Norwich Northern Distributor Road Norfolk

Excavation Report

Volume II: Specialist Reports

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Excavation Report

Norwich Northern Distributor Road, Norfolk

Archaeological Excavation

Volume II: Specialist Reports

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APPENDIX A. FINDS REPORTS

A.1 Prehistoric Pottery

By Sarah Percival

Introduction and methodology

A.1.1 A total of 1,309 sherds weighing 15,601g were collected from sixteen sites across six parishes (Table 1). The prehistoric pottery spanned a range of dates from Earlier Neolithic to Later Iron Age and includes significant assemblages dating to the Middle Bronze Age. Condition of the assemblage varies in both sherd size and preservation. No extant complete vessels survive, with most examples represented by a few sherds only. The majority of the assemblage was found during the excavation phase. Small quantities of sherds recovered during the evaluation are included in the individual site assemblage descriptions below. An overview discussion and appendices are presented at the end of the report.

Area	*Parish*	*Event number*	*Quantity*	*Weight (g)*
Area 1	Taverham	ENF139693	100	432
Area 2a	Drayton	ENF139694	8	44
Area 2b	Drayton	ENF139695	2	33
Area 3	Horsford	ENF139696	898	12462
Area 4	Horsford	ENF139697	31	291
Area 5	Horsford	ENF139698	58	818
Area 6	Spixworth	ENF139699	13	41
Area 7	Spixworth	ENF139700	3	13
Area 8	Beeston St Andrew	ENF139701	6	20
Area 9	Beeston St Andrew	ENF139702	13	79
Area 10	Sprowston	ENF139703	6	115
Area 13	Rackheath	ENF139706	1	10
Area 14	Rackheath	ENF139707	1	11
Area 15	Great & Little Plumstead	ENF139708	2	9
Area 17	Great & Little Plumstead	ENF139710	149	805
Area 18	Great & Little Plumstead	ENF139711	52	402
Area 19	Postwick with Witton	ENF139712	27	354
Total			**1309**	**15601**

Table 1: Quantity and weight of prehistoric pottery by Area and Parish

A.1.2 The assemblage was analysed in accordance with the guidelines for analysis and publication laid down by the Prehistoric Ceramic Research Group (PCRG 2010). The total assemblage was studied and a full catalogue prepared. The sherds were

examined using a hand lens (x10 magnification) and were divided into fabric groups defined on the basis of inclusion types. Fabric codes were prefixed by a letter code representing the main inclusion type: F representing flint, G representing grog and Q representing quartz. Vessel form was recorded: R representing rim sherds, B representing base sherds, D representing decorated sherds and U representing undecorated body sherds. The sherds were counted and weighed to the nearest whole gram. Decoration, condition, food residues and sooting were also noted. The catalogue was recorded using Microsoft Excel 2010.

Area 1, Furze Lane (Taverham: ENF139693)

A.1.3 Area 1 produced a total of 100 prehistoric sherds, weighing 432g from seventeen contexts, of which 31 sherds, 66g, were found in three contexts during evaluation (Table 2). Twelve sherds (26g) are prehistoric but otherwise undiagnostic.

Miti. phase	*Period*	*Period range*	*Group*	*Feature type*	*Feature*	*Spot date*	*No.*	*Weight (g)*
Eval.	0	Unphased	0	Ditch	1197	Later Iron Age	5	33
				Tree throw	1361	Early Bronze Age	7	2
						Post Deverel-Rimbury	12	24
						Undiagnostic pre	6	4
	1	Neolithic	0	Tree throw	1049	Late Neolithic	1	3
Exc.	0	Unphased	1329	Pit	1329	Undiagnostic pre	1	1
	1.2	Late Neolithic	0	Tree throw	1049	Late Neolithic	9	21
					1052	Undiagnostic pre	1	13
					1265	Later Neolithic early Bronze Age	20	52
	2.1	Early Bronze Age	0	Tree Throw	1008	Middle Bronze Age	4	13
			0		1265	Later Neolithic early Bronze Age	20	52
	2.2	Middle Bronze Age	0	Pit	1019	Middle Bronze Age	10	63
			Boundary 1141	Ditch	1141	Middle Bronze Age	3	46
					1178	Middle Bronze Age	1	4
					1212	Middle Bronze Age	3	27
					1240	Middle Bronze Age	5	78
			PH1028	Post hole	1036	Undiagnostic pre	2	1
	6.2	High Med	0	Well	1270	Early Bronze Age	5	25
			Enclosure 1072	Ditch	1152	Post Deverel-Rimbury	2	2
						Undiagnostic pre	2	2
					1162	Post Deverel-Rimbury	1	18
Total							**100**	**432**

Table 2: Sherd count and weight of sherds from Area 1 by date

Later Neolithic Grooved Ware

A.1.4 Ten sherds (24g) of Grooved Ware were recovered from period 1 tree throw **1049.** Two fabrics are present. One sherd is made of fabric containing sparse angular flints the

remainder are sandy with grog inclusions (see Appendix 1). The sandy body sherds are decorated with characteristic incised grooves or channels similar to Grooved Ware of the Durrington Walls substyle found locally at Markshall, Caistor St Edmund, Laurel Farm Thorpe St Andrew and Trowse with Newton (Ashwin and Bates 2000, fig.161, P133; Percival 2011, fig.34,4; Ashwin and Bates 2000, fig.123, P54). The Grooved Ware found at both Markshall and Thorpe St Andrew were solitary finds recovered from discreet pits, perhaps suggesting a pattern of generalised deposition in isolated features (Garrow 2006, 117). Current dating suggests that Grooved Ware was in use around 3000-2000BC (Garwood 1999, 152).

Late Neolithic/Early Bronze Age Beaker

A.1.5 Twenty body sherds (52g) in two fabrics were found in period 2.1 tree throw **1265**. Two fabrics are present, one with common fine flint inclusions and the second with sand, grog and sparse flint (Appendix 1). Two sherds (6g) are decorated with square-toothed comb impressions. Comb-impressed Beaker often forms a component of local non-funerary Beaker assemblages (Bamford 1982; Gibson 1982), and this along with the small size and poor condition of the sherds and the context of recovery suggests that the origin of the Beaker found here is domestic (Healy 2012). Non-funerary Beaker has been found locally at Laurel Farm, Thorpe St Andrew, where it was also recovered from tree throws (Bishop and Proctor 2011, 57). Similar Beaker was also found at Harford Farm on the Norwich Southern Bypass and at Harford Park and Ride whilst the NHER lists at least one find-spot for Beaker in Taverham beside the Wensum adjacent to Ringland Road (NHER7830).

Early Bronze Age

A.1.6 Twelve sherds (27g) are made of soft grog tempered fabrics characteristic of the Early Bronze Age. All the sherds appear to be residual. Seven small scraps weighing 2g were recovered from tree throw **1361** which also contained Post Deverel-Rimbury pottery. Five sherds, 25g came from medieval well **1270**. These include a pointed rim from a barrel-shaped vessel similar to examples found at Hockwold cum Wilton (Healy 1996, fig.95, P266 – P269) and more locally, to an incomplete and undated cremation vessel found at Harford Farm (Bamford 2000, 92) and to pottery recovered at the site of Harford Park and Ride (Percival 2003).

Middle Bronze Age

A.1.7 A total of 26 sherds (231g) of Middle Bronze Age pottery were recovered from pits **1008** and **1019** and from four sections through period 2.2 boundary ditch **1141** (Table 2). Both pits contained small assemblages in coarse grog-tempered fabric. The pottery from pit **1019** includes a rim from an ellipsoid jar with direct flat rim similar to examples from Grimes Graves (Longworth *et al.* 1988, fig.35, 308). Boundary **1141** produced twelve sherds weighing 155g in a mix of flint and grog-tempered fabrics including a rim in sandy flint-tempered fabric decorated with fingertip impressions along the rim top, again similar to examples from Grimes Graves (Longworth *et al*. 1988, fig.43, 576).

Post Deverel-Rimbury (Late Bronze Age)

A.1.8 Fifteen flint-tempered body sherds weighing 44g were recovered. Twelve sherds 24g from tree throw **1361** and three sherds, 20g, from two fills of medieval enclosure ditch **1072**. The sherds are probably of Later Bronze Age to earlier Iron Age date.

Later Iron Age

A.1.9 Twelve later Iron Age body sherds weighing 21g in sandy fabric were recovered from ditch **1197**. The sherds date to *c*.200-50BC.

A.1.10 With the exception of sparse numbers of sherds present within scatters of mixed period ceramics collected during fieldwalking (*cf*. NHER7830), little prehistoric pottery has been recovered from Taverham parish. Evaluation trenching ahead of the construction of the NDR in 2007 produced a minor assemblage of 3 sherds 3g of undiagnostic flint-tempered pottery (NHER3015) as well as a small assemblages of Deverel-Rimbury pottery from ENF124468 and ENF123955 (see below).

A.1.11 Given the lack of excavated earlier prehistoric pottery from the parish the assemblage found at Area 1, particularly the Grooved Ware and Beaker in tree throws, is of interest, confirming later Neolithic to early Bronze Age presence at the site comparable with intermittent, low level activity, some associated with tree clearance noted all along the Tas Yare for example at Laurel Farm (Bishop and Proctor 2011, 57) and Longdell Hills, Easton (NHER36414).

A.1.12 Several Middle Bronze Age boundaries and enclosures have recently been postulated around Norfolk (Gilmour *et al*. 2014) though few have been excavated and fewer still contain contemporary pottery (Percival 1999). Middle Bronze Age ditch **1141** is noteworthy therefore for producing a rare assemblage of excavated MBA pottery. The pottery is contemporary with the much larger assemblage from Area 3 in adjacent Horsford Parish and with thirty sherds weighing 368g from a single Biconical Urn made of chunky, grog-tempered fabric found during trial trenching in 2011 in Taverham along the route of the NDR (ENF124468, Ames and Sillwood 2012, 136). A further 65 sherds, 675g, of MBA pottery with fingertip impressed cordons came from Postwick Hub (ENF123955; Ames and Sillwood 2012, appendix 3).

Area 2: Reepham Road (Drayton: ENF139694 & ENF139695)

A.1.13 A small assemblage of ten sherds (77g) was collected from two unphased features (Table 2). Pit **E2024**, in Area 2a, excavated during evaluation in 2015, produced eight sherds of pottery including seven flint-tempered body and rim sherds. The rim is rolled or folded suggesting that it derives from an Earlier Neolithic Plain Bowl similar to examples found at John Innes Institute, Colney and at Laurel Farm (Percival 2004, fig.9, P10; Percival 2011, fig.31, P4). A rim from a second vessel in grog-tempered fabric has a wet-hand-wiped surface and direct rounded rim with internal bevel and is perhaps Early Bronze Age date (*cf* Healy 1996, fig.83, P113).

Area	Miti. phase	Phase	Group	Feature	Feature type	Spot date	No.	Weight (g)
Area 2a	Eval.	0	0	E2024	Pit	Earlier Neolithic	7	34
						Early Bronze Age	1	10
Area 2b	Excav.	0	0	2004	Posthole	Later Iron Age	2	33
Total							**10**	**77**

Table 3: Sherd count and weight of sherds from Area 2 by date

A.1.14 Posthole **2004** found during the excavation phase in Area 2b contained two Later Iron Age body sherds in sandy fabric (Appendix 1).

A.1.15 Dating of pit **E2024** is uncertain as it appears to contain both Earlier Neolithic and Early Bronze Age pottery, perhaps suggesting that the Neolithic pottery is residual. Flint-tempered pottery of possible Earlier Neolithic date has previously been recovered in Drayton in small quantities at David Rice Hospital (Emery 2008). Early Bronze Age Urns have been found on Fen-edge domestic sites such as Hockwold cum Wilton (Healy 1996, fig.82, P103, fig.95, P273–275) and it is likely that the small assemblage from Area 2 is also of domestic origin. A possible Iron Age sherd in organic tempered fabric also came from David Rice Hospital (Emery 2008), otherwise little prehistoric pottery has been found in Drayton parish.

Area 3, Bell Farm (Horsford: ENF139696)

A.1.16 Area 3 produced the largest prehistoric assemblage found during the NDR excavations, a total of 878 sherds weighing 12,308g and including rims from nineteen vessels (Table 4). All the pot was found during the excavation phase and suggests a background of Later Neolithic Early Bronze Age activity with sherds from surface deposits finding their way into a variety of later features. Middle Bronze Age pottery appears to be largely associated with pit **3132** and enclosure **3008**, whilst Later Bronze Age pot was recovered from structures and domestic features related to continued occupation of the site. There is little prehistoric pottery postdating the Later Bronze Age. A possible Iron Age sherd in sandy fabrics came from period 3 boundary ditch **20249** and twelve body sherds of Later Iron Age pottery in sandy and micaceous fabrics with burnished surfaces were found in period 3 pit **20054**. Three sherds, each weighing less than 1g, from pit **21986**, posthole **3805** and ditch **20621** are prehistoric but otherwise not closely datable.

Spot Date	Feature	Feature Type	Period	QTY	WT	Count NV	Sum of WT %
Earlier Neolithic	20387	pit	1.1	314	5700	4	45.74%
Later Neolithic/Early Bronze Age	3157	pit	4	1	3	1	0.02%
	3896	post hole	2.3	1	6		0.05%
	3898	post hole	2.3	1	2		0.02%
	3900	post hole	2.3	1	15		0.12%
	3932	post hole	2.3	1	2		0.02%

Spot Date	Feature	Feature Type	Period	QTY	WT	Count NV	Sum of WT %
	20041	pit	2.1	5	50		0.40%
	20616	post hole		2	18	1	0.14%
Early Bronze Age	E802			6	8		0.06%
	E817			2	23		0.18%
Early to mid Bronze Age	20179	pit	4	3	14		0.11%
	20398	pit	2.2	7	76		0.61%
	20426	pit	2.2	1	18		0.14%
Middle Bronze Age	3108	ditch	2.2	1	1		0.01%
	3128	pit	4	1	8	1	0.06%
	3132	pit	2.2	212	3683	2	29.55%
	3168	ditch	2.2	2	10		0.08%
	3792	ditch	2.2	1	5		0.04%
	20426	pit	2.2	1	8		0.06%
	20561	ditch	2.2	1	13		0.10%
	20621	ditch	2.2	1	3		0.02%
	21132	post hole	2.2	1	6		0.05%
	21224	post hole	2.2	1	8	1	0.06%
	21304	post hole	2.2	1	5		0.04%
	21358	post hole	2.2	1	15		0.12%
	21618	post hole	2.2	1	10		0.08%
	21972	post hole	2.2	1	57		0.46%
	22070	post hole	2.2	1	5		0.04%
	21038	post hole	2.2	2	21		0.17%
Later Bronze Age	3001	Cremation	2.2	1	7		0.06%
	3152	pit	2.3	2	10		0.08%
	3160	gully	4	1	3		0.02%
	3214	post hole	2	5	56	1	0.45%
	3216	post hole	2	1	3		0.02%
	3236	pit	2	3	26		0.21%
	3238	post hole	2	1	7		0.06%
	3240	post hole	2	17	82		0.66%
	3242	post hole	2	107	638	4	5.12%
	3275	post hole	2	9	63		0.51%
	3347	pit	2	11	24		0.19%
	3354	post hole	2.3	17	134	2	1.08%
	3356	cremation?	2.3	62	686	2	5.50%
	3358	post hole	2.3	3	11		0.09%
	3477	pit	2.3	32	558	1	4.48%

Spot Date	Feature	Feature Type	Period	QTY	WT	Count NV	Sum of WT %
	3860	post hole	2.3	1	2		0.02%
	3946	post hole	2.3	7	31		0.25%
	3969	pit	2.3	1	5		0.04%
	20625	pit		12	134		1.08%
	22022	post hole		1	1		0.01%
	U/S	U/S	2.2	9	38		0.30%
	3350	post hole		5	32		0.26%
Iron Age	20249	ditch	3	1	4		0.03%
Later Iron Age	3611	post hole	2.2	6	64		0.51%
	20054	pit	3	6	47		0.38%
Undiagnostic pre	3805	post hole	2.2	1	1		0.01%
	20621	ditch	2.2	1	1		0.01%
	21986	pit	2.2	1	1		0.01%
Total				**898**	**12462**	**20**	**100.00%**

Table 4: Area 3 pottery by period

Earlier Neolithic

A.1.17 The earliest pottery recovered is of Earlier Neolithic date. A large assemblage of 314 sherds, weighing 5,700g, and including rims from at least three vessels, all round-based Plain Bowls, was recovered from period 1.1 pit (**20387**) which also contained significant quantities of worked flint.

A.1.18 Three fabrics were identified, all containing coarse to medium flint inclusions (Appendix 1), the presence of crushed angular burnt flint inclusions in Earlier Neolithic pottery being typical of this period (Healy 1988, 71). The assemblage includes substantial sherds from a large, ledge-shouldered bowl with a bead rim similar to vessels found at Spong Hill, North Elmham (Healy 1988, fig.74). The outer surfaces of the bowl have tooled channels of the upper body. Sixteen sherds, 166g, are pale and light-weight consistent with having been burnt sometime between breakage and deposition.

A.1.19 A second rim is from a similar bowl with shoulder ledge and rolled rim (Healy 1988, fig.75, P184) and the third, a large abraded direct rounded rim, came from a from a bag-shaped vessel (Healy 1988, fig.72, P152).

A.1.20 The Earlier Neolithic assemblage from pit **20387** includes a mix of incomplete fragmentary vessels, and of fresh, burnt and worn sherds, dumped into the pit. Almost all came from a single fill (20489), suggesting a single episode of infilling with artefact rich occupation debris probably derived from a midden or surface accumulation (Garrow 2006, 58). The deposit was then sealed with a layer of pottery poor soil, perhaps the backfill from digging the pit. This pattern of deposition has been noted locally in

contemporary assemblages from Spong Hill and Kilverstone (Healy 2013, 14; Garrow et al. 2005 and 2006a).

Later Neolithic to Early Bronze Age (Beaker)

A.1.21 Twelve later Neolithic to Early Bronze Age Beaker sherds weighing 96g in sandy, flinty and groggy fabrics (Appendix 1) were recovered in small dispersed quantities as residual material in the fills of four postholes in Later Bronze Age posthole group **3900**, Iron Age pit **20041,** Roman pit **3157,** pit group **20230** and posthole **20616**. The assemblage contains sherds from at least four vessels including two direct flat rims both from straight necked Beakers, decorated with techniques typical of local domestic assemblages including incised lines forming a net or lattice motif, square-toothed comb-impressed decoration and fingernail impressions forming bands (Bamford 1982, fig.39, a; fig.41, e and fig.44, b).

A.1.22 The range of decoration and fabrics, compare well with local Beaker deposits from Harford Farm and Harford Park and Ride amongst others (Ashwin and Bates 2000, Percival 2006) and are also comparable to the non-funerary Beaker deposits found elsewhere along the NDR in areas 1, 9, 10, 17 and 19. The pottery represents residual occupation debris, originally from surface deposits, which has found its way into later features, a depositional pattern widely noted for Beaker and found on sites such as Spong Hill (Healy 2012, 12).

Middle Bronze Age

A.1.23 During evaluation of Area 3 two contexts (E802; E817) produced eight body sherds, 31g, in grog-tempered fabrics given a provisional Early Bronze Age spotdate (Table 4). Given the large Middle Bronze Age assemblage subsequently recovered from the site it is likely that these sherds to are Middle Bronze Age. A total of 229 sherds Middle Bronze Age weighing 3,858g were collected during excavation. The majority of these came from a single feature, (period 2.2.2 pit **3132**) which produced 212 sherds weighing 3,683g including two of the four rims found. Other finds from the pits include a broken flint quern and baked clay oven plates. None of the sherds from pit **3132** are burnt all being fresh and well preserved. This contrasts with the flint assemblage also found in the pit which is heavily sooted and blackened, and suggests that the material which entered the pit is derived from different sources.

A.1.24 The remainder of the Middle Bronze Age assemblage was dispersed in small quantities through the fills of ditches forming Enclosure **3008** and from various postholes including both those from the posthole alignments (**21132,** posthole alignment **21110**; **21224**, posthole alignments **21154** and **21358**, posthole alignment **21308)** and from ungrouped postholes (**21039**, **21304**, **21972** and **22070**).

A.1.25 The Middle Bronze Age assemblage includes rim and body sherds from three bucket-shaped vessels in coarse grog-tempered fabric with pinched or applied cordons decorated with deep fingertip impressions. Two rims have fingernail or fingertip impressions along the rim top. The vessels are very similar to the Middle Bronze Age forms found at Grimes Graves, as well as Cromer Road, Antingham and Witton, near North Walsham (Longworth *et al*. 1988, fig.37, 373-395; Wilson *et al.* 2012, fig.33, 5; Lawson 1983, fig.25; Longworth *et al*. 1988). One rim, from pit **3132** is from a shell-tempered jar with a wide, finger-dragged band on the neck (Longworth *et al*. 1988,

fig.24, 60-63). Many of the body sherds are finished with wet hand wiping or have vertical finger wiping on the vessel body.

A.1.26 Middle Bronze Age pottery from non-funerary contexts remains fairly rare in Norfolk. Since the publication of the still exceptional assemblage from Grimes Graves in 1988 small quantities of bucket shaped vessels have been started to be recognised, mostly from pit and ditch deposits associated with contemporary enclosures (Gilmour *et al*. 2014). The pottery from Area 3 is comparable with Mid Bronze Age assemblages from Areas 1, 5, 13 and 15, and with small quantities of pottery found during archaeological work around Postwick (sees overview below).

Late Bronze Age

A.1.27 A total of 308 sherds weighing 2,551g and including nine rims are Late Bronze Age. This pottery has an average sherd weight of just 8g but ranged in size from 1g to 34g. The pot was principally recovered from postholes forming period 2.3 structures 3200, 3240 and 3269, in particular posthole **3242** part of structure **3240**. These assemblages include a number of heavily re-fired sherds consistent with having been subjected to intense heat post breakage. Burnt sherds form c 27% of the assemblage by weight and 37% by sherd count. The presence of heavily burnt sherds alongside fresh sherds has been frequently noted in Late Bronze Age assemblages (Brudenell 2012, 340), the differing sherd histories perhaps arising from contemporary on-site rubbish management practices such as midden clearance and burning.

A.1.28 Further quantities of Late Bronze Age pottery came from period 2.3 features including pits **3236**, **3152**, **3477**, **3966**, postholes **3354** and **3358** from PG3350, and ungrouped postholes **3860** and **3946**. Posthole **3356** produced 62 sherds 686g though these appeared to derived from a minimum of three vessels and include both fresh and burnt sherds. Late Bronze Age sherds were also found in the ditches of Roman enclosure **3160** and in a series of unphased postholes including features in PG3350 and PH3232.

A.1.29 A range of vessel types are present including tripartite jars, ellipsoid or barrel-shaped jars and jars with high rounded shoulders, all typical vessel forms for the region (Table 5, Brudenell 2012). The barrel-shaped vessel of form D is of similar form and decoration to vessels attributed to the Middle Bronze Age ceramic period suggesting that this Later Bronze Age form developed from the mid Bronze Age antecedent.

Form (Brudenell 2012)	***Decoration***	***Fabric***	***Count***
D barrel/tub-shaped vessel	Fingertip impressed on rim top	QF	1
E Bipartite jar		F1	1
		F2voids	1
		QF	1
F Jar with high rounded shoulder		F1	1
		QF	1
G Slack shouldered jar	Fingertip impressed on rim top	QF	1
		QF	1
Uncertain	Fingertip impressed on rim top	F1	1
Total			***9***

Table 5: Area 3 range of vessel types

A.1.30 The vessels are well made and often have smoothed or burnished surfaces but there is a notable absence of decoration, with only one fingertip-impressed body sherd being present within the assemblage. Three rims have fingertip impressions along the flattened rim top (Table 5). Finger wiping occurs on the surfaces of 50% of the assemblage by weight and 32% by sherd count, reflecting the preferential survival of surface treatment on larger more robust body sherds or perhaps the higher incidence of finger wiping on larger vessels which survive as larger sherds. Fabrics contain a variety of fine to coarse flint inclusions or are sandy sometimes with organic voids (Appendix C.1).

A.1.31 The presence of mixed barrel shaped forms alongside more angular vessels is similar to pottery found at Chimney Farm, Witton on the line of the Bacton to Yarmouth pipeline, an assemblage also primarily recovered from postholes associated with the post built roundhouse and given a tentative mid to later Bronze Age date (Crowson and Bates 1999). The assemblage characteristics suggest that the Late Bronze Age pottery belongs to the 'mature' Plainware group dating to *c*.1000/ 800BC and locally comparable with pottery found on the line of Alysham Bypass (Brudenell 2012, 164).

Area 4, Dog Lane (Horsford: ENF139697)

A.1.32 Area 4 produced a small prehistoric assemblage of 31 sherds weighing 291g (Table 6). The assemblage is principally of Iron Age date with the exception of two possible Early Bronze Age sherds in grog-tempered fabric recovered as unstratified surface finds during evaluation. Two later Iron Age sherds in sandy fabric were also found during evaluation in ditch **E679**.

Miti. phase	*Period*	*Group*	*Feature*	*Feature type*	*Spot date*	*Quantity*	*Weight (g)*
Evaluation	0	0	679	Ditch	Later Iron Age	2	4
	Unstratified				Early Bronze Age	2	10
Excavation	3	PH4114	4118	Posthole	Iron Age	1	5
	3	PH4007	4023	Posthole	Earlier Iron Age	2	10
			4041	Posthole	Earlier Iron Age	1	6
	4	Ditch4004	4184	Ditch	Iron Age	21	245
		Ditch4073	4073	Gully	Earlier Iron Age	2	11
Total						***31***	***291***

Table 6: Sherd count and weight of sherd from Area 4 by date

A.1.33 The excavation phase of Area 4 produced 27 sherds 277g. Five undecorated earlier Iron Age body sherds (27g) were recovered from three features, namely postholes **4023** and **4041** which form part of posthole group **4007**, and Roman ditch **4073**. These small abraded sherds are made of a mix of flint, sand and grog-tempered fabrics (Appendix 1). A further 22 sherds (250g) of Later Iron Age pottery in fine sandy micaceous fabric was recovered. These include an out-turned rim sherd from posthole **4118** and seventeen body sherds (155g), all probably from the same vessel, from Roman ditch **4148** group **4004**.

A.1.34 No indisputably Iron Age pottery has previously been found in Horsford parish. As discussed above (Area 3) eight sherds 14g of undiagnostic prehistoric pottery in flint and grog-tempered fabrics were collected from Bell Farm and given a tentative Neolithic or earlier Iron Age date (NHER18131; Trimble and Watkins 2008), it is also possible that

these sherds are Middle Bronze Age. The earlier component of the assemblage from Area 4 is similarly undiagnostic. The later Iron Age micaceous sherds found largely in Roman features probably represent a very late Iron Age to Early Roman handmade component associated with Roman occupation at the site.

Area 5, Drayton Lane (Horsford: ENF139698)

A.1.35 Area 5 produced a small assemblage of 58 sherds weighing 818g. Eleven sherds were collected during evaluation. A sherd of much abraded fingertip impressed pottery in flint-tempered fabric from ditch **5042** is perhaps later Neolithic early Bronze Age Beaker. A further nine sherds found are Middle Bronze Age. Ditches **E431** and **E440**, which each contained small quantities of the Mid Bronze Age pottery found during evaluation, form part of Enclosure **5007** which was further excavated during the excavation phase and contained an additional 47 sherds, 645g also of Mid Bronze Age date. A single sherd of Later Iron Age pottery in sandy micaceous fabric was collected from ditch **E412.**

A.1.36 The majority of the Mid Bronze Age sherds are made of coarse grog-tempered fabrics though some contain fine grog inclusions. Grog tempered fabrics form 81% of the total assemblage by weight. Fabrics which principally contain sand form a further 15% of the assemblage and flint-tempered sherds 4% (Appendix 1). The assemblage includes rims from four vessels. A direct flattened rim from ditch **5007** is from a barrel-shaped vessel with a pinched-out knob on the neck similar to examples from Grimes Graves (Longworth *et al*. 1988, fig.39, 459-467). A second similar barrel-shaped jar has a pinched out cordon with deep fingertip impressions, a decorative trait found on contemporary vessels from Grimes Graves, Cromer Road, Antingham and Witton, near North Walsham (Longworth *et al*. 1988, fig.37, 373-395; Wilson *et al.* 2012, fig.33, 5; Lawson 1983, fig.25), whilst a third jar has a plain cordon (Longworth *et al*. 1988, fig.41, 517-519). The remaining rim is small and pointed, perhaps from a small jar or cup.

A.1.37 The small Middle Bronze Age assemblage is broadly contemporary with pottery found in Area 1 in Taverham parish and more significantly with the large assemblage from Area 3, also in Horsford. Previous finds around Area 3 include eight sherds 14g of possible Middle Bronze Age pottery in flint and grog-tempered fabrics from Bell Farm (NHER18131; Trimble and Watkins 2008). No previous finds of prehistoric pottery are recorded from the vicinity of Area 5.

Area 6, Quaker Lane a (Spixworth: ENF139699)

A.1.38 Natural hollow **6021** produced 13 Earlier Iron Age sherds weighing 41g. All of the sherds are made of fine, flint-tempered fabric, one is burnished and one has incised decoration forming a herringbone motif similar to vessels found on the Norwich Southern Bypass at Trowse (Ashwin and Bates 2000, fig.140, P114) and at Honey Pots Plantation, Shropham (Brudenell 2011, fig. 6.23, 3).

A.1.39 Research suggests that vessels decorated with incised or tool-impressed herringbone patterns form a small component of Earliest and Early Iron Age assemblages, with a distribution centred upon eastern Norfolk and Suffolk (Brudenell 2011, 247).

Area 7, Quaker Lane b (Spixworth: ENF139700)

A.1.40 Three earlier Iron Age date sherds weighing 13g in sand and flint-tempered fabrics were recovered as single sherds from the fills of modern ditches **7005** and **7011** and posthole

7036. One sherd is decorated with fingertip impressions similar to contemporary pottery from Longham (Ashwin and Flitcroft 1999, fig.23, P46).

A.1.41 Fingertip and fingernail rusticated vessels, such as that found on Area 7, form a minor component of Earliest and Early Iron Age Decorated Ware assemblages with a widespread distribution across East Anglia (Brudenell 2012, fig. 6.25) and were perhaps related to La Tène I rusticated jars from the Champagne region of France (Brudenell 2012, 249).

A.1.42 The pottery found at Areas 6 and 7 in Spixworth parish appears to be contemporary, all belonging to the Early Iron Age. Previous finds of earlier Iron Age pottery from the NDR route within the parish are limited, comprising five sherds, 12g in flint and sandy tempered fabric from ENF123748 and a single undiagnostic flint-tempered sherds from NHER35669 (Ames and Sillwood 2012). No further Iron Age pottery is listed from the parish.

Area 8, Beeston Lane (Beeston St Andrew: ENF139701)

A.1.43 A small assemblage of six sherds weighing 20g was recovered from three Period 2 features in Area 8. Three undecorated body sherd in grog-tempered fabric from natural feature **8000** are probably Early Bronze Age. The three remaining sherds are prehistoric but otherwise undatable, these include two sherds from the fill of ditch **8008** in fine flint-tempered fabric and two flinty body sherds from pit **8015**.

Area 9, Dobbs' Beck (Beeston St Andrew: ENF139702)

A.1.44 Area 9 produced 13 sherds of prehistoric pottery weighing 77g all from the excavation phase. A rim in coarse flint-tempered fabric with piercings below the rounded direct rim from period 1 tree throw **9086** (Group **9065**) is of Earlier Neolithic date. Similar vessels have been recovered from Hurst Fen, Mildenhall and Spong Hill North Elmham (Longworth 1960, fig.21, P23-P26: Healy 1988, fig.66, P69).

A.1.45 Twelve Beaker body sherds representing a minimum of four vessels were also recovered; one from the fill of Period 1 tree throw **9074**, six from period 2.1 pits **9008** and **9010** (Pit group 9008) and four as residual sherds from medieval pit **9332**.

A.1.46 The Beaker sherds are principally made of sandy fabrics with a range of flint and grog inclusions (Appendix C.1). The sherds are decorated with fingernail, fingertip and tool-impressed decoration characteristic of non-funerary assemblages from the region. One sherd with a fingertip raised cordon is similar to examples from Valley Belt, Trowse (Ashwin and Bates 2000, fig.124, P66). The tool impressed sherd resembles a vessel found in a solution feature at Bixley (Ashwin and Bates 2000, fig.37, P11). The form of the Beakers is uncertain as the sherds are small and fragmented but the curvature of some of the sherds suggests that these may be from globular forms.

A.1.47 The Neolithic bowl found at Area 9 is of a form which appear early in the bowl sequence and is perhaps contemporary with the large midden deposit excavated at John Innes Centre, Colney (Percival 2004). Previous work along the route of the NDR in Beeston St Andrew parish produced a single small body sherd in flint-tempered fabric which is probably also of Earlier Neolithic date (NHER49748, Ames and Sillwood 2012).

A.1.48 Beaker pottery is regularly recovered in small quantities from sites in and around Norwich (Ashwin and Bates 2000; Percival 2011, 59: Percival 2009), though none is previously recorded from Beeston St Andrew parish.

Area 10, Wroxham Road (Sprowston: ENF139703)

A.1.49 No prehistoric pottery was found during evaluation of Area 10. Excavation produced six sherds of prehistoric pottery weighing 115g. These include a single sherd of Grooved Ware in grog-tempered fabric (Appendix 1) from period 2.1 pit **10475**. The sherd is decorated with an elaborate applied fingertip-impressed cordon and incised channels and is probably of the Durrington Walls substyle (Longworth 1971).

A.1.50 Five Beaker body sherds in sandy, flint-tempered fabric including two with fingernail-impressed decoration came from natural feature **10448**. Two sherds show signs of post-use burning suggesting exposure to fire perhaps in a hearth or midden post breakage. As with Beaker finds elsewhere along the NDR, the Beaker recovered from Area 10 is of non-funerary origin.

A.1.51 The sherds represent a background scatter of earlier prehistoric activity in the area. Grooved Ware of similar decorative form was also found on Area 1 in Taverham parish and has been recovered locally from isolated pits at Markshall, Caistor St Edmund, Laurel Farm Thorpe St Andrew and Trowse with Newton (Ashwin and Bates 2000, fig.161, P133; Percival 2011, fig.34,4; Ashwin and Bates 2000, fig.123, P54).

Area 13, Gazebo Farm (Rackheath: ENF139706)

A.1.52 A single sherd of pottery weighing 10g from fill 13158 of early medieval enclosure ditch **13157** is made of coarse grog-tempered fabric suggesting an Early to Middle Bronze Age date.

Area 14, Salhouse Road (Rackheath: ENF139707)

A.1.53 A single undated prehistoric sherd weighing 11g came from ditch **14002**. The sand-with-flint fabric suggests that sherd is of Post Deverel-Rimbury date.

A.1.54 The paucity of prehistoric pottery found along the NDR in Rackheath reflects a general lack of pottery of this period recovered from the parish. One body sherd of undiagnostic flint-gritted pottery was found during field walking at NHER19296, otherwise no other prehistoric pottery finds are recorded.

Area 15, Plumstead Road (Rackheath: ENF139707)

A.1.55 Evaluation of Area 15 produced two prehistoric sherds. A rim sherd weighing 9g from a Middle Bronze Age bucket-shaped vessel is made of coarse grog-tempered fabric came from un-phased natural feature **15009**. The sherd has fingertip-impressed decoration along the rim top similar to examples from Grimes Graves (Longworth *et al*. 1988, fig.39, 453 & 454). A small scrap of fine flint-tempered pottery from posthole **15007** may be Earlier Iron Age.

Area 17, Middle & Low Road (Great & Little Plumstead; ENF139710)

A.1.56 A moderate assemblage of 148 sherds weighing 805g was recovered from nine features all during the excavation phase of Area 17 (Table 7).

Period	Group	Feature	Feature type	Spot date	Quantity	Weight (g)
2.1	0	17100	Natural	Later Neolithic early Bronze Age	2	28
		17116	Natural	Undiagnostic pre	1	1
	PG17074	17071	Pit	Later Neolithic early Bronze Age	19	111
		17120	Pit	Later Neolithic early Bronze Age	1	38
		17135	Pit	Later Neolithic early Bronze Age	2	5
	PG17212	17319	Natural	Undiagnostic pre	9	13
2.2	0	17061	Pit	Later Bronze Age	52	253
3	0	17150	Cremation Pit	Iron Age	61	338
6.2	Enclosure17078	17256	Ditch	Iron Age	1	17
		17412	Ditch terminus	Undiagnostic pre	1	1
Total					88	467

Table 7: Sherd count and weight of sherd from Area 17 by date

A.1.57 A small assemblage of 24 sherds of Later Neolithic/Early Bronze Age Beaker weighing 182g was found in the fills of three period 2.1 pits in Pit Group **17074** and natural feature **1710**.

A.1.58 The Beaker assemblage represents the scant remains of at least six vessels and includes rims from two, both globular Beakers with everted rims (Needham 2005, fig.10, 7&8). The sherds are made of a mix of sandy fabrics with fine flint and grog inclusions. One vessel has a rounded, out-turned rim and is decorated with a pinched-out cordon on the neck and pinched fingernail impressions all over (Bamford 1982, fig.9, P93.050), the second has indistinct impressed decoration. Further body sherds have square-toothed comb impressed filled bands and triangles (Bamford 1982, fig.20, P63.118; Gibson 1982 fig. FEN15, 6) or all-over single fingernail impressed decoration (Bamford 1982, fig.41).

A.1.59 A total of 52 large sherds from the rim and body of a Later Bronze Age bowl in hard fired fabric with dense fine flint inclusions came from un-phased and un-grouped pit **17061**. The bowl is round bodied with an everted neck and has a pinched-out rim and simple base similar to examples from Alysham Bypass (Brudenell 2012, fig.41. form K4).

A.1.60 An isolated cremation burial (**17150**) recovered from the site was dated by radiocarbon dating to the Late Iron Age period and was contained in the partial remains of a small, undecorated, globular vessel with a footstand base (61 sherds; 338g). The form, with a footstand base, is a less common type but still within the range of forms typical of the period. The sandy fabric with few other inclusions is also a common type in the area.

A.1.61 The style and decoration of the Beaker is typical of local domestic assemblages such as those found on Areas, 1, 3, 9, 10 and 19 on the NDR, along the Norwich Southern Bypass at Harford Farm, Bixley, and Trowse (Ashwin and Bates 2000) and in larger quantities at Harford Park and Ride (Percival 2006).

A.1.62 Pit **17061** contained the fragmentary non-joining remains of a single Post Deverel-Rimbury vessel including a mix of burnt and unburnt sherds. This suggests that the sherds had been stored prior to deposition, with some sherds being burnt subsequently perhaps in a hearth or midden.

A.1.63 The identification of a Late Iron Age cremation is atypical for the period and of interest. Particularly considering no other evidence for Iron Age activity was revealed within the area.

Area 18, Smee Lane (Great & Little Plumstead: ENF139711)

A.1.64 This area produced 52 sherds of Earlier Neolithic Plain Bowl (402g). Pottery was recovered from three features all dated to period 1.1, comprising pit **18060**, which contained a single body sherd, and natural feature **18122** which produced ten sherds (128g). The largest single assemblage came from pit **18104**, which contained 41 sherds (268g).

A.1.65 The assemblage includes rims from three ledge-shouldered, bag-shaped vessels all in flint tempered fabrics containing varying quantities of small to medium angular flint (see appendices). One rim is externally thickened, one rolled and one finely beaded (Healy 1988, fig.57). The interior of the bead rim bowl is burnished or slipped leaving a fine black surface and the exteriors of all the bowls have been burnished.

A.1.66 The Area 18 assemblage compares well to local Earlier Neolithic pottery from Broome Heath and Eaton Heath (Wainwright 1973; Wainwright 1972) the varied rim types and ledged shoulders being of slightly later form than the more simple rims of the Early Bowl found in Areas 2, 9 and 19.

Area 19, Smee Farm (Postwick with Witton: ENF139712)

A.1.67 A total of 27 sherds (354g) were collected from the excavation phase of Area 19. One undiagnostic prehistoric sherd came from Period 2 ditch **19315**.

A.1.68 The assemblage from Area 19 includes 21sherds, 138g, of Earlier Neolithic Plain Bowl found in Period 1 pits **19332** and **19364** from Pit Groups **19400** and pit **19432** from Pit Group **19432.** The assemblage includes rims from at least two Plain Bowls in a mix of course to fine flint-tempered fabrics (Appendix 1). One vessel has a rolled rim whilst the second rim is pointed and everted (Healy 1988, fig.57). Many of the sherds have burnishing to the exterior.

A.1.69 The Beaker assemblage comprises three sherds 20g probably from three vessels found in pit **19063**. These are made of sandy fabric with sparse flint and include impressed and fingernail impressed body sherds typical of non-funerary Beaker found locally.

A.1.70 A complete vessel, associated with another possible pot (which did not survive washing), found in feature **19232**, is made of sandy fabric with grog and sparse small flint inclusions (Appendix C.1). The form is comparable to a globular Beaker, with a small out-turned rim, rounded body and flared base. The Beaker is undecorated, similar to a vessel found at Flixton in Suffolk associated with Beaker pot (S. Boulter pers. comm.) and comparable to an undecorated Beaker recovered from a barrow in Frampton, Dorset (Clarke 1970, 225, corpus no.180). A single Iron Age sherd (10g) came from Period 6.2 pit **19006**.

A.1.71 The Earlier Neolithic assemblage is comparable to the pottery found at John Innes Centre Colney (Percival 2004) and to finds from Areas 2 and 9 along the NDR.

A.1.72 The Beaker from pit **19063** is probably non-funerary comparable with fragmentary mixed Beaker deposits found in small quantities along the NDR at Areas 1, 3, 9, and 10 and across the Norwich environs. Small sherds of possible rusticated non-funerary Beaker were also recovered during archaeological work at Postwick Hub (Crawley 2014). In contrast the Beaker from feature **19232** was deposited as a complete vessel alongside a second vessel which was too fragmentary to survive excavation. Clarke (1970) lists at least twelve undecorated Beakers associated with burials and it is

possible that this complete Beaker had been deposited as an accessory vessel beside an inhumation burial, which did not survive the acidic soils.

Discussion

Earlier Neolithic

A.1.73 The Earlier Neolithic assemblage comprises a total of 388 sherds weighing 6,258g collected from five excavation areas. The largest single assemblage came from Area 3 in Horsford, to the north-west of Norwich with smaller quantities being recovered from Area 2a in Drayton. The remainder came from parishes to the north-east of Norwich including Area 9, Sprowston, Area 18, Great and Little Plumstead and Area 19 in Postwick with Witton. This scattered distribution broadly follows the pattern of Earlier Neolithic pottery finds during evaluation where a single sherd (3g) came from Beeston St Andrew (NHER49748 Ames Sillwood 2012) to the north west and nine sherds 71g from parishes to the north east including a single sherd weighing 11g field G9 Postwick, 3 sherds (4g) from C1 in Crostwick parish, and 5, 56g from S15 in Spixworth (ENF137057 Pooley *et al*. 2015). The presence along the NDR of even this moderate Earlier Neolithic pottery assemblage contrasts markedly with findings along the route of the Norwich Southern Bypass where very little Earlier Neolithic pottery was found despite the seemingly advantageous location offered there by the river valleys of the Tas Yare confluence (Ashwin and Bates 2000, 236). The distribution mimics that suggested by finds of contemporary flint along the NDR route, indicating low level but widely dispersed Earlier Neolithic activity in the environs of north Norwich.

A.1.74 Earlier Neolithic pottery was primarily recovered from period 1 pit deposits. No pit clusters were present with all pottery derived from isolated or single pits with simple fill sequences. The taphonomy of these pit deposits is varied. The large assemblage from pit 20387 in Area 3 includes large sherds from a semi-complete bowl mixed with sherds from several other vessels within a dumped layer of intentionally redeposited occupation debris. This form of pit filling is reminiscent of the deposits of Plain Bowl and Mildenhall Ware found at sites such as Spong Hill and Kilverstone though here the pits are multiple and often sequential (Healy 2012, 12; Garrow 2006). In contrast the majority of the other pits contained few sherds, mostly highly abraded, from various vessels, with some perhaps representing accidental inclusions of pottery from former surface deposits. The findings confirm that the digging and infilling of pits in the Earlier Neolithic was complex, with more than one type of deposition being practiced, and perhaps reflecting the varying type and longevity of activity taking place at each site (Garrow 2006, 58).

A.1.75 A small assemblage of eleven sherds, 146g, recovered along the NDR came from tree throws. Increasing numbers of examples of tree throws containing Neolithic pottery have been recognised and excavated and, similar to pit finds, show some variation in the quantity, preservation and intent of the deposits (Evans *et al.* 1999). Soil layers and tree throws containing Earlier Neolithic pottery have been found locally at Harford Park and Ride, Keswick and Laurel Farm, Thorpe St Andrew, and were perhaps associated with Neolithic tree clearance

A.1.76 All the Earlier Neolithic pottery found along the NDR was Plain Bowl with no decorated forms such as Mildenhall Ware being recovered either with the Plain Bowl or on its own. The absence of decoration within the Earlier Neolithic assemblage perhaps suggests that all belong towards the earlier period of bowl chronology. Forms recovered vary, perhaps representing chronological differences, though the small size of the

assemblages and of the sherds prohibits exact dating. Vessels with simple or rolled rims, are chronologically earlier suggested to date from *c.*3855/3730 to around 3355/3210 cal.BC (Whittle *et al.* 2011), whilst other vessels, including those from pit **20387** are mixed, including both bag-like forms with thick rounded rims and bowls with distinct shoulder ledges and bead rims, and may fall later in the sequence from 3855/3730 cal BC to 3355/3210 cal BC 68% probability (Whittle *et al.* 2011, 762).

Late Neolithic/Early Bronze Age

A.1.77 The late Neolithic to early Bronze Age pottery types recovered along the NDR reflect the pattern of recovery for pottery of this period in the Norwich environs. No Peterborough Ware was present. This type of Late Neolithic pottery is rarely found around Norwich though small quantities have been recovered at Postwick Water Treatment Works and Laurel Farm, Thorpe St Andrew (ENF133894, Green and Haskins 2015; Percival 2011).

A.1.78 Grooved Ware is also relatively rare. The excavations produced ten sherds of Grooved Ware weighing 91g from two sites, Area 1, Taverham and Area 10, Rackheath. The sherds are made of sandy fabric with grog inclusions and are decorated with incised grooves or channels characteristic of the Durrington Walls substyle. The pottery was recovered in small quantities from two period 1 features, an isolated pit and a tree throw, thus fitting a pattern of generalised deposition in isolated features (Garrow 2006, 117).

A.1.79 Beaker pottery is much more common than other types of later Neolithic/Early Bronze Age pottery, both in and around Norwich and along the NDR. The NDR excavation produced a total of 77 later Neolithic/Early Bronze Age date sherds weighing 640g. These include one possible funerary vessel, an undecorated Beaker deposited complete and perhaps associated with an inhumation burial from pit **19232** in Area 19, Postwick.

A.1.80 The assemblage also included 65 sherds, 379g which show characteristic decoration typical of non-funerary Beaker, and eleven sherds 77g are plain body sherds in similar fabric found alongside the decorated examples. Non funerary Beaker was recovered from six sites dispersed along the route including Area 1 Taverham, Area 3, Horsford, Area 9, Sprowston, Area 10 Rackheath and Area 17 Great and Little Plumstead. Beaker pottery is often found in varying quantities on sites in and around Norwich, sometimes in quantity from contemporary pits such as those found at Harford Park and Ride where a degree of selection and deliberate deposition is suggested (Trimble forthcoming) but also in small quantities dispersed through later features (*cf.* Castle Mall Percival 2009). Healy noted the quantity of residual Beaker found at Spong Hill postulating that this resulted from the contemporary practice of deposition of Beaker pottery in surface deposits which were subsequently incorporated into later cut features and soils (Healy 1988, fig.87). Along the NDR Beaker deposits show a similar pattern. 60% of the non-funerary Beaker came from period 1 features principally pits but also postholes and tree throws. The remainder came from features dated to the Later Bronze Age to Medieval phases. No especially large or selected assemblages containing big sherds or semi complete vessels were present along the NDR suggesting generalised deposition of pottery from pre-pit contexts rather than selected deposition (Garrow 2006, 136).

A.1.81 Beaker and Grooved Ware are believed to overlap chronologically, with Beaker being current from around 2600 until 1800 BC (Kinnes *et al.* 1990) whilst Grooved Ware dates broadly from the period 3000–2000 BC (Garwood 1999, 152).

A.1.82 A small assemblage of 26 sherds (90g) has grog-tempered fabrics and wet-hand-wiped surfaces characteristic of Early Bronze Age forms. Early Bronze Age pottery was recovered from Areas, 2a, 3 (though these may be Mid Bronze Age), 4 and 5 in Drayton and Horsford and Area 8 in Beeston St Andrew. The assemblage includes two rims; one from Area 1 from a barrel-shaped vessel similar to an incomplete and undated cremation vessel found at Harford Farm (Bamford 2000, 92) and the second from Area 2a from a small urn with direct rounded rim with internal bevel (*cf* Healy 1996, fig.83, P113). All the potentially Early Bronze Age pottery came from Areas 1, 2a & 3 and came from medieval or unphased features. Three sherds from Area 8 came from a period 2 ditch.

Middle and Late Bronze Age

A.1.83 Middle Bronze Age pottery has previously been under-represented in assemblages from around Norwich and from Norfolk generally, perhaps due to being under-identified. A total of 314 sherds weighing 4,914g of Middle Bronze Age date (1600-1250BC) are typified by barrel and bucket shaped forms with fingertip impressed decoration to the rim and on applied shoulder cordons. Mid Bronze Age pot was recovered from five sites including Area 1 Taverham, Areas 3 and 5 in Horsford, Area 13 in Rackheath and Area 15 in Plumstead. On the majority of these sites the mid Bronze Age pottery was recovered from ditch fills from contemporary enclosure and boundary ditches with the remainder being retrieved from pits.

A.1.84 The Late Bronze Age assemblage (*c*. 1100-800BC) of mostly plain carinated jar, bowl and cup forms comprised 360 sherds weighing 2,804g and includes rims from eleven vessels. Later Bronze Age pottery was found on two sites, being recovered in small quantities from pit **17061** on Area 17, Great and Little Plumstead and in quantity from Area 3.

A.1.85 In Area 3 substantial quantities of both Middle and Late Bronze Age pottery were found. The Middle Bronze Age bucket and barrel shaped vessels with fingertip impressed rims and cordons derive mostly from the enclosure and posthole alignments. The Late Bronze Age assemblage comes from posthole structures and associated pits and is characterised by a mix of mostly plain bipartite, high shouldered and slack shouldered jars but also includes ellipsoid or barrel-shaped jars with fingertip impressions along the rim top. Enclosure **3008** which contained Middle Bronze Age pottery produced radiocarbon dates of 1422-1260BC and 1742-1559BC (Appendix C). A mix of Middle and Late Bronze Age pottery similar to that identified on Area 3 has been recovered locally in small quantities from a possible enclosure examined during various excavations at Postwick Hub (Ames Sillwood 2012, Crawley 2014). Interestingly recent excavations in Kent have identified a hybrid ceramic phase characterised by a mix of Middle Bronze Age Deverel-Rimbury forms with forms more typical of the Late Bronze Age phase, including ovoid jars in grog-tempered and sandier fabrics similar to those found on Area 3 (Champion 2011, 158). This mid to Later Bronze Age phase is dated to c.1350-1000 BC and several of the radiocarbon dates achieved on features from Area 3 fall within this range.

A.1.86 Radiocarbon dates associated with two contexts which contained body sherds of Later Bronze Age pottery (post hole **3240**, group ST3240 and pit/ corn drier **3152**) produced dates of 898-802 cal BC and 972-823 cal BC confirming the dating suggested by the form and decoration of the bulk of the assemblage as belonging to the 'mature'

Plainware group dating to *c.*1000/ 800BC and locally comparable with pottery found on the line of Alysham Bypass (Brudenell 2012, 164).

Iron Age

A.1.87 The Iron Age component of the assemblage is small. A total of 38 sherds weighing 137g are of Post Deverel-Rimbury and earlier Iron Age date. All are body sherds in flint and sand tempered fabrics. Undiagnostic Post Deverel-Rimbury pottery, probably of earlier Iron Age date, came from Area 1 Taverham and Area 14 Rackheath. Earlier Iron Age pottery decorated with incised or tool impressed herringbone was recovered from Area 6 and all over fingertip impressed sherds from Area 7, both in Spixworth parish. Further undecorated body sherds in similar fabric came from Area 4, in Horsford and Area 15 in Great and Little Plumstead.

A.1.88 The earlier Iron Age pot was recovered in small quantities from a range of features and exhibits a high degree of residuality. Whilst on Area 4 sherds did come from Iron Age and Roman structural postholes and gullies, on Area 7 all came from modern ditches and Roman postholes and in Area 6 from natural features which also included Bronze Age finds. The Post Deverel-Rimbury (PDR) body sherds from Area 1 came from medieval ditches and on Area 14 from unphased ditches. The deposition and distribution of PDR and earlier Iron Age pottery from the excavation reflects the pattern observed during evaluation where only nine sherds weighing 30g and with an average sherd weight of 4g were recovered, again suggesting a high level of residual deposition.

A.1.89 Later Iron Age pottery came from seven sites (Areas 1, 2b, 3, 4 and 5 to the north-west and Areas 17 and 19 to the north east). The small assemblage of 47 sherds weighing 468g contained only one rim sherd and was largely identified by the fabrics which are characteristically sandy and micaceous. Iron Age Pottery was recovered in small quantities from period 3 (Iron Age) ditches and pits on Area 3 but on all other sites were residual within later Roman, medieval and unphased features.

A.2 Romano-British Pottery

By Alice Lyons

Introduction and methodology

A.2.1 A total of 63 Roman pottery fragments, weighing 835g, were found from three excavated areas (3, 4 & 7) along the length of the Norwich Northern Distribution route (NDR) (Table 8). This material represents a minimum of 33 individual vessels. The pottery is fragmentary and generally in poor condition (significantly abraded), with an average sherd weight of only 13g.

Area	*Site Code*	*Sherd Count*	*Weight (g)*	*Weight (%)*
3	ENF139696	27	276	33.05
4	ENF139697	12	258	30.9
7	ENF139700	24	301	36.05
Total		***63***	***835***	***100***

Table 8: The Romano-British pottery, quantified by site

A.2.2 The Roman pottery was assessed following the guidelines of the Study Group for Roman Pottery (Barclay *et al* 2016). The total assemblage was rapidly scanned and a catalogue was prepared. The sherds were examined using a hand lens (x10 magnification) and were divided into fabric groups defined on the basis of inclusion types present. Vessel forms (jar, bowl) were recorded. The sherds were counted and weighed to the nearest whole gram and recorded by context. Decoration, residues and abrasion were also noted. OA East curates the pottery and archive.

Area 3

A.2.3 A small assemblage totalling 27 sherds, weighing 276g, of Romano-British pottery was recovered from pits, also ditches and a gully (Table 9).

Feature Type	*Cut*	*Sherd Count*	*Weight (g)*
Ditch	**3957**	1	3
	20289	1	3
	20295	1	4
	20299	1	8
	20316	1	6
Gully	**20385**	1	6
Pit	**3959**	1	8
	20280	1	5
	20297	3	28
	20312	16	205
Total		**27**	**276**

Table 9: Area 3: The Roman- British pottery assemblage by feature

A.2.4 The Area 3 Roman pottery assemblage consists entirely of locally produced Sandy grey ware (SGW) utilitarian globular jar and storage jar fragments. The pottery fabric is blue/grey in colour, with some silver mica and white quartz which is typical of the pottery made in central Norfolk, specifically the Brampton kilns (Green 1977) and satellite industries (Lyons in prep). Most of the pottery was found as individual sherds, the only exception to this the upper part of a SGW carinated jar found in Pit 20312. Where the material can be closely dated it is of early Roman date (mid 1st to 2nd century AD). The pottery is severely abraded with an average sherd weight of only 10g. No surface residues survive.

Context	*Cut*	*Feature Type*	*Feature Number*	*Group*	*Fabric*	*Form*	*Sherd count*	*Weight (g)*	*Spot date*
3958	**3957**	Ditch	201577	ditch201577	SGW	Jar	1	3	Late 1st to 4th century AD
3961	**3959**	Pit		PG20230	SGW	Jar	1	8	Mid-1st to 4th century AD
20278	**20280**	Pit		PG20280	SGW	Jar	1	5	Mid-1st to mid-2nd century AD
20287	**20289**	Ditch	20300	enclosure20300	SGW	Jar	1	3	Mid-1st to 4th century AD
20296	**20295**	Ditch	20295	enclosure20300	SGW	Jar	1	4	Late 1st to 4th century AD
20298	**20297**	Pit		PG20280	SGW	Jar, storage jar	3	28	Mid-1st to 4th century AD
20299	**20299**	Ditch			SGW	Jar	1	8	Late 1st to 4th century AD
20313	**20312**	Pit		PG20280	SGW	Jar	13	167	Mid/late 1st century AD
20313	**20312**	Pit		PG20280	SGW	Jar, storage jar	3	38	Mid-1st to mid-2nd century AD
20317	**20316**	Ditch	20270	enclosure20300	SGW	Jar	1	6	Late 1st to 4th century AD
20386	**20385**	Gully			SGW	Jar	1	6	Late 1st to 4th century AD

Table 10: Area 3: The Romano-British Pottery catalogue

Area 4

A.2.5 A very small assemblage totalling 12 sherds, weighing 258g, of Roman-British pottery was recovered from a gully and a ditch in Area 4 (Table 11). The pottery has survived well within these features, with an average sherd weight of 21.5g.

Feature Type	Cut	Sherd Count	Weight (g)
Gully	4074	11	148
Ditch	4076	1	110
Total		**12**	**258**

Table 11: Area 4: The Romano-British pottery assemblage by feature

A.2.6 Although single sherds of locally produced Sandy grey ware (SGW) and Sandy red ware (SREDW) undiagnostic jar/bowl fragments were found, of particular interest are the fragmentary remains of a central Gaulish samian bowl (SAM: Tyers 1996, 113-114). The upper part of this highly decorated samian bowl (Dr 37) could be tentatively attributed to an individual potter (?DIVIXTVS) who worked at Lezoux between AD145 and 175. The bowl (SF151) had been used and the slip worn thin on the rim, before it was broken and thrown away.

Context	Cut	Feature Type	Feature Number	Group	Fabric	Form	Sherd count	Weight (g)	Spot date
4074	4073	Gully	4073	ditch4073	SAM	Bowl (Dr37)	9	141	AD145-75
4074	4073	Gully	4073	ditch4073	SGW	Jar	1	5	1st century AD
4074	4073	Gully	4073	ditch4073	SREDW	Jar	1	2	Mid-1st to 2nd century AD
4076	4075	Ditch	4032	ditch4032	SGW	Bowl	1	110	Mid-1st to 2nd century AD

Table 12: Area 4: The Romano-British Pottery catalogue

Area 7

A.2.7 A small assemblage totalling 24 sherds, weighing 301g, of Romano-British pottery was recovered from a range of Area 7 features including ditches and fire-pits (Table 13). The pottery is severely abraded with an average sherd weight of 12.5g. No surface residues survive.

Feature Type	Cut	Sherd Count	Weight (g)
Ditch	7050	1	16
	7073	2	6
	7029	2	13
Pit	7033	2	24
	7037	4	105
	7040	4	35
Gully	7066	1	3
Natural	7068	6	85
Post hole	7012	1	3
Subsoil	7001	1	11
Total		**24**	**301**

Table 13: The Romano-British pottery assemblage by feature

A.2.8 This site assemblage, although still small, contains the widest range of Romano-British pottery fabrics and forms found during the NDR project (Table 14). Locally made Sandy grey ware (SGW) utilitarian coarse wares are the most prolific and found in a limited range of jar and storage jars, also mortaria with flint trituration grits (Tyers 1996, 117-135). Other coarsewares found include Sandy oxidised ware (SOW) dishes and bowls, including flanged examples and Sandy red ware (SREDW) jar and lid fragments. All of this coarse ware material, both oxidised (white or red) and grey (reduced) is consistent with production in the Brampton area (Green 1977).

Fabric	*Abbreviation*	*Vessel form*	*Sherd count*	*Weight (g)*
Sandy grey ware	SGW	Jar, storage jar, mortaria	13	161
Sandy oxidised ware	SOW	Dish, flanged dish, flanged bowl, storage jar	4	94
Sandy red ware	SREDW	Jar, lid	2	20
Nene Valley colour coat	NVCC	Flanged dish	2	11
Oxfordshire red colour coat	OXRED	Mortarium	1	7
Shelly ware	STW	Jar	1	5
South Gaulish samian	SAM	Bowl	1	3
Total			**24**	**301**

Table 14: Area 7: The Romano-British pottery fabrics, listed in descending order of weight (g)

A.2.9 A single fragment of a non-local shelly ware (STW) coarse jar was retrieved, probably manufactured in the kilns at Harrold, Bedfordshire (Tyers 1996, 192-193).

A.2.10 Non-local fine wares include a Nene Valley colour coat (NVCC) flanged dish (Tyers 1996, 173-175) and Oxfordshire red slip ware (OXRED) mixing bowl or mortarium (Tyers 1996, 175-178). Also found was a small abraded fragment of South Gaulish samian undiagnostic bowl (Tyers 1996,12-113)

A.2.11 With the exception of the (probably residual) early Roman samian, the fabrics and forms that are dateable within this site assemblage are typical of the later Roman period.

Context	*Cut*	*Feature Type*	*Feature Number*	*Group*	*Fabric*	*Form*	*Sherd count*	*Weight (g)*	*Spot date*
7001	0	Subsoil	0		SGW	Jar	1	11	Mid-1st to 3rd century AD
7012	7013	Post hole	0	PG7007	SGW	Jar	1	3	Mid-1st to 2nd century AD
7029	7030	Pit	0	PG7045	SGW	Jar	1	9	Late 1st to 4th century AD
7029	7030	Pit	0	PG7045	SOW	Dish	1	4	Mid-2nd century AD +
7033	0	Pit	0		OXREDCC	Mortaria	1	7	4th century AD

Context	Cut	Feature Type	Feature Number	Group	Fabric	Form	Sherd count	Weight (g)	Spot date
7033	0	Pit	0		SREDW	Lid	1	17	Mid-1st to 3rdd century AD
7037	7039	Pit	0	PG7045	SOW	Storage jar	1	54	2nd to 3rd century AD
7037	7039	Pit	0	PG7045	SOW	Flanged bowl	1	17	4h century AD
7037	7039	Pit	0	PG7045	SGW	Mortaria	1	15	Mid-1st to 4th century AD
7037	7039	Pit	0	PG7045	SOW	Flanged dish	1	19	Mid-3rd to 4th century AD
7040	7042	Pit	0	PG7045	SGW	Jar, storage jar	3	32	Mid-1st to 4th century AD
7040	7042	Pit	0	PG7045	SREDW	Jar	1	3	Mid-1st to 4th century AD
7050	7051	Ditch	0		SGW	Jar	1	16	Mid/late 1st to 2nd century AD
7066	7067	Gully	7052		SAM	?	1	3	Mid-1st to 2nd century AD
7068	7069	Natural	7069		SGW	Jar, storage jar	4	74	Late 1st to 4th century AD
7068	7069	Natural	7069		NVCC	Fanged dish	2	11	Mid-3rd to 4th century AD
7073	7072	Ditch	7005		SGW	Jar	1	1	Mid-1st to 4th century AD
7073	7072	Ditch	7005		STW	Jar	1	5	Mid-1st to 4th century AD

Table 15: Area 7: the Romano-British pottery catalogue

Discussion

A.2.12 This is a small, largely abraded assemblage of Romano-British pottery, mostly recovered from stratified contexts within three areas on the NDR route (Ste 3, 4 & 7). Although in poor condition and of limited potential for further analysis, the use of both local coarse wares and imported finewares inform on the lifestyles and trade networks adopted by the communities who deposited this material. The varying dates of the site assemblages also highlight chronological differences within Roman activity along the length of the survey area.

A.3 Post-Roman Pottery

By Sue Anderson

Introduction and methodology

A.3.1 Saxon, medieval and later pottery was recovered from 297 contexts in sixteen areas during the excavation phase of the project. In addition there were related evaluation assemblages from areas 1, 9, 10, 17, 18 and 19 (Fields T7, S16, C1, G6, G7 and P1 respectively; Anderson 2015a). Quantities for each are shown in Table 16 (total 2119 sherds, 21812g).

Area	*Parish*	*ESax*	*LSax*	*EMed*	*Med*	*LMed*	*PMed*	*Mod*	*Un*	*Total*
1 + T7	Taverham		10	12	50			1		*73*
2A	Drayton						1			*1*
3	Horsford			3	1	2	5	1		*12*
4	Horsford		1				1			*2*
5	Horsford			3	1					*4*
7	Spixworth						1	1		*2*
9 + S16	Beeston St Andrew		4	38	223	74	47	7	1	*394*
10 + C1	Sprowston	2	16	16	111	2	3	10		*160*
11	Rackheath		3				1	1		*5*
12	Rackheath		38	44	51			1		*134*
13	Rackheath			3	2					*5*
15	Gt. & Lt. Plumstead							1		*1*
16	Gt. & Lt. Plumstead			1	10					*11*
17 + G6	Gt. & Lt. Plumstead			43	430	69	20	15	1	*578*
18 + G7	Gt. & Lt. Plumstead	1	1	3	167	77	3		1	*253*
19 + P1	Postwick with Witton			34	536	14	1	1	3	*589*

Table 16: Pottery quantification by area and period

A.3.2 Quantification was carried out using sherd count, weight and estimated vessel equivalent (eve). Records were input directly onto an MS Access database, which forms the archive catalogue. The minimum number of vessels (MNV) within each context was also recorded, but cross-fitting was not attempted unless particularly distinctive vessels were observed in more than one context. All fabric codes were assigned from the author's post-Roman fabric series. Form terminology for medieval pottery is based on MPRG (1998). Thetford ware forms follow Dallas (1984) and rim types follow Anderson (2004). Rim types for medieval coarsewares are those used for Dragon Hall, Norwich (Anderson 2005), a modified typology based on the original jar form divisions for LMU and comparable rim types from Norwich (Jennings 1981).

Condition

A.3.3 The pottery from these sites was generally in good condition but a degree of abrasion was common. Table 17 shows the percentages of abraded sherds (based on MNV) for the larger assemblages, together with average sherd weights.

Area	abr	v abr	total	ASW (g)
01	29.2	1.4	30.6	12.3
09	42.8	4.6	47.4	12.1
10	76.4	6.9	83.3	8.6
12	75.4	0.0	75.4	5.6
17	28.6	0.8	29.4	12.6
18	85.7	0.8	86.5	11.2
19	48.1	13.4	61.5	7.5

Table 17: Abrasion and average sherd weights

A.3.4 Pottery from Areas 10, 12 and 18 were particularly affected with abrasion. Overall abrasion was lower at Area 19 than at some of the other sites, but this assemblage had the highest proportion of very abraded sherds. Most of the sites with high abrasion had correspondingly low average sherd weights.

Fabrics

A.3.5 Unprovenanced medieval coarseware (MCW1–8) and glazed ware (UPG1–5) fabrics are described below (Table 18). All other fabrics are described by Jennings (1981).

MCW1:	common fine/medium sandy with sparse to moderate mica. Typically oxidised with buff surfaces/margins and red core, but can be reduced. Some may be handmade, but both simple and developed forms occur. Probably more than one production site.
MCW2:	as MCW1, but very little mica, and more frequently reduced
MCW3:	abundant v fine sand, generally well-sorted, moderate clay pellets/large clay lenses, generally self-coloured in a buff, grey or black matrix.
MCW4:	common fine/medium sandy with sparse ferrous inclusions. Often dark grey/black with a red core, although other colours occur.
MCW5:	common brown and white medium sub-angular sand and moderate white coarse rounded sand. Typically buff-coloured.
MCW6:	common fine sand and sparse medium sand, micaceous, occasional ferrous inclusions, sparse burnt-out organics. Similar to LMU. Colours variable, but more frequently reduced.
MCW7:	very fine micaceous version of LMU. *cf* Bacton-Kings Lynn MCW2 (Anderson 2009)
MCW8:	moderate fine sand, occasional medium sand, moderate mica, moderate small red clay pellets. Often buff-coloured, but not a common find.
UPG1:	medium sandy, sparse ferrous inclusions, some flint/coarse quartz – similar in appearance to Grimston, and may be a local version, but many sherds were heavily abraded and may just look different to typical GRIM due to loss of surfaces.
UPG2:	moderate medium sand, sparse red clay pellets, sparse soft red clay pellets.
UPG3:	similar to MCW1, poss Hare Road LMT or an earlier local glazed ware.
UPG4:	clear and white fine sand, occasional medium sand, sparse self-coloured clay pellets, moderate burnt-out organics, occasional flint.
UPG5:	fine sandy redware with sparse medium sand, orange glaze and brown slip decoration – regional or Dutch?

Table 18: Fabric descriptions

Area 1: Taverham (ENF139693)

A.3.6 Seventy-two sherds (867g) were recovered from 21 contexts in this area during the excavation. In addition, a sherd (15g) from evaluation context E1638 relates to ditch **1247** (enclosure **1066**) in the excavation. Table 19 shows the quantities by fabric.

Description	Fabric	Date range	No	Wt/g	Eve	MNV
Thetford-type ware	THET	10th-11th c.	9	180	0.15	6
'Early medieval' sandwich wares	EMSW	11th-12th c.	1	3		1
Early medieval ware	EMW	11th-12th c.	12	59	0.05	12
Local medieval unglazed	LMU	11th-14th c.	27	346	0.38	23
Medieval coarseware 1	MCW1	12th-14th c.	2	9		1
Medieval coarseware 2	MCW2	12th-14th c.	1	9		1
Medieval coarseware 3	MCW3	12th-14th c.	2	45	0.24	2
Medieval coarseware 4	MCW4	12th-14th c.	1	2		1
Medieval coarseware 7	MCW7	12th-14th c.	14	171		5
Medieval coarseware 8	MCW8	12th-14th c.	1	6		1
Grimston-type ware	GRIM	L.12th-14th c.	2	22		2
Staffordshire white salt-glazed stonewares	SWSW	18th c.	1	30		1
Totals			**73**	**882**	**0.82**	**56**

Table 19: Area 1: Post-Roman pottery

A.3.7 With the exception of a small quantity of Late Saxon pottery, most of which was residual in later contexts, and a single sherd of 18th century stoneware, most of the pottery in this assemblage was medieval.

Area 1: Pottery by Period

Late Saxon

A.3.8 Ten sherds representing seven vessels were of Late Saxon or Saxo-Norman date. One small body sherd was an 'early medieval' sandwich ware type. There were four sherds of a medium 'AB' jar with a type 4 rim, a large fragment of a wide strap handle from a handled storage jar or pitcher, a flat base fragment and three undecorated body sherds. Finds of this date were largely residual in period 6.2 enclosures **1066** and **1072** and other features (well **1270**, ditch **1288**).

Medieval

A.3.9 Twelve sherds were of early medieval ware, generally represented by small body sherds. One rim was present, a simple everted jar rim with thumbed decoration recovered during the evaluation (ditch **E1637= 1247**). Most fragments were residual in enclosure ditches of period 6.2 (boundary **1184**, enclosures **1066** and **1072**, ditch **1288**, well **1270**), or unphased (three throw **1021**).

A.3.10 The most frequently occurring high medieval fabrics were the local medieval unglazed Norwich-type LMU (probably made in Potter Heigham), and a similar but finer micaceous variant (MCW7). Rimsherds of nine medieval vessels were present, of which six were jars, two were bowls and one was a jug. Rim types included both simple and developed types, suggesting that activity continued into the 13th century, if not beyond. Only two sherds of glazed wares, both Grimston types, were recovered (7% of the total sherds, but 15% of the MNV). Pottery of this date was recovered from the boundary and enclosure ditches and other features relating to period 6.2, and a few sherds were residual in period 8 quarry pit **1238**.

A.3.11 The lack of late medieval wares may indicate a decline or cessation of activity by the mid to late 14th century.

Modern

A.3.12 A footring base fragment of a Staffordshire white salt-glazed stoneware vessel was found in modern pit **1238**.

Area 1: Distribution

A.3.13 Table 20 shows the quantities of pottery by site phase. Most of this assemblage came from features assigned to Period 6.2 (high medieval).

Pot period	*Period 6.2*	*Period 8*	*Unphased*
Late Saxon	10		
Early medieval	11		1
Medieval	46	4	
Modern		1	
Totals	*67*	*5*	*1*
MNV	50	5	1

Table 20: Area 1 pottery by site period and pot period (sherd count)

Period 6.2: High medieval (AD1250-1400)

A.3.14 Much of the pottery in this group was recovered from ditch fills, particularly enclosure ditches **1066** and **1072** and boundaries **1164** and **1184**. The largest single quantity (24 sherds) was recovered from ditch **1288**, a linear short ditch within enclosure **1066**, adjacent to post-hole group **1317**. Most other features produced only small quantities of medieval pottery, and a few contained residual Late Saxon and early medieval material.

Features predating the enclosures

Gully **1085** An LMU beaded bowl rim was recovered from fill 1143. 12th–13th c.

Road-side enclosure and associated features

Enclosure 1072 and internal features

Ditch **1072** Fill 1153 contained one small sherd of EMW. 11th–12th c.+

Ditch **1095** A sagging base of MCW7 was found in fill 1097. 12th–14th c.

Ditch **1109** Nine sherds were found in fill 1130: 1 THET, 1 EMSW, 1 EMW, 2 MCW1, and 4 LMU including a jar with an inturned rim. 12th–13th c.

Enclosure 1066 and internal features

Ditch **1075** Seven sherds were collected from fills 1077 and 1252, comprising 2 THET, 2 EMW, 2 LMU including a bowl rim, and 1 MCW4. 12th–13th c.?

Ditch **1087** Fills 1088 and 1094 contained 1 MCW2, 5 LMU and 1 GRIM. 13Th–14th c.

Ditch **1203** A large THET base fragment and a small EMW sherd were recovered from fill 1201. 11th c.+

Ditch **1242** One sherd of LMU was found in fill 1243. 11th–14th c.

Ditch **1247** Evaluation fill 1638 contained an EMW jar rim. 11th–12th c.

Ditch **1288** Twenty-four sherds were recovered from fill 1287 and 1344, comprising a THET handle, a small fragment of EMW, an MCW3 jug rim, 12 MCW7 of which 10 were from a single vessel, and 9

LMU including a thickened everted jar rim and a body sherd from a ?bowl. 13th–14th c.

Ditch **1323** A thickened everted jar rim of MCW7 was found. 13th–14th c.

Boundary ditches

Ditch **1164** A small body sherd of GRIM was recovered. 13th–14th c.

Ditch **1184** A body sherd of EMW and a simple everted jar rim of LMU were found. 11th–12th c.

Post-hole group 1317

PH **1139** An LMU body sherd and an MCW3 jar rim were found in fill 1140. 13th–14th c.

Other features

Well **1270** Four sherds of a THET jar and three sherds of EMW vessels were recovered from fill 1271. 11th c.?

Period 8: Modern (AD1750 onwards)

A.3.15 Quarry pit **1238** contained four sherds of residual medieval pottery and a base fragment of a Staffordshire white salt-glazed stoneware vessel.

Pit **1238** Five sherds were collected from fill 1239: 1 MCW8, 3 LMU including a jar with a thickened everted rim, and 1 SWSW base. 18th c.

Unphased

A.3.16 A tiny sherd of EMW was recovered from tree throw **1021**.

Natural **1021** One small body sherd of EMW came from fill 1020. 11th–12th c. or later

Area 1: Discussion

A.3.17 The presence of a few sherds of Late Saxon and early medieval ware, albeit residual in high medieval features, may indicate activity of this period in the vicinity. The medieval group included a number of rims of both early and developed forms, but the later were more frequent and two sherds of Grimston-type ware were also present, suggesting that activity continued into the 13th and possibly early 14th centuries. LMU and MCW7 were the most frequent coarseware fabrics in this area.

Area 2A: Drayton (ENF139694)

A.3.18 One small sherd (1g) of glazed red earthenware (GRE, 16th–18th c.) was recovered from unphased spread 2012.

Area 3: Horsford (ENF139696)

A.3.19 Twelve sherds (231g) of post-Roman pottery were found in this area. Table 21 shows the quantities by fabric.

Description	*Fabric*	*Date range*	*No*	*Wt/g*	*Eve*	*MNV*
Early medieval ware	EMW	11th-12th c.	3	9		3
Medieval coarseware 3	MCW3	12th-14th c.	1	6		1
Late medieval and transitional	LMT	15th-16th c.	2	8		2
Glazed red earthenware	GRE	16th-18th c.	5	206	0.11	1
Pearlware	PEW	L.18th-M.19th c.	1	2	0.05	1
Totals			**12**	**231**	**0.16**	**8**

Table 21: Area 3: Post-Roman pottery

A.3.20 Identified forms in this group comprised five sherds of a GRE dish with an everted rim from pit **20216**, and a beaded rim from a pearlware vessel.

A.3.21 This small group comprises pottery with a very broad date range. Much of it was from features located to the northern part of the site, although there is no particular concentration by date and sherds of early and late medieval and post-medieval and modern date were found. One early medieval body sherd came from gully 3163 to the west of the site. With the exception of pit **20216**, all of these features are dated to the Roman period or earlier, so the medieval and later wares are presumed intrusive.

Area 4: Horsford (ENF139698)

A.3.22 Two sherds (115g) of post-Roman pottery were found. A heavily abraded stem fragment of a Thetford-type ware baluster lamp (L.9th–11th century) was recovered from ditch fill 4096 (Roman period 4 ditch **4004**), and a body sherd of Frechen (or possibly London) stoneware (16th–17th c.) was found in subsoil 4221.

Area 5: Horsford (ENF139698)

A.3.23 The upper strata of a solution hollow (**5071**) dated to the Bronze Age period contained three intrusive sherds of early medieval ware and one of local medieval unglazed ware (total weight 9g), that has an 11th–13th-century date.

Area 7: Spixworth (ENF139700)

A.3.24 A small sherd of creamware (2g; 18th century) was found in ditch fill 7008 (ditch **7011**). Ditch fill 7073 (ditch **7005**) contained a rimsherd from a GRE dish or platter (12g; 16th–18th c.). The ditches both belong to period 8.

Area 9: Beeston St Andrew (ENF139702)

A.3.25 A total of 325 sherds (4118g) was collected from this area. A further 69 sherds (635g) were recovered from Field S16 during the evaluation. Table 22 presents the quantities by fabric. The majority of pottery in this assemblage was of medieval date, although the large sherd quantities of LMU and GRIM both represented significantly fewer vessels.

Description	Fabric	Date range	No	Wt/g	Eve	MNV
Thetford-type ware	THET	10th-11th c.	4	47	0.12	3
Early medieval ware	EMW	11th-12th c.	9	23		2
Yarmouth-type ware	YAR	11th-12th c.	28	205	0.18	2
Yarmouth-type ware non-calcareous	YARN	11th-12th c.	1	6		1
Local medieval unglazed	LMU	11th-14th c.	118	1158	0.78	26
Medieval coarseware 1	MCW1	12th-14th c.	29	255	0.20	15
Medieval coarseware 2	MCW2	12th-14th c.	2	14		2
Medieval coarseware 3	MCW3	12th-14th c.	2	69	0.25	2
Medieval coarseware 4	MCW4	12th-14th c.	1	42	0.06	1
Medieval coarseware 5	MCW5	12th-14th c.	2	9		2
Medieval coarseware 6	MCW6	12th-14th c.	2	55		2
Medieval coarseware 7	MCW7	12th-14th c.	16	129		1
Medieval coarseware 9	MCW8	12th-14th c.	2	25	0.09	2
Grimston-type ware	GRIM	L.12th-14th c.	39	673	0.20	18
Unprovenanced glazed 1	UPG1	Med	2	40		2
Unprovenanced glazed 4	UPG4	Med	1	9		1
Scarborough Phase II	SCAR2	E.13th-M.14th c.	1	62		1
Yarmouth-type glazed wares	YARG	13th-15th c.	6	154		2
Late Grimston-type ware	GRIL	14th-15th c.?	1	22		1
Late medieval and transitional	LMT	15th-16th c.	72	820	1.07	28
Raeran/Aachen Stoneware	GSW3	L.15th-16th c.	1	63		1
Martincamp Ware Type I	MART1	L.15th-M.16th c.	1	7		1
Dutch-type whitewares	DUTW	15th-17th c.	2	59		1
Glazed red earthenware	GRE	16th-18th c.	38	585	0.81	34
Cologne/Frechen Stoneware	GSW4	16th-17th c.	2	23	0.16	2
Speckle-glazed Ware	SPEC	L.17th-18th c.	1	1		1
Staffordshire-type Slipware	STAF	L.17th-18th c.	1	5		1
Tin glazed earthenwares	TGE	16th-18th c.	2	12		2
English Stoneware	ESW	17th-19th c.	2	57		2
Late slipped redware	LSRW	18th-19th c.	2	82	0.04	2
Refined white earthenwares	REFW	L.18th-20th c.	2	5		2
Staffordshire white salt-glazed stonewares	SWSW	18th c.	1	2		1
Unidentified	UNID	-	1	35	0.11	1
Totals			**394**	**4753**	**4.7**	**165**

Table 22: Post-Roman pottery from Area 9 and Field S16.

Area 9: Pottery by Period

Late Saxon

A.3.26 Thetford-type wares were collected from two pits and a gully assigned to Period 6 (medieval). Two sherds from pit **9332** were part of a medium AB jar with a type 1 rim, probably of 11th-century date. The two other fragments were undecorated body sherds.

Medieval

A.3.27 Thirty-eight sherds were of early medieval date, comprising the typical sandy wares (EMW) and both calcareous and non-calcareous Yarmouth-type wares. Eight sherds of EMW were from a single vessel, found in ditch **9211**. One other sherd came from evaluation pit **3080**. A sherd of non-calcareous Yarmouth-type ware was found in evaluation gully **3044**. All other Yarmouth-type ware, representing only two vessels, was recovered from two fills of pit **9332** and included a jar with an upright beaded rim.

A.3.28 The medieval coarsewares were dominated by LMU, MCW1 and MCW7 but most other types were also present. Identified vessels comprised eight jars, five bowls and two jugs. Two jars and a ?jug had simple everted rims of early type, the remainder being developed forms. Vessels in all fabrics can be paralleled in the Norwich LMU corpus (e.g. Jennings 1981 nos. 260, 261, 279, 305, 310, 313). Decoration was minimal, with only two thumbed rims, a stabbed handle and a sherd with an applied thumbed strip. One jar rim had knife grooves at the edge and may have been reused as a whetstone.

A.3.29 Glazed wares made up 21% of the high medieval assemblage by count and 31% by MNV, both unusually high proportions for a medieval rural site. Grimston-type ware (including the similar UPG1) was the most common glazed ware of the period and included two jug rims and two wide strap handles. Decoration included applied brown slip lines, pellets and scales. One base was thumbed. The Yarmouth-type glazed wares also included a wide strap handle. The Scarborough ware sherd was a fragment of the bridge from a bridge-spouted pitcher (*cf*. McCarthy and Brooks 1988 no. 659).

Late medieval and early post-medieval

A.3.30 A small but significant group comprises the later medieval and early post-medieval wares, which includes local redwares and some imported wares.

A.3.31 Late medieval and transitional wares included five identifiable vessels: a cauldron, a pipkin. a handled jar, a jug and a tankard. Several sherds found in the evaluation (pit fill E3078) were in a fabric similar to the early LMT fabric found at Hare Lane, Plumstead, which appears to be production waste (Anderson 2015b). Other late medieval wares included a body sherd of late Grimston-type ware and a base fragment of a Raeren stoneware mug/jug.

A.3.32 Post-medieval wares were dominated by GRE, which included three jars, a jug, a bowl, a handled bowl, two dishes (or bowls/plates), a pipkin and a cistern. Two sherds of a Dutch whiteware cauldron with a rod handle were also found, and there was a Frechen stoneware jug and a Staffordshire slipware press-moulded dish. Two tin-glazed earthenware body sherds had hand-painted decoration. Of particular note in this period is a piece of Martincamp flask, examples of which are not common in the county outside the urban and port centres.

Modern

A.3.33 Modern wares included a Staffordshire white salt-glazed stoneware base, a late-slipped redware bowl with trailed slip decoration and another with white slip internally, an English stoneware preserve jar and refined whiteware sherds with spongeware or black transfer-printed decoration.

Unidentified

A.3.34 One jar rim from evaluation ditch fill 3071 was in a fine grey fabric and was a lid-seated type with a beaded edge. Although possibly Thetford-type ware, the fabric was unusually dense and the sherd could be Roman.

Area 9: Distribution

A.3.35 Table 23 shows the quantities of pottery by site phase. A large proportion of this assemblage came from features assigned to Period 6.1 (early medieval), mainly due to a large quantity in a single pit.

Pot period	*Period 6.1*	*Period 6.2*	*Period 6.3*	*Period 7*	*Period 8*	*Unphased*
Late Saxon	4					
Early medieval	36					2
Medieval	131	48	20	13		11
Late medieval		2	5	26		44
Post-medieval			6	36	2	
Modern				2	4	1
Unidentified			1			
Totals	*171*	*50*	*32*	*77*	*6*	*58*
MNV	27	27	17	72	6	16

Table 23: Area 9: pottery by site period and pot period (sherd count)

Period 6.1: Early medieval (AD1066-1250)

A.3.36 This was the largest period group from Area 9, but the total 171 sherds represented only 27 vessels. Eighty-five sherds were part of a single LMU vessel, and a further 24 sherds were from a Yarmouth-type ware jar, both recovered from charcoaling pit **9332**, which also contained six sherds of two other vessels. Two ditches and two pit groups produced the remainder of this group. Four sherds of Thetford-type ware were probably residual in this phase, and early medieval wares should be contemporary with the period date range, but medieval coarsewares were also frequent in these features, suggesting that they were infilled towards the end of the period.

Charcoaling pit

Pit **9332** Two sherds of a THET AB jar, 24 sherds of a YAR jar and 4 sherds of another YAR vessel, 85 sherds of an LMU jar with a thickened everted rim were collected. 13th c.?

Ditches

Ditch **9205** Fills 9208 and 9212 contained 1 THET, 8 EMW and 1 MCW5. 12th/13th c.?
Ditch **9330** One large sherd of UPG1 was found in fill 9331. 13th–15th c.?

Pit groups

9220 Fill 9226 contained two LMU sherds from one vessel. 11th–14th c.
9265 Fills of pits **9265**, **9267** and **9269** contained 44 sherds between them, comprising 1 THET, 14 LMU including a jug rim, 2 MCW2, 1 MCW3 including a jug rim, 1 MCW6, 16 MCW7 of a jug, and 9 GRIM. 13th–14th c.

Period 6.2: High medieval (AD1250-400)

A.3.37 Fifty sherds of 27 vessels were recovered from features in this period. The largest groups were from ditch group **9320** (27 sherds) and pit group 9443 (20 sherds), with only a handful of sherds being recovered from ditch **9470** and natural feature **9333**. There were no residual sherds, all fragments dating to the high or late medieval periods. Finds from pit group **9443** included some late medieval wares and these pits probably date towards the end of this period, whilst other features also contained 13th/14th-century pottery.

Ditches

Ditch **9470**	A base fragment and a thickened everted rim of LMU were found in fill 9472. 13th–14th c.
Ditches **9320**	Fills 9322, 9410, 9232 and 9250 contained 27 sherds of 12 vessels, comprising 18 MCW1 including a bowl and a jar, 1 MCW5, 1 MCW8 jar, 5 LMU including a jar, 1 GRIM and 1 SCAR2 bridge-spouted jug. 13th–14th c.

Pits

Group **9443**	Fills of pits 9363, 9438 and 9493 contained 20 sherds: 1 MCW4 bowl rim, 10 GRIM including a jug rim, 2 YARG, 1 UPG1, 1 GRIL, and 1 LMT. M.14th/15th c.
Natural **9333**	One small sherd of LMU was found in fill 9334. 11th–14th c.

Period 6.3: Late medieval (AD1400-1500)

A.3.38 Four ditches/ditch groups and a post-hole within a fenceline produced the 32 sherds (17 vessels) recovered from this period, most of which were probably residual. These included heavily abraded sherds of a Grimston ware jug in ditch group **9451**. Late medieval and early post-medieval wares were recovered from post-hole **9449** and ditch **9314**.

Ditches

Ditch **9314**	Fills 9314 and 9366 contained 1 MCW1, 6 GRE and 1 GSW3. 16th c.
Ditch **9316**	Evaluation ditches 3028 and 3072 contained 1 LMU bowl and 1 UNID jar. 13th–14th c.
Ditches **9451**	Thirteen sherds of a heavily abraded GRIM vessel were recovered. 13th–14th c.+
Ditches **9520**	Fill 9484 contained 1 MCW1 and 1 LMU jar with simple everted rim. Evaluation ditch 3012 contained a small sherd of GRIM. 13th–14th c.+

Fenceline post-holes

9449	Fill 9448 contained 2 MCW1 including a bowl rim, and 4 LMT. L.14th c.+

Period 7: Post-medieval (AD1500-1750)

A.3.39 Sixty sherds in this period came from eight pits in group **9254**, although most were from pit **9254** itself. Small quantities were collected from two structures (post-hole building **9290** and barn **9461**), a well (**9402**), two ditches (**9100**, **9307**), and two other pit groups (PG9422, PG9426). Fragments contemporary with the phase included LMT, GRE, tin-glazed earthenwares, a Dutch whiteware cauldron and a Martincamp flask. A few residual sherds of medieval coarsewares were found, and it is possible that some of the late medieval pottery was also residual, but some could be contemporary with the earliest post-medieval wares.

Structures

9290	Post-hole fill 9289 contained a small sherd of GRE. 16th–18th c.
9461	Fill 9467 contained a GRE bowl rim and a body sherd of decorated TGE. 17th c.?

Well

9402 Fill 9404 contained 1 MCW1, 1 LMT, 4 GRE including a jug with a collared rim, and a base fragment of transfer-printed REFW. 16th–18th c. if the latter is intrusive, or 19th c.

Pit groups

9254 Sixty sherds were recovered from fills of eight pits in the excavation and from evaluation pit 3075 (=9254?). Table 24 shows the distribution of fabrics. Ten sherds of medieval date were residual, and 20 sherds of late medieval date may be contemporary with the earliest post-medieval finds. A variety of vessels was present in the post-medieval group, including jars, pipkins, jugs, dishes/bowls, a cauldron and a cistern. 16th/17th c.

Fabric	*9234*	*9236*	*9254*	*=E3075*	*9288*	*9291*	*9302*	*9323*	*9445*
LMU				2		2			
MCW1						1		2	2
GRIM					1				
LMT	1	2	12	4			1		
DUTW			2						
MART1			1						
GRE	3	1	13	6	1				
GSW4			2						
SPEC			1						
Totals	*4*	*3*	*31*	*12*	*2*	*3*	*1*	*2*	*2*

Table 24: Pottery from pit group 9254 (sherd count)

9422 A small sherd of TGE and a large fragment of LSRW were recovered from fills 9429 and 9423 respectively. L.18th-19th c.

9426 Fills 9417 and 9431 contained a sherd of LMT and a GRE jar rim. 16th c.?

Ditches

Ditch **9100** Residual sherds of MCW1 and MCW3 were recovered from fills 9103 and 9345. 12th–14th c.+

Ditch **9307** One sherd of LMT was recovered from fill 9542. L.14th–M.16th c.

Period 8: Modern (AD1750-present)

A.3.40 Clay-lined pit **9488** contained two sherds of residual post-medieval pottery and four fragments of 19th-century date.

Pit **9488** Six sherds were collected from fill 9489: 1 GRE, 1 STAF, 1 REFW, 2 ESW including a preserve jar, and 1 LSRW bowl rim. 19th c.

Unphased

A.3.41 Fifty-eight sherds of sixteen vessels were recovered from unphased contexts, most of which were found in the evaluation (two sherds were recovered from features in Trench 3, outside the excavation area). A range of pottery is included in this group, but much of the material from the evaluation contexts is of high or late medieval date and includes substantial parts of two LMT vessels found in post-hole **E3080** (Trench 11), located towards the end of Period 6.3 ditch **9376** and just north of Period 7 pit group **9254**.

Layer 9437 A small fragment of a GRIM jug rim and a small piece of SWSW base

	were found. 18th c.+
Pit **9527**	A decorated body sherd of GRIM was recovered from fill 9528. 13th–14th c.

Evaluation (* = outside excavation area):

PH 3017	Fill 3018 contained one sherd each of LMU and GRIM. 13th–14th c.
PH 3019	A tiny sherd of LMU and a sherd of UPG4 came from fill 3020. 13th–15th c.
Natural 3026	A thickened everted jar rim of LMU came from fill 3025. 13th–14th c.
Ditch 3039*	A sherd of GRIM was recovered from fill 3040. 13th–14th c.
Ditch 3041*	Fill 3042 contained a sherd of LMU. 11th–14th c.
Gully 3044	One sherd of YARN was found in fill 3043. 11th–12th c.
PH 3080	Fill 3078 contained 1 EMW, 1 MCW8, 14 sherds of a handled LMT vessel, and 30 sherds of an LMT cauldron. L.14th–M.16th c.

Area 9: Discussion

A.3.42 There were small quantities of Late Saxon and early medieval wares at this site, but they were broadly scattered and largely residual in the contexts in which they occurred. The Yarmouth-type wares found in association with a number of sherds of an LMU vessel with a developed rim in charcoaling pit **9332** may represent continuation of the earlier fabric into the 13th century. The medieval group included more developed than early forms, and this may explain the high proportion of glazed wares, with activity continuing beyond the 14th century at this site. LMU, MCW1 and MCW7 were the most frequent coarseware fabrics in this area.

Area 10: Sprowston (ENF139703)

A.3.43 Seventy-two sherds (860g) of post-Roman pottery were collected in Area 10. A further 88 sherds were recovered from this area (Field C1) during the evaluation, although most were from trenches located outside the area of excavation. Table 25 shows the quantities by fabric. Late Saxon and medieval wares were the most frequent in this assemblage, with only a small quantity of later material.

Description	*Fabric*	*Date range*	*No*	*Wt/g*	*Eve*	*MNV*
Early Saxon fine sand	ESFS	5th–7th c.	2	5		2
Thetford-type ware	THET	10th-11th c.	16	210	0.58	12
Early medieval ware	EMW	11th-12th c.	15	51		9
Local medieval unglazed	LMU	11th-14th c.	26	268	0.27	22
Medieval coarseware 1	MCW1	12th–14th c.	15	108	0.10	9
Medieval coarseware 3	MCW3	12th-14th c.	1	68		1
Medieval coarseware 4	MCW4	12th–14th c.	5	14	0.08	3
Medieval coarseware 5	MCW5	12th-14th c.	3	36	0.03	3
Medieval coarseware 6	MCW6	12th-14th c.	1	9		1
Medieval coarseware 7	MCW7	12th–14th c.	55	335	0.36	1
Medieval coarseware 9	MCW8	12th-14th c.	1	9		1
Grimston-type ware	GRIM	L.12th-14th c.	1	33		1
Unprovenanced glazed 1	UPG1	Med	1	36		1
Unprovenanced glazed 4	UPG4	Med	3	55		1
Late medieval and transitional	LMT	15th-16th c.	2	57		2
Glazed red earthenware	GRE	16th-18th c.	3	15		3
Creamwares	CRW	1730-1760	1	1		1
Late blackwares	LBW	18th-E.20th c.	1	38		1
Late post-medieval unglazed earthenwares	LPME	18th-20th c.	1	1		1
Late slipped redware	LSRW	18th-19th c.	1	6		1

Description	Fabric	Date range	No	Wt/g	Eve	MNV
European porcelain	PORC	18th-20th c.	1	2		1
Refined white earthenwares	REFW	L.18th-20th c.	5	20	0.15	5

Table 25: Area 10: Post-Roman pottery

Area 10: Pottery by Period

Early Saxon

A.3.44 Two small sherds of fine sandy ?Early Saxon handmade wares were recovered from samples of pit fills **10043** and **10045** in Period 6.1 PG10199.

Late Saxon

A.3.45 Thetford-type wares were collected from period 5 charcoal pit **10299**, ditches of Period 6.2 enclosure **10201** and natural feature **10508**. The sherds included two flat bases and rims of three jars (one small 'AA', two medium 'AB') with rim types 4, 5 and 6, which span the entire date range of this fabric type. Most of the sherds are not in the hard reduced urban fabrics of Norwich and Thetford, but are more typical of local rural fabrics of unknown origin. One sherd was overfired and slightly deformed, so could be a waster or second, but as it was one of the vessels recovered from a pit containing charcoal burning waste, it is possible that the distortion was due to secondary burning rather than original firing.

Medieval

A.3.46 Fifteen sherds were of early medieval date, all sandy wares (EMW) and all small body sherds. They were recovered from charcoal pits assigned to periods 5 and 6.1, and Period 6.2 pits and ditches.

A.3.47 High medieval wares were largely associated with Period 6.2 enclosure **10201**. The 107 sherds of medieval coarsewares were dominated by LMU and MCW1, with 55 sherds of MCW7 representing a single vessel. Several other fabrics were also present. Identified vessels comprised five jars, three bowls and three jugs. All rims were developed forms. Vessels in all fabrics can be paralleled in the Norwich LMU corpus (*e.g.* Jennings 1981, nos 257, 264, 311). Only three vessels were decorated – two bowls with thumbed rims and a jug with a grooved handle.

A.3.48 Glazed wares made up 4% of the high medieval assemblage by count and 7% by MNV, both within normal limits for a medieval rural site. Five sherds represented three vessels of which two were Grimston-type (including the similar UPG1) comprising a GRIM thumbed base and a UPG1 wide strap handle. Three sherds of UPG4 had applied decoration in the form of strips and 'feathers', but appeared to be overfired with unfused glaze and may be a waster.

Illustrated vessel

6. MCW7 jar, upright flat-topped rim, sagging base. Evaluation ditch fill 2868 enclosure **10201**.

Late medieval and early post-medieval

A.3.49 Two LMT base fragments were recovered, one from period 6.2 enclosure **10201** and one from evaluation ditch 2801 (=**10011**).

A.3.50 Three small sherds of GRE, including a handle, were recovered from period 6.2 enclosure **10201** and two period 8 features.

Modern

A.3.51 Ten sherds were of recent date, some of which were intrusive in period 6.1 Pit group **10199** and period 6.2 enclosure **10201**, with the remainder being from period 8 features. The majority were refined whitewares, some with transfer-printed decoration, and including rims of a bowl and a saucer. Also found were a small fragment of plantpot, a sherd of creamware, an undecorated porcelain fragment, a base fragment of blackware and a body sherd of slipped redware.

Area 10: Distribution

A.3.52 Table 26 shows the quantities of pottery by site period.

Pot period	*Period 5*	*Period 6.1*	*Period 6.2*	*Period 8*	*Unphased*
Early Saxon?		2			
Late Saxon	10		3		3
Early medieval	5	4	4		2
Medieval	1	4	26		81
Late medieval			2		
Post-medieval			1	2	
Modern			1	7	2
Totals	*16*	*13*	*33*	*9*	*88*
MNV	11	11	30	9	21

Table 26: Area 10: pottery by site period and pot period (sherd count)

A.3.53 A large proportion of this assemblage came from features assigned to period 6.2 (high medieval), most of which are associated with enclosure **10201**. Much of the unphased material came from features located within the enclosure during the evaluation.

Period 5: Anglo-Saxon (410-1066)

A.3.54 Sixteen sherds were recovered from charcoal pit **10299**, of which ten were Thetford-type wares, five were EMW and one was LMU.

Charcoaling pit

Pit **10299** Ten sherds of THET including an AB jar and an AA jar, 5 sherds of EMW, and 1 LMU sherd were collected. 11th c.?

Period 6.1: Early medieval (AD1066-1250)

A.3.55 Thirteen sherds were recovered from enclosure ditch **10011**, pits in group **10199** and charcoal pit **10255**. Two were residual ?Early Saxon fragments, six were EMW, four were LMU including a developed jar rim, there was also developed jar rim in MCW5, and one sherd was an LMT base fragment. The developed and late medieval forms and fabrics in this group are likely to represent the final filling of these features.

Ditch

Ditch **10011** Two fragments of EMW and a developed jar rim of LMU were found in fills 10109, 10175 and 10192. Evaluation ditch 2801 contained a base sherd of LMT. Broad date range of 11th–15th c.

Charcoaling pit

Pit **10255** Four sherds of an EMW vessel were recovered from sample <469>. 11th–12th c.

Pit group

10199 Fills of pits **10042**, **10044** and **10199** contained six sherds between them, comprising 2 ESFS, 3 LMU and an MCW5 thickened everted jar rim. 13th–14th c.

Period 6.2: High medieval (AD1250-1400)

A.3.56 Thirty-three sherds were recovered from features in this period. Most were associated with enclosure **10201**. A few sherds of late medieval to modern date are presumed intrusive, with the majority of sherds being of high medieval or earlier date. All rim forms were of 13th–14th-century date.

Enclosure 10201

Ditch **10052** A sherd of LMU was found in fill 10051. 11th–14th c.
Ditch **10050** Fills 10049, 10053, 10077, 10135, 10138, 10140, 10141 and evaluation 2808 contained 18 sherds, comprising 2 THET, 1 EMW, 7 LMU including a bowl, a jar and a jug handle, 1 MCW1, 2 MCW5, 1 GRIM, 1 LMT, 1 GRE and 1 LBW. 13Th–14th c. with intrusive late/pmed.
Ditch **10212** One sherd of THET was found in fill 10214. 10th-11th c.+
Ditch **10263** An abraded sherd of MCW8 was found in fill 10144.
Ditch **10333** Fills 10295 abd 10451 produced 8 sherds: 4 LMU, 1 MCW6 and 3 UPG4. 13Th–14th c.

Features inside Enclosure 10201

Pit **10171** Fill 10172 contained 1 EMW and a UPG1 handle. 13th–14th c.
Natural **10297** An LMU jug rim and an MCW3 jug handle were recovered from this layer.

Unphased

A.3.57 Fifty-eight sherds of sixteen vessels were recovered from unphased contexts, most of which were found in the evaluation (two sherds were recovered from features in Trench 3, outside the excavation area). A range of pottery is included in this group, but much of the material from the evaluation contexts is of high or late medieval date and includes substantial parts of two LMT vessels found in post-hole **E3080** (Trench 11), located towards the end of period 6.3 ditch **9376** and just north of period 7 pit group **9254**.

Ditch **10161** A thickened everted rim of LMU was found in fill 10162. 13th–14th c.
Natural **10508** Three sherds of a THET (or possibly Roman) jar were found in fill 10509. 11th c.?

Evaluation (all outside excavation area):

Ditch **2815** Fill 2816 contained one sherd each of EMW, MCW1 and MCW4. 11th–14th c.
Ditch **2837** Two sherds of REFW were recovered from fill 2838. 19th c.+
Holloway **2844** A tiny sherd of LMU, 10 sherds of MCW1 including a bowl and a jar, and 3 MCW4 came from fill 2843. 13th–14th c.

Ditch **2861** Three LMU and an MCW4 jug rim were recovered from fill 2860. 13th–14th c.
Ditch **2869** Fill 2868 contained 1 EMW, 3 LMU, 2 MCW1 and 55 sherds of an MCW7 jar. 13th–14th c.

Area 10: Discussion

A.3.58 Thetford-type wares at this site were largely associated with charcoal production, although a few were redeposited elsewhere on the site. One sherd may be a waster, and given the local nature of the Thetford-type ware fabrics from here and other sites in the area, it would not be impossible for there to be a rural kiln in the area and could even be the reason for charcoal production here. However in this case the sherd was associated with other burnt material so its status as a waster is in doubt.

A.3.59 The range of early and high medieval wares from this site is similar to other sites along the route, with the majority of dateable forms belonging to the 13th–14th centuries and suggesting a concentration of activity associated with the Period 6.2 enclosure at this site. Unfortunately the interior of the enclosure could not be excavated as part of this project, but there are tantalising glimpses of internal features from the evaluation, several of which also contained pottery of high medieval date. A fragment of an unprovenanced glazed ware appeared to be a waster or second, and in this case could indicate pottery production of high medieval date in the vicinity.

A.3.60 A limited quantity of late medieval and post-medieval pottery suggests that the site was no longer in use by the end of the 14th century, if not before.

Area 11: Rackheath (139704)

A.3.61 Three sherds of a Thetford-type ware vessel with applied thumbed strips were found in ditch fill 11017 (Period 6.1 ditch **11016**). A body sherd of brown-glazed English white stoneware (15g; 18th–19th c.) was found in ditch fill 11028 (Period 8 ditch **11027**). Ditch fill 11040 (Period 8 ditch **11039**) contained a base fragment (15g) of orange-glazed GRE (16th–18th c.).

Area 12: Rackheath (ENF139705)

A.3.62 Table 27 shows the quantities of post-Roman pottery from Area 12 by fabric. This group contains a high proportion of Late Saxon and early medieval sherds, with fewer high medieval wares and almost no late or post-medieval material.

Description	Fabric	Date range	No	Wt/g	Eve	MNV
Thetford-type ware	THET	10th-11th c.	33	122	0.04	18
Thetford-type ware (Grimston)	THETG	10th-11th c.	2	15		2
'Early medieval' sandwich wares	EMSW	11th c.	3	27		3
Early medieval ware	EMW	11th-12th c.	57	263	0.35	35
Yarmouth-type ware	YAR	11th-12th c.	1	2		1
Pingsdorf Ware	PING	10th-13th c.	1	2		1
Local medieval unglazed	LMU	L.11th-14th c.	18	147	0.05	6
Medieval coarseware 1	MCW1	12th-14th c.	14	104	0.04	8
Medieval coarseware 2	MCW2	12th-14th c.	1	1		1
Medieval coarseware 5	MCW5	12th-14th c.	1	3		1
Medieval coarseware 6	MCW6	12th-14th c.	1	2		1
Grimston-type ware	GRIM	L.12th-14th c.	1	45		1
Late post-medieval unglazed earthenwares	LPME	18th-20th c.	1	12	0.09	1
Totals			***134***	***745***	***0.57***	***79***

Table 27: Area 12: Post-Roman pottery

Area 12: Pottery by period

Late Saxon

A.3.63 Twenty-three sherds of this period were recovered, but there was only one rim, a Thetford-type ware large 'AC' jar of type 1. This, together with the presence of Grimston Thetford-type ware and 'early medieval' sandwich ware, suggests an 11th-century date for the Late Saxon activity, probably contemporary with the early medieval wares from this site. Most were recovered from period 6.1 features.

A.3.64 Several sherds of Thetford-type ware were in a fine sandy fabric with sparse medium/coarse sand, moderate coarse angular ferrous inclusions and sparse flint. This presumably represents a local variant of the fabric.

Medieval

A.3.65 Fifty-nine sherds were of early medieval date, the majority sandy wares (EMW) with only one sherd of Yarmouth-type ware and a small fragment of Pingsdorf ware. The EMW included rimsherds of four jars, a ginger jar and a ?bowl. Three rims had thumbed decoration and there were applied thumbed strips on the ginger jar and another body sherd. They were recovered from period 6.1 ditches, enclosure **12308**, and pit groups **12015** and **12233**.

A.3.66 High medieval wares were also associated with the same period 6.1 features as the early medieval wares. The 50 sherds of medieval coarsewares represented 22 vessels and were dominated by LMU, MCW1 and MCW8, with three sherds of three other fabrics also present. Identified vessels comprised a jar and a bowl, both with developed rim forms (*cf.* Jennings 1981 nos. 263, 316). The bowl had a thumbed rim and one base was also thumbed.

A.3.67 The single sherd of Grimston-type ware makes up 2% of the high medieval assemblage by count and 4% by MNV. The large body sherd was probably part of a face jug, with applied brown 'feathers' and part of an arm.

Illustrated vessel

7. EMW bowl, flaring rim. Pit fill 12156, Period 6.1.

Modern

A.3.68 A sherd of an LPME plantpot with a collared rim came from gully fill 12263.

Area 12: Distribution

A.3.69 Table 28 shows the quantities of pottery by site period. A large proportion of this assemblage came from features assigned to period 6.1 (early medieval), most of which are associated with enclosure **12308**.

Pot period	***Period 5***	***Period 6.1***	***Period 8***	***Unphased***
Late Saxon	19	14		5
Early medieval	43	16		
Medieval	2	33		1
Modern			1	
Totals	*64*	*63*	*1*	*6*
MNV	34	42	1	2

Table 28: Area 12 pottery by site period and pot period

Period 5: Anglo-Saxon (410-1066)

A.3.70 Sixty-four sherds of 34 vessels were recovered from six pits in two pit groups (**12015**, **12233**). Of these, pit **12044** contained the largest quantity with 32 sherds (Table 29)

PG **12015** Forty-eight sherds were recovered from five pits in this group, as shown in Table 13. Two EMW jar rims were found. 11th–12th c.?

Fabric	***12044***	***12097***	***12264***	***12310***	***12325***
THET	14				
EMSW			2		
EMW	17	3	8	2	
LMU					1
MCW6	1				
Totals	***32***	***3***	***10***	***2***	***1***

Table 29: Fabrics by feature

PG **12233** Pit **12154** contained 3 THET, 11 EMW including a ginger jar and a ?bowl, 1 YAR and 1 PING. 11th c.?

Period 6.1: Early medieval (1066-1250)

A.3.71 This period group included Late Saxon to high medieval wares, some of which may be broadly contemporary in the 11th/12th centuries. The majority of high medieval wares were recovered from ditch **12174** in enclosure **12308**, which included a developed jar rim. Most other features contained earlier medieval wares.

Ditches

Ditch **12298** One sherd of EMW came from fill 12299. 11th–12th c.
Ditch **12215** One sherd of LMU was recovered from fill 12216. 11th–14th c.

Enclosure 12018

Gully **12042**	A sherd of EMSW and one of MCW5 were recovered from fills 12177 and 12043 respectively. A post-hole **12184** within the gully contained a small sherd of THET. 11th–12th c.?
Ditch **12018**	A small sherd of EMW was found in fill 12019. 11th–12th c.
PH **12050**	An EMW jar rim and a body sherd of MCW8 were found. 11th–12th c.?

Enclosure 12308

Ditch **12206**	Four sherds of EMW and a fragment of THETG were recovered from fill 12207. 11th–12th c.
Ditch **12080**	Fills 12083 and 12228 contained one sherd each of EMW and THET respectively. 11th c.
Ditch **12172**	A rim sherd of THET and seven other THET sherds were found in fill 12192. 11th c.
Ditch **12174**	Fill 12175 contained 1 THETG, 7 EMW, 14 MCW1 including a developed jar rim, 1 MCW2 and 15 LMU including a bowl. 13th–14th c.
Ditch **12308**	A simple everted EMW jar rim was found in fill 12153. 11th–12th c.

Pit

Pit **12046**	A body sherd of a GRIM face jug was found. 13th–14th c.

Period 8: Modern (1750-Present)

A.3.72 A fragment of plant pot was recovered from gully **12142**.

Area 12: Discussion

A.3.73 Like Area 10, Late Saxon and early medieval wares at this site were associated with charcoal production in Period 5, but were also found in association with two enclosures assigned to Period 6.1. Although medieval wares are present, the small number of developed rims and the single glazed sherd are suggestive of a decline in the 13th century and most of the medieval coarsewares could be contemporary with the early medieval wares.

Area 13: Rackheath

A.3.74 Five sherds (14g) of medieval pottery were recovered from this area. Ditch fill 13139 (period 6.1 enclosure ditch **13157**) contained a sherd of early medieval ware (EMW, 11th–12th c.). Ditch fill 13179 contained a small piece of an everted jar rim of EMW, and a body sherd of MCW1 (late 11th–14th c.), and gully fill 13181 contained a small sherd of local medieval unglazed ware (L.11th–14th c.), both in period 7 ditch group **13013**. A small sherd of EMW was found in fill 13217 of Period 6.1 enclosure **13097**.

Area 15: Great & Little Plumstead (ENF139708)

A.3.75 A small fragment (1g) of a refined whiteware (19th/20th c.) moulded handle base was recovered from post-hole fill 15008 (period 8 post-hole **15007**).

Area 16: Great & Little Plumstead (ENF139709)

A.3.76 Table 30 shows the quantities of pottery in Area 16 by fabric. All pottery from this site was of medieval date. There were two developed jar rims in MCW1 and a developed bowl rim in MCW4. Most of the pottery came from Period 6.2 pit groups **16005** and **16039**.

Description	Fabric	Date range	No	Wt/g	Eve	MNV
Early medieval ware	EMW	11th-12th c.	1	1		1
Local medieval unglazed	LMU	11th-14th c.	1	2		1
Medieval coarseware 1	MCW1	12th-14th c.	6	64	0.15	6
Medieval coarseware 4	MCW4	12th-14th c.	1	48	0.05	1
Medieval coarseware 6	MCW6	12th-14th c.	1	5		1
Medieval coarseware 7	MCW7	12th-14th c.	1	6		1
Totals			**11**	**126**	**0.2**	**11**

Table 30: Area 16: Post-Roman pottery

Area 17: Great & Little Plumstead (ENF139710)

A.3.77 This large assemblage comprises 472 sherds (6234g). A further 106 sherds were recovered from this area (Field G6) during the evaluation, although some were from trenches outside the excavation area. Table 31 shows the quantities from both phases of fieldwork. Although still dominated by medieval coarsewares, this group also contains a high proportion of late medieval pottery.

Description	Fabric	Date range	No	Wt/g	Eve	MNV
Early medieval ware	EMW	11th-12th c.	39	188	0.24	23
Early medieval gritty with shell	EMWSG	11th-13th c.	1	1		1
Yarmouth-type ware	YAR	11th-12th c.	2	9		2
Grimston coarseware	GRCW	11th-M.13th c.	1	13		1
Local medieval unglazed	LMU	11th-14th c.	137	1797	1.88	67
Medieval coarseware 1	MCW1	12th-14th c.	84	1324	0.89	34
Medieval coarseware 3	MCW3	12th-14th c.	20	247	0.14	4
Medieval coarseware 4	MCW4	12th-14th c.	52	607	0.31	7
Medieval coarseware 5	MCW5	12th-14th c.	4	34		4
Medieval coarseware 6	MCW6	12th-14th c.	6	58	0.05	6
Medieval coarseware 7	MCW7	12th-14th c.	45	397	0.48	11
Medieval coarseware 8	MCW8	12th-14th c.	28	377	0.33	2
Grimston-type ware	GRIM	L.12th-14th c.	49	595	0.44	18
Unprovenanced glazed 1	UPG1	Med	1	183		1
Unprovenanced glazed 5	UPG5	L.12th-14th c.?	1	2		1
Yarmouth-type glazed wares	YARG	13th-15th c.	3	39		2
Siegburg Stoneware	GSW1	E.14th-17th c.	2	70		2
Late medieval and transitional, gritty	LMTG	M.14th-15th c.	1	5		1
Late medieval and transitional	LMT	L.14th-16th c.	61	858	0.64	43
Langerwehe Stoneware	GSW2	L.14th-15th c.	1	52		1
Dutch-type redwares	DUTR	15th-17th c.	2	25	0.11	2
Raeran/Aachen Stoneware	GSW3	L.15th-16th c.	2	96	0.25	2
Glazed red earthenware	GRE	16th-18th c.	10	48	0.08	9
Iron glazed blackware	IGBW	16th–18th c.	1	4		1
Cologne/Frechen Stoneware	GSW4	16th-17th c.	3	159		3
Speckle-glazed Ware	SPEC	L.17th-18th c.	1	5		1
Staffordshire-type Slipware	STAF	L.17th-18th c.	2	4		2
Staffordshire manganese glazed	STMG	L.17th-18th c.	1	1		1
Westerwald Stoneware	GSW5	E.17th-19th c.	2	19		2
Chinese porcelain	PORCC	16th–20th c.	1	1		1
Creamwares	CRW	18th c.	5	45		5
Pearlware	PEW	L.18th-M.19th c.	3	11	0.08	2

Description	Fabric	Date range	No	Wt/g	Eve	MNV
Refined white earthenwares	REFW	L.18th-20th c.	5	18	0.18	4
English stoneware	ESW	19th-20th c.	1	9		1
Unidentified	UNID		1	9		1
Totals			**578**	**7310**	**6.1**	**268**

Table 31: Area 17: Post-Roman pottery

Area 17: Pottery by period

Medieval

A.3.78 Forty-three sherds were of early medieval date, comprising mainly sandy wares (EMW, GRCW) with a few calcareous Yarmouth-type and EMWSG wares. Five EMW jar rims were found, all simple everted types and one decorated with facetting of the edge. One sherd appeared to be decorated with rouletting and may be earlier.

A.3.79 The medieval coarsewares were dominated by LMU, MCW1 and MCW7 but most other types were also present. Identified vessels comprised twenty jars, nine bowls, a curfew and six jugs. Three jars had simple everted rims of early type, the remainder being developed forms. Vessels in all fabrics can be paralleled in the Norwich LMU corpus (e.g. Jennings 1981, nos 257, 258, 260, 276, 302, 303, 305, 311–313, 315, 324), but one rim was more typical of Suffolk forms. Few sherds were decorated, with one grooved jug handle in MCW1 and another in LMU, a thumbed rim, combed wavy lines, and applied thumbed strips on a handle, all in LMU.

A.3.80 Glazed wares made up 12.5% of the high medieval assemblage by count and 14% by MNV. Grimston-type ware (including the similar UPG1) was the most common glazed ware of the period and included several sherds of two face jugs, large fragments of two other jugs, one with a bridge spout, and an additional wide strap handle (two of the jugs also had wide strap handles attached). Decoration included applied brown slip lines. One base was thumbed. The UPG5 vessel also had brown slip decoration but was too small to determine the type.

Late medieval and early post-medieval

A.3.81 Later medieval and early post-medieval wares formed a relatively large group, which includes local redwares and some imported wares.

A.3.82 Late medieval and transitional wares included nine identifiable vessels: five jars, three jugs and a ?lid. One coarse sherd was in a fabric similar to the early LMT fabric found at the possible production site at Hare Lane, Plumstead (Anderson 2015b). Other late medieval wares included base and body fragments of Siegburg, Langerwehe and Frechen stonewares, and a Dutch redware cauldron rim/handle.

A.3.83 Post-medieval wares comprised several regional redwares: GRE vessels including a mug, and body sherds of iron-glazed blackware and speckle-glazed ware. A Staffordshire slipware press-moulded dish and a base fragment of another yellow-glazed vessel, together with a manganese glazed sherd were all of later post-medieval date. Imported wares included a tiny sherd of hand-painted Chinese porcelain and several fragments of Frechen stoneware including a mug rim/handle.

Modern

A.3.84 Modern wares included five creamware fragments including a plate base, two sherds of a pearlware cup with floral transfer-printed decoration, a pearlware base with blue line decoration, four refined whitewares including a bowl rim and a base with transfer-printed decoration, an English stoneware base fragment, and two body sherds of Westerwald stoneware, one with moulded and one with applied stamped and combed decoration.

Unidentified

A.3.85 One body sherd from unphased pit **17289** was cream with a pinkish core, fine sandy with sparse red grog; the sherd could be Roman.

Area 17: Distribution

A.3.86 Table 32 shows the quantities of pottery by site period. A large proportion of this assemblage came from features assigned to Period 6.2 (early medieval), but quantities from Period 6.3 were also high. Much of the unphased material was recovered during the evaluation.

Pot period	*Period 2.2*	*Period 6.1*	*Period 6.2*	*Period 6.3*	*Period 7*	*Unphased*
Early medieval	1	6	25	3	1	6
Medieval	2	40	212	67	18	92
Late medieval		1	7	41	16	4
Post-medieval			1	3	9	7
Modern					12	3
Unidentified						1
Totals	***3***	***47***	***245***	***114***	***56***	***113***
MNV	3	32	91	76	35	30

Table 32: Area 17 pottery by site period and pot period (sherd count).

Period 2.2: Bronze Age

A.3.87 Three medieval sherds were thought to be intrusive in Period 2.2 ditch **17047**.

Ditch **17047** A small sherd of MCW3 was found in fill 17106. Evaluation ditch fill 5123 contained sherds of EMW and LMU. 11th–12th c. or intrusive.

Period 6.1: Early medieval (AD1066-1250)

A.3.88 Forty-seven sherds were recovered from two enclosures, three ditches and three pits in this period. The majority were of high medieval date. The largest group, 18 sherds, came from pit **17229**, but the sherds only represented four vessels. In general this group was sparsely spread across the southern part of the site with no major concentrations.

Enclosures

Enc **17006** Ditch fills 17167, 17182 and 17263 contained 3 EMW including two jar rims, 1 EMWSG, 3 LMU and 1 MCW3. 11th–12th c.?

Enc **17011** An EMW jar rim and a sherd of LMTG were recovered from fills 17197 and 17238 respectively. 11th–12th c. or M.14th c.?

Ditches

Ditch **17330** Fill 17331 contained an MCW3 bowl rim and one sherd each of MCW5 and MCW6. 13th–14th c.
Ditch **17269** Fills 17417 and 17293 contained 3 MCW1 and 4 LMU body sherds. A sherd of EMW came from evaluation ditch fill 5121. 11th–14th c.
Ditch **17275** Three LMU sherds including a simple everted jar rim were found in fills 17276, 17367 and 17395. 11th–13th c.

Pits

Pit **17229** Eighteen sherds of medieval pottery were found in fill 17232: 7 MCW1 jar, 9 MCW3, 1 MCW7 and a UPG1 jug. 13th–14th c.
Pit **17271** Two sherds (MCW1, MCW6) were found in fill 17272. 11th–14th c.
PG17431 Fill 17492 contained 2 LMU and 1 MCW7. 11th–14th c.

Period 6.2: High medieval (AD1250-1400)

A.3.89 A total of 245 sherds, representing 91 vessels, was recovered from this period. The majority came from ditches associated with enclosure **17078** and the northern extension ditch **17468** (64 and 149 sherds respectively). This material presumably represents domestic waste from a dwelling on the Low Road frontage. Several bowls, jars and jugs were recovered in a variety of fabrics, and fragments of two Grimston face jugs were also present. These decorative tablewares, together with a fragment of imported Siegburg stoneware from a pit within the enclosure, may indicate a degree of status for the occupants. The few late and post-medieval sherds recovered from these reworked ditch fills are likely to represent final backfilling of the ditches, perhaps in the 16th century.

Enclosure 17078 and associated features

Enc **17078** Fills 17018, 17077, 17079, 17192, 17202, 17257, 17286, 17343, 17352, 17359, 17401 and 17413 contained 64 sherds in total: 13 EMW including a jar, 36 LMU including two bowls, two jars and two jugs, 2 MCW1, 2 MCW4, 1 MCW5, 5 MCW7 including a bowl and a jar, 4 GRIM and 1 GSW4. 13th–14th c., assuming the GSW4 is intrusive.
Ditch **17468** Fill 17467 contained 92 sherds of 25 vessels: 5 EMW, 5 MCW1 including a jar rim, 1 MCW3, 5 MCW4 including a jar and a bowl, 1 MCW7, 47 LMU including two jars, a jug and a bowl, 1 UPG5, and 27 GRIM including two face jugs. Fill 17464 (incorrectly labelled) contained a high proportion of medieval wares: 3 EMW, 8 MCW1 from a jar, 8 MCW3 from a jar, 32 MCW7 from a jar and 6 LMU including 2 jars and a bowl; there were cross-links to material in 17467. 13th–14th c.
Pit **17246** Fourteen sherds were recovered: 11 LMU, 2 MCW1 and a GSW1 frilly base. 14th c.

Other ditches

Ditch **17000** A large jug rim with twisted rod handle in MCW1 was found. 13th c.?
Ditch **17013** Two sherds of an EMW jar and 1 YAR were recovered from fill 17194. 11th–12th c.
Ditch **17244** An MCW1 jar rim was found in fill 17291. 13th–14th c.
Ditch **17294** Fills 17295, 17315 and 17509 contained 11 sherds: 2 LMU including a jar rim, 1 MCW5, 1 MCW6, 1 MCW7 jar rim, 1 YARG and 5 LMT. M/L.14th–15th c.?
Ditch **17322** One sherd of LMT was found in fill 17613. M/L.14th–M.16th c.
Ditch **17368** A fragment of EMW came from fill 17369. 11th–12th c.

Period 6.3: Late medieval (AD1400-1500)

A.3.90 Of the 114 sherds recovered from features of this period, 99 were collected from eleven pits in the southern part of the site (groups **17057** & **17296**). These groups contained a high proportion of residual material, presumably part of the domestic waste group which first appears in quantity in features of Period 6.2. Intercutting and general disturbance had resulted in sherds of one medieval coarseware vessel being redeposited in three pits in group **17296**. The late medieval and early post-medieval wares in this group include both local and imported (Rhenish, Dutch) wares.

Ditches

Ditch **17049** An LMU handle was found in fill 17050. 12th–14th c.

Ditch **17036** Fills 17042 and 17091 contained 1 LMU, 2 MCW1, 1 MCW7 jar rim and 1 LMT. M/L.14th c.+

Ditch **17038** Four sherds of LMT were recovered from ditch fill 17094 and pit fill 17096. M.14th–M.16th c.

Pits

Pit **17445** One sherd of MCW7 was recovered from fill 17446. 12th–14th c.

PG **17057** Fills of pits 17031, 17057, 17360 and 17362 contained 28 sherds comprising 2 MCW1, 11 LMU, 1 GRIM, 10 LMT, 2 GSW2 and 2 GSW4. Evaluation pits 5102 and 5106 contained 1 LMU and 1 IGBW respectively. 16th c.?

PG **17296** A total of 71 sherds were recovered from seven pits in this group, as shown in Table 33. Identifiable vessels included an MCW1 jug, two jars and a bowl, an MCW4 bowl, an MCW6 jar, an LMU rod handle, an LMT jar and jug, and a DUTR cauldron. Cross-matches of an MCW1 vessel were noted between pits **17473**, **17476** and **17479**. 15th c.+

Fabric	*17296*	*17348*	*17418*	*17420*	*17473*	*17476*	*17479*
EMW			1		1		1
LMU	1		1		3		
MCW1	2		1	1	17	4	5
MCW4			1		2		
MCW6		1					
MCW7					1		
GRIM	2				1		
YARG							2
LMT	2		13	1	4		1
GSW2							1
DUTR					1		

Table 33: Pottery from PG17296 (sherd count)

Period 7: Post-medieval (AD1500-1750)

A.3.91 A few medieval sherds were residual in this period, but finds from trackway **17019** suggest this was in use in the 15th/16th centuries, whilst trackway 17510 to the north of the site contained largely 18th-century finds. Ditch 17461 appears to have been finally filled in the later 18th/19th century.

Track **17019** Contexts 17020 and 17030 contained 34 sherds: 1 GRCW, 14 MCW1 including a curfew, 1 LMU, 15 LMT including 3 jars, 2 jugs and a lid, 1 GSW1, 2 GRE. 16th c.

Ditch **17461** Fills 17462 and 17517 contained five sherds: 1 GRE, 1 GSW5, 1 CRW and 2 REFW from a bowl. L.18th/19th c.

Track **17510** Contexts 17376, 17378, 17485, 17544, 17549, 17571 and 17587 contained 16 sherds: 1 EMW, 1 MCW1, 1 GRIM, 3 GRE, 1 SPEC, 1 STAF, 4 CRW, 2 PEW cup, and 2 REFW. Evaluation ditch 5015 contained 1 GSW5. L.18th/19th c.

Unphased

A.3.92 Unphased contexts, most of which were from the evaluation trenches outside the excavation area, produced 113 sherds of 30 vessels. A range of early to post-medieval pottery is included in this group, but much of the material from the evaluation contexts is of high or late medieval date and includes substantial parts of three medieval coarseware vessels found in ditch **E5032** (Trench 1).

Layer 17060 A small fragment of GRE mug rim was found. 16th–18th c.

Layer 17097 Three sherds of LMU and an MCW7 jar rim fragment were found. 13th–14th c.

Pit **17027** A small sherd of LMT was recovered from fill 17028. L.14th–M.16th c.

Gully **17199** One fragment of EMW came from fill 17200. 11th–13th c.

Pit **17289** An unidentified body sherd was found in fill 17288.

Pit **17390** Three sherds of an EMW vessel and an MCW5 jar rim were recovered from fill 17391. 13th–14th c.

Pit **17610** Fill 17612 contained an EMW sherd. 11th–12th c.

Evaluation (all outside excavation area except 5116):

Ditch **E5022** Base fragments of PEW and REFW were found in fill 5023. 19th c.

Ditch **E5029** Fill 5028 contained 2 GRE, 1 STAF and 1 STMG, all small. 17th c.+

Ditch **E5032** Seventy-four sherds representing three vessels of MCW1, MCW4 and MCW8 were collected from fill 5033. 13th–14th c.

Ditch **E5044** Fill 5043 contained eight sherds of a GRIM jug with a bridge spout, and a base fragment of MCW8. 13th–14th c.

Hedge **E5094** One small sherd of GRE came from fill 5093. 16th–18th c.+

Ditch **E5110** A tiny fragment of PORCC and a piece of ESW were recovered from fill 5111. 19th c.

Ditch **E5116** One sherd of YAR was found in fill 5117. 11th–12th c.

Ditch **E5118** One small sherd of LMU was found in fill 5120. 11th–14th c.

Natural **E5131** Four heavily abraded GRIM sherds were recovered from fill 5130. 13th/14th c.+

Area 17: Discussion

A.3.93 Although still dominated by medieval coarsewares, this group also contains a high proportion of late medieval pottery. Several coarsewares are present, with Norwich-type LMU the most frequent, followed by MCW1 and MCW7. The early medieval wares included several simple everted jar rims, and a few of these also occurred in LMU, but the majority of medieval rims are developed types. There is also a relatively high proportion of Grimston ware at this site. Together with the late medieval wares, this suggests a *floruit* for the site of broadly 13th–15th century, with minor earlier and later activity. Some of the LMT is in a coarse fabric and may have been made at the recently-excavated production site at Hare Road, Plumstead (Anderson 2015b). Identified LMT vessel forms comprise mainly jars and jugs.

A.3.94 Several imported wares are present in the later medieval and early post-medieval groups, but these are Dutch redwares or German stonewares, all of which found frequently in Norwich itself.

A.3.95 The majority of medieval and late medieval pottery appears to be from the southern half of the site, with only small quantities of mainly post-medieval pottery from the trackway in the northern part of the area. The high medieval wares in particular are concentrated in the area of Period 6.2 enclosure **17078** and probably represent domestic waste from a roadside dwelling within or in the vicinity of the enclosure.

Area 18: Great & Little Plumstead (ENF139711)

A.3.96 This area produced 237 sherds (2643g) during the excavation. A further 17 sherds were recovered from this area (Field G7) during the evaluation. Table 34 shows the quantities by fabric. Medieval pottery is more common than early or late medieval, but there is still a significant proportion of the latter.

Description	*Fabric*	*Date range*	*No*	*Wt/g*	*Eve*	*MNV*
Early Saxon medium sandy	ESMS	ESax	1	1		1
Thetford-type ware	THET	10th-11th c.	1	5		1
Early medieval ware	EMW	11th-12th c.	2	2		2
Yarmouth-type ware	YAR	11th–12th c.	1	2		1
Local medieval unglazed	LMU	11th-14th c.	27	283	0.31	10
Medieval coarseware 1	MCW1	12th-14th c.	15	140	0.09	7
Medieval coarseware 2	MCW2	12th-14th c.	2	14		2
Medieval coarseware 3	MCW3	12th-14th c.	70	836		3
Medieval coarseware 4	MCW4	12th-14th c.	2	23		1
Medieval coarseware 5	MCW5	12th-14th c.	16	369	0.09	9
Medieval coarseware 6	MCW6	12th-14th c.	12	104		4
Medieval coarseware 8	MCW8	12th–14th c.	2	35		1
Grimston-type ware	GRIM	L.12th-14th c.	15	302		9
Hedingham Ware	HFW1	M.12th-M.13th c.	1	13		1
Unprovenanced glazed 1	UPG1	Med	2	3		1
Unprovenanced glazed 2	UPG2	Med	2	19		2
Gritty Rhenish stoneware	RHSW	13th-14th c.	1	21		1
Late Grimston-type ware	GRIL	14th-15th c.?	3	72		1
Late medieval and transitional, gritty	LMTG	M.14th-15th c.?	54	312		1
Siegburg Stoneware	GSW1	E.14th-17th c.	2	31		1
Langerwehe Stoneware	GSW2	L.14th-15th c.	3	93		2
Late medieval and transitional	LMT	15th-16th c.	15	132		3
Glazed red earthenware	GRE	16th-18th c.	1	16		1
Staffordshire-type Slipware	STAF	L.17th-18th c.	2	7		1
Unidentified	UNID		1	1		1
Totals			***253***	***2836***	***0.49***	***67***

Table 34: Post-Roman pottery from Area 18

Area 18: Pottery by period

Early Saxon

A.3.97 One small undecorated body sherd of Early Saxon medium sandy ware was recovered from ditch fill 18013 in Period 6.3 Ditch group **18005**.

Late Saxon

A.3.98 A body sherd of a very fine micaceous Thetford-type ware vessel was found in pit fill 18002, Period 6.2.

Medieval

A.3.99 Only three sherds were of early medieval date, two sandy wares (EMW) one Yarmouth-type calcareous ware. The former were residual in Period 7 ditch **18009**, and the latter was from evaluation ditch **E5205**.

A.3.100 A total of 146 sherds of medieval coarsewares represented only 37 vessels. The fabric groups were dominated by LMU, MCW5 and MCW1, but other fabrics were also present. Identified vessels comprised two jars, three bowls, three jugs and a curfew. There were two wide strap handle fragments, probably also from jugs. Most rims were developed forms. Vessels can be paralleled in the Norwich LMU corpus (*e.g*. Jennings 1981, nos 261, 303, 312/305, 318). Four vessels had applied strips, one had finger-tip impressions, two handles were thumbed and one of those was also stabbed, one handle was a twisted rod form, and one had ridges at the sides and centre.

A.3.101 Glazed wares made up 12% of the high medieval assemblage by count and 25.5% by MNV, both high proportions for a medieval rural site. Twenty sherds represented thirteen vessels of which ten were Grimston-type (including the similar UPG1), two were UPG2, and one was Hedingham ware from Essex. Six sherds of a Grimston ware jug from evaluation ditches **E5203**/**E5205** had coarsely applied brown slip lines. Another sherd from this feature had brown slip 'feathers' in a triangle. Two handle fragments were recovered from pit **18001**. One imported ware of this period was recovered, a body sherd of coarse Rhenish stoneware with girth-grooving of the body, found in pit group **18036**.

Late medieval and early post-medieval

A.3.102 Thirteen sherds of an LMT vessel in Period 6.2 pit **18064** (PG18100) were in the Potter Heigham LMT fabric. A bunghole cistern sherd from ditch **18056** was more typical of the putative Woodbastwick production site. One other LMT body sherd was found in PG18100. The 54 sherds of LMTG were found in pit 18001 and comprise body, base and strap handle sherds of a jug. Three sherds of GRIL from PG18100 were also part of a jug. Imported wares of this period comprised fragments of Siegburg and Langerwehe stonewares.

A.3.103 A body sherd of GRE and two fragments of a Staffordshire slipware mug were the latest pottery finds from the site. They were found in Period 7 ditches **18052** and **18009** respectively.

Unidentified

A.3.104 A small body sherd of a wheelmade fine sandy redware with sparse very coarse inclusions (granite, ironstone) was found in pit/pond **18071** and is likely to be of post-medieval date and non-local origin.

Area 18: Distribution

A.3.105 Table 35 shows the quantities of pottery by site period. A large proportion of this assemblage came from features assigned to Period 6.2 (high medieval). Much of the unphased material came from two features excavated during the evaluation.

Pot period	***Period 6.2***	***Period 6.3***	***Period 7***	***Unphased***
Early Saxon		1		
Late Saxon	1			
Early medieval			2	1
Medieval	145	1	2	19
Late medieval	73	4		
Post-medieval			3	
Unidentified			1	
Totals	***219***	***6***	***8***	***20***
MNV	44	5	6	12

Table 35: Area 18 pottery by site period and pot period (sherd count)

Period 6.2: High medieval (AD1250-1400)

A.3.106 Three pit groups on the western half of the site produced 219 sherds of 44 vessels. One residual sherd of Thetford-type ware was found, and there were fragments of five late medieval vessels, the remainder being of medieval date.

PG **18036** Pits **18036**, **18085** and **18087** produced 11 sherds: 1 LMU jug handle, 2 MCW1 including a jug, 5 MCW5 including a bowl and a curfew, 2 MCW6 and 1 RHSW. 13th c.?

PG **18100** Thirty-six sherds were collected from pits **18065** and **18101**, the majority from the former. High medieval wares comprised 4 MCW1, 1 MCW2, 1 MCW3, 3 MCW5, 1 MCW6, 1 LMU, 2 UPG2, 5 GRIM and 1 HFW1. Late medieval wares, all from **18065**, comprised 14 LMT and 3 GRIL from a jug. M.14th–15th c.

Period 6.3: High medieval (AD1400-1500)

A.3.107 A total of 178 sherds were recovered from this period, two of which were residual. Contemporary fragments comprised a piece of LMT bunghole cistern from ditch **18056** and three sherds of two Langerwehe stoneware vessels from hollow **18031**. Substantial fragments of an MCW3, an LMU bowl and an LMTG jug were found in pit **18001**

Pit **18001** Fill 18002 contained 172 sherds of 17 vessels: 1 THET, 6 MCW1, 1 MCW2, 68 MCW3 of a jug, 2 MCW4, 6 MCW5, 9 MCW6, 21 LMU including a bowl, 2 GRIM jug handles, 54 LMTG of a jug, and 2 GSW1. L.14th c.?

Ditch **18056** A large sherd of an LMT cistern was found in fill 18057. Evaluation ditch fill 5211 contained 1 GRIM. M.14th–M.16th c.

DG **18005** A residual sherd of ESMS was found in fill 18014. 5th–7th c.+

PG **18031** Three sherds of two GSW2 vessels were found in fill 18032. L.14th–15th c.

Period 7: Post-medieval (AD1500-1750)

A.3.108 Eight sherds of six vessels were recovered from a pit and three ditches. Four sherds were residual EMW and UPG1, and one was unidentified. Post-medieval wares comprised a Staffordshire slipware mug and a sherd of GRE.

Pit **18071** One small unidentified redware sherd was found in pit/pond fill 18072. Post-

med?

Ditch **18009** Two small sherds of EMW and two fragments of a STAF mug were found in fills 18012 and 18018. L.17th–18th c.

Ditch **18052** A sherd of GRE came from fill 18050. 16th–18th c.

Ditch **18109** Two sherds of UPG1 were found in fill 18108. 13th–14th c.

Unphased

A.3.109 Two ditches identified in the evaluation (possibly pits in PG18001?) contained fifteen sherds of high medieval pottery. Layer 18121 contained five sherds of medieval coarsewares and may be related to PG18100.

Layer 18121 Five sherds of medieval coasewares (1 MCW1, 1 MCW3, 1 MCW5 and 2 LMU) were recovered. The MCW5 base fragment cross-linked to a sherd in fill 18101 (PG18100), Period 6.2. 11th–14th c.

Evaluation (possibly part of PG18100?)

Ditch **E5203** Fill 5204 contained 2 MCW1, 1 MCW5, 2 MCW8 and 6 GRIM from two jugs. 13th–14th c.

Ditch **E5205** Fill 5206 produced 1 YAR, 2 LMU jar rims and 1 GRIM from one of the vessels in 5203. 13th–14th c.

Discussion: Area 18

A.3.110 The majority of pottery in this area came from large Period 6.2 pit groups **18001** and **18100** to the west of the site. Although the assemblage is relatively large in terms of sherd count, the number of vessels represented is fairly small. This is mainly due to the presence of several sherds of three vessels, an MCW jug (68 sherds), an LMU bowl (18 sherds) and an LMTG jug (54 sherds) in pit **18001**. Like Area 17 this area seems to have been most active in the 13th to 15th centuries. Jugs and bowls were the most frequent identifiable vessels, and German stonewares the most common imports, with only early examples of these present.

Area 19: Postwick with Witton (ENF139712)

A.3.111 The largest post-Roman pottery assemblage was recovered from Area 19, a total of 551 sherds (4072g). A further 38 sherds were recovered from this area (Field P1) during the evaluation. Totals by fabric are shown in Table 36. The majority of pottery in this large assemblage was of high medieval date. This group was the most abraded of any of the areas, making identification of fabrics difficult.

Description	*Fabric*	*Date range*	*No*	*Wt/g*	*Eve*	*MNV*
Early medieval ware	EMW	11th-12th c.	32	154		27
Early medieval ware gritty	EMWG	11th–13th c.	2	40		2
Local medieval unglazed	LMU	11th-14th c.	206	1230	0.73	41
Medieval coarseware 1	MCW1	12th-14th c.	45	379	0.21	31
Medieval coarseware 2	MCW2	12th-14th c.	35	151	0.13	29
Medieval coarseware 3	MCW3	12th-14th c.	104	941	0.98	58
Medieval coarseware 4	MCW4	12th-14th c.	16	101		6
Medieval coarseware 5	MCW5	12th-14th c.	45	225	0.05	8
Medieval coarseware 6	MCW6	12th-14th c.	1	15		1

Description	Fabric	Date range	No	Wt/g	Eve	MNV
Medieval coarseware 8	MCW8	12th–14th c.	7	11		3
Medieval coarseware gritty	MCWG	L.11th-13th c?	1	18		1
Grimston-type ware	GRIM	L.12th-14th c.	21	394	0.66	13
Scarborough Phase I	SCAR1	M./L.12th-E.13th c.	1	52		1
Unprovenanced glazed 1	UPG1	Med	37	478		10
Unprovenanced glazed 2	UPG2	Med	1	3		1
Unprovenanced glazed 3	UPG3	Med	5	22	0.14	4
Saintonge ware	SAIN	12th-13th c.	1	14		1
Yarmouth-type glazed wares	YARG	13th-15th c.	10	43		6
Langerwehe Stoneware	GSW2	L.14th-15th c.	3	32		1
Late medieval and transitional	LMT	15th-16th c.	11	84	0.08	6
Glazed red earthenware	GRE	16th-18th c.	1	1		1
Late slipped redware	LSRW	18th-19th c.	1	19		1
Unidentified	UNID		3	11		2
Totals			***589***	***4418***	***2.84***	***254***

Table 36: Area 19 Post-Roman pottery

Area 19: Pottery by Period

Medieval

A.3.112 Thirty-two sherds were of early medieval date, all sandy wares (EMW, EMWG). All fragments were body and base sherds. Most were found in association with high medieval wares, with the largest group coming from pit group **19050**.

A.3.113 A total of 460 sherds of medieval coarsewares were found at this site. The fabric groups were dominated by LMU, MCW3, MCW1 and MCW2, but other fabrics were also well represented. Identified vessels comprised 19 jars, 16 bowls, three jugs and two cisterns. Additionally four wide strap handle fragments were present, probably also from jugs. Most rims were developed forms, although seven were early. Vessels can be paralleled in the Norwich LMU corpus (*e.g*. Jennings 1981, nos 258, 260, 261, 264, 279, 299, 303, 306, 316). Three vessels had applied strips, two rims and one base were thumbed and one bowl rim was stabbed.

A.3.114 Glazed wares made up 14% of the high medieval assemblage by count and 17% by MNV, both relatively high proportions for a medieval rural site. Seventy-six sherds represented 36 vessels of which 23 were Grimston-type (including the similar UPG1), ten were Yarmouth-type glazed wares, one was UPG2, four were UPG3, one was Scarborough ware and one was Saintonge ware from SW France. Six identifiable vessels were all jugs and there were a further three wide strap handles. A few sherds were decorated with brown slip lines, mainly UPG1 and UPG3, and other applied decoration was present on two Grimston vessels.

Late medieval and early post-medieval

A.3.115 Eleven sherds of LMT were recovered, mostly body sherds, but including a ?pedestal base and a bowl rim. Some were in a coarse fabric comparable with Hare Lane production waste (Anderson 2015b). Three body sherds of a Langerwehe stoneware vessel were also found.

A.3.116 A small body sherd of GRE was an intrusive find in ditch **19095**.

Modern

A.3.117 A fragment of slipped redware was recovered from Period 6.2 pit **19154**.

Area 19: Distribution

A.3.118 Table 37 shows the quantities of pottery by site period. A large proportion of this assemblage came from features assigned to Period 6.2 (high medieval), with only two sherds intrusive in earlier periods. The evaluation assemblage was from features which probably belong to Period 6.2 and has been included in the totals for that period.

Pot period	*Period 1*	*Period 2*	*Period 6.2*	*Period 6.3*	*Period 8*	*Unphased*
Early medieval	1		32	1		
Medieval		1	492	29	8	6
Late medieval			3	9	1	1
Post-medieval			1			
Modern					1	
Unidentified			3			
Totals	*1*	*1*	*531*	*39*	*10*	*7*
MNV	1	1	209	30	8	5

Table 37: Area 19 pottery by site period and pot period (sherd count)

Periods 1 and 2 (Neolithic and Bronze Age)

A.3.119 Small sherds of EMW and MCW2 were intrusive in Period 1 pit **19367** and Period 2 ditch **19315**.

Pit **19367** A tiny fragment of EMW was intrusive in this Neolithic pit.
Ditch **19315** Fill contained a small sherd of MCW2, presumably intrusive.

Period 6.2: High medieval (AD1250-1400)

A.3.120 The majority of pottery from this site came from features associated with enclosures **19061** and **19106**. The ditches forming the enclosures and their subdivisions contained small quantities of pottery, with slightly larger groups being found in some of the pits. The exception to this was ditch **19237**, presumably forming the rear boundary to the NE plot of the enclosure, which contained 212 sherds, although 142 of these were from a single vessel. To the east of the enclosure, pit group **19050** contained a total of 90 sherds. Much of this material dates to the 13th/14th centuries and includes a typical range of domestic wares, as described above.

Enclosure 19061 and associated ditches

Enc **19061** Ditches **19092**, **19121** and **19263** contained seven sherds: 2 MCW2, 3 MCW3 and 2 GRIM of a jug rim/handle. Evaluation ditches **5834**, **5849** and **5862** contained 6 EMW, 2 LMU, 1 MCW1 bowl and 1 GRIM. 13th–14th c.
Ditch **19164** One sherd of UPG1 was found in fill 19165. 13th–14th c.

Pits in Enclosure 19061

Pit **19112** A simple everted jar rim in MCW3 and two sherds of UPG1 were found in fill 19110. 13th c.?

Pit **19305** Fill 19304 contained 3 EMW, 4 MCW2, 10 MCW3 including a jar rim, 6 UPG1 and 1 UNID. 13th–14th c.
Pit **19331** Rims of two bowls, MCW1 and MCW3, were found in fill 19330. 13th–14th c.

Enclosure 19106 and associated ditches

Enc **19106** Ditches **19027**, **19030**, **19166**, **19183**, **19285**, **19286**, **19287**, **19311**, **19339** and **19379** contained 40 sherds: 12 LMU including a twisted rod handle, 4 MCW1, 9 MCW2, 6 MCW3 including a jar and a bowl, 1 MCW6 bowl, 1 UPG1, 4 YARG and 3 GSW2. One LMU sherd was found in evaluation ditch **5846**. L.14th c.?
Ditch **19014** Forty-one sherds were recovered from fills 19015 and 19084, of which 38 were from a MCW5 bowl. There were also 2 MCW1 and 1 MCW3. 13th–14th c.
Gully **19022** A rim/handle and a handle of two MCW3 jugs were found in fill 19021. 13th–14th c.
Ditch **19035** A simple everted MCW1 jar rim was found in fill 19036. 11th–13th c.
Ditch **19077** One sherd each of GRIM and MCW3 were found in fills 19078 and 19109. 13th–14th c.
Ditch **19095** A small fragment of GRE is presumed intrusive in fill 19284. 16th c.+
Ditch **19237** Fills 19072, 19128, 19132, 19180 and 19236 contained 212 sherds: 6 EMW, 158 LMU (of which 142 were from a single jar with at least two bands of applied thumbed strips), 8 MCW1 including a bowl, 3 MCW2, 22 MCW3 including a bowl, 10 MCW4, 2 MCW5, 2 GRIM and 1 UPG3. 13th–14th c.

Pits in Enclosure 19106

NE plot

Pit **19037** Fill 19039 contained 1 EMW, 1 MCW1, 1 MCW3 and 6 GRIM including a jug. 13th–14th c.
PG19002 Fill 19007 contained 2 MCW1 and 1 MCW2, all very small sherds. 11th–14th c.+

NW plot

Pit **19073** Fill 19074 contained 1 MCW3 and 2 UPG1 (possibly the same as a vessel in fill 19049, PG19050). 13th–14th c.
Pit **19200** One MCW3 and 2 YARG were found in fill 19201. 13th–14th c.
Pit **19202** Seventeen sherds were found in fills 19203 and 19204, comprising 2 EMW, 1 MCW1, 1 MCW2, 6 MCW3 including a cistern, 6 LMU of a handle, and 1 MCWG. 14th c.?
Pit **19175** Fill 19176 contained 1 EMW, 3 MCW2, 4 MCW3, 2 LMU and 1 UPG3. 13th–14th c.
Eval pit **5853** Fill 5854 contained 2 EMWG, 2 LMU, 3 MCW1 including a jar, 1 MCW4, 7 MCW8 and 1 GRIM. 13th–14th c.
Eval pit **5864** (=**19417**) Fill 5865 contained 1 LMU and 1 YARG. 13th–14th c.

SW plot

Pit **19117** Fill 19118 contained 2 MCW1 and 4 MCW3 including two bowl rims. 13th–14th c.
PG19255 Pits **19217** and **19299** contained 1 EMW, 1 MCW3 and 2 MCW1. 11th–14th c.

SE plot

Eval pit **5828** Fill 5827 contained 1 EMW, 1 LMU and 2 MCW1 sherds. 11th–14th c.

East of Enclosure 19106

Pits **19040** Fill 19043 contained one sherd of MCW1. 11th–14th c.
Pits **19050** Pits **19046**, **19048**, **19115**, **19158**, **19222**, **19230** and evaluation pit **5823** contained 90 sherds: 9 EMW, 15 LMU including four jars, 8 MCW1 including two bowls, 1 MCW2, 19 MCW3 including a jar, 1 MCW4, 2 MCW5, 5 GRIM, 1 SCAR1, 23 UPG1 jugs, 1 UPG2, 2 UPG3 jugs, 1 SAIN handle and 1 UNID. 13th–14th c.

Other ditches

Ditch **19087** An MCW1 sherd and an MCW3 bowl rim were found in fill 19088. 14th c.?
Ditch **19101** A simple everted jar rim in MCW3 was found in fill 19102. 11th–13th c.
Ditch **19129** Three sherds of MCW3 were found in fill 19130. 11th–14th c.

Other

Natural **19143** Two sherds of an MCW3 jar were found in 19148. Fill 19144 contained 1 MCW2 and 1 MCW3. 11th–14th c.
Natural **19417**

Period 6.3: Late medieval (AD1400-1500)

A.3.121 Pit **19154** contained ten sherds, the majority of which were residual medieval wares presumably redeposited from the underlying Period 6.2 ditches. One sherd of late slipped redware was found.

Unphased

A.3.122 A natural feature and a ditch contained small quantities of medieval pottery.

Natural **19149** Four sherds of MCW2, MCW3 (jar rim), YARG and LMT were recovered. M.14th/15th c.
Ditch **19377** Three sherds of an LMU vessel were found in fill 19390. 11th–14th c.

Area 19: Discussion

A.3.123 This site produced the largest assemblage of medieval pottery from the project. The coarsewares were dominated by LMU and MCW3 in particular, with high proportions of other coarsewares and Grimston/UPG1. Identified vessels were largely jars, bowls and jugs. There were few simple early rim forms and the group was dominated by developed forms of 13th/14th-century date, but with less late medieval pottery than Areas 17 and 18.

Overview and Discussion: The complete assemblage

Early/Middle Saxon

A.3.124 Only two sites along the route produced possible Early Anglo-Saxon handmade wares, a total of three sherds (6g), all in sandy fabrics with few other inclusions. No Middle Saxon Ipswich wares were present. This is perhaps surprising given the ubiquity of Ipswich ware across Norfolk, but may simply reflect the positioning of the route across areas which appear to have been largely arable, uncultivated, or woodland between the Iron Age and the Late Saxon period.

Late Saxon

A.3.125 Thetford-type wares and related fabrics were recovered from seven sites along the route, but only in small quantities, making 73 sherds (737g) in total. The largest groups were recovered from Area 10 and Area 12, in both places in association with charcoal burning. In most cases, the Late Saxon material was associated with early and high medieval assemblages and is likely to be of 11th-century date – the six jar rims recovered were generally of late date. This material is therefore contemporary with the earliest medieval use of these sites.

A.3.126 The Thetford-type wares from these sites are not in the hard, fine/medium sandy fabrics typical of the urban production centres (Ipswich, Thetford, Norwich), but are more like the wares made at the known rural production centres in the county (most notably at Langhale, Kirstead Green; Wade 1976). The same was true of assemblages recovered from sites along the Bacton to Kings Lynn pipeline in the north of the county, which also produced small quantities of 'local' Late Saxon wares (Anderson 2009). These wares have a broad similarity but are different enough to suggest that there are many more rural production sites awaiting discovery. Indeed, the presence of a possible waster in the present group is worthy of note, and may provide a context for the charcoal manufacture noted in some of these areas.

Medieval

A.3.127 The larger medieval assemblages were recovered from Areas 1, 9, 10, 12, 17, 18 and 19, which corresponded with several of the larger groups recovered during the evaluation. It is noticeable that in most of these groups the number of sherds significantly outweighs the number of vessels represented, suggesting that larger sherds have been broken up *in situ* or nearby and have not moved far from their original place of deposition. This is more typical of settlement assemblages than material scattered across open fields. The small quantities of medieval pottery recovered from Areas 3, 5, 13 and 16 were generally small and abraded, and are likely to represent manuring activity.

A.3.128 A total of 211 sherds (1023g) of 128 early medieval wares vessels were recovered from the excavation areas and related evaluation fields. High medieval wares totalled 1477 sherds (15610g) representing 600 vessels. Table 38 shows the overall quantities.

Description	***Fabric***	***Date range***	***No***	***Wt/g***	***Eve***	***MNV***
Early medieval ware	EMW	11th-12th c.	174	748	5.62	117
Yarmouth-type ware	YAR	11th-12th c.	31	213	0.18	5
Yarmouth-type ware non-calcareous	YARN	11th-12th c.	1	6		1
Early medieval gritty with shell	EMWSG	11th-13th c.	1	1		1
Early medieval ware gritty	EMWG	11th-13th c.	2	40		2
Grimston coarseware	GRCW	11th-M.13th c.	1	13		1
Pingsdorf Ware	PING	10th-13th c.	1	2		1
Total early medieval			***211***	***1023***	***5.8***	***128***
Local medieval unglazed	LMU	11th-14th c.	559	5219	42.02	195
Medieval coarseware 1	MCW1	12th-14th c.	206	2357	18.51	111
Medieval coarseware 2	MCW2	12th-14th c.	41	189	0.13	35
Medieval coarseware 3	MCW3	12th-14th c.	200	2212	1.61	71
Medieval coarseware 4	MCW4	12th-14th c.	36	386	8.42	19
Medieval coarseware 5	MCW5	12th-14th c.	71	676	0.17	27
Medieval coarseware 6	MCW6	12th-14th c.	79	583	36.05	17

Description	Fabric	Date range	No	Wt/g	Eve	MNV
Medieval coarseware 7	MCW7	12th-14th c.	86	751	0.48	23
Medieval coarseware 8	MCW8	12th-14th c.	3	38	0.09	3
Medieval coarseware gritty	MCWG	L.11th-13th c?	1	18		1
Grimston-type ware	GRIM	L.12th-14th c.	115	1933	1.3	58
Hedingham Ware	HFW1	M.12th-M.13th c.	1	13		1
Scarborough Phase I	SCAR1	M./L.12th-E.13th c.	1	52		1
Scarborough Phase II	SCAR2	E.13th-M.14th c.	1	62		1
Unprovenanced glazed	UPG	L.12th-14th c.	1	2		1
Unprovenanced glazed 1	UPG1	Med	43	740		15
Unprovenanced glazed 2	UPG2	Med	3	22		3
Unprovenanced glazed 3	UPG3	Med	5	22	0.14	4
Unprovenanced glazed 4	UPG4	Med	4	64		2
Yarmouth-type glazed wares	YARG	13th-15th c.	19	236		10
Gritty Rhenish stoneware	RHSW	13th-14th c.	1	21		1
Saintonge	SAIN	12th-13th c.	1	14		1
Total high medieval			***1477***	***15610***	***108.92***	***600***

Table 38: Overall quantities of medieval wares recovered from the excavation and associated evaluation areas.

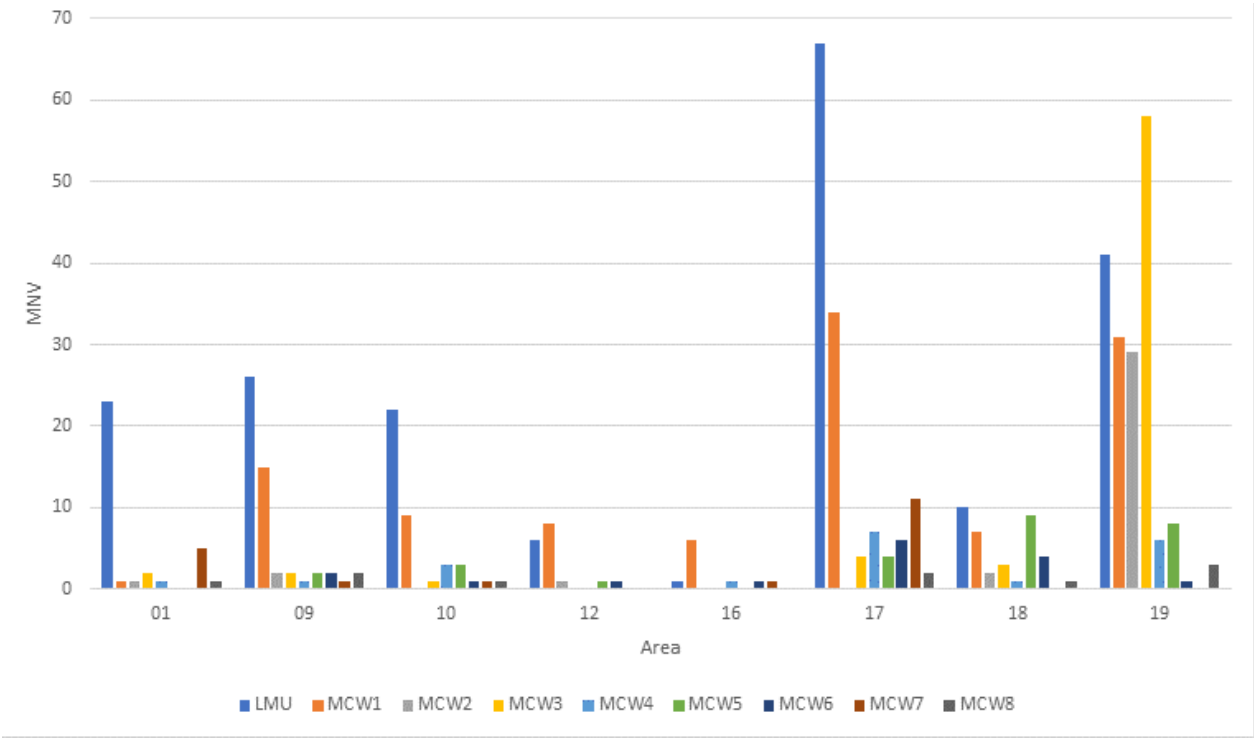
A.3.129 The early medieval group is dominated by the ubiquitous thin-walled fine/medium sandy wares, most commonly black but sometimes with oxidised surfaces, found throughout Norfolk. Identified forms were commonly jars with simple everted rims, but one bowl and one ginger jar were also found. Yarmouth-type wares made up 15% of the group by sherd count, but only 4% of MNV. Although relatively rare in comparison with city centre assemblages, this proportion is higher than seen along the Bacton to Kings Lynn pipeline, where these wares contributed only 1% of the early medieval assemblage. It is currently uncertain where 'Yarmouth-type' ware was produced, particularly as it is more frequent in Norwich than in Yarmouth itself. It occurs in Suffolk and Cambridgeshire in small quantities and has been found elsewhere along the east coast. Ceramic petrological studies have suggested that a source somewhere close to Yarmouth is possible and indeed likely (Vince 2007). Along the NNDR it occurred in assemblages from Spixworth, Rackheath and Plumstead, but the lack of it in parishes to the west is unlikely to be significant as it has been found to the west of Norwich in, for example, Little Melton (Anderson 2016).

A.3.130 By far the most frequent medieval coarseware fabric in this assemblage was Norwich-type LMU. This is the hard fine sandy greyware typical of medieval sites in the city and ranging in date from the (?later) 11th century to the 14th or early 15th century. It has long been suspected that this ware was made at the putative production sites which have been identified through fieldwalking at Potter Heigham and Woodbastwick. However, the range of fabrics present in this assemblage and others in rural north Norfolk suggests that there were other suppliers making very similar wares. Whilst it is true that abrasion and loss of the smooth surfaces seen in much of the urban LMU can make this fabric appear coarser and slightly different in macroscopic appearance in rural assemblages, there are natural inclusions in some sherds which point to a different origin. For example, common red clay pellets and/or abundant mica occur in some of the fabrics found along the NNDR, and these are not typical of LMU (although occasional or sparse inclusions of these types and others are sometimes present).

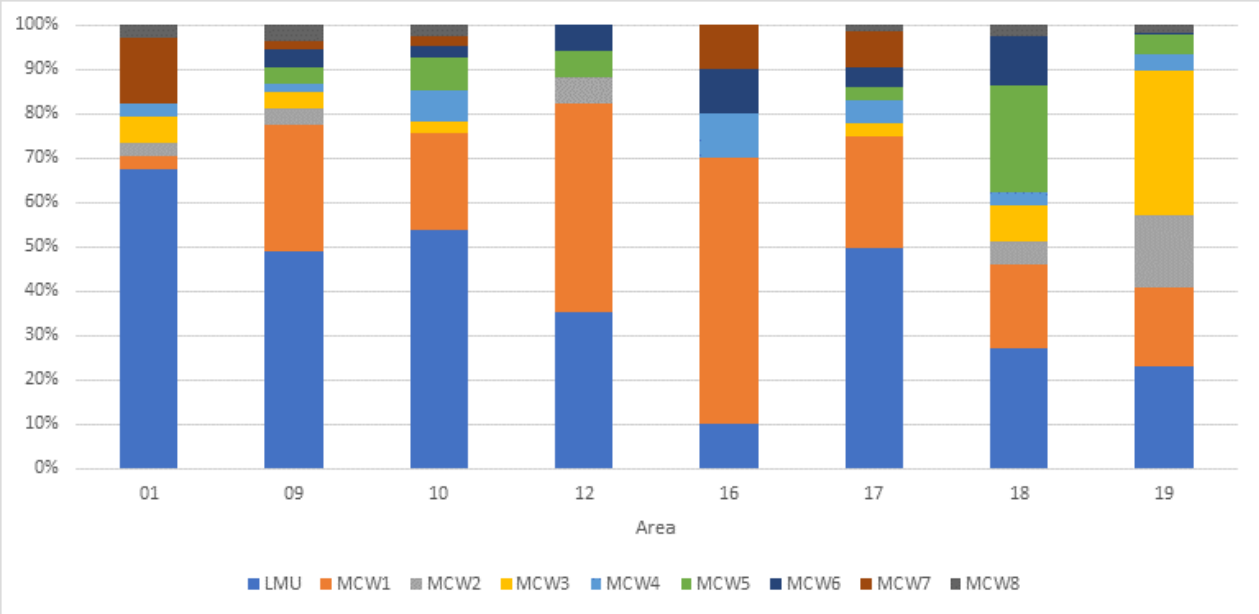
A.3.131 Apart from LMU, the most frequently occurring coarseware fabrics were MCW1 and MCW3, both relatively fine sandy wares, the former distinguished from LMU largely on the basis of its slightly coarser nature and tendency to be buff or reddish rather than

grey, and the latter based on the presence of large self-coloured clay pellets in a very fine matrix. Both these and most of the other fabrics in the assemblage were used to make a range of vessels with rim forms similar to those illustrated in the Norwich corpus of LMU and it is clear from this and other assemblages from the north of the county that despite the slight differences in fabric, this group represents a continuum of local wares made in the same style but using different clay sources.

A.3.132 Graphs 1 and 2 show the quantities (MNV) and proportions of medieval coarsewares in the larger assemblages running from west to east.



Graph 1: Medieval coarseware quantities (MNV) at the larger site from west to east



Graph 2: Medieval coarseware proportions (MNV) at the larger sites from west to east

A.3.133 As a proportion of all coarsewares, LMU was most frequent at Area 1, which is perhaps surprising given that it is the furthest site from the suggested sources. Although it was the most common fabric overall in the NNDR assemblage, some areas had larger quantities of MCW1 or, in the case of Area 19, MCW3. MCW2 occurred rarely across the sites, but was most frequent in Area 19, perhaps suggesting a source to the east of Norwich. MCW1 on the other hand, was proportionally most common in Area 16. It should be noted that Areas 16–19 were all within 1.5km of each other, so it seems unlikely that the differences between them represent a realistic pattern of sourcing – Area 16 produced only a small quantity of pottery and the proportion of MCW1 may be elevated as a result. Nevertheless, Area 12 also produced a higher proportion of MCW1, and perhaps there was a production site located somewhere to the north-east of the city. Another possibility is that the patterns might relate to date – Areas 12 and 16 both had relatively high proportions of early medieval wares, and some MCW1 appears to have been handmade, perhaps suggesting it was more easily available than LMU in rural areas during the earlier periods. MCW1 is present in both early and late forms, so probably had a longevity similar to that suggested for LMU in Norwich (Jennings 1981). Highly micaceous MCW7 has similarities to Bacton-Kings Lynn fabric MCW2, which occurred in small amounts at most sites between Bintree and Swafield (Anderson 2009). MCW5 and MCW8, both found most frequently to the east of Norwich, have similarities with both Suffolk Waveney Valley and Hollesley wares, and with the Bacton–Kings Lynn MCW1. Their presence at Areas 18 and 19 in particular could be related to the later date ranges of *floruit* for these sites, particularly if they are related to the Suffolk wares, which are dated towards the end of the medieval period.

A.3.134 Despite the differences in fabrics, the forms identified in this group were largely typical of EMW and LMU and rims could usually be paralleled amongst those illustrated from Norwich (Jennings 1981). Table 39 shows the distribution of rim forms by fabric for all sites based on MNV.

Rim	Form	EMW	LMU	MCW1	MCW2	MCW3	MCW4	MCW5	MCW6	MCW7	MCW8	Total
Everted: simple	EV		2									**2**
	FLAR	1										**1**
	TAP			1		2						**3**
	SEV	10	6	1		2					1	**20**
Inturned	INTBD									1		**1**
	INT	1	2				1			1		**5**
Upright: simple	UPBD		1									**1**
	UPEV		2									**2**
	UPINT		1									**1**
	UPPL			1		1						**2**
Upright: developed	UPFT		1	1		1				1		**4**
	UPTH		1	1		2						**4**
Beaded	BD		1									**1**
	SQBD										1	**1**
	TRBD			1								**1**
Everted: developed	THEV		20	13		9	6	4	2	5	1	**50**
	T		4	5	1		2	1				**13**
	HH					1						**1**
	FTEV			3	1	1						**5**

Table 39: Distribution of coarseware forms by fabric

A.3.135 The developed rims were significantly more common in this assemblage, and were more frequent than earlier rim forms at every site, although some groups were too small for the differences to be significant.

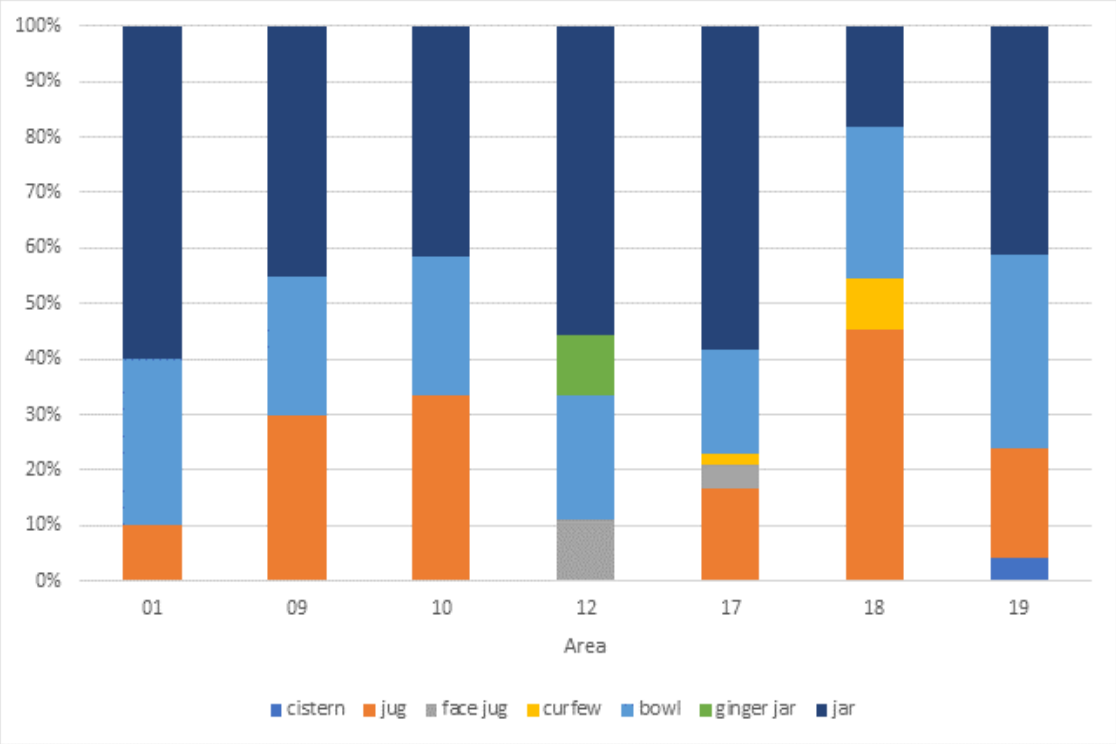
A.3.136 Glazed wares were relatively infrequent finds at most of these sites, occurring more frequently where other evidence suggested that the sites continued into the 14th and 15th centuries. Some of the early LMT fabrics are not dissimilar to some of the ?local glazed wares recovered from this site and body sherds, particularly when abraded, can be difficult to identify with certainty. Grimston-type wares were the most frequent types and included both plain and highly decorated jugs. UPG1 is likely to be a variant or more locally made ‘copy’ of similar type. The small quantities of other unprovenanced wares make interpretation of these difficult, but again they contain inclusions which could indicate a local origin. A possible waster was identified at Rackheath Area 10 (UPG4). Non-local identified wares were few, but included a couple of sherds of Scarborough ware and one of Hedingham ware. Scarborough Ware in particular is a frequent find at ports and coastal sites along the east coast of Britain but is less common on inland rural sites. Hedingham ware occurs occasionally in Norwich but is not common in Norfolk generally.

A.3.137 Graph 3 shows the proportions of the main identifiable forms at each site, based on MNV of coarsewares and glazed wares. All sites produced a range of jars, bowls and jugs, with jars being the most frequent form at all sites except Area 18, where jugs predominated. Jugs were also relatively common at Areas 9 and 10. Bowls occurred at a similar frequency on all the sites, and only out-numbered jars in Area 18. It has long been suggested that bowls might be related to dairying on rural sites, but work on an assemblage from West Cotton, which was associated with several malt kilns, brewing and bakehouses, has suggested that bowls may more commonly have been used as measuring devices for grain (Blinkhorn 1999, 44). Malting requires water to be brought

to the grain in order to soak it, and a relatively high proportion of Potterspury ware jugs was associated with a malt house at West Cotton (ibid, 39). Potentially the high proportion of jugs and bowls at Area 18 might be evidence for malting, although this is tentative without physical remains of feature or palaeoenvironmental evidence to back up the suggestion.

A.3.138 The presence of Grimston face jugs at two of the sites may be evidence for a degree of status, as such jugs would have been time-consuming to make, more difficult to fire and transport without breakage, and therefore more expensive and less easily available.

A.3.139 Only three imported wares were dated to the early/high medieval periods, two Rhenish proto-stonewares (PING, RHSW), and a glazed handle from Saintonge in SW France. These are all relatively common in Norwich, but generally rare in the rural hinterland.



Graph 3: Proportions of main identifiable medieval forms at the larger sites (MNV)

Late medieval and early post-medieval

A.3.140 A total of 239 sherds of late medieval date were collected from six sites, and there were 73 sherds of post-medieval wares from ten sites. Table 40 shows the quantities by fabric. The largest groups were from Spixworth (Area 9) and Great Plumstead (Areas 17 and 18).

Description	Fabric	Date range	No	Wt/g	Eve	MNV
Late Grimston-type ware	GRIL	14th-15th c.?	4	94		2
Late medieval and transitional	LMT	15th-16th c.	163	1959	71.09	84
Late medieval and transitional, gritty	LMTG	M.14th-15th c.	55	317		2
Siegburg Stoneware	GSW1	E.14th-17th c.	4	101		3
Langerwehe Stoneware	GSW2	L.14th-15th c.	7	177		4
Raeran/Aachen Stoneware	GSW3	L.15th-16th c.	3	159	0.25	3
Dutch-type redwares	DUTR	15th-17th c.	1	15	0.11	1
Dutch-type whitewares	DUTW	15th-17th c.	2	59		1
Total late medieval			***239***	***2881***	***71.45***	***100***
Martincamp Ware Type I	MART1	L.15th-M.16th c.	1	7		1
Glazed red earthenware	GRE	16th-18th c.	58	892	10.98	50
Cologne/Frechen Stoneware	GSW4	16th-17th c.	6	194	0.16	6
Speckle-glazed Ware	SPEC	L.17th-18th c.	2	6		2
Staffordshire-type Slipware	STAF	L.17th-18th c.	4	14		3
Tin glazed earthenwares	TGE	16th-18th c.	2	12		2
Total post-medieval			***73***	***1125***	***11.14***	***64***

Table 40: Overall quantities of late medieval and early post-medieval wares recovered from the excavation and associated evaluation areas.

A.3.141 On most sites where pottery of this date occurred, it was found in association with high medieval pottery and suggested continuation into the late 14th-15th centuries. The range of identifiable forms was typical of each fabric and reflects the increasing range of vessels available from the later 14th and 15th century onwards. As well as jugs, bowls and jars, there are pipkins, cauldrons, cisterns, dishes/plates, mugs and cups. Of most interest in the group is the presence of several sherds of coarse early LMT, similar to the presumed production waste identified at Hare Road, Plumstead (Anderson 2015b).

A.3.142 Imported wares are more frequent than in earlier periods, but the majority are German stonewares, which were frequent imports and are common finds in Norwich and other towns in the region. The Martincamp flask sherd was the most notable find, being very rare outside urban contexts.

Modern

A.3.143 Thirty-seven sherds of modern pottery, including early refined wares such as porcelain, creamware, pearlware and white salt-glazed stoneware, were recovered from ten sites. Most were intrusive finds in the upper fills of ditches and other features. They are likely to have reached the sites through manuring in this period, and may represent night soil brought out from the city to spread on arable fields. As such, they are of little interpretative value for the areas in which they were found.

Conclusions

A.3.144 Based on the pottery evidence, all of the larger assemblages along the route included some pottery which suggested an 11th-century beginning of activity. Some sites appear to have been abandoned towards the end of the 13th century or beginning of the 14th (particularly Areas 1, 10, 12 and possibly 16), whilst others continued into the 15th and sometimes 16th centuries (Areas 9, 17, 18 and 19). In some cases, pottery assemblages had been deposited in pits and enclosure ditches which appear to have delineated roadside plots, presumably occupied and in some cases the sites of domestic dwellings. The ceramics recovered provide some evidence for the limited range of pottery available to these occupants, with jars, bowls and jugs performing

multiple functions relating to cooking, food processing, food and drink consumption and perhaps also specialist use relating to agricultural and craft activities. No specialist items such as lamps or crucibles were present in the medieval assemblage, however. Despite the local nature of much of the pottery, a few imported wares were present, particularly towards the end of the period. These were most likely to have been obtained during trips to local markets, particularly in Norwich where such wares are more common.

A.4 Post-Roman Pottery Thin Section Analysis

By Patrick Quinn

Introduction and methodology

A.4.1 Thin section petrographic analysis has been undertaken on selection of nine sherds of Medieval coarseware pottery recovered during the Norwich Northern Distributor Road (NDR) Scheme, Norfolk, UK. The sherds were chosen as representatives of each of the macroscopic fabrics found during the excavations. The aim of the analysis was to characterise the sherds petrographically and check correspondence with the macroscopic fabric classification and description. The nine sherds have been been given analytical numbers from NDR001-NDR009, the correspondence of which can be found in Table 41.

Sample	*Area*	*Context*	*Cut*	*Feature*	*Pot Spot Date*	*Period*	*Fabric*	*Comments*
NDR001	1	1140	1139	pit/posthole	13-14	6.2	MCW3	Feature part of structure within roadside enclosure
NDR002	1	1287	1288	ditch	13-14	6.2	MCW7	ditch forming part of roadside enclosure
NDR003	9	9232	9231	ditch	13-14	6	MCW1	Stock enclosure ditch
NDR004	9	9270	9269	pit	L.12-14	6	MCW2	Cluster of extraction pits
NDR005	9	9515	9461	Building	L.11-14	7	MCW6	P-med ?barn structure, built same period as 17th C dairy farm directly west
NDR006	10	10144	10145	Enclosure Ditch	L.11-14	6.2	MCW8	Part of roadside enclosure, metalworking taking place in vicinity
NDR007	12	12045	12044	Pit	L.11-12?	6.1	Thet. Local	From a poss. Charcoaling pit
NDR008	19	19015	19014	Enclosure Ditch	13-14	6.2	MCW5	roadside enclosure, part of a farmstead to north
NDR009	19	19072	19071	Enclosure Ditch	13-14	6.2	MCW4	roadside enclosure, part of a farmstead to north

Table 41: Details of medieval coarseware pottery analysed from the route

A.4.2 All sherds were prepared as a standard 30 µm petrographic thin sections at the Institute of Archaeology, University College London (Quinn 2013, p. 23-33). The nine thin sections were characterised petrographically under the polarising light microscope, characterised in terms of their petrographic composition and interpreted in terms of their raw materials and manufacturing technology. The sections were compared to one another under the microscope and compared to the macroscopic fabric descriptions provided by the client and given in Anderson (2009), Cox and Brudenell (2017) and Jennings (1981). Finally the composition of the sherds in thin section was compared to other analytical studies on Medieval pottery from East Anglia (Quinn 2015, 2018).

Petrographic Characterisation

A.4.3 All nine Medieval coarseware ceramic samples are characterised by sandy quartz rich, non-calcareous fabrics in thin section (Figures 1-3), but exhibit variation between sherds in terms of texture, the nature of their clay matrices and the presence, absence and amount of other inclusions such as chert, mica, opaques and argillaceous features. Each sample is described individually below, after which their relationships with one another are commented on.

A.4.4 Sample NDR003 (Macroscopic fabric MCW1) has a bimodal grain size distribution consisting of medium-coarse, rounded to sub-angular quartz and polycrystalline quartz sand including rare chert and perthite, plus a fine fraction of sub-angular to sub-rounded silt-sized inclusions with some muscovite mica, rare chert and amphibole (Fig. 1A, B). The coarse fraction appears to represent sand temper. The sample also contains a large ferruginous inclusion with quartz sand and silt. The sample has a non-calcareous matrix. It is moderately porous due to the presence of meso- and macro-elongate voids. The presence of optical activity and the green colour of the amphibole indicates a firing temperature of <750°C. The sherd is well oxidised.

A.4.5 In thin section sample NDR004 (Macroscopic fabric MCW2) has a bimodal grain size distribution due to the presence of a well-sorted medium sand fraction of sub-rounded to sub-angular quartz and polycrystalline quartz, rare chert and significant opaques (Fig. 1C, D). The polycrystalline quartz can be foliated. The fine fraction is composed of medium-fine silt sized inclusions of quartz, muscovite, opaques and rare biotite. The sample has a non-calcareous clay matrix and low porosity composed of meso-elongate voids and some vughs. The sherd appears to be tempered with sand and the presence of some very fine dark clay-rich inclusions may represent remnants of the base clay. Firing was in a poorly oxidised to reduce atmosphere.

A.4.6 Sample NDR001 (Macroscopic fabric MCW3) has a unimodal grain size distribution composed of well-sorted, sub-rounded to sub-angular medium-fine sand sized quartz and polycrystalline quartz, some chert, amphibole, opaques and rare zircon, plagioclase and untwinned feldspar (Fig. 1E, F). The clay matrix is clean, mottled and relatively iron-poor. Conspicuous lumps of un-hydrated and unmixed base clay occur in the sample. Porosity is low and composed of thin parallel-sided meso-elongate drying voids. Firing took place in an oxidising atmosphere and the significant optical activity and the green colour of the amphibole indicates that the temperature was not above 750°C.

A.4.7 In thin section sample NDR009 (Macroscopic fabric MCW4) has a weakly bimodal grain size distribution due to the presence of a coarse to fine sand-sized fraction of well-rounded to sub-angular quartz and polycrystalline quartz with few chert and opaques and a fine fraction of silt-sized angular to sub-angular quartz, polycrystalline quartz, white mica, plagioclase, amphibole, untwinned feldspar and opaques (Fig. 2A, B). The sample contains one possible grog fragment, though this is likely to be an accidental incorporation due to its low abundance. The polycrystalline quartz can be foliated. The sample has a non-calcareous clay matrix with heterogeneity that appears to be natural in origin. Porosity is low and formed mainly of meso-elongate voids. The sherd may have been tempered with moderately sorted quartzose sand. Firing took place in an oxidising atmosphere and the significant optical activity and the green colour of the amphibole indicates that the temperature was not above 750°C.

A.4.8 Sample NDR008 (Macroscopic fabric MCW5) has a weakly bimodal grain size distribution composed of rounded to sub-angular sand-sized quartz, abundant often

foliated polycrystalline quartz, chert and opaques, plus less abundant angular to sub-angular silt-sized quartz, muscovite mica and opaques (Fig. 2C, D). The clay matrix is relatively iron-poor and non-calcareous. The sample has low porosity, composed of parallel-sided meso-elongate voids. The sample appears to have been sand tempered and several fine argillaceous lumps occur in the thin section which may represent remnants of base clay. Firing took place in an oxidising atmosphere and was below 850°C.

A.4.9 In thin section sample NDR005 (Macroscopic fabric MCW6) has a unimodal grain size composed of sub-angular to sub-rounded coarse silt and fine sand-sized inclusions, with occasional medium sand grains (Fig. 2E, F). The inclusions are dominated by quartz with few opaques and white mica, plus rare plagioclase, chert, polycrystalline quartz and untwinned feldspar. The clay matrix is non-calcareous and rather clean. Porosity is low and formed mainly of meso-elongate voids plus some vughs and vesicles. The latter two types of voids are associated with some charred organic matter. It is not clear whether this is naturally occurring or added as temper, though the former seems more likely. Firing took place in an oxidising atmosphere and the presence of optical activity in the clay matrix suggests that the temperature was not above 850°C.

A.4.10 Sample NDR002 (Macroscopic fabric MCW7) has a unimodal grain size distribution composed of sub-angular to sub-rounded coarse silt and less commonly fine sand-sized inclusions of quartz with few muscovite mica, plagioclase, untwinned feldspar, rare amphibole, siltstone, zircon and opaques (Fig. 3A, B). The clay matrix is non-calcareous. The sample has low porosity, composed of parallel-sided micro- and meso-elongate voids. Firing took place in an poorly oxidising atmosphere and based on the brown colour of the rare amphibole, was above 750°C.

A.4.11 In thin section sample NDR006 (Macroscopic fabric MCW8) has a bimodal grain size composed of sub-rounded to sub-angular medium-coarse sand-sized inclusions of quartz and occasionally foliated polycrystalline quartz, plus an abundant silt-sized fine fraction dominated by quartz and white mica (Fig. 3C, D). The sample contains significant opaques including ironstone nodules with silt sized grains inside them. The clay matrix is non-calcareous and porosity is low and formed mainly of meso-elongate voids. A couple of silt argillaceous inclusions occur in the sample and may be remnants of base clay. This and the bimodal grain size distribution seem to suggest that the sample was tempered. Firing took place in an oxidising atmosphere and the presence of optical activity in the clay matrix suggests that the temperature was not above 850°C.

A.4.12 Sample NDR007 (Macroscopic fabric Thet Local) has a unimodal poorly-sorted grain size distribution composed of well-rounded to sub-angular coarse sand to fine silt-sized inclusions (Fig. 3E, F). The largest inclusions are well-rounded quartz and significant chert. Quartz, polycrystalline quartz and chert, plus amphibole and weathered feldspar occur as medium and fine sand-sized inclusions. The sample could have been made from a sandy clay sources rather than having been tempered. The clay matrix is non-calcareous and the sample has low porosity. Some voids contain charred organic matter. Firing took place in a reducing atmosphere and based on the green colour of the rare amphibole, was below 750°C.

A.4.13 Comparison of the nine thin sections with one another revealed several links. Sample NDR003 of macroscopic fabric MCW1 is similar to sample NDR009 of fabric MCW4 and also related to sample NDR004 classified as fabric MCW2. Sample NCR008 of macroscopic fabric MCW5 is similar to NDR006 belonging to fabric MCW8 but has less mica and less inclusions in its fine fraction. The representative samples of fabrics MCW6 and MCW7 are related to one another in thin texture, though the latter has more

inclusions. Finally, sample NDR007 of fabric Thet Local is similar to sample NDR004 of fabric MWC002, but contains some coarser inclusions.

Comparison with Macroscopic Fabric and Previous Studies

A.4.14 vComparison of the descriptions of the macroscopic fabrics to which the nine sherds have been ascribed and their petrographic composition under the microscope, as outlined above, reveals some good correspondence, but also some points of disagrement. In thin section sample NDR003, classified as MCW1 is sandy, micaceous and contains opaque iron inclusions as per the description of this macroscopic fabric. However, the "occasional 'local' inclusions such as chalk" and burnt-out organics that are reported for this fabric (Cox and Brudenell 2017) were not detected. Fabric MCW001 is described as having 'clay lenses' by Anderson (2009, p. 4). These do not occur in sample NDR003, however they are present in sample Rey 105-1 from Reydon, analysed in Quinn (2018) which was ascribed to MCW1. Aside from this samples NDR003 and Rey 105-1 are similar in thin section.

A.4.15 Sample NDR004 of macroscopic fabric MCW2 is sandy in thin section as with most of the Medieval ceramics analysed in this report. Fabric MCW2 is described as having "few other inclusions" (Cox and Brudenell 2017, p. xxxvii), which it does in thin section. Under the microscope the analysed sample have significant opaques, which is not mentioned in the macroscopic description of this fabric. Anderson (2009, p. 4) comments that MCW2 is "probably a micaceous version of LMU", which is itself described as being "fine sandy with sparse mica". This is in agreement with the composition of sample NDR004 in thin section. Sample Rey 105-2 from Reydon, analysed by Quinn (2018) and ascribed to MCW2 is a fair match for sample NDR004, though the latter contains more opaques.

A.4.16 In thin section sample NDR001, which is classified as MCW3 contains abundant medium sand as per the description of this macroscopic fabric as well as occasional chert/flint (Anderson 2009, p. 4). There is no mention in hand specimen of the mica that occurs in the sample in thin section, nor the amphibole or the argillaceous inclusions. No "occasional coarse chalk (mostly leached)" reported by Cox and Brudenell (2017), was detected in the analysed sample under the microscope. Sample Rey105-3 of MCW3 from Reydon, which was analysed by Quinn (2018), is similar to sample NDR001 in thin section. Both samples contain argillaceous particles that were not reported in the descriptions of Anderson (2009) or Cox and Brudenell (2017).

A.4.17 Sample NDR009 of macroscopic fabric MCW4 contains fine sand and occasional flint and some mica as per the description of Cox and Brudenell (2017, p. xxxvii). Anderson (2009, p. 4) however suggests that it is not micaceous. Neither descriptions of this fabric mention the opaques which are quite prevalent in sample NDR009 in thin section. She suggests that it is related to MCW1, which is supported by the comparison of samples NDR009 and NDR003.

A.4.18 Macroscopic fabric MCW5, to which sample NDR008 was ascribed is described by Anderson (2008, p. 4) as having "poorly sorted medium to large quartz grains and occasional red ferrous oxide". This is supported by the analysis of the sample in thin section. An alternative description of this fabric provided by the client mentions "common brown and white medium sub-angular sand". The brown sand may relate to the argillaceous lumps seen in sample NDR005 in thin section. Neither description acknowledges the presence of chert/flint, which is seen under the microscope.

A.4.19 Macroscopic fabric MCW6 is described by Anderson (2009, p. 4) as a "coarser, and generally harder, version of MCW1, containing abundant medium rounded quartz sand grains". This is not in agreement with the composition of sample NDR005 in thin section, which is ascribed to the fabric. The sample instead has coarse silt and fine sand-sized inclusions and is finer than MCW1, as represented by sample NDR003. An alternative description of this fabric provided by the client mentions "sparse burnt-out organics", which were not detected in the prepared thin section of sample NDR005.

A.4.20 Sample NDR002, attributed to macroscopic fabric MCW7 is fine grained and contains some mica, as per the description of the fabric by Anderson (2009, p. 4). The latter mentions the presence of large white clay lenses, which may related to the silty inclusion seen rarely in the prepared thin section. Anderson (2009, p. 4) also mentions "common coarse ferrous inclusions", which are present in sample NDR002, though not perhaps common. Other rarer inclusion types, such as amphibole are present in the sample, but not mentioned in the description of fabric MCW7. An alternative description of MCW7 provided by the client mentions that it is a "very fine micaceous version of LMU. *cf* Bacton-Kings Lynn MCW2 (Anderson 2009)". Fabric/ware LMU is described by Anderson (2009, p. 4) as "fine sandy with sparse mica', which is in agreement with the composition of sample NDR002.

A.4.21 Macroscopic fabric MCW8, to which sample NDR006 was ascribed is not described in Anderson (2008). However, a description of this fabric supplied by the client mentions "moderate fine sand, occasional medium sand and moderate mica", which is in agreement with the composition of sample NDR006 in thin section. The presence of "moderate small red clay pellets" is also mentioned. This seems to related to the opaque inclusions and ironstone seen under the microscope. The strongly bimodal nature of this sample is striking and is not a feature that is mentioned in the description of fabric MCW8.

A.4.22 The macroscopic type 'Thet' to which sample NDR007 is ascribed relates to 'Thetford-type ware', which is described in Jennings (1981, p. 14). There is however little mention of its fabric other than that it is 'hard' and 'sandy'. No description can be found in either Anderson (2009) or Cox and Brudenell (2017. Jennings (1981, p. 14) makes the observation that pottery from three different production centres of Thetford-type ware "are too similar to be distinguished except by scientific analysis (Hawkin 1977)".

A.4.23 The Medieval coarseware ceramics analysed in this study are all characterised by sandy quartz rich, non-calcareous fabrics. They differ only slightly in terms of their texture and the amount of certain rarer inclusions in thin section and while certain sherds stand out, such as NDR001 with its clean base clay, many are related. The similarity of Medieval coarseware pottery from the Norfolk and Suffolk area has also been commented on by Quinn (2015) in a petrographic study of LMT kilns sites as well as in the analysis of contemporaneous ceramics from the site of Reydon in Quinn (2018). With this in mind it may be difficult to effectively classify and source sherds of this type. Mismatches between the macroscopic classification and petrographic characterisation of the sherds in this report and Quinn (2018) highlights the problem of effectively subdividing them by eye.

A.4.24 An additional issue that has been highlighted here is that the descriptions of some macroscopic fabrics differ between Anderson (2009), Cox and Brudenell (2017) and the information provided by the client. Hopefully, further study will clarify this situation. A possible approach might be to undertake petrographic fabric classification of a larger corpus of Medieval coarsewares independently of macroscopic attribution and then relate this back to the sherds themselves. It is suspected that the ceramics are too

finely divided in hand specimen and that a simpler system with less fabrics might be easier to apply consistently. Another approach might be to analyse and classify the ceramics geochemically, which could reveal differences in the elemental composition of the clay fraction of pottery from different production centers. This appears to have been achieved for Thetford-type ware by Hawkin (1977), though at the time of writing it has not been possible to obtain this source.

A.5 Clay Tobacco Pipe

By Carole Fletcher

Introduction and methodology

A.5.1 A small assemblage of clay tobacco pipe was recovered along the route, and are described by site below. The vast majority of the fragments of pipe represent a casually discarded pipe that has subsequently been reworked into features as the site developed.

A.5.2 Terminology used is taken from Oswald's simplified general typology (Oswald 1975, 37–41) and Crummy and Hind (Crummy 1988, 47-66). Analysis followed the recording methods recommended by the Society for Clay Pipe Research (http://scpr.co/PDFs/Resources/ White%20BAR%20Appendix%204.pdf). Stem bore diameter recording has not been undertaken on this assemblage due to its limited size. The following catalogues act as a full record and the clay pipe may be deselected prior to archive deposition.

Area 4 (ENF139697)

A.5.3 Three fragments of a single stem from a white ball clay tobacco pipe, weighing 10g, was recovered from gully **4093**.

Area	*Ctxt*	*Cut*	*Form*	*Weight (g)*	*Fragments*	*Description*	*Date*
4	4094	4093	Fragments of pipe stem and mouthpiece	10	3	The mouthpiece is present and complete and the stem survives to a length of 156mm, the stem having broken before the heel/bowl. The stem is slightly curved and slightly oval in shape. Mould seams are visible for most of the length of the stem, slightly trimmed in the centre. The pipe stem is not closely datable.	Not closely datable

Table 42: Area 4 clay tobacco pipe catalogue

Area 5 (ENF139698)

A.5.4 A mouthpiece and stem fragment of a white ball clay tobacco pipe, weighing 0.001kg, was recovered from ditch **5042**.

Area	*Ctxt*	*Cut*	*Form*	*Weight (g)*	*Fragments*	*Description*	*Date*
5	5046	5042	Pipe stem mouthpiece	1.000	1	The mouthpiece is complete and the stem survives to a length of 37mm. The stem is slightly oval in shape. One mould is trimmed the other untrimmed. The fragment is discoloured and grey, most likely having been burnt in a fire a technique commonly used to clean out the pipe.	Not closely datable

Table 43: Area 5 clay tobacco pipe catalogue

Area 7 (ENF139702)

A.5.5 Ten fragments of white ball clay tobacco pipe, weighing 0.044kg, were recovered from three features in Site 9. The fragments of clay tobacco pipe recovered from features **9100** and **9234**, most likely represent casually discarded pipes that have subsequently been reworked as the site was developed. The pipe fragment do little other than to indicate the consumption of tobacco on or in the vicinity of the site, between *c.*1580-1900. However, feature **9513** contained a datable pipe bowl fragment of *c.*1700 or later and it is likely that the assemblage from this site is all 18th century.

Area	*Ctxt*	*Cut*	*Form*	*Weight (g)*	*Fragments*	*Bowl fragments*	*Description*	*Date*
9	9101	**9100**	Fragments of pipe stem	0.008	2		Stem fragments survives to a length of 42mm and 45mm, slightly oval in shape, mould seams are lightly trimmed.	Not closely datable
	9235	**9234**	Fragment of pipe stem	0.004	1		The stem fragment survives to a length of 47mm, the length shows the stem tapering slightly and oval in shape, the mould seams are lightly trimmed but both are visible.	Not closely datable
	9467	**9513**	Bowl and stem fragment	0.005		1	Fragment of lower part of back of bowl and part of wall still attached to the stem, with broken heel and traces of letters either side of the heel. These letters are unclear but indicate that the pipe is *c.*1700 or later; the specific Oswald type is uncertain, but likely a type 10 or later form.	*c.*1700+
			Pipe stem ? mouthpiece	0.002	1		Slightly blackened from burning and abraded	Not closely datable
			Fragments of pipe stem	0.025	6		Stem fragments from several different pipes. The stem fragments surviving lengths are: 78mm, tapering and slightly oval with well trimmed seams; 49mm, neatly trimmed seams and slightly oval; 41mm, trimmed seams, blackened around bore indicating use; 40mm, trimmed seams slightly blackened indicating use and showing abrasion on the sides of the pipe; 36mm, slightly trimmed seams, slightly oval in shape; 26mm and slightly oval in shape, mould seams are lightly trimmed.	Not closely datable
Total				**0.044**	**10**	**1**		

Table 44: Area 7 clay tobacco pipe catalogue

Area 10 (ENF139703)

A.5.6 Two stem fragments from white ball clay tobacco pipes, weighing <0.004kg, were recovered from features **10202** and **10314**.

Area	*Ctxt*	*Cut*	*Form*	*Weight (g)*	*Fragments*	*Description*	*Date*
10	10202	**10201**	Fragment of pipe stem	<1	1	Small fragment of pipe stem from close to the mouth-piece, oval in shape with visible mould seams. Length 18mm.	Not closely datable
	10315	**10314**	Fragment of pipe stem	3	1	Stem fragment survives to a length of 39mm and slightly oval in shape, broken just where stem begins to broaden at heel/bowl. Mould seams are lightly trimmed, the stem is moderately abraded.	Not closely datable
Total				**<4**	**2**		

Table 45: Area 10 clay tobacco pipe catalogue

Area 17

A.5.7 A single stem fragment from a white ball clay tobacco pipe, weighing 0.002kg, was recovered from feature **17027**.

Area	*Ctxt*	*Cut*	*Form*	*Weight (g)*	*Fragments*	*Description*	*Date*
17	17028	**17027**	Fragment of pipe stem	0.002	1	From Sample <800>, a small fragment of pipe stem, oval in shape with visible mould seams. Length 17mm, trimmed seams, blackened around bore, indicating use.	Not closely datable

Table 46: Area 17 clay tobacco pipe catalogue

A.6 Glass

By Carole Fletcher

Introduction and methodology

A.6.1 All fragments of glass from the excavations are the result of casual loss or agricultural processes incorporating the material into the features, and although not closely datable, the glass is likely to be 18th century or later. The following catalogues act as a full record and the glass may be deselected prior to archive deposition.

Area 1 (ENF139693)

A.6.2 A single shard of glass weighing 7g was recovered from ditch **1187**. The shard is from the base angle of a natural black glass, relatively small, cylindrical bottle with a dull matt surface.

Area	*Ctxt*	*Cut*	*Count*	*Weight (g)*	*Form*	*Description*	*Date*
1	1186	**1187**	1	7	Vessel-utility bottle	Body shard and fragment of basal edge from a cylindrical dark olive green-natural black glass bottle. There are some faults within the glass and the outer surface is pitted from contact with the mould, indicating it is a mould-blown or part mould-blown vessel.	Not closely datable

Table 47: Area 1 glass catalogue

Area 3 (ENF139696)

A.6.3 A single shard of glass, recovered from pit **20666**. A body shard from a natural black glass bottle with a dull surface.

Area	*Ctxt*	*Cut*	*Count*	*Weight (g)*	*Form*	*Description*	*Date*
3	20567	**20666**	1	16	Vessel-utility bottle	Body shard from dark olive green-natural black glass bottle. There are some bubbles within the glass and the outer surface is pitted from contact with the mould, indicating it is a mould-blown or part mould-blown vessel. The shard has suffered some more recent damage. Approximately 7mm thick.	Not closely datable

Table 48: Area 3 glass catalogue

Area 9 (ENF139702)

A.6.4 Five shards of vessel glass were recovered from four contexts within this area. None of these can be particularly closely dated. The shards are all relatively small, with that recovered from ditch **9035** being only a flake. The shards from pits **9271** and **9488** may be 18th century or later, while the remainder are 19th or 20th century.

Area	Ctxt	Cut	Count	Weight (g)	Form	Description	Date
9	9036	**9035**	1	0	Undiagnostic	Flake of greenish glass, most likely from a vessel. From Sample <402>.	Not closely datable
	9272	**9271**	1	7	Vessel-utility bottle	Sub-rectangular curved fragment of vessel glass, 2.7mm-3.5mm thick, most likely from a bottle, showing heavily patinated (gold coloured) external surfaces and breaks; held to the light the glass is a dull pale olive green. The iridescent opaque surfaces of the glass suggest it has some age, however the recent break indicates the glass is in good condition, suggesting it is unlikely to be any earlier than 18th century.	Not closely datable but likely 18th century or later.
	9491	**9488**	1	8	Vessel-utility bottle	Roughly triangular curved shard of natural black, dark olive-green glass 7.5mm-5.5mm thick, the surfaces of which are dull and slightly opaque which can be seen on the more recently broken edges. The nature of the glass suggests an 18th century date.	Not closely datable but likely 18th century or later.
			1	2	Vessel-utility bottle	Triangular shard of clear bright green glass.	19th-20th century
	9515		1	6	Vessel-utility bottle	Irregular fragment of clear blue-green, mould formed glass, The glass is embossed, however, the only identifiable letter is R, the remaining embossing is possibly a logo.	19th-20th century
Total			***5***	***24***			

Table 49: Area 9 glass catalogue

Area 10 (ENF139703)

A.6.5 A single shard of glass was recovered from pit **10199**; it is unclear if this shard is vessel or window glass and cannot be closely dated.

Area	Ctxt	Cut	Count	Weight (g)	Form	Description	Date
10	10200	**10199**	1	2	Glass, uncertain form	Sub-rectangular shard of clear, near colourless glass, somewhat matt on one side, the thickness varies between 2.8mm-3.2mm. Uncertain if it is vessel or window glass.	Not closely datable
	99999		1	5	Vessel-pharmaceutical bottle	Rim shard from a clear blue glass bottle with dull surfaces, most likely from a moulded bottle.	19th-20th century
Total			***2***	***7***			

Table 50: Area 10 glass catalogue

Area 11 (ENF139704)

A.6.6 Archaeological works produced a small assemblage of vessel glass, recovered from three features. Ditch **11025** produced a base from an 18th century bottle while the glass from ditch **11039** was not closely datable. Finally, post hole **11097** produced a complete Co-operative Wholesale Society (CWS) one-third pint wide mouthed milk bottle, and a further eight shards from a second bottle; both bottles are 20th century. The glass from **11097** may represent primary deposition.

Area	Ctxt	Cut	Count	Weight (g)	Form	Description	Date
11	11026	**11025**	1	242	Utility vessel-wine bottle	Near complete base shard from a cylindrical natural black, dark olive-green glass bottle. Thick basal edge and bell shaped kick (30mm deep), traces of pontil scar, but unclear if disc pontil scar, the kick being heavily patinated. The surface of the glass, where not patinated, is lightly pitted and dull, having undergone some surface loss. The glass has many small and medium bubbles and a few so large they can be seen without holding the glass to the light. The basal diameter of the bottle is uncertain but is not in excess of 120mm. Maximum thickness at the base of the kick is 9mm and the wall is 5.9mm.	18th century
	11040	**11039**	1	11	Vessel-utility bottle	Body shard from a mid olive-green bottle with numerous small and medium sized bubbles within the glass. Both external and internal surfaces are heavily pitted with some suggestion of surface loss, due to patination. The condition of the glass suggests it may be 18th century.	Not closely datable
	11098	**11097**	1	230	Vessel-utility bottle (food)	Complete colourless glass moulded bottle with embossing on front, the letters C.W.S. Within a circle, and on the shoulders and neck a pattern like leather creased leather- crackle effect. The base is embossed, with an outward facing W and a central mark that is unclear, and below this L /9/5. CWS stands for the The Co-operative Wholesale Society, established in 1863. The bottle is a wide-mouthed 1/3 pint milk bottle. 140mm high.	20th century
			8	86	Vessel-utility bottle (food)	Base and wall shards from a colourless glass moulded bottle. The base is embossed, with an outward facing W and a central mark that is unclear and below this 2/11 and below this a 2. The diameter of the base is identical to the complete C.W.S 1/3 pint milk bottle also recovered from this context and the basal markings are similar suggesting the shards represent a second bottle of the same type.	20th century
Total			***11***	***569***			

Table 51: Area 11 glass catalogue

Area 17 (ENF139710)

A.6.7 Archaeological works produced a small assemblage of vessel glass, eight shards representing seven bottles, recovered from four ditches, a pit and from the surface of a trackway. Ditch **17516** and surface 17544 produced glass that could not be closely dated. Ditches **17461** and **17491** both produced vessels from the 18th century, with ditch **17461** and pit **17455** also producing glass that may be 17th-18th century.

Site	Context	Cut	Count	Weight (kg)	Form	Description	Date
17	17367	**17380**	1	7	Utility vessel-bottle	Sub-rectangular curved fragment of mid olive-green glass 3mm-7mm thick, dull external surface. The glass is in good condition, suggesting it is unlikely to be any earlier than 18th century.	Not closely datable but likely 18th century or later
	17456	**17455**	1	113	Utility vessel-wine bottle	Irregular curved shard of natural black, dark green glass bottle, thick basal edge and partial small, shallow kick, with heavily patinated iridescent external surfaces and breaks; some of the iridescence is flaking from the surfaces. Thickness varies from 13mm to 8.2mm-9.6mm.	*c.* Late 17th-mid 18th century
	17462	**17461**	1	21	Utility vessel-wine bottle	Irregular curved shard of natural black, dark green glass bottle, thick basal edge and partial kick, with dull external surface (internal surface is lost), and off-white opaline-like line within the glass.	*c.*18th century
			1	11	Utility vessel-bottle	Sub-rectangular curved fragment of vessel glass 3.5mm-3.9mm thick, most likely from a bottle, with heavily patinated (gold coloured) surfaces and breaks; held to the light the glass is a dull pale olive green and the glass has bubbles and faults and the surfaces are pitted and scared. The iridescent opaque surfaces of the glass suggest it is not modern, and its condition including surface loss support this.	Not closely datable but likely 17th or 18th century
	17490	**17491**	1	172	Utility vessel-wine bottle	Irregular curved partial base shard from a natural black, dark olive-green glass cylindrical bottle, thick basal edge and partial kick (relatively shallow), traces of pontil scar, but unclear if disc pontil scar. Within the glass, and visible on the internal surface of the kick is an off-white opaline-like area within the glass. It is unclear if this is due to post-depositional processes, resulting in slight devitrification or is opaline glass. The basal diameter of the bottle is approximately 160mm. Maximum thickness at the surviving hight of the kick is 12mm and the wall 5.5mm.	*c.*18th century
	17517	**17516**	2	3	Most likely a utility vessel-bottle	Two irregular slightly curved shards of dark olive-green glass 2.5-3mm thick, with dull external surfaces, most likely a bottle.	Not closely datable
	17544		1	2	Most likely a utility vessel-bottle	Irregular slightly curved shard of dark olive-green glass 1.8mm-2mm thick, with dull external surface, most likely a bottle.	Not closely datable
Total			**8**	**329**			

Table 52: Area 17 glass catalogue

A.7 Metalwork and other Small Finds

By Chris Howard-Davies

Introduction and methodology

A.7.1 A number of small assemblages of metalwork were recovered during the successive phases of evaluation and excavation along the route of the Norwich Northern Distributor Road. The total assemblage of metalwork comprises 179 fragments, many of them poorly preserved. The finds from each site have been examined and commented upon separately, but, where possible during analysis, finds from the two phases of work have been combined (Table 53). The single ceramic artefact recovered is discussed separately under finds from Area 3.

Area	*Parish*	*Ironwork*	*Cu alloy*	*Lead*	*Other*	*Totals*
1 + T7	Taverham	4	0	0	0	*4*
2	Drayton	0	0	0	0	*0*
3	Horsford	11	2	0	1 (ceramic)	*14*
4		5	0	0	0	*5*
5		0	1	0	0	*1*
6	Spixworth	0	0	0	0	*0*
7 + S3, S4		1	0	0	0	*1*
8	Beeston St Andrew	0	0	0	0	*0*
9 + S16		30	4	3	0	*37*
10	Sprowston	11	3	0	0	*14*
11 + R1	Rackheath	1	9	1	0	*11*
12 + R2a		1	1	0	0	*2*
13		3	6	2	1 (cupro-nickel)	*12*
14 + R7		1	0	0	0	*1*
15 + G3	Great & Little Plumstead	2	0	0	0	*2*
16		0	0	0	0	*0*
17 + G6		25	8	0	0	*33*
18 + G7, G9		4	1	13	4 (silver)	*22*
19 + P1	Postwick with Witton	5	3	7	0	*15*
+ P7		3	0	0	0	*3*
+ G4		3	0	0	0	*3*
Totals		***110***	***38***	***26***	***6***	***180***

Table 53: Quantification of small finds from evaluation & excavation phases along NDR Route

A.7.2 The complete assemblage is sufficiently small and disparate to render any detailed sub-division by functional group meaningless, although some more general points can be made.

A.7.3 Three areas excavations produced coins or jettons, and this is tabulated below (Table 54).

Area	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***10***	***11***	***12***	***13***	***14***	***15***	***16***	***17***	***18***	***19***	
RB																				*0*
Med																		2		*2*
PM																	3			*3*
Mod													5					1		*6*
Total													***5***				***3***	***3***		***11***

Table 54: Distribution of coins and jettons by Area excavation and approximate date

A.7.4 Those from Areas 17 and 18 fall into two groups. Two silver pennies of Edward I (minted after 1279) were found in Period 6.2 and 6.3 contexts in Area 18. It should be noted that Edward's silver coinage stayed in circulation long after his death, and these two somewhat worn examples could well have been deposited long after their date of issue. Area 17 produced three Nuremberg jettons of late 16th or early 17th century date, but none could be attributed to a specific master. Two of the three are perforated as if reused for some other purpose, perhaps as pendants, again perhaps suggesting that they were deposited somewhat after their original date of issue, in addition, all three are effectively unstratified. The remainder of the coins, including those from Area 13, are of 20th century date.

A.7.5 Fine metalwork was confined to items of copper alloy, few of which are of particular interest, and many of which are casual losses from clothing or horse harness, showing no particular concentrations. Only in one case can an item of fine metalwork be identified as of medieval (perhaps 15th-century) origin, being a poorly preserved buckle plate or strap end from ditch **10215** part of Period 6.2 enclosure **10201**, at Area 10. Otherwise the objects are relatively late: there are fragmentary shoe buckles and fasteners, probably dating to the late 18th century, and 18eighteenth or 19th-century date.

A.7.6 The range of lead-work from the sites is fairly restricted, but includes three spindle whorls, found together with other drips and splashes of lead in Period 6.2 pit **18065** on Area 18. Lead spindle whorls are difficult to date, but it seems most likely that they are of medieval date, and their presence together in a single pit, might suggest a deliberate act of clearance. Elsewhere, lead was confined to solidified splashes, offcuts, pot mends, and informal weights, none of which appear to conform to official weights.

A.7.7 There is little of interest in the ironwork, the overwhelming majority of which comprises nails and other items of a structural nature, like, for instance hinge fragments, and wall-hooks or pintles. Perhaps the only group of any significance is that of the horseshoe fragments, associated with various trackways investigated, most noticeably on Area 17, where there was also part of a snaffle bit, and a 17th-century copper alloy pack-horse bell.

A.7.8 Other identifiable items of ironwork were rare, but included knife blades of 18th-century form from Areas 9 and 10, and, from evaluation G4, a bone handle, possibly with decorative lozenges inlaid with metal pins. These are now missing, but are often of tin (see for instance an elaborate handle from London, inlaid with pins arranged in a floral pattern and an inscription with a panel of similar lozenges at the bottom of one side (Cowgill *et al* 1987, 95-6, fig 65 no 138), which is dated to the late 14th century.

Area 1 & Evaluation Field T7 Objects

A.7.9 The only metalwork recovered from Area 1 comprised two small fragments of ironwork. Both are fragmentary and in poor condition. Iron artefact types are frequently simple and long-lived, and as a result it is impossible to assign a precise date to small fragments such as these. They can, however, be allocated a high medieval (Period 6.2) date on the basis of other dating evidence from the relevant features. Large-headed nail SF3 is from a fill (1304) of a contemporary boundary ditch **1184**, and SF2 is a small fragment of nail shaft from well **1270**, also Period 6.2.

A.7.10 Significant ironwork from the evaluation included part of a 'wavy-edge' horseshoe (Clark's type 2B (1995), with rectangular nail holes) from context 1646. In London (*ibid.*) type 2B appears in the second half of the 12h century and continued in use well into the 14th century, thus falling between Periods 6.1 and 6.2. A nail from evaluation context 1664 is similar in head size to that from late medieval well **1270**.

Area	*Context*	*Sf no*	*Material*	*Description*
1	1271	2	Iron	Incomplete nail, shaft only (L: c 23mm)
1	1304	3		Incomplete nail or stud with large flat head (L: c 12mm; Diam head: c 26mm)
T7 Tr 4	E1646	-	Iron	Incomplete horseshoe. Branch fragment wavy-edged horseshoe with fiddle-key nails in situ, in countersunk holes. (L: c 90mm; W: 21mm)
T7 Tr 7	E1664	-	Iron	Large-headed nail, complete? (L: 83mm; Diam head: 26mm)

Table 55: Metalwork from Area 1 & evaluation

Area 3 Objects

A.7.11 This area produced 11 fragments of ironwork (probably representing no more than five objects), and two of copper alloy. Both classes of metalwork are fragmentary and in generally poor condition.

A.7.12 Ten of the 11 fragments of ironwork were from Roman (Period 4) pit groups (Sfs 105 and 108 from pit **20280** (fill 20278) in pit group **20280**; SF107 from pit **20179** (fill 20183) in pit group **20230**). All survive only as amorphous fragments, and their identification was not clarified by x-radiography. A single hand-forged nail (SF106) came from the fill (20287) of ditch **20289**, part of enclosure **20300**, again allocated to Period 4. There was also a single fragmentary nail (SF104) came from pit **20644** (fill 20645) in pit group **20674**.

A.7.13 One item of copper alloy (SF100) remains unidentified: broadly T-shaped, it is reminiscent of a large buckle, but this seems an unlikely identification. It was recovered from pit **20017** (fill 20018) within unphased pit group **3856**. A small rectangular fitting (SF101) riveted to a fragment of thin sheet, from context 3000, is probably modern.

Ceramic Object

A.7.14 A biconical ceramic spindle whorl in very good condition (SF103) was recovered from posthole **3242** (fill 3243), part of Period 2.3 structure **3240**, dated by C14 to 898-802 Cal. BC (Appendix D., Table 127), as well as producing Late Bronze Age pottery, and there is no reason to believe that the whorl is anything other than contemporary. Its fabric appears to resemble that of a spindle whorl from Newmarket Road, Burwell, although its form differs slightly (Percival 2014). Biconical spindle whorls are well known from Iron Age sites in the South, and there is no reason to believe that their simple form, easily made as required, had not already been in use during the Bronze Age. The present example is relatively small; at only 36mm in diameter, and at only 20g in weight, it falls into the 'lighter' category defined at Danebury (Poole 1984, 401), and would, presumably, have been used to spin finer thread.

Area	*Context*	*Sf no*	*Material*	*Description*
Ironwork				
3	20645	104	Iron	Incomplete nail, head and part of shaft only (L: c 33mm)
3	20278	105	Iron	Small amorphous fragment (L: c 36mm)
3	20278	108	Iron	Small amorphous fragment (L: c 34mm)
3	20183	107	Iron	Seven small amorphous fragments of sheet (no relevant dimensions)
3	20287	106	Iron	Small amorphous fragment (L: c 45mm)
Copper alloy				
3	3000	101	Cu alloy	Small rectangular fitting riveted to thin sheet (L: 12mm; W: 10mm; Th: 3mm).
3	20018	100	Cu alloy	Broadly T-shaped object reminiscent of a buckle, with flat loop and round-sectioned bar. (L: 59mm; W: 67mm; Th: 10mm)
Ceramic				
3	3243	103	Ceramic	Spindle whorl made from grey-firing clay with white (calcite?) inclusions. Bun-shaped. Central perforation pushed through from above, creating a tapering hole, 6mm in diameter at the top and 4.5mm at the base (Diam: 36mm; Ht: 19mm; Wgt: 20g)

Table 56: Objects from Area 3

Area 4 Objects

A.7.15 There were five relatively large fragments of ironwork from Area 4, representing three objects. All are in fair condition, and all were recovered from the fills of ditches assigned to Period 4. Two of the three (SFs 151, SF152) come from ditch **4073** (fill 4207), one (SF151) is probably a wall-hook or pintle, the other (SF152) a large nail, or possibly a punch or cold chisel with a slightly burred head. There are numerous Roman and later parallels for both types (Manning 1985), but similar objects remain in current use, so that a firm date is effectively impossible. SF153 from ditch **4129** (fill 4202) is a featureless fragment of wide perforated strip, presumably used for reinforcing. Its presence in a fill which accumulated after the ditch fell into disuse, might suggest it to be relatively recent.

Area	Context	Sf no	Material	Description
4	4207	151	Iron	Large wall hook? (L: c 170mm)
4	4207	152	Iron	Incomplete nail or stud with large flat head. Alternatively slightly burred head might suggest a punch or cold-chisel. (L: c170mm;)
4	4202	153	Iron	Two joining fragments of strip with oblique breaks or folds at each end. Third fragment probably the same object, again with oblique breaks at each end: (L (largest) c 170; W: c 33mm; Th: c 2mm

Table 57: Objects from Area 4

Area 5 Objects

A.7.16 The only metalwork from this site is a single item of copper alloy. It is fragmentary and in very poor condition. SF215 appears to be a small droplet, presumably generated by the handling of molten metal, which is not impossible as the feature has been attributed to Period 2.2 (Middle Bronze Age). It is, however, insufficient to suggest metalworking on or near the site and its position, within a fill (5064) of ditch **5066** (enclosure **5007**) might mean that it has arrived at the site from elsewhere.

Area	Context	Sf no	Material	Description
5	5064	215	Cu alloy	Rounded sub-triangular droplet (L: *c* 12mm)

Table 58: Objects from Area 5

Area 7 & Evaluation Field S4 Objects

A.7.17 The Area excavation produced no metalwork. Trench 1, context E3620, in evaluation field S4 produced a single trapezoidal fragment of ferrous strip

Area	Context	Sf no	Material	Description
S4 Tr 1	E3620	-	Iron	Trapezoidal fragment of strip (L: 32mm; W: 18mm)

Table 59: Object from Area 7

Area 9 & Evaluation Field S16 Objects

A.7.18 There were, in all, 25 fragments of ironwork from Area 9, and a further five from evaluation site S16. The latter also produced four fragments of copper alloy and three of lead. All the ironwork is in poor condition.

A.7.19 A scale tang blade (SF423) with the choil and an expanded bolster marking the transition between blade and tang, comes from Period 7 pit **9254** (fill 9255). It is the most immediately identifiable object from the site, and one of the few items of ironwork that can be dated with any precision. The shape of the blade, taken together with the presence of both bolster and choil, suggest a relatively late date for the object, probably

no earlier than the mid-18th century (Moore 1999). Other less diagnostic blade fragments (SF408, SF404) come from Period 6 pit **9363** (fill 9364) and Period 7 pit **9234** (fill 9235). It is possible that the latter is possibly an upright rim fragment rather than a blade. A single very worn horseshoe fragment (SF424) is also from Period 7 pit **9254** (fill 9255), and is likely to be of Clark's type 4, which persists well into the post-medieval period (Clark 1995, 97) and can thus be assumed to be of similar date to the knife blade described above.

A.7.20 The remainder of the ironwork is probably structural in purpose, and thus, effectively undateable. There are fragments of wide strapping (SFs 409, 413), possibly originating from door hinges, from Period 7 pit **9426** (fill 9431) and Period 7 layer 9467, an occupation layer within building 9461, and an L-shaped pintle or wall-hook (SF410) from layer 9437. There are also 17 nails (SFs 407, 411, 412, 414 – 422, 425, 426). Some are from Period 6 pits **9267** (pit group **9265**) and **9438** (pit group **9443**), and from Period 6 ditch **9468**. Seven (SFs 414 – 418, 411, 412) can be associated with Period 7 building 9461, with five from construction cut **9513** (fill 9492) and two from occupation deposit 9467 within it. Others are from Period 7 pits **9428** (pit group **9422**), and **9413** (pit group **9426**). A single nail (SfF419) is from the rubble backfill of well **9402**. Another five nails, of similar form, came from evaluation context 3071. All of these nails seem to be hand-forged.

A.7.21 An undiagnostic fragment of bar (SF406) came from Period 6 refuse pit **9265** (fill 9266).

A.7.22 Finds of both copper alloy and lead were only recovered from the evaluation trenches. A small dress pin of late type came from context 3074, and a robust lace tag, probably again of late form, was found in topsoil 3000. A rounded terminal came from context 3037, and a crumpled rectangle of thick sheet metal, probably an offcut, was from 3074.

A.7.23 Lead was confined to a large solidified splash of molten metal from context 3013, and two small rectangular weights weighing 16g (c 0.5oz) and 52g (*c* 1.8oz), recovered from topsoil 3000.

Area	*Context*	*Sf no*	*Material*	*Description*
9	9364	408	Iron	Blade fragment, probably whittle tang (L: 79mm; W: 14mm; Th: 3.5mm)
9	9404	419	Iron	Complete nail, curved (L: 45mm; Diam head: 11mm)
9	9417	425	Iron	Four nail fragments, all head and shaft only (L: 24mm; 30mm; 43mm; 45mm)
9	9429	421	Iron	Complete nail? (L: 47mm; Diam head: 14mm)
9	9429	422	Iron	Large nail? (L: 87mm; Diam head: 9mm)
9	9431	409	Iron	Strap fragment, possibly with one rounded original end. One terminal perforated (L: 105mm; W: 25mm; Th: 4mm)
9	9235	404	Iron	Blade fragment or perhaps sloping rim of large vessel. (L: 130mm; W: 30mm; Th: 5mm)
9	9437	410	Iron	L-shaped pintle or wall-hook with rectangular section suggesting the latter. (L: 48mm; W: 50mm; Th: 8mm)
9	9440	420	Iron	Nail fragment, head and shaft only. Large head, possibly clenched.(L: 33mm; Diam head: 16mm)
9	9255	423	Iron	Blade and part of scale tang, transition between blade and tang marked by expanded bolster and choil (L: 140mm; W: 23mm; Th: 4mm)
9	9255	424	Iron	Very worn horseshoe with one nail surviving in situ but other nail holes worn away. (L: 108mm; W: 25mm; Th: 3mm)
9	9266	406	Iron	Square? Sectioned bar fragment. (L: 113mm)

Area	Context	Sf no	Material	Description
9	9467	411	Iron	Complete nail (L: 58mm; Diam head: 8mm)
9	9467	412	Iron	Nail fragment, head and shaft only (L: 23mm; Diam head: 10mm)
9	9467	413	Iron	Strap fragment, possibly with one rounded original end. Two perforations. (L: 98mm; W: 32mm; Th: 6mm)
9	9467	426	Iron	Nail fragment, head and shaft only (L: 50mm; Diam head: 11mm)
9	9268	407	Iron	Complete nail (L: 62mm; Diam head: 11mm)
9	9492	414	Iron	Nail fragment, head and shaft only (L: 24mm)
9	9492	415	Iron	Nail fragment, head and shaft only (L: 35mm; Diam head: 6mm)
9	9492	416	Iron	Nail fragment, head and shaft only (L: 30mm; Diam head: 15mm)
9	9492	417	Iron	Nail fragment, head and shaft only (L: 24mm; Diam head: 9mm)
9	9492	418	Iron	Nail fragment, head and shaft only (L: 32mm: Diam head: 14mm)

Table 60: Area 9 Objects

Area	Context	Sf no	Material	Description
Ironwork				
S16 tr 8	3071		Iron	Five nails. 1) Complete nail (L: 40m; Diam head: 11mm), 2) complete nail clenched (L: 43+mm; Diam head: 16mm); 3) head and shaft fragment (L: 24mm; Diam head: 11mm), 4) head and shaft fragment (L: 24mm; Diam head: 12mm), 5) shaft fragment (L: 24mm).
Copper alloy				
S16 tr 4	3000		Cu alloy	Thick plain sheet crimped into a plain, figure-of-eight lace tag (L: 22mm; W: 7mm; Th: 4.5mm)
S16 tr 8	3071		Cu alloy	Thick sheet folded into a crumpled rectangle (L: 82mm; W: 45mm; Th: 12mm)
S16 tr 11	3074	-	Cu alloy	Dress pin, point missing. Stamped head. (L: 17mm; Diam head: 1.5mm)
S16 tr 13	3037		Cu alloy	Round perforated terminal with arm to one side (L: 43mm; W: 19mm; Th: 6mm)
Leadwork				
S16 tr 5	3013		Lead	Large solidified melt (L: 57mm; W: 36mm; Th: 11mm)
S16 tr 8	3000		Lead	Irregular cuboid weight. (L: 21mm; W: 15mm; Th: 9.5mm; Wgt: 16g)
S16 tr 11	3000		Lead	Cuboid weight, with groove at one end (L: 27mm; W: 15mm; Th: 15mm Wgt: 52g)

Table 61: Objects from Evaluation Field S16

Area 10 Objects

A.7.24 In all, eleven fragments of ironwork and three of copper alloy were recovered from this site. The ironwork is in poor condition, whilst the copper alloy is fair to good.

A.7.25 A substantial ironwork ring, ferrule, or collar (SF457) is from ditch **10333** (fill 10334), which forms part of late medieval (Period 6.2) enclosure **10201**. A fragment of wrought iron, curled into a spiral at one end, and perhaps a decorative terminal (SF452), comes

from the same enclosure (ditch **10076** (fill 10077), as does a fragmentary horseshoe (SfF464), from ditch **10139** (fill 10141), another element of **10201**. The horseshoe is poorly preserved, and could fall into Clark's type 3 or 4, as the x-radiograph does not clarify the form of the nail hole. As a result it can only be assigned a general medieval date, with type 3 appearing as early as the 13th century (in London and elsewhere) and continuing in use into the 14th century, and type 4 appearing in the 14th century, replacing type 3 and becoming universal by the end of the 15th century (Clark 1995, 96-7).

A.7.26 A relatively large fragment from a knife blade (SF454) came from post-medieval (Period 6.3) ditch **10433** (**10238**). The shape of the blade, taken together with the presence of both bolster and choil, suggest a relatively late date for the object, placing it probably no earlier than the mid-18th century. It is possible that SF467, from the same ditch (fill 10434), a curved fragment of square-sectioned bar, is a drop handle from a relatively large vessel, perhaps a bucket, although it cannot be dated. A second fragment of relatively fine curved bar, this time with a central perforation, suggesting that it might have pivoted (SF459) is from ditch **10427** (fill 10426), another element of **10433**.

A.7.27 SF463, from the modern fill (10056) used to block animal burrow **10055**, appears to be the decorative terminal from a strap hinge (SF463), and, although not easy to date, is reminiscent of mid-17th to mid-18th-century forms (Alcock and Hall 1994). There are also four nails (SFs 451, 456, 465, 466). It is possible that SF451, from a Period 5 charcoal pit (**10004**, fill 10003) is a cut nail of 19th-century or more recent date, suggesting it to be intrusive in such an early context. Similarly SF465, from furnace **10240** (fill 10241) appears to be a drawn or machine-made nail.

A.7.28 There are three copper alloy items. Two of them (SFs 458 and 461) from Period 5 charcoal pit **10325** (fill 10323; pit group **10290**) and ditch **10215** (fill 10216), part of Period 6.2 enclosure **10201** respectively, are almost identical small looped plates which could have served as escutcheons for drop handles, or small fixing plates. They cannot be dated with any precision, and, as such fixing plates are still made today (for invisible fixing, for instance mirrors to walls), they cannot be used to date the features from which they derive, except to note that one of the two is likely to be intrusive or residual.

A.7.29 The third copper alloy object (SF460), again from ditch **10215** (fill 10216), part of Period 6.2 enclosure **10201**, is a fragment of medieval buckle plate or strap-end with incised decoration. It resembles examples from London dated to the first half of the 15th century (Egan and Pritchard 1991, 134, no 619).

Area	Context	Sf no	Material	Description
Ironwork				
10	10003	451	Iron	Complete nail. Hand-forged or cut? (L: c 60mm; Diam head: 10mm)
10	10056	463	Iron	Fragment from a strap hinge, with nail fragment in situ. (L: c 45mm; W: 28mm; Th: 13mm)
10	10077	452	Iron	Fragment of bar bent into a spiral or loop at one end. (L: c 57mm)
10	10141	464	Iron	One branch of horseshoe with calkin. (L: c 117mm; Web: 33mm)
10	10238	454	Iron	Fragment of large straight-sided blade with bolster, but tang missing. (L: c 147mm; W: 23mm; Th: 2mm)
10	10241	465	Iron	Machine-made nail with round section. Complete? (L: c 50mm)
10	10295	456	Iron	Complete headless nail? (L: c 55mm)
10	10362	466	Iron	Nail fragment. Shaft only. (L: c 48mm)
10	10426	459	Iron	Fragment of bar, bent over at one end. (L: c 79mm)
10	10434	467	Iron	Curving square-sectioned bar - ring or drop handle. (L: c 105mm)
10	10334	457	Iron	Deep ring, ferrule or collar. (Diam: c 55mm; Ht: c 25mm)
Copper alloy				
10	10323	458	Cu alloy	Flat sub-oval escutcheon with tri-lobed perforation to allow suspension/attachment. Two small rivets at base and remnant of thin sheet. (L: 21mm; W: 17mm)
10	10216	460	Cu alloy	Buckle plate or strap end. Rectangular fragment with two countersunk holes for attachment on one side. Probably incised curvilinear design, possibly gilded. (L: 12mm; W: 14mm)
10	10216	461	Cu alloy	Flat sub-oval escutcheon with keyhole-shaped perforation to allow suspension/attachment. Two small rivets at base and remnant of thin sheet. (L: 18mm; W: 12mm)

Table 62: Area 10 Objects

Area 11 & Evaluation Field R1 Objects

A.7.30 Seven relatively well-preserved items of copper alloy and one of lead were recovered from this site. All are in fair condition. All are from context 11000 (topsoil), and the group is notable for the lack of ironwork, which might suggest selective collection in the course of metal-detecting.

A.7.31 The group of copper alloy items are probably all of late 17th to 18th-century date at the earliest. They have no particular coherence as a group, although it is likely that key SF500 and escutcheon SF501 derive from the same object, presumably a small lockable box or drawer. SF503 is a clog or shoe clasp, of a type current from the late 17th century but probably still in use in the early 20th century. Harness fitting SF504 is again probably of late 17th or 18th-century date, and there is no reason to believe that other objects from the site, including lead weight SF502, differ in date.

A.7.32 Trench 30, context E2607, at this site produced a single iron nail fragment and a round copper alloy button with gilt surfaces, probably of later 19th or 20th-century date. A second button, with a silver or tin plating came from trench 5, context E2621, and is of similar date.

Area	*Context*	*Sf no*	*Material*	*Description*
11	11000	500	Cu alloy	Small rotary key (cast), with plain guard and oval head-loop. (L: c 32mm; W: 16mm; Th: 2.5mm)
11	11000	501	Cu alloy	Lock escutcheon with perforation for rotary key. (L: c 42mm; W: 38mm; Th: 2mm)
11	11000	503	Cu alloy	Clog/shoe clasp. Rectangular catch with three rectangular perforations and a projecting T-shaped tag at one end. (L: c 25mm; W: 16mm; Th: 1mm)
11	11000	504	Cu alloy	Harness decoration? Cast hexagonal fitting with central six-petal flower decoration and two projecting shanks to rear for attachment. (Diam: c 21.5mm; Ht: 5mm)
11	11000	505	Cu alloy	Ring, now deformed, with flattened D-shaped section. (Diam: c 22mm; Ht: 2.5mm)
11	11000	506	Cu alloy	Cast fragment with obvious ?incised decoration but no obvious function (L: c 24mm; W: 14mm; Th: 2mm)
11	11000	507	Cu alloy	Two fragments embossed decorative fitting - probably part of the same object and ?associated with furniture? (L: c 17mm, 11mm)
11	11000	502	Lead	Cast discoidal weight. (Diam: 27mm; Th: 6.5mm)

Table 63: Area 11 Objects

Area	*Context*	*Sf no*	*Material*	*Description*
R1 tr 30	E2607	-	Iron	Nail, head and shaft fragment (L: 35mm; Diam head: 11mm)
R1 tr 30	E2607	-	Cu alloy	Flat round button, gilded. Loop missing. Inderside decorated, with words 'Gold surface' and 'gilt' visible (Diam: 20mm; Ht: 2.5)
R1 tr 5	E2621	-	Cu alloy	Slightly convex button cap, stamped and marked 'plated' to rear. Silvered. Loop missing.

Table 64: Field R1 Evaluation Objects

Area 12 & Evaluation Field R2 Objects

A.7.33 Only a single item of ironwork came from this site. Possibly complete, but in poor condition, SF550 is a single apparently complete nail, from charcoal production pit **12260** (fill 12261) in pit group **12233**, assigned to the early medieval period (Period 6.1). It is otherwise undateable.

A.7.34 Trench 7, context E2400, at the associated evaluation site (R2a) produced a small, slightly asymmetrical ring made from thick copper alloy sheet, the purpose and date of which remains obscure.

Area	Context	Sf no	Material	Description
12	12261	550	Iron	Complete nail (L: c. 56mm;Diam head: 9mm)

Table 65: Area 12 Object

Area	Context	Sf no	Material	Description
R2a Tr 7	E2400	-	Cu alloy	Small slightly asymmetrical ring cut from thick sheet? (Diam: 13mm; Ht: 1.5mm)

Table 66: Evaluation Field R2a Object

Area 13 Objects (Including material recovered during retrieval of plane material)

A.7.35 Three items of ironwork and two of lead were recovered from site ENF139706, and six of copper alloy, one of 'silver' or more strictly cupro-nickel, from site ENF137 (XNFGAF16). All are in fair to good condition. Only the iron nails from site ENF139706 were from a stratified context, the remainder being unstratified. The group from ENF137 is, again, notable for the lack of ironwork, which might suggest selective collection.

A.7.36 There are three small nails (SF611) from a pit (**3021**). As they retain mineralised wood impressions, it is relatively certain that they were deposited whilst still within wood, which might suggest the presence of a lining within the pit. There is, in addition one unstratified piece of spherical lead shot (SF608), its bore suggesting use in a pistol, which can only be broadly dated to the post-medieval or early modern period. The weight (SF609), also unstratified, has no diagnostic features to allow dating.

A.7.37 The material recovered whilst detecting the plane crash site comprises five low-denomination coins, one button and a probable harness mount. The coins comprise two farthings (SF605, SF601, the former probably attributable to George II, the latter to William IV), one halfpenny (George V: SF603), one penny (Edward VII; SF604) and a sixpence of George VI (dated 1943; SF600). A small stamped four-hole sew-through button (SF602) falls into a similar date range to the coins. The final item, SF606, is a cast decorative harness stud, its design suggesting a post-medieval date.

Area	Context	Sf no	Material	Description
13	3021	611	Iron	Three small nails deposited within wood – wood-grain impressions are visible (L: c 17mm)
13	0	608	Lead	Spherical pistol shot (Diam: 14mm)
13	0	609	Lead	Discoidal weight (Diam: 39.5mm)
13	0	600	Silver	George VI, sixpence. Cupro-nickel
13	0	601	Cu alloy	Farthing William IV?
13	0	602	Cu alloy	Thin, stamped, four-hole sew-through button, with holes in slight concavity (Diam: 17.5mm)
13	0	603	Cu alloy	George V, halfpenny
13	0	604	Cu alloy	Edward VII, penny
13	0	605	Cu alloy	Farthing, not dated
13	0	606	Cu alloy	Round cast decorative stud. A central boss is surrounded by 16 small petals, defining a lower tier, with the edge defined by ?14 protruding rays. Underside slightly hollowed, with central shank (now broken) presumably originally for fixing (Diam: 29mm; Ht: 7mm)

Table 67: Area 13 Objects

Area 14 (Evaluation Field R7) Object

A.7.38 Trench 5, context 4208, at R7 produced a single modern screw with domed head.

Area	Context	Sf no	Material	Description
R7 Tr 5	E4208	-	Iron	Dome-headed screw (L: 34mm; Diam head : 9mm)

Table 68: Evaluation Field R7 Object

Area 15 and Evaluation Field G3 Objects

A.7.39 There are two items of ironwork from the site. One from the excavation is an incomplete nail (SF700), from posthole **15007** (fill 15008), assigned to Period 6.2. It is otherwise undateable. Trench 15, context E4406, at evaluation site G3 produced a single modern screw with countersunk head.

Area	Context	Sf no	Material	Description
15	15008	700	Iron	Nail shaft fragment (L: *c*. 17mm)

Table 69: Area 15 Object

Area	Context	Sf no	Material	Description
G3 tr 15	E4406	-	Iron	Small screw, spiral thread clearly visible (L: 24mm; Diam head: 9mm).

Table 70: Evaluation Field G3 Object

Area 17 & Evaluation Field G6 Objects

A.7.40 Some 13 fragments of ironwork representing a similar number of items, and seven of copper alloy from Area 17, a further 14 objects of iron and one of copper alloy are from evaluation G6. The ironwork is in poor to fair condition, and the copper alloy is fair to good. All of the ironwork is stratified, but only four of the copper alloy objects are from stratified contexts.

A.7.41 The earliest of the ironwork comes from late medieval/early post-medieval (Period 6.3) features. Ditch **17036** (fill 17091) produced a large fragment from what might be the handle of a bucket or similar vessel (SF806), and an amorphous fragment (SF812) came from pit **17473** (fill 17474).

A.7.42 There are two horseshoe fragments from Period 7 trackway **17510**; SF811 from layer 17545, and SF818 from layer 17544. Although neither is complete, their broad web might suggest a late medieval or early post-medieval date, assuming that both were lost by horses using the trackway. There is, in addition, part of a snaffle bit (SF819) from boundary ditch **17380** (fill 17376), part of the same trackway complex. The surface (17029) of another Period 7 track **17019** produced what could be the turned-over rim of a sheet vessel (SF805). A complete horseshoe came from context E5001 of the evaluation, the presence of a well-defined fuller running around the shoe suggests a relatively recent date. Evaluation context E5111 produced a small and unusual D-shaped object, resembling a horseshoe closed with a bar linking the two branches. It is, however, very small, and unless intended for some orthopaedic procedure, would seem too small even for a donkey. In addition there are 11 nail holes, so close together that that seem likely to have damaged the hoof if used as a horseshoe. No other obvious identification presents itself, unless it is an unusual clog or shoe-heel iron, which would, again, suggest a relatively modern date.

A.7.43 There are seven nails amongst the group from Area 17, coming from pits **17057** (fill17059; SF810) and **17360** (fill 17363; SF813) in Period 6.3 pit group **17057**, from contemporary pit **17473** (SF814; fill 17475; pit group **17296**); and from pit **17610** (SF815). Two more (SF816, SF817) were from components (17587, 17586) of Period 7 trackway **17510**. Four more nails were recovered during the evaluation, from contexts E5028 and E5075. A large nail or possibly a punch with slightly burred head, came from E5005. There was a possible blade fragment from E5073, and four further fragments from E5075, which remained unidentifiable despite x-ray.

A.7.44 A large cast crotal bell (SF808) from surface 17030 (trackway **17019**; Period 7) is probably of late 16th and 17th-century date, as are the three copper alloy jettons recovered from Area 17 (SF800 – SF802). None are stratified but all three clearly bear, on the reverse, the imperial orb surmounted by cross patteé, within a tressure, and on the obverse three crowns and three fleur de lis, typical of Nuremburg issues, and by far the most common design. Two of the three are perforated, as if for suspension. A large tinned or silvered button (SF809) from layer 17571 (track **17510**, again Period 7) could be as early as the 18th century, but the type persisted well into the 19th century. Another tinned or silvered button was recovered from the evaluation, context E5014.

A.7.45 One small fragment of copper alloy from surface 17019 (fill 17020; SF804) remains unidentified, beyond noting that it appears to be a ring of some kind.

Area	Context	Sf no	Material	Description
Ironwork				
17	17020	805	Iron	Possibly rolled-over rim of large vessel. (L: c 86mm; W: 36mm; Th: 10mm)
17	17091	806	Iron	Handle? Slightly curving bar, increased in thickness towards the centre of the piece. (L: c 170mm; W: 18mm; Th: 11mm)
17	17059	810	Iron	Nail. Head and shaft fragment (L: c 42mm)
17	17545	811	Iron	Horseshoe fragment. Broad web, c 33mm. Approx half of horseshoe, no calkins, no clip. (L: c 105mm; W: 55mm; Th: 5mm)
17	17474	812	Iron	Unidentifiable object (L: c 47mm; W: 18mm; Th: 11mm)
17	17363	813	Iron	Large nail or spike (L: c 77mm; Diam head: 23mm)
17	17475	814	Iron	Head and shaft fragment large-headed nail (L: c 35mm; W head: 45mm); head and shaft fragment (L: c 52mm; Diam head: 15m)
17	17612	815	Iron	Nail. Head and shaft fragment (L: c 73mm; Diam head: 8mm)
17	17587	816	Iron	Nail. Shaft only (L: 68mm; Diam head: 7mm)
17	17586	817	Iron	Large nail or spike; head and shaft fragment (L: c 63mm; Diam head: 11mm).
17	17544	818	Iron	Horseshoe, almost complete, three rectangular nail holes each side. Broad web, c 30mm, no calkin, no clip. (L: c 110mm; W: 107mm; Th: 10mm)
17	17376	819	Iron	Part of the central bar and side-loop from a snaffle bit. (L: c 93mm; W: 35mm; Th: 20mm)
Copper alloy				
17	0	800	Cu alloy	Worn jetton with hole punched through from reverse. Nuremburg issue. Obv: three crowns and three fleur de lis around a central rose. Obverse inscription illegible. Rev: Orb with cross in a tressure of three points and three arches with pellets to each side of the points. Reverse inscription illegible.
17	0	801	Cu alloy	Worn jetton with hole punched through from reverse. Nuremburg issue. Obv: three crowns and three fleur de lis around a central rose. Obverse inscription illegible. Rev: Orb with cross in a tressure of three points and three arches with pellets to each side of the points.. Reverse inscription illegible.
17	0	802	Cu alloy	Very poor condition, but probably a small jetton with orb/rose design. Nuremburg?
17	7020	804	Cu alloy	Tube, ring, or domed object embedded in corrosion products (Diam c 10mm)
17	17284	807	Cu alloy	Shoe buckle fragment from area of bar pivot. Plain with a single bead around the edges (L: 25mm; W: 9mm; Th: 6mm)
17	17030	808	Cu alloy	Large cast crotal bell, suspension loop incomplete, some damage and part of lower hemisphere missing. (Diam: 45mm; Ht: 52mm)
17	17571	809	Cu alloy	Large slightly convex button with wire loop to rear, seems soldered. Surface tinned. (Diam: 27mm; Ht: 7mm)

Table 71: Area 17 Objects

Area	Context	Sf no	Material	Description
Ironwork				
G6 tr 3	5028	-	Iron	Head and shaft fragment (L: 32mm; Diam head: 11mm)
G6 tr 8	5001	-	Iron	Complete horseshoe, worn at the front. Three holes each branch set in clearly defined fuller. Web c 25mm. (L: 106mm; W: 113mm)
G6 tr 10	5075	-	Iron	Head and shaft fragment, ?extracted? (L: c 32mm; Diam head: 12mm)
G6 tr 17	5111	-	Iron	Small lunate ?veterinary horseshoe with bar across rear and eleven nail holes, web 17mm (L: 50mm; W: 58mm). Alternatively a clog or shoe-heel iron
G6 tr 26	5073	-	Iron	Possible triangular blade fragment, tang lost. (L: 87mm; W: 18mm)
G6 tr 26	5075	-	Iron	Nail, shaft fragment? (L: 31mm)
G6 tr 26	5075	-	Iron	Unidentifiable fragment. X-ray faint and unclear
G6 tr 26	5075	-	Iron	X-ray unclear for two fragments, third has a small flat, round perforated head. (L: 17mm; W: 9mm)
G6 tr 26	5075	-	Iron	Possible nail head. (L: 12mm)
G6 tr 26	5005	-	Iron	Large nail or burred punch. (L: 80mm; W: 14mm; Diam head: 21mm)
G6 tr 26	5075	-	Iron	Nail, joining shaft and head fragments, probably joining. (L: 26mm)
Copper alloy				
G6 tr 6	5014	-	Cu alloy	Flat round button with soldered loop to rear (now missing). Silvered (Diam: 26mm)

Table 72: Evaluation Field G6 Objects

Area 18 and Evaluation Fields G7 & G9 Objects

A.7.46 There were four fragments of ironwork, four of silver (representing two coins), and 13 of lead from Area 18 and one iron object from evaluation site G7. The ironwork is all in poor condition, one of the coins is in good condition and the other fragmentary, and the lead is in fair to good condition. All of the artefacts are stratified, most coming from pit **18064**, assigned to Period 6.2.

A.7.47 There are three nails (SF862) from modern (Period 7) pit/pond **18071**, all are undiagnostic shaft fragments. A large, badly corroded object (SF861) from Period 7 ditch 18052 (fill 18050) is probably a relatively recent washer or ferrule, with two fixing holes. The one fragment of ironwork recovered during the evaluation is a large rectangular object, but its identification is not clarified by x-radiography.

A.7.48 One of the two silver coins (SF850) from Period 6.3 pit **18031** (fill 18032; pit group **18031**) has been identified as a long cross penny, probably of Edward I's 'New' coinage, issued from 1279 on. The other coin (SF854) from high medieval (Period 6.2) pit **18064** (fill 18065; pit group 18100) is in poor condition and fragmentary, but can again be identified as a long cross penny of Edward I, probably from the London mint. A pre-decimalisation penny, dated 1927 (George V) came from evaluation trench G9, context E5400.

A.7.49 All of the lead items are from Period 6.2 pit **18064** (fill 18065). Most are amorphous fragments (SF856, SF859, SF860) or small drips of solidified molten lead (SF855, SF857, SF858), but there are also three small spindle whorls (SF851-SF853), two sub-conical and one closer to bun-shaped. Although widely used through the medieval period, these items cannot be closely dated. All three are quite small, with diameters between 17mm and 22mm, and weighing between 18g and 20g. Two have perforations *c* 6mm in diameter, which Walton Rogers (1997) would place in the Roman period, whilst the third has a diameter of 9mm, suggesting a later, Anglo-Saxon or medieval date. Their shape (two of Walton-Rogers shape A1, one of A2) is one closely associated, in York, with Anglian activity (*ibid*, 1737) There is, however, nothing else amongst the metalwork to suggest Roman or Anglo-Saxon activity, and it must be borne in mind that Walton Rogers notes that this strong correlation does not seem to persist on southern sites (*ibid*).

Area	*Context*	*Sf no*	*Material*	*Description*
Ironwork				
18	18050	861	Iron	Large ?washer obscured by corrosion products (Diam: c 50mm)
18	18072	862	Iron	Three nails, all shaft only fragments (L: c 43mm; c 42mm; c 32mm
Silver				
18	18065	854	Silver	Complete but fragmentary coin, , probably Edward I, minted in London
18	18032	850	Silver	Long cross penny, probably Edward I 'New Coinage' after 1279
Lead				
18	18065	851	Lead	Cast sub-conical spindle whorl. (Diam: 22mm; Ht: 10mm; Wgt: 20g)
18	18065	852	Lead	Cast low bun-shaped spindle whorl. (Diam: 22mm; Ht: 7mm; Wgt: 18g)
18	18065	853	Lead	Cast sub-conical spindle whorl (Diam: 17mm; Ht: 12mm; Wgt: 20g)
18	18065	855	Lead	Solidified spill? (L: 24mm)
18	18065	856	Lead	Rectangular fragment. (L: 30mm)
18	18065	857	Lead	Small solidified spills. No relevant dimensions
18	18065	858	Lead	Solidified spill? (L: 35mm)
18	18065	859	Lead	Fragment of twisted sheet. (L: 38mm)
18	18065	860	Lead	Roughly rectangular cast fragment. (L: 67mm)

Table 73: Area 18 Objects

Area	*Context*	*Sf no*	*Material*	*Description*
G7 tr4	5212	-	Iron	Rectangular object (L: *c* 61mm; W: 51mm)

Table 74: Evaluation Field G7 Object

Area	Context	Sf no	Material	Description
G9 tr2	5400	-	Cu alloy	Penny. George V. 1927

Table 75: Evaluation Field G9 Object

Area 19 and Evaluation Field P1 Objects

A.7.50 In all, Area 19 produced four fragments of ironwork, three of copper alloy, and seven of lead from this site, and one nail from the evaluation (P1). The ironwork is in poor condition, with both the copper alloy and the lead in fair to good condition. Much of the lead is unstratified.

A.7.51 The ironwork was confined to nails found in Period 6.2 pits, with fragments (SF915, SF916) recovered from pit **19154** (fill 19155) and pit **19135** (fill 19136) respectively. Two small fragments, tentatively identified as horseshoe nails (SF917) come from ditch **19285** (fill 19294), and element of enclosure **19106**.

A.7.52 A badly damaged copper alloy strap end (SF911) from Period 6.2 pit **19331** (fill 19330) is possibly medieval in date, but the other two items of copper alloy, both found unstratified, are more recent, a plain shoe buckle (SF903) and a domed button (SF907) are both likely to be of mid 18th-century or more recent date.

A.7.53 All of the lead items are unstratified from metal detecting. SF914, is a large cast fragment with a number of nail or screw holes. Its function is not obvious. The other lead objects comprise two pot mends (SF900, SF904), a spindle whorl or perforated weight (SF908), a fragment of cast round-sectioned wire (SF902), and two solidified 'spills' of molten metal (SF901, SF905). None can be dated.

Area	Context	Sf no	Material	Description
Ironwork				
19	19155	915	Iron	Nail fragment. Shaft only (L: c 35mm)
19	19136	916	Iron	Joining fragments badly obscured hand-wrought nail (L: c 34mm)
19	19294	917	Iron	Two similarly-sized fragments, possibly horseshoe nails (L: 27mm)
Copper alloy				
19	0	903	Cu alloy	Plain shoe buckle with separate bar (now missing). (L: 47mm; W: 36mm)
19	19024	907	Cu alloy	Domed button with wire loop to rear. Cap is thin sheet, crimped on to rear plate. (Diam: 16mm; Ht: 7mm)
19	19330	911	Cu alloy	Rectangular strap end, possibly embossed or incised. Two perforations at one end. (30mm; W: 14mm)
Leadwork				
19	0	900	Lead	Large, but thin, cast pot mend. (L: 53mm; W: 50mm; Th: 4mm)
19	0	901	Lead	Small solidified spill (L: 11mm)
19	0	902	Lead	Folded wire (L: 45mm)
19	0	904	Lead	Small cast pot mend. (L: 24mm; W: 15mm; Th: 7mm)

Area	Context	Sf no	Material	Description
19	0	905	Lead	Angular 'lump' which appears to be a solidified spill (L: 37mm)
19	0	908	Lead	Perforated disc, possibly spindle whorl or weight. (Diam 21mm; Th: 2.5mm; Wgt: 13g)
19	0	914	Lead	Large cast fragment, uneven, with a marked median ridge. (125mm)

Table 76: Area 19 Objects

Area	Context	Sf no	Material	Description
P1 tr12	E5827	-	Iron	Nail, shaft only (L: 28mm)

Table 77: Evaluation Field P1 Object

Other Evaluation objects not associated with Excavation Areas

Evaluation Field G4

A.7.54 Single hand-forged nails came from trenches 8 (context E4624) and 22 (context E4620) at this site. The bone handle of a small knife came from the latter context. Although in poor condition, the bone plates are clearly decorated with lozenge-shaped groups of dots. It is possible that these were originally inlaid with tin, a fashion popular in the 14th century. A more elaborate handle from London is inlaid with tin pins arranged in a floral pattern and an inscription with a panel of similar lozenges at the bottom of one side (Cowgill *et al* 1987, 95-6, fig 65 no 138).

Area	Context	Sf no	Material	Description
G4 tr 22	E4620	-	Worked bone / iron	Bone handle with iron rivets and tang. Decorated with lozenges of small dots, possibly originally inlaid with tin. Surfaces of bone very poor, ironwork very corroded. (L: 116mm; W: 22mm; Th: 13mm)
G4 tr 22	E4620	-	Iron	Nail, shaft only (L: 17mm)
G4 tr 8	E4624		Iron	Large nail, head and shaft fragment (L: 112mm; Diam head: 17mm)

Table 78: Evaluation Field G4 Objects

Evaluation Field P7

A.7.55 Trench 5, context E4208, at this site produced crushed fragments of rectangular-sectioned strip, possibly originally a small socketed object.

Area	*Context*	*Sf no*	*Material*	*Description*
P7 tr5	E4208	-	Iron	Rectangular-sectioned strip fragments, possibly comprising a crushed socket. (L: 39mm; W: 19mm; Th: 2mm)

Table 79: Evaluation Field P7 Object

A.8 Metalworking Waste

By Simon Timberlake

Introduction and methodology

A.8.1 The iron slag and metalworking debris examined comes from a series of evaluation trenches undertaken between April and September 2015 followed by 20 hectares of open-area excavations at 20 discrete sites along the course of Norwich Northern Distributor Route. Evidence for iron smelting and metalworking was recovered from Areas 3,9, 10, 11 and 17.

A.8.2 Sarah Percival undertook a report on the evaluation assemblage (in Pooley 2016) and also undertook an assessment of the metalworking debris from five excavation sites (in Moan 2017). However, the current assemblage, which includes the evaluation archive and some hitherto unseen material from Site 10, is almost twice as large as this. Accordingly, all of the material has been re-examined in greater detail, and the interpretation of the assemblage and its significance revised.

A.8.3 A number of general research objectives specifically relating to this ironworking evidence were itemised in the PXA (Moan 2017):

- *The evidence of medieval charcoal production and iron smelting has been seen on many sites within the hinterlands of Norwich […] The evidence identified through many of the areas excavated (particularly Areas 9 to 12) shows a widespread distribution for the activity. This evidence can be seen to be of regional importance when incorporated with other known medieval charcoal production and ironworking sites within the Norwich environs.*
- *Further analysis of the industrial features and assemblages will add information to the activities taking place in the hinterlands around Norwich during the medieval period. Dating of the charcoaling and ore smelting activity on Areas 9 through 12 is important, as it is possible that the activity originated during the Anglo-Saxon period. Synthesis of the evidence with that found at Mousehold Heath will add to the regional understanding of industrial practices during the medieval period.*

A.8.4 These and other questions will be addressed in the discussion of the fully interpreted assemblage. Prior to that the assemblage will be analysed on a site by site basis.

A.8.5 All of the material was re-weighed and examined by hand using a x10 magnification illuminated lens and a binocular microscope where necessary. The iron content of the slags was tested using a magnet and the slag typology compared with the samples of a (personal) reference collection. Standard reference texts were used both in the assessment and comparison of material (Tylecote 1986 & 1987; Craddock 1995; Bayley *et al.* 2001 in bibliography).

A.8.6 Within the catalogue tables, a suffix of '*****' equates to a recommendation for illustration, whilst '**D**' equates to a recommendation for disposal.

Technical Summary

A.8.7 A total of 84.2 kg of iron slag and metalworking debris was recorded during the examination of the samples taken from excavation Areas 3, 4, 9, 10, 11 and 17 (including the evaluations within fields H7/H5, S16 (Tr.13), R1 (Tr.18) and C1 (Tr.23 and Tr.26)).

A.8.8 Some 50.5 kg of this metalworking debris was recovered from Area 10 (38+ features), 19.3 kg from Area 11 (5 features), 10.4 kg from Area 9 (6 features), 3 kg from Area 17 (4-5 features), 0.9 kg from Area 3 (8 features) and 0.1 kg from Area 4.

A.8.9 More than 94% (79kg) of the metalworking debris examined appears to be from iron smelting carried out within slag pit or tap-slagging shaft furnaces with an internal diameter of between 250 – 400mm, whilst just 6% (5.5 kg) of the slag may be the result of the primary smithing of iron blooms, and more rarely the secondary smithing of wrought iron (maximum of 0.4 kg).

A.8.10 Along the course of the road scheme there appears to be evidence for iron smelting carried out during the Late Iron Age – Early Roman period (furnace pit **10421** within Area 10 and slag redeposited within Roman ditches in Area 3), the Early-Middle Saxon period (slag pit **10042** and charcoal-production pits **10001** etc. within Area 10), Early Medieval (11th to 12th century) period (charcoal-production pits **10255** in Area 10) and Late Medieval (15th to 16th century) period (*i.e.* pits **10345** and **10340** and features **9470** and **9254** with pottery and iron slag). In addition to this there was 0.05 kg of potential iron smithing debris (but no confirmed smelting slag) linked to a post medieval feature on Site 11, that may be residual.

A.8.11 Although such continuity of activity would not necessarily be surprising within an area of iron extraction, it is possible here that we are looking at just one or two phases of iron production, and therefore the distribution of much of this primary material into later features. In fact the rather ubiquitous and residual nature of slag and metalworking debris is an important issue to consider, and because of this the likelihood (if not probability) that many of the earlier slags have been re-deposited in later features, particularly in the neighbourhood of the former furnaces.

A.8.12 Fortunately, the location and type of smelting furnace, and their associated pits, can sometimes be established from the study of the types and associations of metalworking debris re-deposited within the fills of (grouped) local features. In fact, the excavation and recording of many of those features referred to as ‘furnaces’ within the NDR excavation areas suggests that these may in fact just be the broken-up/ dispersed remnants of the structures themselves which have been tipped into pits, although in some cases these pits may also indicate the sites of the furnaces.

A.8.13 In summary, at least 10, possibly 12, sites of former smelting can be recognized within the six NDR excavation areas based solely upon the juxtaposition of slag and smelting remains present; at least 6 of which are to be found within Area 10. Amongst these it is possible to recognize at least two different sorts of iron smelting furnace; one of which may be Late Iron Age – Early Roman and the others perhaps Saxon and/or Early Medieval in date. It is also possible that there are Later Medieval smelting furnaces within the general vicinity of the others.

Results by Area

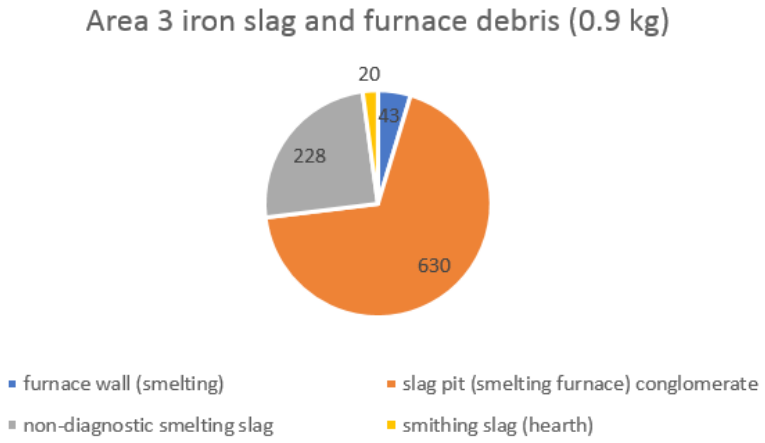
Area 3

A.8.14 The kilogramme of slag from this site is made up of small amounts of weathered iron slag re-deposited within features which range from the Roman to late medieval/ early post-medieval periods. It is significant perhaps that the iron smelting slag from the Roman pit **20289** is of a recognisably ‘early furnace type’ and consists of a slag pit conglomerate which is typical of Late Iron Age/Roman-Early Saxon pre-slag tapping

furnaces. Similar pieces of weathered slag conglomerate were also found re-deposited within the pit **20280** alongside probable secondary iron smithing debris.

Cut	*Feature*	*Ctxt*	*Slag type*	*No.*	*Weight (kg)*	*Magnetic (0-4)*	*Furnace/ pit intern. diam. (mm)*	*Comments*	*Spot date*
20255	ditch	20256	VHL	1	0.02	1		rim edge of hearth? **D**	
20280	pit	20278	VHL	1	0.02	0		smelting or smithing hearth **D**	11-16C (POT)
20280	pit	20278	slag pit	1	0.13	0		weathered lump of slag pit conglomerate **D**	11-16C (POT)
20289	ditch	20287	slag pit	3	0.5	0		slag pit conglomerate **D**	Roman (POT)
20300	ditch	20299	slag	1	0.02	2		undiagnost – but poss sm slag **D**	
20307	pit	20309	VHL	1	0.02	0	c.140	rim of possible smith hearth? **D**	
20307	pit	20309	slag	1	0.05	3		unidentified – poss smelting? **D**	
20280	pit	20281	slag	1	0.01	1		non-diagnostic iron slag **D**	
20297	pit	20298	sm slag	1	0.14	0		non-diagnostic smelt slag **D**	Roman (POT)
3157	pit	3159	VHL	1	0.01	0		non-diagnostic iron slag **D**	

Table 80: Area 3 metalwork waste catalogue



Graph 4: Weights (g) of iron slag and other metalworking debris from Area 3

Area 4

A.8.15 The small amount of iron slag recovered from the trench evaluation of this area (in Fields H5 and 7) is fairly undiagnostic of either furnace type or period, although from context **E809** there is perhaps the only evidence of fused iron ore pieces, now barely recognisable in terms of mineral ore type, yet indicative still of the actual ore charge size of around 5-8mm diameter. This is useful to our understanding of the process –

albeit one in which we have little other information on furnace or period. The material is small, weathered and re-deposited, thus may have been dispersed from some distance.

Trench	*Cut*	*Feature*	*Ctxt*	*Slag type*	*No.*	*Weight (kg)*	*Magnetic (0-4)*	*Furnace/ pit intern. diam. (mm)*	*Comments*	*Spot date*
H7/Tr8			E678	slag	1	0.03	0		undiagnost weathered sm slag **D**	
H5/Tr9			E809	slag	1	0.05	0		undiagnostic immature sm slag (fused ore (5-8mm size ore pieces?) **D**	

Table 81: Area 4 metalwork waste catalogue

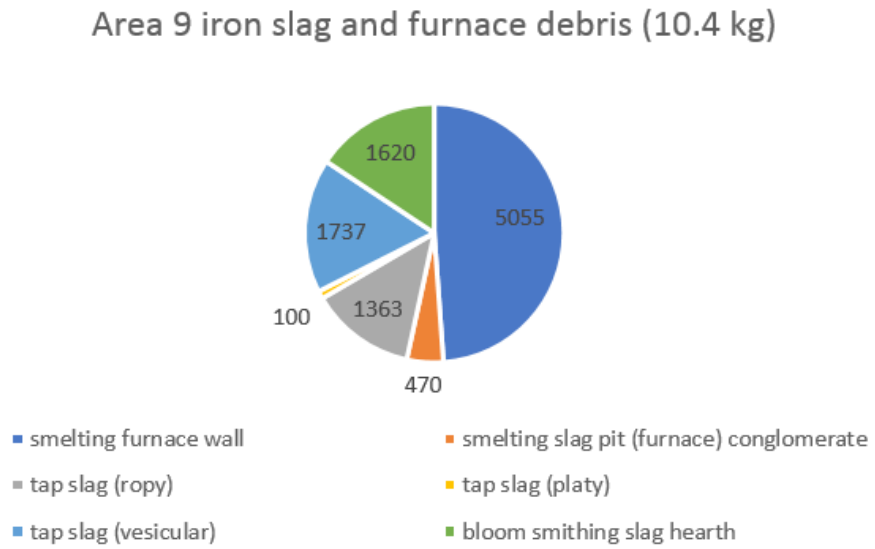
Area 9

A.8.16 The majority of the 10.4 kg of metalworking debris and slag from this area comes from the archaeological evaluation (Field S16 Trenches 6 & 13) and has little directly associated dating evidence. However, probable furnace locations are suggested by significant amounts of slag associated with contexts E3063 and E3037 and in particular E3068 (all Trench 6) which appear to be associated with tap-slagging furnace(s). Examples of furnace type are suggested by: a piece of pooled slag (E3063) banked against the probable tap arch of a furnace shaft; the base of a slag conglomerate (E3037) which seems to have been removed from a furnace of c. 260mm internal diameter; a fragment of lower furnace wall from a larger tapping furnace (of 350-400mm diameter) complete with traces of accreted slag scoria following slagging E3068; plus fragments of ropy-textured E3068 as well as low-viscosity platy slags E3074. From the excavation phase of Area 9 comes further examples of hearth bases from what may have been slag tapping furnaces (**9254**), a possible bloom-smithing hearth (**9206**), and yet more tap slag. The spatial relationship of these all these contexts/ features to each other will be important in terms of their final interpretation, yet it seems most likely upon present reckoning that we are looking here at Medieval slag-tapping furnaces, a suggestion also supported by the Early Medieval pottery dates for charcoaling pits (*e.g.* **9332**). Re-deposition seems a possible explanation for the presence of Medieval-type smelting slag within a 16th to 17th century pit.

Trench	*Cut*	*Feature*	*Ctxt*	*Slag type*	*No.*	*Weight (kg)*	*Magnetic (0-4)*	*Furnace/ pit intern. diam. (mm)*	*Comments*	*Spot date*
Tr6/S16	E3065	furnace	E3063	slag pool	1	0.8	0		slag cake pooled against tap arch (70mm thick)? * **D**	
Tr13/S16	E3038	ditch	E3037	base of slag pit	1	0.47	0	260	separation line between slag conglomerates -re-use with sandy lining beneath **D**	

Trench	Cut	Feature	Ctxt	Slag type	No.	Weight (kg)	Magnetic (0-4)	Furnace/ pit intern. diam. (mm)	Comments	Spot date
Tr13/S16	E3038	ditch	E3037	tap slag	1	0.42	0		slag flow with ropy surface 120mm+ **D**	
Tr6/S16	-	layer	E3068	lower furnace wall slag	8	4.62	0	380-400	thick layer of vertical slag accretion to lower walls with crystalline base and conglom scoria interior (30-60mm) * **D**	
Tr6/S16	-	Layer	E3068	VHL	1	0.43	0	370	fused clay wall with convex vesicular glassy surface (50mm thick) **D**	
Tr6/S16	-	Layer	E3068	tap slag	1	0.92	0		ropy flow slag on top with uneven channel base with grit + sand **D**	
Tr11/S16	E3075	ditch	E3074	platy tap slag	1	0.1	0		thin low-viscosity plate slag flow (10-15mm thick) **D**	
9	9206	ditch	9207	re-used hearth base?	1	1.62	0	200	shallow furnace base with sandy clay lining with re-lined clay top – bloom smithing? * **D**	
9	9225	pit/ ph	9224	tap slag?	1	0.02	0		fragment of thin (12mm thick) ropy slag runnel? **D**	
9	9254	pit/hollow	9255	slag cake	1	0.52	0	130	vesicular slag c.30mm thick in channel or hearth **D**	15-16C (POT)
9	9470	ditch	9472	slag cake?	1	0.42	0	100	40-50mm thick **D**	11-14C (POT)

Table 82: Area 9 & evaluation metalwork waste catalogue



Graph 5: Weights (g) of iron slag and metalworking debris types from Area 9

Area 10

A.8.17 Several location/context associations for what appear to be early-type shaft slag-pit iron smelting furnaces may be identified within Area 10. This includes a 'furnace group' of 7 pits referred to as an "Early Medieval" pit group (**10413**). One of these pits (**10432**) containing more than a kilogramme of slag also provided charcoal which gave a Late Iron Age to Early Roman C14 date of 39BC-123AD (1956 ± 30 radiocarbon age BP; SUERC-75489 (GU45240)). Another 9 kg of slag came from the fill (10439) of an associated pit (**10438**). It is significant perhaps that all of this slag consisted of slag pit conglomerate with vertical slag runnel drips which suggests an *in-situ* collection of slag at the very base of the furnace shaft as opposed to its removal by tapping. Likewise, the c. 250 mm diameter of the slag conglomerate cake (or 'furnace slag') appears consistent with the typical internal diameters for these furnace types. Pits **10435** and **10438** were both cylindrical in shape, thus they may represent the re-excavated remains of the slag pit furnaces, or at least the holes from which these were removed. Furnace wall and slag pit runnel are to be found with Early Saxon pottery in pits **10042** and **10044**, and an admixture of tap slag and slag conglomerate (from different furnace types) within possible Saxon furnace pit **10240** (fills 10247-10248). Another confirmed example of furnace slag (slag pit conglomerate) was identified within context 10050 (ditch **10049**), part of late medieval enclosure **10201** which lies some distance to the east of **10413**, and the slag may be of similar date

A.8.18 It seems that tap-slagging smelting furnaces were already being used for the production of iron here by (or before) the Middle Saxon period, as has been suggested by the recovery of vitrified furnace wall and tap slag from a charcoaling pit **10299** which is associated with a group of such pits, two of which returned Middle Anglo-Saxon radiocarbon dates (this includes a C14 date from pit **10001** of 729-951 AD at 95.4% probability (1181 ± 30 Radiocarbon Age BP; SUERC-75488 (GU45239)).

A.8.19 A further 7kg of broken-up furnace wall and ropy and platy tap slag from at least one destroyed tap-slagging furnace was recovered from the fill of a pottery-dated **Early Medieval** charcoaling pit (**10255**) and an adjacent charcoaling pit (**10225**). The fairly complete association of this debris from 10256 suggests a slightly more sophisticated

form of tap slagging furnace of this same date. From pit **10240**, directly west of these charcoaling pits was other slag associations that included both vesicular (10298) and radiating ropy tap slag (10307) as well as furnace wall material (10309) which all indicate this pit was a tap-slagging iron furnace. Within fill 10309 was the evidence for bloom smithing in the form of slag hearth bases, which as might be expected, lay close to the smelting furnaces. Once again, there is little in the archaeology of actual *in situ* remains of the iron smithing.

A.8.20 In the eastern branch (**10050**) of the late medieval enclosure ditch (**10201**) there is an interesting association of c.1.5 kg of slag which includes both ropy and platy tap slags, tuyere slags (the iron-slagged tips or bases of the air blast (tuyere) pipes), and bloom smithing slag (10084-10085) – yet all or most of this is likely to be re-deposited Early Medieval iron smelting and smithing debris. However, the best evidence for bloom smithing comes from 10065 (pit **10064**) – a 'slag sand' consisting of a mixture of magnetic spheroidal slag droplets and platy scale within a burnt flint and clay charcoal-rich sand.

A.8.21 Up to 6 kg of possible bloom smithing slags and sediments were thus identified from Area 10, although perhaps only 1.5 kg of this could be confirmed (contexts 10065 and 10256).

A.8.22 Despite the lack of definitive *in-situ* remains, this examination of the iron smelting and metalworking debris from Area 10 suggests reveals a probable continuity of iron production ranging from the pre-Roman Iron Age/ Early Roman period through to the Early (or perhaps even) the Late Medieval period.

Trench	*Cut*	*Feature*	*Ctxt*	*Slag type*	*No.*	*Weight (kg)*	*Magnetic (0-4)*	*Furnace/ pit intern. diam. (mm)*	*Comments*	*Spot date*
Tr23/ C1			E2816	sm slag	1	0.02	0		non-diagnostic dense slag fragment **D**	
C1/ Tr26			E2816	flow slag infill of tuyere/tap	3	0.63	0-2	70	junction of slag flow and infill (blocked) tuyere of c.70mm int diam. with accreting sandy furnace lining *****	
C1			E2841	slag flow	1	0.6	0	110	tap slag channel (20-25mm) **D**	
C1/ Tr26			E2860	tuyere slag?	1	0.28	0	c.100	slagged base of underside or hearth bottom (smelting) **D**	
10	10042	pit	10043	slag pit	14	2.83	0	250?	slag pit conglom up to 150mm thick with large charcoal impress (>50mm) and broken-off slag runnel *** D**	Early Saxon
10	10050	ditch	10049	slag pit?	21	0.48	0		slag pit conglom with charcoal but no runnel – assoc with flat sandy-clay lining away from tuyere *** D**	11-14C
10	10064	pit	10065	slag		2.05	0-4		spheroidal slag	

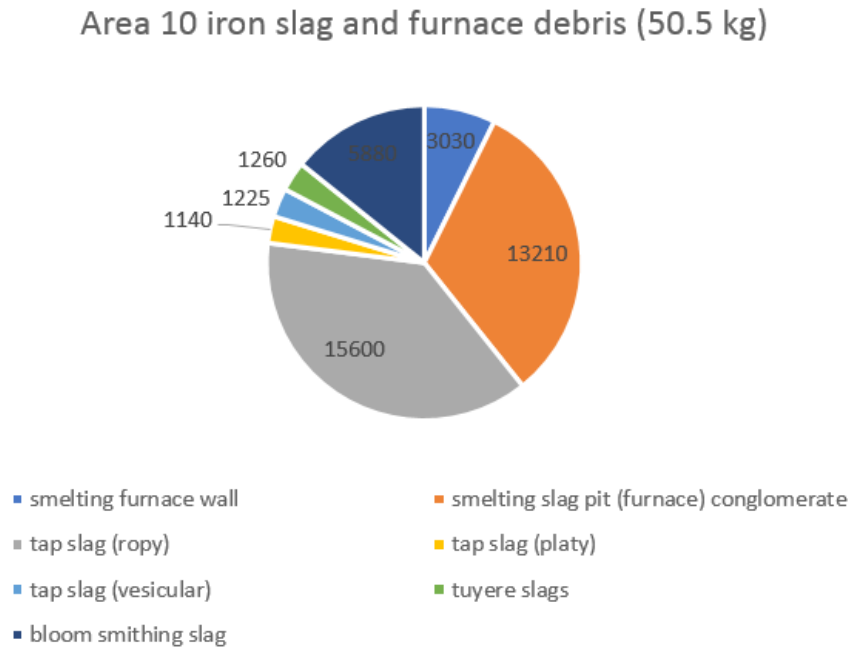
Trench	Cut	Feature	Ctxt	Slag type	No.	Weight (kg)	Magnetic (0-4)	Furnace/ pit intern. diam. (mm)	Comments	Spot date
			<458>	sand					droplets, concretions and platy scale fragments (75%) within a burnt flint and burnt clay and charcoal sand = bloom smithing? **D**	
10	10074	ditch	10075	tap slag	3	0.69	0		ropy flow slag 30 mm thick with pressure ridges +traces of clay/sand channel c.70-80mm wide *** D**	
10	10074	ditch	10075	tap slag	3	0.69	0		ropy flow slag 30 mm thick with pressure ridges +traces of clay/sand channel c.70-80mm wide *** D**	
10	10076	ditch	10077	tap slag	1	0.52	0	90	flow tip of platy flat tap slag with vesic base 45mm thick 90-100mm wide **D**	10-11C (POT)
10	10074	ditch	10084	bloom smithing?	1	0.74	0		hearth or channel slag **D**	
10	10074	ditch	10084	slagged tip tuyere	2	0.35	0	110	probably slagged tip or underside of tuyere with blast hollow – either smithing or smelting? **D**	
10	10076	ditch	10085	tap slag	2	0.46	0		ends of ropy slag flow channel 20-30mm and minimum 70mm+ wide **D**	
10	10096	ditch	10097	tap slag	1	0.73	0	110	upper surface of tap channel slag close to tap arch* **D**	
10	10145	ditch	10144	tap slag	1	0.07	0		ropy surface slag (20mm thick) **D**	12-14C
10	10159	ditch	10160	tap slag/ slag pool	1	0.39	0		perhaps slag pool next to tap arch (45-50mm thick)? **D**	
10	10161	ditch	10162	tap slag?	1	0.26	0		ropy slag under charcoal	11-14C
10	10199	pit	10200	sm slag	1	0	1		undiagnostic **D**	12-14C
10	10225	Charcoaling pit	10229	tap slag	6	0.51	0		ropy and uneven -surfaced slag (incl beneath charcoal) **D**	Middle Saxon (C14)
10	10225	Charcoaling pit	10229	furnace wall	2	0.26	0		lower furnace wall **D**	
10	10225	Charcoaling pit	10229	VHL wall	3	0.33	0-1		high-fired upper furnace wall with globules of iron slag attached *****	
10	10225	Charcoa	10229	tap slag	6	0.03	0		**D**	

Trench	Cut	Feature	Ctxt	Slag type	No.	Weight (kg)	Magnetic (0-4)	Furnace/ pit intern. diam. (mm)	Comments	Spot date
		ling pit	<467>	+ VHL						
10	10240	furnace	10241 <468>	slag scoria	10	0.02	0		**D**	
10	10240	furnace	10241 <468>	furnace wall+VHL	12	0.56	0		VHL (x4) + reddened sandy clay with flint furnace wall (x8) 30-50mm thick *	
10	10240	furnace	10248	lower furnace wall slag	12	0.89		c.250	thick (20-50mm) slag accretion to inside wall of lower shaft with conglomerate of collapsed sandy furnace lining * **D**	
10	10240	furnace	10249 <471>	furnace wall + VHL	5	0.06	0		VHL (x1) + weathered clay wall **D**	
10	10240	furnace	10249 <471>	tap slag	100	2.01	0		highly fragmentary ropy and plate slag with some slag pit runnel (10 – 70mm) **D**	
10	10255	pit	10256 <469>	tap slag	50	2.59	0		broken-up (crushed?) thin ropy tap slag with some burnt clay slag channel lining **D**	Early Medieval (POT)
10	10255	pit	10256 <469>	furnace lining	20	0.13	0		weathered and waterworn small fragments of fired clay (up to 35mm thick) **D**	
10	10255	pit	10256 <469>	slag sand		1.01	0		spheroidal slag droplets, concretions (75%) within a burnt flint and burnt clay and charcoal rich sand = bloom smithing? **D**	
10	10255	pit	10256 <469>	tap slag	100	2.85	0-1		broken-up ropy slag and slag runnel (<50mm) fragments **D**	
10	10255	pit	10257 <470>	tap slag	8	0.06	0		fragmentary platy and ropy tap slag (<30mm) **D**	
10	10261	ditch	10262	tap slag	1	0.2	1		fluted ropy slag (35 mm thick) **D**	
10	10240	furnace	10298 <472>	VHL (glassy) + clay lining	15	0.06	0		weathered fragments, some glassy **D**	
10	10240	Furnace	1098 <472>	slag pit	<50	0.45	0		broken-up slag conglomerate fragments (<30mm) **D**	
10	10240	Furnace	10298	tap slag	1	0.24	0		vesicular slag	

Trench	Cut	Feature	Ctxt	Slag type	No.	Weight (kg)	Magnetic (0-4)	Furnace/ pit intern. diam. (mm)	Comments	Spot date
									surface (beneath charcoal) 35mm thick **D**	
10	10299	Charcoaling pit	10301 <473>						charcoal in burnt flint gravel (3.604 kg) **D**	
10	10240	Furnace	10307	tap slag	2	2.64	0		ropy flow slag 20-30 mm thick* + slag-filled clay-lined channel adj to tap arch **D**	
10	10240	Furnace	10307	tap slag	1	1.7	0		ropy radiating slag flow from edge of slag arch (25-50mm) *	
10	10240	Furnace	10309	bloom smithing + VHL	2	2.478 + 0.031	0	350	possibly a hearth slag cake from smithing an iron bloom with upper hearth re-lining + small fragment of clay VHL (assoc with smithing?) * **D**	
10	10240	Furnace	10309	furnace lining	1	0.96	0	350	slagged VHL – perhaps associated with above or smelting furnace **D**	
10	10333	ditch	10335	bloom smithing	1	0.34	3	>200	possibly a bloom smithing hearth base attached to VHL underneath **D**	
10	10353	pit	10354	tap slag	1	0.03	0		platy tap slag flow * **D**	
10	10345	pit	10390	tap slag	13	1.22	0		ropy and platy slag (10-20mm thick) and uneven topped slag pool with sandy base (30mm+) **D**	
10	10345	pit	10390	tuyere slag	1	0.23	0		dense slag in region of tuyere **D**	
10	10413	furnace	10414 <477>	slag	1	0	0		**D**	
10	10421	furnace	10422 <478>	furnace lining	5	0.01	0		weathered/ waterworn clay wall fragments **D**	
10	10421	pit	10423	slag pit	12	0.82	0		100mm+ thick consisting of vertical runnel with little charc **D**	
10	10421	pit	10423	VHL glassy	1	0.25	0		area of rim top of shaft showing evidence of re-lining (fused glazed green) 35-60 mm *	
10	10427	ditch	10427	tuyere slag	1	0.11	0		accreted scoria slag to rim of tuyere(?) **D**	
10	10428	furnace	10429	slag	6	0.04	0		**D**	

Trench	Cut	Feature	Ctxt	Slag type	No.	Weight (kg)	Magnetic (0-4)	Furnace/ pit intern. diam. (mm)	Comments	Spot date
			<479>	scoria						
10	10421	furnace	10422 <478>	slag pit?	25	0.17	0		small broken fragments of slag runnel (<20mm) **D**	
10	10430	furnace	10431 <482>	high glass VHL	2	0.1	0		35mm thick **D**	
10	10430	furnace	10431 <482>	slag pit	50	0.45	0		fragmentary slag runnel (<40mm) **D**	
10	10430	furnace	10431 <482>						charcoal in burnt flint gravel **D**	
10	10430	pit	10432	slag pit	17	1.18	0-1	250	slag pit conglom and broken-off slag runnel (through pit lining) **D**	LIA-Roman (C14)
10	10433	ditch	10434	tap slag	2	0.13	0		flat platy slag pieces *	
10	10433	ditch	10434	slag pool	5	0.9	0		pooled slag under charcoal (up to 30-40mm) * **D**	
10	10438	furnace	10439	slag pit	23	3.4	0	250	slag pit conglomerate with 1-5cm charcoal impressions and runnel on underside **D**	Roman?
10	10438	furnace	10439	slag pit	8	3.34	0-2	250 (170 + deep)	intact slag pit conglomerate with 1-7cm charcoal impressions towards top and some clay lining attach to runnel under *	Roman?
10	10438	furnace	10439 <481>	slag pit	>100	1.87	0		broken-up slag conglomerate with charcoal impressions (20 – 70mm) **D**	Roman?
10	10440	furnace	10449 <483>	slag scoria	8	0.01	0		**D**	

Table 83: Area 10 & evaluation metalwork waste catalogue



Graph 6: Weights (g) of iron slag and metalworking debris types from Area 10

Area 11

A.8.23 Although on a considerably smaller scale, the slag and metalworking debris and archaeology of excavation Area 11 and the evaluation of Field R1 (Trench 18) has provided us with the best *in-situ* evidence so far for an iron smelting furnace structure (*i.e.* **11126=** E2638 + E2636). Both this and most of the other metalworking evidence from Area 11 appears to be associated with the use of an 'early type' of slag pit shaft furnace. There is no evidence at all for tap slagging, or for that matter the near-furnace smithing of the iron blooms. However, some 19.3kg of iron smelting slag and furnace wall was recovered from the excavation of this area. In addition, a very small amount of re-deposited secondary iron smithing slag (broken-up forge slag) was recovered from a post-medieval (16th to 18th century) posthole.

A.8.24 This feature was half-sectioned during evaluation and 100% excavated during the further mitigation works. This allows the construction of a 'model' which suggests the presence of a circular daub/ clay-walled shaft furnace more than 0.5m high, with an internal diameter of *c*. 300mm at the top but wider (350 – 360mm) towards the base, with a furnace wall thickness of between 30-40mm (where there is the accretion of iron slag and vitrification upon the inside this has grown to c. 60mm thick at the base), and the likely presence of a slag pit in its base. The shaft furnace, it appears, was probably dug into the ground (or into a bank) to a depth of 0.5 m, beneath which there was probably a slag pit of *c*.300mm deep. The remainder of the 'cut' for the furnace was then probably backfilled with soil or clay around the furnace wall. What has been described as a 'flue' (**E2637**) placed in front (*i.e.* on the north-east side) of the furnace most likely reflects the entrance of the tuyere(s) and bellow(s) above the level of the slag pit, but this is difficult to determine now due to the level of subsequent destruction of this feature. There remains the possibility of course that this furnace possessed a tap arch, and that the intention was to try and tap the slag into an external slag pit immediately adjacent to and below the tuyere entry, but if this was the case, then it

clearly failed to tap, and if iron bloom(s) were successfully produced, then the slag separation that took place was into a slag pit beneath. If a multi-use rather than a single-use furnace (which seems likely from the depth of vitrification and slag accretion present), the base of the furnace would have been broken apart in order to remove the tuyere and attached bloom, and probably also to dig out the furnace slag (conglomerate) from the inside. This may explain some of the advantages seen in burying the furnace shaft, and in preparing a working area (i.e. 'flue' pit) at the front.

A.8.25 Amongst the many small details seen in the furnace debris is the evidence for a tuyere blast hole penetrating the furnace slag. This suggests that there was a slag build up within one or other of the smelts which could have partly blocked the tuyere pipe. Likewise there appears to be evidence for the partial collapse of the furnace wall into the slag; either the result of *in situ* structural collapse, or else the result of an attempt at removing the slag/ slag blockage whilst still molten. It is also clear from the furnace wall debris that the slag level built up, and then was lowered, either through its removal from the base whilst still viscous (*i.e.* 'dug out' as opposed to tapping it), or else its break through into the slag pit once fully molten.

A.8.26 Re-examination of this feature during the excavation phase produced another 4.6 kg of slag and hearth lining. Examination of the charcoal impressions within this slag pit conglomerate suggests the use of split hazel and oak branchwood charcoal of c 50mm diameter. This might therefore suggest a coppiced fuel source.

A.8.27 Just 105g of 'smithing hearth' debris consisting of some relatively un-diagnostic slag lumps plus a small piece of vitrified hearth lining were recovered from Late Medieval/ Postmedieval features. It was not possible to discern whether this was from primary or secondary smithing.

Trench	Cut	Feature	Ctxt	Slag type	No.	Weight (kg)	Magnetic (0-4)	Furnace/ pit intern. diam. (mm)	Comments	Spot date
Tr18/ R1	E2636 (= 11126)	furnace	E2634	slag pit	25	0.76	0		small broken fragments of conglomeratic slag runnel (with v few bits charcoal) **D**	
Tr18/ R1	E2636 (= 11126)	furnace	E2634	furnace lining and iron slag scoria	20	2.29	0-1	300	accretion of iron slag scoria broken off from shaft furnace wall lining *** D**	
Tr18/R 1	E2636 (= 11126)	furnace	E2634	furnace lining	50	3.51	0		very fragmentary reddened clay furnace wall of minimum 40-mm thickness and thin high vitrification on inside surface to depth of 5mm *** D**	
Tr18/ R1	E2636 (= 11126)	furnace	E2635	furnace lining	25	1.03	0	300	clay furnace wall of shaft furnace c. 60-70mm thick with 30mm vitrified zone with some accreted iron slag (<5mm) in places **D**	

Trench	Cut	Feature	Ctxt	Slag type	No.	Weight (kg)	Magnetic (0-4)	Furnace/ pit intern. diam. (mm)	Comments	Spot date
Tr18/ R1	E2636 (= 11126)	furnace	E2635	slag accreted furnace + VHL	30	2.03	0-1	300-350	collapsed furnace wall material mixed with iron smelting slag and one example of fired broken VHL sitting on top of iron slag pool * **D**	
Tr18/ R1	E2636 (= 11126)	furnace	E2635	slag pit	53	1.95	0	360	slag conglomerate with extensive slag runnel and rare traces of horizontal tuyere blast hole **D**	
Tr18/ R1	E2636 (= 11126)	furnace	E2636	VHL with accreted slag	10	0.84	0		highly vitrified furnace wall of c.40mm reddened sandy gritty clay with 10-30mm sagging. Includes top glazed rim * **D**	
Tr18/ R1	E2636 (= 11126)	furnace	E2636	upper furnace wall	9	0.56	0-1		reddened clay furnace wall fragments with up to 60mm iron slag scoria **D**	
Tr18/ R1	E2636 (= 11126)	furnace	E2636	slag pit	15	1.67	0		slag conglomerate with extensive vertical slag runnel **D**	
11	11025	ditch	11026	smithing slag	13	0.08	0-1		broken-up slag smithing lumps with shale/flint inclusions and attached redden furnace lining **D**	
11	11039	ditch	11040	vitrified hearth lining	1	0.02	0	<100 ?	edge of small smithing hearth *	16-18C (POT)
11	11001	pit	11003	hearth lining	1	0.08	0		baked pink-pale silty clay **D**	
11	11126	pit/ furnace	11124	slag pit	10	0.92	0	>100	slag pit conglomerate with runnel drops + charcoal impressions c.50mm **D**	
11	11126	pit/ furnace	11125	slag pit	9	3.59	0	c.260	slag pit conglomerate with horiz runnels * **D**	

Table 84: Area 11 & evaluation metalwork waste catalogue

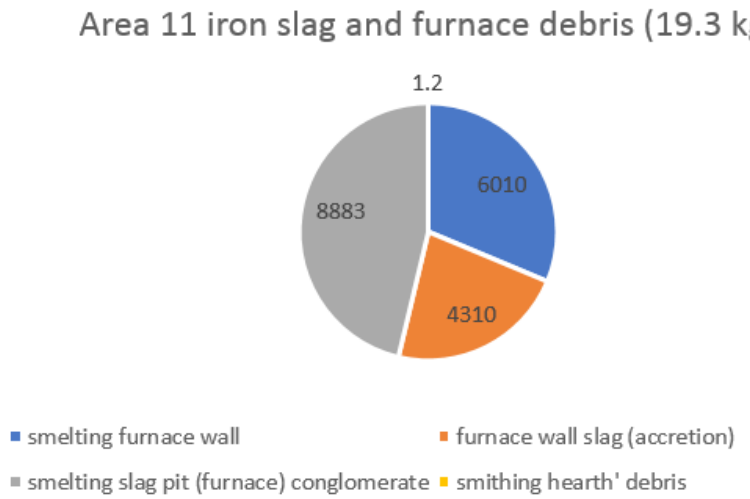


Illustration 7: Weights (g) of iron slag and metalworking debris types from Area 11

Area 17

A.8.28 Despite the recovery of more than 3 kg of iron slag, much of it coming from just one feature (ditch **17191**), it has not been possible to suggest the probable source or location of the furnace(s). Almost all of this though is typologically the same, consisting of ropy tap slag, platy tap slag, vesicular-type channel slag and tuyere slag block (concretion) – all of it associated with fully tap-slagging iron furnaces. However, the complete absence of furnace wall debris, or for that matter any substantial pieces of slag pit (furnace) conglomerate, precludes any assessment being made of furnace size(s) or number.

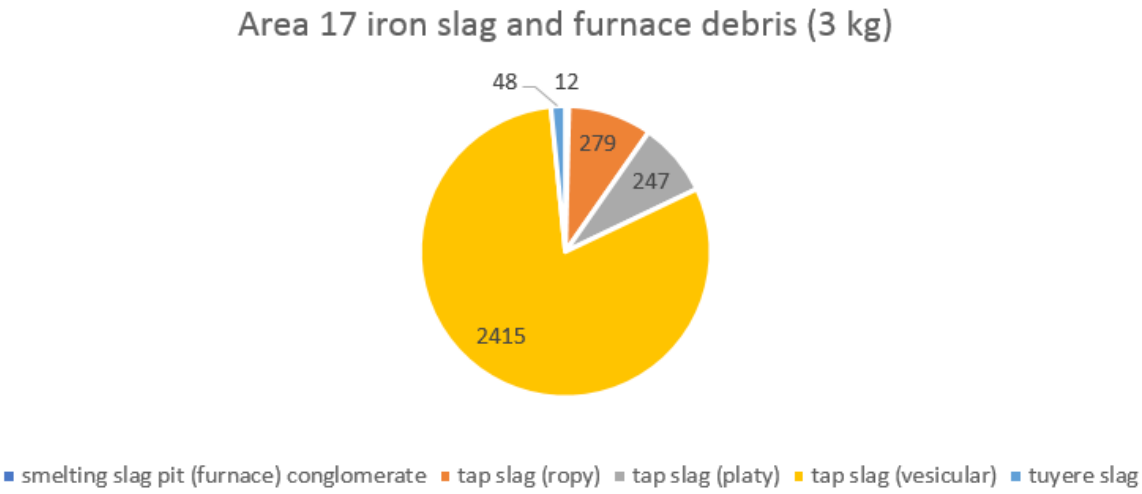
A.8.29 The well-preserved but fragmentary nature of the slag suggests a nearby location for these probably destroyed smelting furnaces, yet most of the debris was recovered from just a few fills within a number of late medieval ditches, none of which appeared to be associated in any way with charcoaling pits (contrary to what we find on Sites 10 and 11), with most accompanying a range of other re-deposited finds including Early Medieval pottery sherds (11th to 14th century AD).

A.8.30 Apart from (perhaps) the single example of slag pit conglomerate from 17647 (pit **17468**) all of this material seems likely to be the product of the typologically later form of slag-tapping furnace which may be Late Saxon or Early Medieval in date.

Trench	Cut	Feature	Ctxt	Slag type	No.	Weight (kg)	Magnetic (0-4)	Furnace/ pit intern. diam. (mm)	Comments	Spot date
17	17191	ditch	17192	tap slag	1	2.42	0	140	rough upper surface of tap channel slag close to tap arch – flow depth 60-70mm + 140mm wide * **D**	11-14C (POT)
17	17261	ditch	17263	tap slag	1	0.03	0		ropy slag c.15mm thick **D**	12-14C (POT)
17	17365	ditch	17366	tap slag	1	0.13	0		ropy slag c.15mm thick *	11-14C (POT)
17	17463	ditch	17464	tap slag	1	0.02	0		ropy slag 15-20mm	11-14C

Trench	Cut	Feature	Ctxt	Slag type	No.	Weight (kg)	Magnetic (0-4)	Furnace/ pit intern. diam. (mm)	Comments	Spot date
									thick **D**	(POT)
17	17463	ditch	17464	tuyere slag	1	0.05	0	50	iron slag block in base of tuyere c.50mm internal diameter *	11-14C (POT)
17	17292	ditch	17293	tap slag	1	0.25	0		lower layer of flat platy tap slag c.30mm thick **D**	11-14C (POT)
17	17468	pit	17467	tap slag	2	0.02	0		fragments of very thin tip (runnels) of tap slag **D**	11-14C (POT)
17	17468	pit	17467	sm slag	1	0.1	2		poss frag of slag pit conglom **D**	11-14C (POT)

Table 85: Area 17 metalwork waste catalogue



Graph 8: Weights (g) of iron slag and metalworking debris types from Area 17

The NDR Slag Assemblage Classification & Typology

A.8.31 A brief classification of the iron slag and associated metalworking debris recovered from these sites is provided below, and this includes an explanation of the relevant terminology. This can be confusing when similar slag elements are described differently from different sites, or when different types of slag which look similar are described as being the same. In some cases it may not even be possible to distinguish between them. For this reason it is sometimes impossible to provide a definitive interpretation of furnace processes. This is more problematic where *in-situ* furnace remains either don't survive, or where the survival is just partial (such as in Areas 10 and 11). It's for this reason that a 'best fit' approach is recommended through an examination of the more closely associated assemblages of slag and MWD to try and detect different furnace types/furnace processes and chronologies of activity. Although comparisons with the ironworking evidence from nearby archaeological sites is clearly important here, the distinctive characteristics of these furnace/slag remains and the dating of some of the

relevant features should be looked at critically given the long duration of iron smelting in the Norwich area (i.e. from the Late Iron Age to Late Medieval periods).

A.8.32 The terminology and definitions used here will be compared with that of Keys in Bishop and Proctor (2011, 98-100); her description refers to the more comprehensive remains of iron roasting, smelting and charcoal production found at Laurel Farm (Bishop 2011) the south-west of Area 11, as well as to the terminology used by Bayley *et al*. in the Centre for Archaeology Guidelines for Archaeometallurgy (2001).

slag pit conglomerate ['furnace slag' (Keys 2011,98); 'furnace bottom' (Bayley *et al*.2001,11)]: a heterogenous slag cake that is usually formed inside of the (base) of the furnace, which when more complete defines the shape and size of the sub-surface slag pit below the level of the tuyere and iron bloom, and this usually therefore accumulates below the zone of vitrification. This is not normally the slag found accreting to the lower furnace wall (unless this has blocked the furnace and the slag level rises and then empties into the tuyeres). It is referred to as 'conglomerate' on account of the numerous inclusions of charcoal throughout the mass (particularly towards the top), occasionally of the baked clay lining, and in particular the worm-like and mostly vertically oriented slag drips (runnels) which form a sometimes porous mass around its sides and base. The slag is generally non-magnetic and fayalitic in nature, and is a more typical of earlier (i.e. Late Iron Age-Romano British and Early Anglo-Saxon) non tap-slagging iron smelting furnaces, where the slag is instead collected in a sub-shaft slag pit. Less slag production may reflect the use of richer hand-picked ores (Bayley *ibid*. 11). In some cases there may be some difficulty in distinguishing these furnace slag pit slags from those tapped into round (cylindrical) slag collection pits immediately adjacent to the furnace (as suggested by Timberlake 2017 re. the Romano-British slags from Marsham Resilience Scheme).

slag blocks ['slag block' or plano-convex 'furnace slag bottoms' (Keys *ibid.*,99)]: larger and sometimes denser examples of these same furnace slags, invariably formed in the same way (NB. Iron Age *Schlackenklotz*)

slag drip or **runnel** ['slag runs' (Keys *ibid*,99)?]: short stalactitic drips of molten slag, usually no more than 10mm in diameter and rarely more than 70-80mm long, some wound into longer coiled shapes, and typically formed around the edges and on the base of in situ. slag blocks within a slag pit. Sometimes these are broken off, and in mixtures of slag debris may be confused with flow slag.

furnace wall slag: a layer of slag which remains accreted to the lower part of the vitrified wall of the furnace following its tapping, or subsequent to the drop of the molten slag into the slag pit. This slag layer may be up to 60mm thick in places, but is variable; the slag having fully vitrified and cemented the furnace wall, sometimes with a crystalline layer of fayalite along the contact zone and a layer of slag scoria upon the surface.

scoriaceous slag: a mixture of fayalitic and oxidic slag left coating the inside of the lower furnace wall following the drop of the molten slag into the slag pit, or else following tapping. More typically this will be found associated with the 'earlier' type slag pit furnaces.

slag drops ['slag prills' (Keys ibid., 99)]: small drops of fayalitic slag often found adhering to the interior vitrified wall fragments of the upper furnace, but which may also be found showered around and within the sediments in front of the tap arch. These sometimes survive within the sediments and broken-up layers of dumped slags, and may be confused with slag spheres or spheroidal hammerscale.

vitrified hearth lining ['vitrified clay lining' (Bayely *et al*. 2001, 10)]: the altered, fused and glazed lining on the interior of the clay/daub furnace wall or hearth. This is to be found on both smithing hearths and on the walls of smelting furnaces, although on the latter the depth of alteration is greater due to the intensity of the heat and duration of the smelt. The depth of vitrification seen within some of the NDR smelting furnace walls occasionally exceeds 30-40mm. In smithing hearths this rarely exceeds 10-15mm. A green iron glaze can sometimes be seen

coating the interior upper rim fragments of the shaft smelting furnaces or bloom smithing hearths.

clay furnace wall: the unvitrified portions of clay/daub lined wall, usually on the exterior of the furnace. The fabric of the clay may be fired pink or red, or may be relatively soft and un-altered. In this condition it is often weathered into fragments from pieces of furnace wall left exposed at surface, and then appears as 'clay lumps' within the charcoal-rich or washed slag sediments. Most of the clay walls of the smelting furnaces encountered on the NDR sites were between 30-50mm thick.

tap arch: a structural arch or hole within the base of the furnace beneath the level of the tuyere(s) which is sealed with clay then opened during the smelt to either tap or rake out the liquid slag (slag-tapping furnace only). This is often re-sealed then re-opened (periodically) during the smelt.

tuyere slag: a scoriaceous and dense fayalitic slag associated on occasions with vitrified clay which forms upon the tip and underside of the clay tuyere pipe, and sometimes around it and also within it in the form of a partial blockage. In some cases the tuyere itself has melted away, with the slag itself forming the blow hole within the vitrified lining.

slag pool ['dense slag' (Keys ibid., 98)?]: a ponding of trapped slag which collects inside or outside of the tap arch forming (either intentionally or unintentionally) a shallow slag cake composed of dense slag.

flow slag ['run slag' (Keys *ibid*.98)]: fayalitic tap slag which exhibits flow lines, but which is either too fragmentary or otherwise too indistinctive to characterise.

vesicular tap slag: a dense fayalitic tap slag which exhibits horizontal flow structure, but which is frequently thick (and possibly therefore viscous when tapped), possessing an uneven vesicular surface. This may represent slag 'raked out' from the tap arch of the furnace, possibly mixed with charcoal, the presence of which forms the uneven top.

ropy tap slag ['ropy flow tap slag' (Keys *ibid*. 98)]: a less viscous type of fayalitic slag which is probably the commonest recognized form of tap slag typical of the smelting of poorer more silicic iron ores and/or the addition of a flux. All are non-magnetic with a relatively low iron content.These form short runs, and sometimes show the imprint of the tap channel dug from the tap arch. The flows of ropy tap slag associated with the NDR tap-slagging furnaces are rarely more than 100mm long and wide, and frequently are no more than 20-30mm thick. Most of the examples recovered appear to be the tips or ends of longer runs. Occasionally these are radiating flows from a slightly-blocked tap arch.

platy tap slag: low viscosity tap slags which flow quickly across the top of hot semi-molten slag masses and which break up into thin sub-parallel sheets (usually < 10mm thick) following rapid cooling.

bloom smithing hearth bases ['smithing hearth bottoms' (Keys *ibid.*,99)]: in general this produces much larger plano-convex hearth bottoms than those formed by secondary smithing (*i.e.* SHBs). Whilst dense in the middle, the tops of these cakes can be seen to be composed of composite scale and collapsed spheres which are sometimes magnetic. The iron bloom is usually smithed close to the site of the smelting furnace, by heating this in a clay-lined hearth, then hammering the bloom upon an anvil to remove the particles of slag and forge it into a billet of iron.

spheroidal slag ['slag spheres' (Keys *ibid.*,99)]: these spheres or spheroidal scale particles are larger than the spheroidal hammerscale produced by secondary smithing or forge welding of iron. The spheres, some of which are fused together, are individually rarely >5mm in diameter. These are formed during the primary smithing of the slag bloom into a billet, and are often to be found within the floor sediments around the smelting furnaces and bloomery hearths, often in the form of 'slag sands'. Often strongly magnetic.

smithing slag ['secondary smithing slag' (Bayley *et al.* 2001)]: fused and melted platy and spheroidal hammerscale with inclusions of charcoal in much smaller fragments. Associated with the forging of iron, and usually unrelated to the sites of smelting.

SLAG PIT Type 1	no recovered furnace wall	250mm internal	slag block w coarse charcoal	slag runnel on base	poorly fired clay lining				Romano-British or Saxon
SLAG PIT Type 2	vitrified + unvitrified furnace wall	300-350mm	slag pit conglomerate composed of slag runnel	slag pool			slagged lower furnace wall	collapsed furnace wall	Middle-Late Saxon?
SLAG TAPPING furnace	highly vitrified furnace wall	370-400mm internal	'slag cake' vesicular slag	slag pool (tap arch)	ropy tap slag	platy tap slag	slagged lower furnace wall	evidence of furnace re-use	Late Saxon/early medieval
BLOOMERY HEARTH	shallow clay-lined hearth	200mm	porous composite hearth base		slag spheres (magnetic)	slag sand sediment		primary iron smithing	Roman? - Medieval
SMITHING HEARTH	fragmentary VHL	c.100mm?	fragmentary low-density smithing slag		magnetic			secondary iron smithing	Late medieval – post-medieval

Table 86: Association matrix for the recognition of different furnace types

The NDR Slag Assemblage as a whole

A.8.33 Approximately 34.2 kilogrammes (42%) of the slag and metalworking debris examined from NDR originated in slag-tapping iron furnaces which were probably Late Saxon or medieval in date, whilst 24.2 kilogrammes (30%) came from slag pit (Slag Pit Type 2) iron smelting furnaces which may have been Early to Middle Saxon in date, and another 12.3 kilogrammes (15%) from slag pit (Slag Pit Type 1) furnaces which could be Early Roman or Saxon in date. A further 8.5 kilogrammes (11%) of the slag appears to be composed of (Roman – Medieval?) bloom smithing waste, and just 0.5 kilogrammes (0.6%) consisted of secondary iron smithing (late medieval – post medieval). There was another 1 kg of indeterminate iron slag(s).

Discussion

A.8.34 The summary above provides the basis of a revised assessment of this iron smelting/working assemblage recovered during the excavations carried out within the landscape of the Norwich Northern Distributor Route.

A.8.35 The distribution of slag spreads, destroyed furnace sites and charcoal pits along this route reveals a concentration of smelting and minor associated bloom smithing activity (production = 50.5 kg slag) within Area 10 near Rackheath, where the smelting most probably dates to the Roman – medieval period. This level of activity then appears to decrease a short distance to the north-west on Site 9 (production = 10.4 kg slag) where there is evidence for medieval tap-slag smelting, and to the south on Site 11 (production = 19.3 kg slag), where there are only slag-pit furnaces which may be Roman or Early-Middle Saxon in date. To the south of this on Site 17, close to the site of the Laurel Farm site (Bishop & Proctor 2011), traces of what was probably medieval tap-slag iron

production (3kg slag) was encountered, whilst some distance to the west of Rackham Heath within the parish of Horsford, very minor indications of smelting and ironworking (smithing) activity (0.9 kg slag) were identified on Area 3.

A.8.36 In short, therefore, we are looking at another pre-medieval to medieval iron production centre in the area of Sites 9-11 on Rackham Heath which appears to be of similar size to that investigated at Laurel Farm, which produced 41.4kg of slag.

A.8.37 This study of this assemblage raises a number of important questions. For instance:

- Is it possible to resolve the uncertainty concerning the dating of the main iron production period(s) and their duration? Are we, for instance, looking at predominantly Romano-British or Middle-Late Saxon slag-pit iron smelting? There appears to be suggestions of both here, although the evidence for medieval tap-slag iron smelting is perhaps more convincing.
- What is the scale of production, and does this represent a small-scale *ad-hoc*. local rural industry designed to satisfy local demand based on the *in-situ* exploitation of local ores?
- What were the raw material demands in terms of wood, ore and skilled manpower?
- How exactly did these different furnaces work? There is a reasonable body of evidence now from Norfolk and the East of England for Roman and Medieval iron production and the types of furnaces used.

A.8.38 As can be seen from the results of this analysis, dating of the iron-smelting features is relatively difficult due to the similarity of the slag throughout all periods. The radiocarbon date retrieved from features on Area 10 would indicate a Roman date for the cluster of furnaces identified there, although there is evidence for Saxon ore smelting due to the recovery of slag from a charcoaling pit, from which 3 radiocarbon dates have been obtained, dating this form of feature to the Middle to Late Saxon period. Similarly, a Roman date was retrieved for the rectangular charcoaling pits on Area 11, most probably associated with the best example of a slap pit furnace from the route.

A.8.39 Roman iron smelting furnaces have been found on the northern and southern peripheries of Norwich, both on Buxton Heath (excavated by Norwich Castle Museum in 1954) [Norfolk Heritage NHER 7495] and on Norwich Southern Bypass route (1990 excavation) [MNF9589], but also at the Roman settlement at Brampton where quite extensive evidence for ironworking was revealed during excavations carried out in 1974 (Cleere 1981, 15). Within the last year almost 8kg of Roman tap slag in the form of near-furnace cast slag cakes was recovered during archaeological work carried out near Marsham [ENF142220], to the north-west of Norwich, and close to the line of the NDR route. Although no actual furnaces were identified, the model for this closely matches that of the furnace found at Scole [NHER 1008], in which slag was tapped into two small depressions designed for the slag to seep into and solidify into slag cakes (Tylecote 1967).Tylecote (1986,136) referring to the development of the sub-shaft slag pit furnace during the British Iron Age refers to these furnaces as probably continuing into the Roman period, although no particular examples of this were provided. One possible local example, the slag-pit furnace bottom found at Aylsham was found un-stratified, so it was impossible to determine whether this was Roman or Saxon in date (Tylecote *ibid*.,136). In fact slag-tapping furnaces became fully developed during the Roman period, one of the classic examples of this being the shaft furnace from Ashwicken in Norfolk (Tylecote *ibid*.,158). From the end of the Roman period the use of slag-pit furnaces once again becomes the norm as regards small-scale iron production in Early-Middle Saxon times (Bayley *et al*. 2001, 11; Keys in Bishop & Proctor *ibid*., 98).

The evidence for this (though as yet undated) is probably to be found both here and at Laurel Farm, but elsewhere in Norfolk at Witton, and also Mucking in Essex (Birch 2011, 7).

A.8.40 When looking at the credible dating evidence for the Site 10 and 11 Roman slag-pit furnaces, there are few if any other examples with which the furnaces might be compared with, so we are forced to consider whether these features might just be Late Iron Age furnace types which continue on in a Romano-British setting during the Early Roman period, and if so, whether these are not just isolated examples, thus quite unrepresentative of the rest of the smelting evidence from this site?

Types of Furnace

Slag-pit furnaces

A.8.41 There were potentially two different types of slag-pit furnace used at the smelting sites for the purposes of iron production (Slag Pit Type 1 and Slag Pit Type 2). The key feature of both was the presence of a sub-shaft cylindrical slag pit, up to 30 cm deep and 25 cm (Type 1) to 35 cm (Type 2) wide. Above this was the circular shaft of the furnace which may have been partly buried, but was at least 50 cm high above the ground surface. The furnace would have had at least one hole for the insertion of a tuyere (nozzle for bellows) in its base, and these would then have been blown by a system of bag or piston bellows. When fully charged the furnaces may have held up to 8 kg of hand-picked iron ore (fairly pure iron hydroxides broken up into pieces of 10-20mm) which would have been added gradually from the top as the furnace was fired together with c.20 kg of charcoal in layers with the ore, then (more or less) continually replenished over the next 12 hours or more of the smelting period. Prior to the smelt the empty slag pit would have been densely packed with charcoal or straw into which the forming slag could then have dripped. A sealed-up hole in the furnace known as the bloom arch may have been located just above the level of the tuyere. During the middle of the smelt this could have been opened-up so as to rake out any of the slag that was preventing the bloom from forming, and then again at the end of the smelt to remove the now fully-formed bloom located just in front of the tuyere. If successful the slag would have separated from the bloom, some of this having reacted with, and accreted to, the lower furnace wall. The rest however will have dripped down into the slag pit to form a furnace slag mixed with charcoal, surrounded by drips (runnels) of fayalitic slag around its edge and base. At this point the removed hot iron bloom would have been ready to be heated up again within a shallow bloom-smithing hearth located nearby, and then forged on an anvil to remove the slag impurities. The impure iron bloom needs to be heated up to red-heat then forged up to 20 times to remove the slag impurities in order to produce a much-reduced billet of purer wrought iron. The proximity of these hearths to the smelting furnaces meant that quite often we find these slags intermixed.

A.8.42 Tylecote (1986, 135) describes how the tops (*i.e.* the cylindrical or tapered shafts) of these furnaces could sometimes be lifted off and removed to: (a) recover the iron bloom, (b) re-use the near-complete shaft within another furnace, and (c) to remove the furnace bottom from the slag pit. However, sometimes these furnace bottoms were just left in the ground where they formed (there appears to be examples of this from Area 10), whilst on other occasions they were dug out and dumped along with fragments of the furnace superstructure into pits. Tylecote noted an identifiable ratio between the height and width of the furnace shaft in these slag pit furnaces (i.e. H/W = >1.5). Typically one of these shafts could be lifted off the slag-pit after the smelt and moved in

one piece to another location a few metres away where it is reconstructed over a new pit. This type of smelting (Slag Pit Type 1) was often associated with a group of furnace pits. This could be what we are looking at in Group 10413 on Site 10.

A.8.43 There may have been other slag-pit furnaces which were re-used *in-situ*, the blooms and perhaps even the furnace slags (furnace bottoms) being removed from either the side or from the top of the (in general) wider furnace shafts (Slag Pit Type 2). The date of this particular type of furnace is quite speculative, but it is unlikely to be later than the Middle-Late Saxon period.

Slag-tapping furnaces

A.8.44 The exact form these slag-tapping furnaces take is unclear, yet from the fragments available would appear also to be squat, cylindrical clay-walled shaft furnaces. From the analysis of other better-preserved examples, it is known that some were built into banks, and others were part-buried, the likelihood being that most of them possessed large, shallow tapping-pits in front which held the tap channels linked to a tap arch located below the level of the tuyere. (Cleere 181, Tylecote 1986). Tylecote (*ibid*., 158, fig. 13) illustrates and describes in some detail the 2nd century AD Romano-British shaft furnace found at Ashwicken, Norfolk in which slag was tapped into two sand-lined pits outside of the furnace, the typical product of this furnace being the plano-convex slag cakes, examples of which were found recently at Marsham during archaeological work carried in 2017. However, the tap slag assemblage found on Areas 9 and 10 which appear to be dominated by thin sheets of ropy flow slag is most probably linked to an Early Medieval type low-shaft slagging furnace, such as the one illustrated by Tylecote from Stamford, Lincolnshire (*ibid*., 183). This had a wide, shallow and elongate slag pit into which the slag flowed, the shaft being sub-round in shape and 300mm at the top and 450mm at the base. The smelting of more impure ores, or the intentional addition of a silica-rich flux, assisted in the production of a low-viscosity fayalite-rich slags which could be intermittently tapped throughout the period of the smelt to help the iron bloom to form, and at the same time prevent re-oxidation and the absorption of the iron back into the slag. The periodic tapping explains the sheeting of this and also the variation in composition between lower and higher viscosity melts. After tapping, the blooms were sometimes removed through the top of the furnace with tongs, and then smithed. Wherever possible, these furnaces were then re-used, as evident from the repeated and also accumulated layers of furnace wall-accreted slag.

A.8.45 This combination of different furnace traditions is an interesting aspect of the excavation of these NDR sites.

Iron production throughout history within the Norwich Hinterlands

A.8.46 As increasing levels of commercial archaeological investigation reveal both the level and type of former occupation of this North Norwich landscape, a picture is beginning to emerge of a widespread but low intensity exploitation of local iron ore resources in order to satisfy local demand for iron. This locally produced iron was clearly important to the local economy from the Roman period until at least the medieval period, after which iron production became more consolidated in areas such as Northampton, Lincoln and perhaps the Wealds in south-east England.

A.8.47 Roman iron production begins shortly after the Conquest, but almost certainly in North Norfolk there were small local industries exploiting the Lower Greensand carstone and

associated bog iron ores near Hunstanton (Ashwicken) and Downham Market, the nodular crag beds between Runton and Cromer (such as at Weybourne), and more locally near Aylsham and Marsham close to the Roman settlement at Brampton using locally imported ores. More immediately relevant perhaps is the area of Beeston Heath where smelting was carried out using the nodular iron ores from the local Corton Beds. In this respect the evidence of Roman iron smelting near Rackheath Parva (NDR Sites 10 and 11) makes some sense, although here it was probably an outlier, and may represent the continuation of a small-scale native (Latest Iron Age – Romano-British) iron production tradition. However, on the basis of so little information, it is very difficult to assess the scale of this. For Roman Britain as a whole, Cleere (*ibid*., 72-73) estimates that the total production of iron between 43-100 AD was around 360 tons per year, of which 150 tons came from the Weald, 50 tons from the Forest of Dean, 80 tons from the Jurassic Ridge, and another 80 tons from the other minor iron producing areas. This probably means that somewhat less than 10 tons per year is likely to have been produced in Norfolk, of which local production in the vicinity of Norwich (*i.e.* Brampton – Beeston Heath) is unlikely to have exceeded a few tons per year, thus almost certainly for local requirements.

A.8.48 It is even harder to assess the likely level of Saxon production, particularly in the Norwich area. Most probably this begins during the 8th – 9th century AD, and continues to the 10th century AD, by which time we have a record of iron smelting close to the centre of Norwich (Baggs 1963, 3) as well as around Thorpe St. Andrew. Even if just half of the total weight of iron slag recovered from NDR Sites 10 and 11 and from Laurel Farm comes from Middle-Late Saxon, as opposed to Early Medieval ironworking, then we are probably looking at a sample of 40 kg of slag from an actual production level which, speculatively, could have been 10-20 times larger than this; therefore the production of something in the region of 250 kg of iron ($1m^3$ of slag = 1 ton slag = 0.3 tons of iron). Whatever the exact figure, the indications are that we are still looking at just small-scale production to help supply local demand.

A.8.49 The situation from the 11th century onwards is probably rather similar. The industry retains its rural basis, and is likely to have been seasonal, depending upon the (probable) management of local coppiced woodland for charcoal production (Bishop & Proctor 2011, 123). The total output from this local ore resource (which here consisting of a relatively low-grade limonitic nodular ore (*ibid*. 100-101) was probably in the region of just a few tons of forgeable iron.

Conclusion

A.8.50 In summary, the ironworking evidence suggests relatively small-scale production carried out intermittently from the Late Iron Age – Early Roman ('native style' production) through into the Middle-Late Saxon and Early Medieval periods (*i.e.* 10th to 11th century), during which time the surrounding woodlands were also being managed for charcoal manufacture.

A.8.51 In total, over 84kg of iron smelting slag and metal-working debris was recovered from the NDR sites (Areas 3, 4, 9, 10, 11 and 17), the majority of this coming from Area 10 (50kg), with smaller amounts from Areas 11 (19kg) and 9 (10kg). This assemblage consisted of 23kg of (slag-pit) furnace slag, 24kg of tap slag and 23kg of furnace wall debris. Additionally there was 8.5kg of bloom smithing waste and 0.5kg of secondary smithing slag. Approximately 5-6 areas of former (now largely destroyed) furnaces were

identified, most of these being slag-pit iron smelting furnaces, some of which were probably Late Iron Age – Early Roman in date and others Middle – Late Saxon.

A.8.52 As at Laurel Farm on Mousehold Heath (Bishop & Proctor 2011) the evidence for local iron production within the NDR areas (*i.e.* between Beeston St.Andrew – Rackheath Parva) is associated with the extraction of nodular ironstone from the underlying Corton Beds and the local production of pit clamp charcoal from what are probably managed woodlands.

A.9 Ceramic Building Material

By Ted Levermore

Introduction and methodology

A.9.1 Archaeological works produced a large assemblage Ceramic Building Material (CBM) from much of the excavated area. Excavations produced 30782g, 208 fragments, across 14 areas and evaluation work generated 137 fragments, 6494g. The evaluation material was assessed by Sue Anderson and is discussed in the evaluation report (Anderson, in Pooley 2016), the conclusions drawn will be referred to here, but the data is not included. The excavation assemblage is largely medieval to post-medieval in date with some Roman fragments found in a small number of areas. Much of the CBM is fragmentary and abraded so could not be closely dated (see catalogue in Appendix C.4). This report provides a quantified characterisation and description of the material by area.

A.9.2 The assemblage was quantified by context, fabric and form and counted and weighed to the nearest whole gram. Fabrics were examined using a x20 hand lens and were described by main inclusions present. Width, length and thickness were recorded where possible. Any CBM that weighed less than 1g recovered from samples was not assessed and was discarded. Woodforde (1976) and McComish (2015) were used as reference material for identification and dating.

Fabrics

A.9.3 The excavation assemblage contained 19 fabrics seen in both the brick and tile, three of these are variants of a parent fabric (Table 87). There are two broad groups; silty clays and quartz-sand clays with varying degrees of matrix destiny and coarseness. The fabrics differed in the main inclusions present which broadly consisted of flint, calcareous material, grog or clay pellets, ironstone/ferrous material and in one case angular glass. The fabrics are all typical of ceramic building material, with a clear preference for clays with coarse inclusions and the addition of coarse temper. The fragments of glass in Fabric D are a novel but not surprising addition, production of CBM in the medieval and post-medieval periods often made use of available industrial by-products and waste material.

Code	*Colour*	*Matrix*	*Fine inclusions*	*Coarse inclusions*	*Moulding sand*	*Comments*
A	Orange	Dense Quartz Clay	Occasional: calcareous flecks, grog and iron stone pellets and sub-rounded voids	Occ. sub-linear iron stone pellets	Fine	Patches of poor mixing
A1	Orange-Brown	Dense Quartz Clay	Occasional quartz, grog and iron stone pellets and sub-rounded voids	Occ. sub-linear iron stone pellets	Fine	
B	Light Orange	Fine Quartz Clay	Common quartz, occasional ironstone and grog/clay pellets	Rare grog/clay pellets	Fine	
B1	Dark Reddish-Orange	Fine Quartz Clay	Common quartz, occasional ironstone and grog/clay pellets	Rare grog/clay pellets and rounded pebbles, rounded	Coarse	

Code	Colour	Matrix	Fine inclusions	Coarse inclusions	Moulding sand	Comments
				voids		
C	Mid Orange	Dense Silty Clay	*(occ. micaceous)*	No Visible	Fine	One example is overfired to grey
D	Mid Red with white streaking	Dense Silty Clay	Common rounded quartz and voids	Occasional angular and sub-angular voids, very rare glass fragments	Fine	Poorly mixed
E	Mid Orange	Dense Fine Quartz Clay	Common rounded quartz	Rare rounded voids	Fine	
F	Mid Orange	Dense Fine Quartz Clay	Common rounded quartz, rare angular flint	No Visible or rare calcareous flecks	Fine	
G	Mid Yellow	Dense Silty Clay	Occ. rounded voids	Rare ironstone pellets	Fine	
H	Mid Orange/Red	Fine Silty Clay	Rounded quartz and grit, rare ironstone flecks	Occ. grog/clay pellets, occ. angular/sub-rounded flint	Moderate	
I	Mid Brown/Dark Orange	Fine Quartz Clay	Common rounded quartz, ironstone pellets and grit	rare rounded flint	Fine	
J	Light Brown	Fine Silty Clay	Common grog, mica and calcareous flecks	No Visible	Moderate	
K	Light Pink/Cream	Fine Chalky Clay	rare grog/clay pellets	No Visible	Fine/ Wiped	Moderate mixing
L	Red-Brown	Fine Quartz Clay	Common rounded quartz	Common rounded quartz and flint pebbles and rounded voids	Fine	
M	Mid orange with yellow streaking	Coarse silt clay	common rounded voids, rare rounded flint	No visible	Moderate	Poorly mixed
N	Mid orange with white streaking	Fine Quartz Clay	Occ. chalk flecks	common grog fragments	Fine	Poorly mixed
O	Red-Brown	Fine quartz clay	Occ. chalk flecks, iron stone pellets, red grog chunks	common red grog chunks, large rounded and sub rounded voids	Fine	Large bits of pot/brick as grog
O1			*same but whitish ?grog*			
P	Mid brown with reduced grey core	Fine quartz clay	common rounded quartz and angular flint	Occ. angular flint, rare calcareous chunks	Fine	

Table 87: NNDR CBM Fabrics

A.9.4 The number of fabrics and the variation seen not only represents a variety of paste preparation techniques through the Roman, Medieval and post-medieval periods but also the diverse origins of the raw materials. The east Norfolk landscape, around Norwich, is populated by a variety of superficial clay deposits and so any are likely contenders for the clays used to make our material. The low number of fragments present and spread of this material across almost the entire excavation makes further analysis of the clays unnecessary. There is no pattern visible in the distribution of the fabrics across the sites where CBM was recovered, indeed where there is a higher concentration of material there is a greater number of fabrics present (Table 88). Instead, a local origin of the material can be assumed, especially considering the likely expense and effort required to transport consignments of CBM any distance.

Fabric / Area	A	A1	B	B1	C	D	E	F	G	H	I	J	K	L	M	N	O	O1	P	N/A	Total
1	1		2																		3
2					1																1
3			1			1	2														4
4							1														1
6								1													1
7		1	1		1		2	3	1												9
9	2		35	23	7		4	6		20	21	2	2								122
10	1	5		2	2	1	2		1					1							15
11								2		1											3
12			1		2										1						4
13										1				1		1					3
17	2	1	6	4	1			9	1			1					1	1			27
18		1	2	1																3	7
19		1		5	1														1		8
Total	**6**	**9**	**48**	**35**	**15**	**2**	**11**	**21**	**3**	**22**	**21**	**3**	**2**	**2**	**1**	**1**	**1**	**1**	**1**	**3**	**208**

Table 88: Count of CBM fragments in each fabric by area

The Assemblage

A.9.5 The ceramic building material assemblage was recovered from 78 contexts across 14 of the 19 excavated areas. The spread of this material was not constant across these sites (Table 89); the highest concentration of material was from Areas 9, 13, 17 and 19. The following section will outline the material found in each area.

Area	*Brick*		*Tile*		*Undiagnostic*		*Total Count*	*Total Weight (g)*
	Count	*Weight (g)*	*Count*	*Weight (g)*	*Count*	*Weight (g)*		
1			3	142			**3**	**142**
2			1	27			**1**	**27**
3	3	747			1	34	**4**	**784**
4					1	5	**1**	**5**

Area	Brick		Tile		Undiagnostic		Total Count	Total Weight (g)
	Count	Weight (g)	Count	Weight (g)	Count	Weight (g)		
6					1	4	**1**	**4**
7	2	440	3	251	4	15	**9**	**706**
9	39	16913	71	4878	12	157	**122**	**21948**
10	1	180	4	145	10	307	**15**	**632**
11	1	160	1	9	1	70	**3**	**239**
12			4	122			**4**	**122**
13	2	1342	1	237			**3**	**1579**
17	3	2641	20	400	4	25	**27**	**3066**
18			2	281	5	88	**7**	**369**
19	1	681	7	478			**8**	**1159**
Total	**52**	**23103**	**118**	**6974**	**38**	**704**	**208**	**30782**

Table 89: CBM (count & weight) by Area

Area 1

A.9.6 Three fragments of CBM (143g) were recovered from Area 1. Ditch **1141** produced two refitting pieces of a medieval to post-medieval tile (32g, 14mm). It was made in Fabric B and had scorched faces. A flange fragment of a Roman tegula tile (111g) was recovered from Ditch **1242**. Made in Fabric A, it exhibited sanded outer surfaces and finger smoothing marks on the inner face.

Area 2

A.9.7 A single abraded fragment of post-medieval tile (Fabric C, 27g) was recovered from Pit **2014**.

Area 3

A.9.8 Four fragments of brick (784g) were recovered from this area. Pit **3166** produced half of a probable 15th century brick (106mm wide x 50mm thick; 688g). it has a wedge-shaped cross section, there is also streaking and folding in the clay which is typical of the slop-mould process. The poorly mixed fabric (D) has a range of inclusions but most notably a fragment of glass added as temper can be seen in the broken section. Ditch **20638** produced two abraded fragments (59g) of a medieval or post-medieval brick and Pit **20651** produced an undiagnostic fragment of CBM (37g).

Area 4

A.9.9 A single fragment of abraded undiagnostic CBM (5g) was recovered from Ditch **4206**.

Area 6

A.9.10 A fragment of post-medieval tile (4g) was recovered from Pit **6014**.

Area 7

A.9.11 Nine fragments of CBM (706g) were recovered from features in Area 7; the majority of which were undiagnostic and/or not datable (6 fragments, 107g). A fragment of post-medieval tile (16g) was collected from the subsoil. A 17th-18th century brick fragment (371g, 40mm thick) was recovered from Ditch **7005**. It was made in yellow silty clay (Fabric G) and had a smoothed remaining upper bed face. It is probably a clinker floor brick like those imported from the Netherlands or it is a locally made copy of this type of brick (Smith, 2001). Context (7070), natural feature **7071**, produced a terminal fragment of a Roman imbrex tile (Fabric A1, 212g), it possessed a slight curve and was sanded on both the inner and outer faces.

Area 9

A.9.12 Area 9 produced the majority of the ceramic building material assemblage (122 fragments, weighing 21948g). A small portion, 12 fragments; 157g, could not be identified or closely dated due to heavy abrasion. 71 fragments, 4878g, of tile fragments were collected from 17 contexts and the subsoil. This material was undiagnostic and recorded as flat tile, this kind of CBM is broadly medieval and post-medieval to modern in date. 39 pieces, 16913g, of brick were also recovered in this area. This material can be more closely associated with late medieval and post-medieval use of this landscape, probably as part of the Beeston Estate. Below is a summary, Table 90, of the diagnostic brick material from Area 9.

Context	*Cut*	*Feature*	*Form*	*Fabric*	*Date*	*Description*	*Count*	*Weight (g)*
9255	**9254**	pit/ hollow	Fragment	B	Med? - Post Med?		2	1053
			Wall Brick	H	16th C	Patches of grey and white glazing on some surfaces, the patterns of the glaze suggests it comes from the over firing of the brick rather than any decorative intention. Mould made, moderate/coarse sanding and wiped upper bed. Brick is quite thin, a floor brick?	2	756
			Wall Brick	H	16th C	Very even shape. Over firing glaze evident.	1	961
			Wall Brick	I	16th C	Very even shape. Over firing glaze evident.	1	436
9346	**9347**	post hole	Floor Brick	H	18th C?	Thin red brick, floor brick?	1	364
			Fragment	I	No Date		1	15
9366	**9365**	ditch	Fragment	B	No Date		1	212
9403	**-**	subsoil	Fragment	I	16th Century	Brick fragment, lower bed has sheared off, but probably 45-50mm thick. Covered on all other faces by gravelly lie mortar with CBM inclusions	1	1356
			Fragment	K	?	Brick with large amount of lime mortar with chalky inclusions attached. Very abraded, abraded and then covered in lime mortar - reuse of a much earlier brick?	1	1300

Context	Cut	Feature	Form	Fabric	Date	Description	Count	Weight (g)
			Square	K	Late 15th C?	A square brick. Chalkier fabric than others in the context. Mortar on most faces. Poorly formed. Possibly earlier - late 15th? A five inch square, probably made for a specific purpose	1	1027
			Wall Brick	H	16th Century	Two and a half bricks. Two complete bricks have reduced surfaces. All have remains of lime mortar on all long faces. The same form and appearance of the wall bricks from 9255.	3	4920
			Wall Brick	I	16th Century	Half brick fragment with gravelly lime mortar remains on all faces apart from the stretchers.	1	898
			Wall Brick	I	16th Century	Two brick fragments with lime mortar remains, similar style to others in this context and those in 9255	2	1860
9431	**9426**	pit	Floor Brick	I	18th/19th C?	Patches of grey and white glazing on some surfaces, the patterns of the glaze suggests it comes from the over firing of the brick rather than any decorative intention. Mould made, moderate/coarse sanding and wiped upper bed. Brick is quite thin, a floor brick?	4	291
			Fragments	B1	No Date	Fragments of at least one brick, quite abraded.	3	119
			Fragments	H	No Date	Fragments of at least one brick, quite abraded.	8	257
9448	**9447**	post hole	Floor Brick	H	?		1	61
			Fragment	B	No Date	Abraded	1	30
9467	**9513**	occupation deposit	Fragment	B	?	from two different bricks	2	37
9542	**9531**	ditch	Floor Brick	H	Late Med-Post Med	Two fragments of a large floor brick. Upper bed is smoothed/polished probably through use with very rough lower bed face.	2	960
Total							***39***	***16913***

Table 90: Area 9 Brick

A.9.13 As can be seen from the table, the most notable fragments are the 16th century wall bricks recovered from pit **9254** and the subsoil. They are made in two different fabrics but generally share the same form and production traits. In combination with medieval/post-medieval flat tile fragments, although bearing in mind that thee were varying degrees of abrasion present, this is evidence for brick and tile constructions in the vicinity. Large nodes of flint with gravelly lime mortar accretions were also found here and further indicate the style of building this material originated from; a brick and tile construction with a flint façade.

A.9.14 Some of the brick fragments show the same grey vitrification/overfired glaze present on material found in the supposed furnace discussed in the evaluation report. It appears that those bricks are a variant of the wall bricks recovered during the excavation. In contrast to the conclusions made in the evaluation report, it seems unlikely that they

present evidence of use-firing, instead they are most likely the bricks fired at the bottom of the brick kiln, where the fumes are hottest. These brick and tile fragments point, instead, to the presence of a well-planned late medieval construction in the vicinity, or indeed part, of the barn and the well uncovered in this area. The furnace was not revealed during the excavation phase, but its presence here suggests industrial activity of this period was taking place.

Area 10

A.9.15 A small, largely undiagnostic assemblage of CBM was recovered from Area 10 (15 fragments, 632g). Ditch **10139** produced a fragment of brick (180g) like the 16th/17th century brick in Area 9. Fragments of post-medieval tile from Ditch **10427** and the subsoil make up the rest of the diagnostic fragments.

Area 11

A.9.16 Ditch **11025** produced an undiagnostic fragment of CBM and a brick fragment broadly dated to the medieval and post-medieval period (70g and 160g respectively). Ditch **11039** produced a post medieval tile fragment (9g).

Area 12

A.9.17 A small assemblage of CBM was recovered from Area 12 (4 fragments, 122g). Gully **12262** produced a post-medieval flat tile fragment and a tile fragment that is broadly medieval to post-medieval in date (72g and 18g). Pit **12097** produced a post medieval tile fragment (31g).

Area 13

A.9.18 Two brick fragments and a floor tile were recovered from Ditch 13013 in Area 13. The bricks (Fabric H, 1092g and Fabric L, 250g) appear to be of an earlier form than the examples found in preceding areas, they were given 15th-16th century dates based on the surviving width and thickness of the largest fragment (110mm x 50mm; 1092g). The floor tile fragment (237g) was heavily abraded and could only be assigned a broad medieval to post-medieval date.

Area 17

A.9.19 This area generated 27 fragments of CBM, 3066g, consisting mostly of medieval to post-medieval tile fragments (20 fragments, 400g). Ditches **17510**, **17535**, **17614** produced brick fragments (2641g total), including a bull-nose header (Fabric O1, 754g), that could be dated to the 17th to 18th centuries. This is a later date than the bricks from previous areas, however it is still within the timeframe of the flat tile assessed.

Area 18

A.9.20 A small and undiagnostic assemblage of CBM was recovered from Area 18 (7 fragments, 369g). This assemblage is fragmentary and abraded and not archaeologically informative. A piece of medieval-post-medieval flat tile (254g) was collected from ditch **18017**.

Area 19

A.9.21 A small assemblage of CBM was recovered from Area 18 (8 fragments, 1159g). Notably, Pit **19331** produced a medieval to late-medieval green glazed roof tile fragment (14mm, Fabric P, 253g). Fill 19439 (pit **19438**), produced intrusive fragments of medieval to post-medieval peg tile (Fabric B1, 218g) and a fragment of medieval floor brick (Fabric A1, 681g). The latter was probably used in a cellar floor as it lacks evidence of mortar or wear. A single fragment of flat tile (7g) was collected from the fill of natural feature 19271.

Discussion

A.9.22 Most of the assemblage is of little archaeological significance, presenting evidence for recent human use of the landscape and little else. None of the finds derive from *in situ* walls or floors, and as such any further in-depth conclusions are not possible. Area 9, and by extension Area 10, provide an insight into the activities being conducted on Beeston Estate lands. Here, there is evidence of 15th to 18th century constructions and possible kiln or furnace work.

A.10 Fired Clay

By Ted Levermore

Introduction and methodology

A.10.1 Archaeological excavation yielded 413 fragments of fired clay (12001g) from 13 areas. The assemblage comprises 213 amorphous pieces (1627g) and 200 structural fragments (10374g). This latter group comprises fragments with flattened surfaces, wattle impressions or show signs of being hand-formed. Within the structural group there are diagnostic objects consisting mostly of loom weights and portable kiln furniture. This report provides a quantified characterisation and description of the material by area.

A.10.2 Fired clay recovered from features during the evaluation (56 pieces, 188g) were assessed by Sue Anderson for the evaluation report (Anderson in Pooley 2016) and will not be discussed here.

A.10.3 The assemblage was quantified by context, fabric and form and counted and weighed to the nearest whole gram. Fabrics were examined using a x20 hand lens and were described by main inclusions present. Width, length and thickness were recorded where possible.

A.10.4 The quantified data and fabric descriptions are presented on an Excel data sheet held with the site archive. A summary of the catalogue can be found in Appendix C.5.

Fabrics

A.10.5 Twenty fabrics were recorded, five of which were subsets, for the fired clay assemblage. Most of the fired clay fragments contained calcareous inclusions (shell and chalk) or voids from dissolved calcareous inclusions, quartz sand and fragments of flint. Although the exact source of the clays and tempering ingredients has not been proven for this assemblage they are likely to have been naturally occurring in the clay. The poor sorting of the inclusions suggests minimal paste preparation, although organic matter (chaff?), grog and crushed stone may have been added to some of the clay recipes. The number of fabrics recorded and the variation present appears to represent differences in the local geology rather than differences in paste preparation. As such, these will not be discussed further unless there is cause to mention the fabric used.

The Assemblage

Area 1

A.10.6 One fragment (4g) of amorphous and five fragments (1031g) of structural fired clay were recovered from Area 1. The structural fragments were recovered from pits **1008**, **1279** and tree throw **1092**. These fragments exhibit flattened surfaces and appear to be fragments of kiln or oven furniture. Tree throw **1092** produced a fragment of an oblong ceramic artefact (171g). It has a rounded outer surface with partial surviving butt end and could possibly be the top of a cylindrical/flaring kiln pedestal typical of Late Iron Age to Early Romano British pottery kilns. Pit **1279** produced two fragments of chalky fired clay (842g). Each with a flattened and darkened surfaces. Their reverse is an uneven surface. The colouration lightens from flattened surface to uneven surface indicating a firing direction. The surfaces have concentration of smaller angular flint grit. These

fragments appear to have been used as a lining for a kiln or oven. These fragments suggest a fairly permanent prehistoric use of this area.

Area 3

A.10.7 Excavations produced a large assemblage of fired clay from Area 3 (212 fragments, 5179g) from 13 contexts. Within this assemblage 105 fragments (736g) were amorphous pieces; these are not informative beyond their weight and count. A total of 107 fragments (4442g) of structural fired clay were recovered from eight features. The structural fragments exhibit flattened surfaces and wattle impressions and many were hand formed diagnostic artefacts. These fragments comprise fragments of daub, possible kiln furniture and fragments of loom weights. Pit **3132** produced fragments of a flattened ceramic object with organic impressions on the surfaces (262g). It is reminiscent of Late Iron Age to Early Romano British kiln plate, but here was securely associated with a substantial assemblage of Middle Bronze Age pottery. Pit **20054** and posthole **20490** (1299g and 83g respectively). The largest portion was made up of fragments with a flattened surface and multiple wattle and withy impressions in the body of the fragment (5 to 20mm diameters).

Clay Weights

A.10.8 Two pit contexts produced fragments of large clay objects, whose form and fabric suggests they were originally weights (Table 91). Pit **3153** produced a collection of fragments that represented at least three objects – for descriptions see below. Unlike the weights found in the other pit, these examples were harder to assign a type. They are very fragmentary and abraded, having lost most faces and therefore their original form. In their current state they resemble both Bronze Age brick-shaped weights and Iron Age triangular weights. Considering the C14 dates associated with the cereal grains found in this feature, an earlier date is more than likely.

A.10.9 The fragments from Pit **20054** were similar to Poole's Danebury Hillfort Type 1 weights (Poole, 1984). Poole's typology is based on a study of 62 clay weights as well as a survey of other large assemblages of Iron Age weights. They were made in two fabrics (F5 and F6) with similar paste recipes, a quartz filled clay with angular flint and stones or pebble inclusions. This collection of inclusions serves to considerably increase the weight of each object. Such objects are usually referred to as loom weights, however their use is unclear. Weights of this shape have been found in various sizes, suggesting that there is a range of functions associated with the Iron Age triangular weight. It has been suggested recently that some may have been used to form hearth walls and other structures (pers. comm. C. Poole.). However, it is most likely that these examples were designed to be suspended, perhaps to provide torsion for a loom.

Context	*Cut*	*Feature*	*Date*	*Count*	*Weight (g)*	*Notes*
3153	3152	Pit	BA or IA	3	563	Probably fragment of a weight; only one face remains and some of perpendicular face remain. Central perforation (15mm diameter) runs parallel to the remaining face and would have been made through the perpendicular face. Unclear if it is a large version of a Type 1 IA weight or

Context	Cut	Feature	Date	Count	Weight (g)	Notes
						a very abraded fragment of a BA brick-shaped weight.
3153	3152	Pit	?	28	1052	Fragments of a large clay object, possible a weight. Most exhibit a flattened and rounded surface, some don't but are clearly of the same object. No evidence of any perforations.
3153	3152	Pit	BA or IA	5	514	Corner fragment from a weight with related pieces. Two perpendicular faces and a rounded corner with a perforation in the body (10mm). Possibly corner from an IA triangular weight but could also be the top section of a BA brick-shaped weight.
20055	20054	Pit	MIA-LIA	2	201	Corner fragment of an MIA/LIA triangular loomweight. Lateral perforation remaining in broken face - hour glass shaped perforation. (10mm). Type 1 (After C. Poole)
20055	20054	Pit	MIA-LIA	2	210	Corner fragment of an MIA/LIA triangular loomweight. Vertical break prevents full width measurement. Lateral perforation remaining in broken face. (15mm). A large Type 1 (After C. Poole).

Table 91: Catalogue of clay weight fragments from Area 3

Area 4

A.10.10 Two amorphous fragments (8g) of fired clay was recovered from features in Area 4.

Area 5

A.10.11 A small assemblage of fired clay (7 fragments, 114g) was collected from six features in Area 5. Five fragments, 43g, were amorphous and uninformative. Two fragments (71g) of structural fired clay were collected from Ditch **5066** exhibiting flattened surfaces and corners. On fragment (60g) is part of a rounded ceramic object; it has external and internal rounded edges. Possibly a fragment of kiln furniture but it is too fragmentary for any certainty. The other (11g) is a corner fragment of a hand formed object.

Area 7

A.10.12 Nine fragments (79g) of fired clay were collected from two contexts in Area 7. Firepits **7030** and **7039** produced amorphous and structural fragments respectively (8 pieces, 25g and 1 piece, 54g). The structural fragment has a flattened surface.

Area 9

A.10.13 A small assemblage of amorphous fired clay (9 fragments, 11g) was collected from four contexts in Area 9. These pieces are too small and fragmentary to glean much information.

Area 11

A.10.14 A small assemblage of amorphous fired clay (12 fragments, 368g) was collected from three contexts in Area 10. Whilst amorphous, the fragments from **10240** and **10421** are of note. The pieces from Floor **10240** seem to be baked lumps of clay (4 pieces, 322g) that were accidentally dropped into firing conditions, judging by their flattened bases but amorphousness as a whole. Pit **10421** produced what seems to be fragments of lining from a hearth, kiln or furnace (5 pieces, 41g) as they exhibit reduced patches. These may be related to the slag also collected from this context.

Area 12

A.10.15 A moderate assemblage (39 pieces, 560g) was recovered from Area 12. This assemblage comprises amorphous (12, 103g) and structural (27, 457g) fragments. The assemblage is made up of a number of small hand-squeezed objects. These objects were not identifiable and seem somewhat *ad hoc*. The collection of props, spacers and other functional objects suggests this site may have been the location of a light industrial process, perhaps Iron Age to Early Roman pottery manufacture. The assemblage is summarised in the Table 92.

Context	***Cut***	***Feature***	***Fragment type***	***Structural type***	***Object Form***	***Notes***	***Count***	***Weight (g)***
12043	12042	gully	a				2	3
12050	12050	post hole	s	fs	Misc Objects	Fragments with rounded surfaces and evidence of hand forming. Spacers? Props?	5	42
12155	12154	pit	a				4	7
12156	12154	pit	a		?Briquetage	Small fragment of fired clay with a greenish white crust. Possibly indicative of briquetage	1	15
12156	12154	pit	a		Object	Fragment of a larger object, poss kiln furniture. Very abraded and rounded	2	69

Context	Cut	Feature	Fragment type	Structural type	Object Form	Notes	Count	Weight (g)
12160	12097	pit	s	fs			1	2
12165	12097	pit	a				1	1
12173	12172	ditch	s		Briquetage/ Kiln Furniture	Small spacer or prop with thumb impression	1	35
12173	12172	ditch	s	fs		Possibly all fragments of the same object, or at least two. Flattened and curved surfaces. 1 refit.	16	238
12190	12188	ditch	s	c/fs	Kiln Furniture?	Corner fragment of a clay object, slightly everted perpendicular sides. There are organic impressions that possibly indicate third face parallel to the most extant face. Kiln bar? Or thick kiln plate?	3	57
12190	12188	ditch	s	c/fs	Object	Ceramic partefact with reduced surfaces. Partially pyramidal, with isosceles base, in shape although abrasion prevents certainty of face identification.	1	83
12196	12195	pit	a				1	4
12235	12237	natural	a				1	4
Total							**39**	**560**

Table 92: summary of fired clay from Area 12 (a=amorphous, s=structural, fs=flattened surface, c=corner)

Area 13

A.10.16 A small assemblage of mostly amorphous fired clay (18 pieces, 103g) was collected from Area 13. A single pieces of structural fired clay (24g) with a flattened surface was collected from Ditch **13140**.

Area 17

A.10.17 A small assemblage of largely structural fired clay (33 pieces, 523g) was recovered from five contexts in Area 17. Pit **17304** produced 29 fragments of fired clay , 114g, one of which has wattle and withy impressions (16g). Ditch **17418** produced fragments of a small hand formed object (2 pieces, 171g) with not obvious function; it is probably an ad hoc spacer or a prop. Pit **17468** produced a single amorphous fragment (5g). Trackway **17545** produced a sub-rectangular object in a buff fabric and with pinkish surfaces. The upper and lower faces part surviving and an intermediary perpendicular face survives – which is notably smoothed and squared. This briquette has no clear function, although its use as a spacer, prop or in an oven or kiln cannot be ruled out.

Area 18

A.10.18 A small assemblage of fired clay (29 fragments, 154g) was collected from Area 18. Pit 18031 produced amorphous (10, 29g) and structural (2, 39g) fragments. The latter comprises two small hand squeezed objects each with a single anomalous edge. This edge suggests they were squeezed up against a surface as a prop, commonly but not solely used for supporting salt pans (cf. Lane and Morris, 2001). Ditch **18052** produced a single amorphous fragment (10g). Pit 18053 produced structural fragments that were probably part of a floor or lining. These fragments each have a greyish flattened surface and a rounded orange surface suggesting a single firing direction.

Discussion

A.10.1 Most of the fired clay is of little archaeological significance. The assemblages do, however, provide a very basic characterisation of the areas. The fired clay hints at domestic and production activities within a domestic/settlement setting. Portable kiln furniture of this kind, clay plates and pedestals, are typically associated with Iron Age and early Roman settlement sites (Lyons, 2016; Poole, 1984). The Area 3 Clay weights are forms usually associated with domestic activity, though their original function is unclear. Sadly, the fragments found do not survive well enough to be assigned properly to a typology. However, they are probably examples of Late Bronze Age to Early Iron Age and Middle to Late Iron Age weights.

A.11 Lithics

By Barry Bishop

Introduction

A.11.1 The archaeological investigations along the route of the NDR road scheme resulted in the recovery of 2286 struck flints, four ground stone implements and over 51kg of unworked burnt stone from 19 Areas, with a further 204 pieces of struck flint and nearly 12kg of unworked burnt stone was found during the preceding Archaeological Evaluation. The assemblages have been assessed as part of the post-excavation programme and this recommended that further examination and analysis should be conducted on some of the larger and more contextually secure feature-assemblages (Bishop 2015; 2017a).

A.11.2 This report is the culmination of this further work and presents a full description of the lithic assemblages from each of the Areas excavated, followed by a discussion of the broader character and significance of flintworking as revealed by the NDR investigations. All of the lithic material has been catalogued by individual context (Appendix C.6) which provides further details of the pieces including their contextual distribution. This report should be read in conjunction with the catalogue as well as the detailed metrical and technological analyses that have been conducted on the assemblages from four pits and tree-throw hollows, which are presented in Appendix C.7.

General Comments

A.11.3 The struck pieces recovered during the archaeological investigations along the road scheme were made predominantly from good knapping quality flint that varies considerably in colour, texture and translucency and in the extent and nature of its inclusions. Similarly, original cortex ranged from being rough and only slightly weathered through to being completely smooth worn and abraded, with thermal (frost) fractured) surfaces and internal flaws commonly present. The raw materials are likely to have been obtained from the flint-rich glacial deposits that mantle the area although some of the better quality flint may have been brought from sources nearer the parent chalk, which outcrops along the river valley margins in the area. Non-local stone include a ground quartzite fragment that was recovered from the excavations at Area 5 (see below), although this may also be an ‘erratic’ from the local glacial deposits. Additionally, the ground greenstone implement that was recovered from Trench 4 in Field T8 during the Evaluation stage is made from Cornish Greenstone (Section A.13) and this must have been humanly transported to the site.

Area 1 (ENF139693)

A.11.4 The excavations in Area 1 resulted in the recovery of 195 pieces of struck flint and just under 3.5kg of unworked burnt stone, whilst the preceding archaeological evaluation produced a further 13 pieces of struck flint, 380g of unworked burnt flint and a fragment from a polished battle-axe (Table 93).

	Decortication flake	Decortication blade	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Core	Conchoidal chunk	Shattered cobble	Hammerstone / pounder	Total Struck	Burnt Stone (no.)	Burnt Stone (wt:g)
Tree-throw 1265	1		4	7	1			3	1	2		1	2			**22**	57	1181
Ditch 1141	27	4	5	61		1	8	2		12	4	10	6	3		**143**	56	1421
Other contexts	5	1		10		1	2			4		3	1	2	1	**30**	53	892
Eval	1			3			1			2	1	2	1			**11**	33	380
Total no.	**34**	**5**	**9**	**81**	**1**	**2**	**11**	**5**	**1**	**20**	**5**	**16**	**10**	**5**	**1**	**206**	**199**	**3874**
Total %	*16.5*	*2.6*	*4.6*	*40*	*0.5*	*1*	*5.1*	*2.6*	*0.5*	*9.2*	*2.1*	*7.2*	*4.6*	*2.6*	*0.5*	*100*		

Table 93: Quantification of lithic material from NDR Area 1

A.11.5 The struck assemblage broadly represents two periods of flintworking at this area, a small component indicates Mesolithic or Early Neolithic activity but the majority can be dated to the later prehistoric period and is quite possibly associated with ditch **1141**.

A.11.6 The earlier material is predominantly blade-based and was found scattered across the site, mostly residually deposited but with some of the material possibly focussing on a series of tree-throw hollows. The most substantial assemblage of this date came from tree-throw **1265** whose two fills furnished 22 pieces of Mesolithic or Neolithic struck flint and a large quantity of unworked burnt flint, amounting to over 1kg. The struck assemblage is dominated by unusable knapping waste including micro-debitage (flakes and flakes fragments measuring less than 15mm in maximum dimension) but it also contains a bifacially retouched blade-like flake, a burnt side-and-end scraper and a multi-platformed narrow flake core. The quantity of unworked burnt flint is substantial and suggests the deliberate dumping of hearth waste. The material from the tree-throw hollow is typical of Neolithic industries and depositional practices but is too small to indicate the precise chronology or provide information on the nature of the activities that it represents, beyond being suggestive of small mobile communities.

*Ditch **1141** (Period 2.2)*

A.11.7 The bulk of the struck flint from Area 1 is, however, much more typical of later prehistoric industries. Some of these pieces were found scattered in low numbers within a variety of feature types but substantial collections were recovered from boundary ditch **1141** which traverses the site. The six sections excavated across the ditch produced a total of 143 struck pieces, almost three-quarters of the worked flint from Area 1, along with 1.4 kg of unworked burnt flint (Table 94).

Ditch Section	Decortication flake	Decortication blade	Chip <15mm	Flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Retouched implement	Core-tool	Core	Conchoidal chunk	Shattered cobble	Total Struck	Burnt Stone (no.)	Burnt Stone (wt:g)
1141	3		1	3			1	1		5	1	1	**16**	46	1014
1151			1		1	4				2	1		**9**		
1178							1						**1**		
1212	9	2	1	16		1		6	1	1	2		**39**	3	122
1226	2			2							1		**5**	1	36
1240	13	2	2	40		3		5	3	2	1	2	**73**	6	249
Total (no.)	**27**	**4**	**5**	**61**	**1**	**8**	**2**	**12**	**4**	**10**	**6**	**3**	**143**	**56**	**1421**
Total (%)	*18.9*	*2.8*	*3.5*	*42.7*	*0.7*	*5.6*	*1.4*	*8.4*	*2.8*	*7*	*4.2*	*2.1*	*100*		

*Table 94: Quantification of the lithic material from ditch **1141** by excavated section*

A.11.8 Sections **1240** and **1212** excavated through ditch **1141** furnished the largest assemblages at 73 and 39 pieces respectively and section **1141** contained 16 pieces, although the other three sections all produced fewer than ten struck flints. The unworked burnt flint was also distributed along the ditch unevenly, with nearly 80% (by weight) of the material coming from a single section, **1141**, and with section **1240** producing most of the remainder.

A.11.9 The majority of these pieces are in a good or only slightly abraded condition suggesting that they entered the ditch not long after manufacture. They were made from flint of a wide variety of colours, textures and knapping qualities, with cortex ranging from relatively unweathered to smooth rolled. The variety present suggests little discernment was exercised in selecting better knapping-quality flint and the raw materials used were probably collected from local and ready-to-hand sources.

A.11.10 No refitting pieces were identified but occasional similarities in the flints' colour and cortex from some of the sections (*e.g.* **1212**) indicates that some pieces may have been struck from the same pieces of raw material. It is evidence that many different cobbles contributed to the assemblage overall, and the lack of micro-debitage would indicate that the material had been gathered up and dumped into the ditch, rather than knapped directly into it.

A.11.11 The very uneven distribution of both the struck and unworked burnt flint and the good condition that most of the struck pieces are in would suggest that the material was deliberately dumped into the ditch or that these sections were close to the foci of flint-using activities. There are also some differences in the composition of the struck flint (see Table 94) which may suggest that the assemblages from the different sections were generated from relatively short-lived and task specific activities.

A.11.12 The assemblages are dominated by variably shaped but usually thick and broad hard-hammer struck flakes which retain significant amounts of cortex and have wide and often notably obtuse striking platforms. Ten cores were recovered from ditch **1141**, contributing a relatively high 7% of the assemblage. Half of the cores came from a single section, **1141**, which may indicate that core working was occurring in the vicinity. In addition, six conchoidally worked chunks that most probably represent disintegrated core fragments were recovered.

A.11.13 The cores mostly comprise either 'quartered' larger nodular fragments or thermally fractured nodular chunks and weigh between 36g and 150g, averaging at 84g. They show few indications of preparation and their frequent limited working means that most are irregular in shape, reflecting the form of the original pieces of raw material. Four of the ten cores were minimally worked, having produced fewer than ten flakes before being abandoned, and it is possible that some of these were intended as core-tools. The others were all casually worked with flakes being removed from different directions and numerous striking platforms that usually comprise cortical or simple flaked surfaces. Rarely were more than a few flakes removed from any particular platform and reduction seems to have been undertaken rather randomly with the cores being frequently turned and flakes detached from whatever surface seemed most appropriate at the time.

A.11.14 Ditch **1141** also produced 12 retouched flakes and a further four core-tools, these tools representing a high 11% of the total assemblage from this ditch. In addition to these, many other flakes have worn or damaged edges that may have accrued from being utilized. The retouched implements comprise four steeply retouched flakes that, although similar to scrapers, are irregular in form and have uneven or slightly denticulated working edges. Four other retouched pieces have coarsely denticulated edges and, again, were made using rather irregularly shaped blanks, three have fine retouch or heavy use-wear along one of their margins, suggesting use as cutting implements, and the remainder is a small flake with an inverse notch. The core-tools are somewhat larger than the retouched flakes but are broadly comparable and comprise two pieces with coarsely denticulated edges and two with deep but wide notches cut in their sides.

A.11.15 Other important finds from the vicinity include a fragment of a finely polished greenstone battle-axe that was found in an adjacent field (Trench 4 Field T8) during the evaluation phase, which was most likely to have been made during the Later Neolithic or Early Bronze Age (see Timberlake, Appendix A.13).

Area 2 (ENF139694)

A.11.16 The excavations in Area 2 produced only 2 struck flints and three pieces of unworked burnt stone that weigh 13g, although a further eight struck flints and 274g of unworked burnt flint were recovered during the preceding evaluation. None of the material is closely dateable although its technological traits would suggest that the bulk of it is of Mesolithic or Neolithic date and this includes a small 'front' type blade core and a steeply retouched cortical blade that possibly represents a backed knife or a scraper. The struck flint indicates low level prehistoric activity at this site that includes the use of hearths, but little more can be added to its interpretation.

Area 3 (ENF139695)

A.11.17 The excavations in Area 3 resulted in the recovery of a substantial lithic assemblage amounting to 646 pieces of struck flint and nearly 24kg of unworked burnt flint, with a further 19 pieces of struck flint and 3.4kg of unworked burnt flint found during the evaluation (Table 95).

	Decortication flake	Decortication blade	Core rejuvinations Flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone / pounder	Total Struck	Burnt Stone (no.)	Burnt Stone (wt:g)
Pit 20387 no.	30	7	4	27	143	34	44	35	29	16	24			12	7	2		**414**	36	1755
Pit 20387 %	*7.2*	*1.7*	*1*	*6.5*	*34.5*	*8.2*	*10.6*	*8.5*	*7*	*3.9*	*5.8*			*2.9*	*1.7*	*0.5*		***100***		
Pit 3132 no.					5			1	3		1		2			2		**14**	8	212
Enclosure 3008 no.	10	1			33		2	2	3		10			6	3		2	**72**	146	5302
Other features no.	17	1		13	73	3	6	3	3	6	13	1		2	3	2		**146**	779	16699
Other features %	*11.6*	*0.7*		*8.9*	*50*	*2.1*	*4.1*	*2.1*	*2.1*	*4.1*	*8.9*	*0.7*		*1.4*	*2.1*	*1.4*		***100***		
Eval	2				8				1		1			4	3			**19**	114	3437
Total	**59**	**9**	**4**	**40**	**262**	**37**	**52**	**41**	**39**	**22**	**49**	**1**	**2**	**24**	**16**	**6**	**2**	**665**	**1083**	**27405**
Total struck %	*8.9*	*1.4*	*0.6*	*6*	*39.4*	*5.6*	*7.8*	*6.2*	*5.9*	*3.3*	*7.4*	*0.2*	*0.3*	*3.6*	*2.4*	*0.9*	*0.3*	*100*		

Table 95: Quantification of lithic material from NDR Area 3 (N.B. percentage figures are only given for assemblages containing in excess of 100 pieces)

A.11.18 The struck flint from this Area represents activity over a long period, from at least the Mesolithic/Early Neolithic and through to the end of the Bronze Age. The largest individual assemblage, contributing nearly three-quarters of all the struck flint from the Area, came from a single pit that can be dated to the Early Neolithic period. The rest of the struck flint came from a variety of features, many of which date to the later prehistoric period. A few pits also contained relatively substantial quantities of unworked burnt stone.

*Pit **20387** (Period 1.1)*

A.11.19 One of the earliest assemblages from this Area and also the largest from any individual feature excavated during the NDR investigations was recovered from pit **20387**.This assemblage represents all stages in the reduction sequence, from the preparation of raw materials to the manufacture and discard of retouched implements. Similarities in flint colour and cortex indicate it was generated from the reduction of only a small number of cores. Although the assemblage is large and all elements in the knapping sequence are present, it is clear that it only represents only a proportion of what must have been generated, it presumably having been selected from a larger accumulation. This is supported by the condition of the assemblage. Whilst most pieces are in a sharp condition, a small proportion exhibit post-deposition chipping and rubbing, around 13% of the pieces had been burnt and many have broken to some extent. A wide variety of cores were recovered which indicate the principal objectives of reduction was the production of blades and flakes of a variety of shapes. Retouched pieces were limited to simple edge retouched implements, most of which were probably used as cutting tools, and a few scrapers. Due to the size and contextual integrity of this assemblage, it

has been subjected to detailed technological analysis and a full description and discussion is presented in Appendix C.7.

Other Features

A.11.20 The other features in this Area produced much smaller quantities of struck flint. Some of the other pits contained flintwork of a similar date and condition to that from the flint-rich pit **20387**, such as pit **3237** which produced four struck pieces, all in good condition with two having been struck from the same core, although all of these assemblages are small and their contained flintwork could be residually deposited. Pit **3132** contained a relatively large assemblage of 14 struck pieces. Whilst dating this material is difficult as all of the pieces are either burnt or have been stained black from contact with soot, it does include a burnt fragment of a serrated prismatic blade which can be dated to the Mesolithic or Early Neolithic. There are also two fragments of flint querns and two of the flakes are heavily chattermarked and may have been struck from a hammerstone or pounder. Flint querns were made throughout the prehistoric period although perhaps the majority do come from later Bronze Age or Iron Age contexts, which might indicate that the serrated blade is residual. The assemblage is still interesting however, as it represents a collection of broken quern fragments and burnt flintworking debris that appears to have been deliberately deposited, possibly as a symbolic gesture.

A.11.21 A number of the pits also produced relatively large quantities of unworked burnt flint. This includes flint-rich pit 20387 which contained 1.7kg but also some others that contained little or no struck flint. Pit **3234** held over 3kgs, pit **3856** nearly 4kg, pit **20652** over 1.6kg and **20208** over 1.1kg. Smaller but still not insignificant quantities of unworked burnt flint were found in many other features across the site. Much of this material probably derives from domestic hearth use but the larger deposits may have been generated from cooking or craft-based activities.

A.11.22 Other relatively large quantities of struck flint came from many of the enclosures and other settlement features. Enclosure **3008** provided the largest assemblage amounting to 69 struck flints and over 5kg of unworked burnt flint. The struck flint is undoubtedly chronologically mixed but a high proportion probably dates to the later second or first millennium BC, and is likely to be contemporary with the enclosure. There are many thick squat flakes including a high proportion that have been retouched to form simple cutting flakes, denticulated implements and irregular scrapers. The assemblage also contains a high proportion of cores, most of which are either irregularly worked or minimally reduced. Although the pieces were distributed in low densities throughout many fills and probably represent casually discarded material eroded or discarded into the open ditch, it does suggest sustained and, for that period, fairly intensive episodes of flintworking and tool use in the vicinity. Similarly, many of the other features contained struck flint that is likely to be contemporary with the settlement.

Area 4 (ENF139697)

A.11.23 The excavations in Area 4 resulted in the recovery of 93 pieces of struck flint and 4.4kg of unworked burnt flint, with a further 16 struck flints and 2.2kg of unworked burnt flint collected during the evaluation (Table 96).

	Decortication flake	Decortication blade	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Core	Conchoidal chunk	Shattered cobble	Hammerstone / pounder	Total Struck	Burnt Stone (no.)	Burnt Stone (wt:g)
Subsoil 4221	7	1	1	24	4	7	4	7	2	6						**63**		
Posthole 4041	2			3				4		2	3	2	1	4		**21**	47	963
Other Features			4	2			1			1		1				**9**	340	3438
Eval	4			3		1		1		1	1	4			1	**16**	278	2200
Total	**13**	**1**	**5**	**32**	**4**	**8**	**5**	**112**	**2**	**10**	**4**	**7**	**1**	**4**	**1**	**109**	**665**	**6601**

Table 96: Quantification of lithic material from NDR Area 4

A.11.24 Very little struck flint was present across most of the area with the assemblage being concentrated within two contexts, which between them accounted for 84 pieces or 90% of the total. Most of this, amounting to 63 pieces, came from subsoil 4221 and comprised an abraded and chronologically mixed assemblage reflecting flint-using activities dating from the Mesolithic or Early Neolithic through to at least the end of the Bronze Age.

A.11.25 Probably the most informative collection came from posthole **4041** and amounts to 21 pieces of technologically homogeneous Middle Bronze Age to Iron Age flintwork which is generally in a good condition. It includes a number of badly struck or 'squat' flakes along with an irregularly worked core and five tools that comprise three coarsely denticulated core-tools, a similarly coarsely denticulated flake and a flake with a heavily crushed edge. It also contained almost 1kg of unworked burnt flint fragments. Many of the other features within Posthole Group **4114** also provided relatively large quantities of unworked burnt flint, with the largest quantities from the site coming from adjacent natural feature **4000** which produced nearly 1.5kg. The unworked burnt flint from this site predominantly comprises large intensely and uniformly heated fragments which, along with the similar material recovered from this area during the evaluation phase, suggest that activities involving its deliberate production, perhaps for cooking or craft activities, were important aspects of the occupation here.

Area 5 (ENF139698)

A.11.26 The excavation and preceding evaluation in Area 05 produced 374 struck flints, a fragment of a ground sandstone object and nearly 19kg of unworked burnt stone. Virtually all of the lithic material came from nine of the ten sections excavated within the enclosure ditch 5007 with most of the remainder coming from a natural sinkhole feature (Table 97).

	Decortication flake	Decortication blade	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint Quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone / pounder	Total Struck	Burnt Stone (no.)	Burnt Stone (wt:g)
Enclosure 5007 no.	31	3	4	115	1	1	11	25	1	42	8	1	15	14	19	2	**293**	495	13857
Enclosure 5007 %	*10.6*	*1*	*1.4*	*39.2*	*0.3*	*0.3*	*3.8*	*8.5*	*0.3*	*14.3*	*2.7*	*0.3*	*5.1*	*4.8*	*6.5*	*0.7*	**100**		
Sinkhole 5071 no.	7		1	22				4		1				6	2		**43**	55	1316
Other features no.	1			10	1		2	1		4				2	1		**22**	79	1296
Evaluation	3			6		1		1		2			1	2			**16**	135	2287
Total no.	**42**	**3**	**5**	**153**	**2**	**2**	**13**	**31**	**1**	**49**	**8**	**1**	**16**	**24**	**22**	**2**	**374**	**764**	**18756**
Total struck %	*11.2*	*0.8*	*1.3*	*40.9*	*0.5*	*0.5*	*3.5*	*8.3*	*0.3*	*13.1*	*2.1*	*0.3*	*4.3*	*6.4*	*5.9*	*0.5*	***100***		

Table 97: Quantification of lithic material from NDR Area 5 (N.B. percentage figures are only given for assemblages containing in excess of 100 pieces)

A.11.27 The assemblage from this Area is chronologically mixed with a small quantity of Mesolithic and / or Neolithic flint present in low quantities across many of the features. Most of the struck flint, however, can be dated to the Bronze Age and this includes most of the material from enclosure **5007** although the presence of a few blades and blade-like flakes suggests a small component of the assemblages is earlier. Substantial quantities of unworked burnt flint, amounting to nearly 14kg, were also recovered from the enclosure. Struck flint and unworked burnt flint were recovered from all of the sections excavated through the enclosure ditch with the exception of section **5020**, although it was not evenly distributed and some notable concentrations were present (Table 98). Whilst unevenly distributed along the entire perimeter of the enclosure, the greatest densities of both struck flint and unworked burnt flint were found along the ditch's northern side and in its terminus on the western side.

*Enclosure **5007** (Period 2.2)*

A.11.28 The material from all of the sections is in a variable but mostly good often still sharp condition, with the more-worn pieces belonging to earlier, Mesolithic or Neolithic, industries. Very few small flakes or fragments were recovered and the slight variations in condition noted within the individual assemblages suggest that they were either deliberately dumped into the ditch or had been knapped close to the ditch and had eroded in shortly afterwards. This is also reflected in the raw materials used to manufacture the assemblage. A number of short refitting sequences were identified and similarities in the colour and texture of the flint as well as surviving cortex suggests that, at least within individual sections, the assemblages only represent a limited number of knapping episodes. The raw materials comprise flint of a wide variety of colours and textures with cortex ranging from relatively unweathered to smooth rolled, suggesting the raw materials were probably collected from the local glacial tills.

Ditch Section	Decortication flake	Decortication blade	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Retouched implement	Axe/Ground implement	Core-tool	Core	Conchoidal chunk	Shattered cobble	HAmmerstone	Total Struck	Burnt Stone (no.)	Burnt Stone (wt:g)
5007	6			16				3		14	1	1		5	3	1		**50**
5009	5			15			2	4		6	1		1	3	1			**38**
5012	6			14			1	1		5	1	3		2		5		**38**
5014	8	1	1	29			5	9	1	4				3	4	7		**72**
5042		1		4	1		1	3		1						1	1	**13**
5048	2			11						2				1	2			**18**
5052				5			1			3								**9**
5062										1								**1**
5066	4	1	3	21		1	1	5		6		1		1	4	5	1	**54**
Total (no.)	**31**	**3**	**4**	**115**	**1**	**1**	**11**	**25**	**1**	**42**	**3**	**5**	**1**	**15**	**14**	**19**	**2**	**293**
Total (%)	*10.6*	*1*	*1.4*	*39.2*	*0.3*	*0.3*	*3.8*	*8.5*	*0.3*	*14.3*	*1*	*1.7*	*0.3*	*5.1*	*4.8*	*6.5*	*0.7*	*100*

Table 98: Quantification of the lithic material from enclosure ditch 5007 by excavated section

A.11.29 With the exception of the few residual pieces, the assemblages from the enclosure ditch are the product of a simple, flake-based, knapping strategy typical of later second and early first millennium BC industries. The flakes are variable in shape and size although tend to be quite squat and thick with most retaining some cortex. Striking platforms are mostly thick and sometimes very obtuse, with few showing any attempts at platform modification beyond perfunctory trimming of flake scar overhangs. Most striking platforms comprise either scars from previous removals or remain cortical with ancient thermal planes often preferred. Nevertheless, there is considerable technological variability within the assemblage as a whole; a small but significant number of flakes appear well struck and have relatively thin and narrow striking platforms that are frequently trimmed and occasionally facetted. This suggests that alongside the opportunistic approach taken towards reduction as shown by the majority of flakes, some were the product of a more structured and even systematic approach to reduction that involved a greater degree of core adjustment and maintenance.

A.11.30 The assemblage contains a notably high proportion of retouched pieces and core-tools which together form 17.1% of the material from the enclosure. Of note are three fragments with ground surfaces. These include a piece of burnt white sandstone from section **5007** that appears to have a finely ground domed surface. Its size suggests it may be a fragment from one side of a ground stone axe or, perhaps more probably given it was made from sandstone, a macehead or battle-axe. Section **5009** produced the butt end of an opaque, light grey flint axehead. Both of its faces consist of c. 50% ground surface and 50% flake scars, and it had undergone at least two episodes of flaking followed by polishing prior to its breaking. The fragment is oval in section with rounded but fairly acute lateral margins and it has a squared-off butt. Its break resembles an 'end-shock' fracture. The third piece, from section **5012**, is a heavily burnt mesial fragment of a bifacially worked implement with parallel, possibly slightly converging lateral margins. It is lenticular in cross section and had been flaked over both faces with remnants of ground surfaces indicating it had been re-flaked after

grinding. Although fragmentary, its shape and thinness is most reminiscent of narrow axes or chisels.

A.11.31 The enclosure ditch also produced 42 retouched flakes and five core-tools. The former are dominated by pieces with steeply retouched edges which comprise nearly half of the retouched flakes. The majority of these are made using thick and sometimes poorly struck flakes with irregular retouch forming uneven or denticulated working edges. These are comparable to many of the scraping type implements found in many of the later second and early first millennium contexts excavated along the NDR scheme, such as boundary ditch **1141**. There are also many others that are much more like conventional scrapers; these being made on well-struck blanks and are more skilfully worked with uniformly retouched and sometimes symmetrically arced working edges that are more comparable to Later Neolithic and Early Bronze Age examples. The remaining retouched flakes have a variety of edge morphologies and include six pieces with fine edge-retouch that were probably used as cutting implements, six notched flakes, six flakes that have a few relatively large flakes removed from the ventral surfaces ('flaked flakes'), two coarsely denticulated flakes and one flake with a bifacially worked cutting edge. The remaining core-tools comprise three coarsely denticulated pieces, one with a steeply worked edge and one with bifacial working reminiscent of a chopping type implement. There are also two complete hammerstones or pounders that have heavily battered, or 'chattermarked', surfaces, a number of flakes or conchoidally fractured chunks that have similarly 'chattermarked' surfaces, and a fragment from a flint quern which has a pecked surface that has been worn smooth.

A.11.32 Fifteen cores were recovered from enclosure **5007**, contributing just over 5% of the assemblage. Additionally, most the 14 conchoidally fractured chunks that were recovered probably represent cores that had disintegrated along thermal flaws. Six of the cores have single platforms and a further six have multiple platforms, with the remaining three being minimally worked with only a few flakes having been removed. Some of the multi-platformed cores are globular in shape and show attempts at platform preparation skill in their reduction, but none had been specifically shaped prior to reduction. The complete cores range in weight from 47g to 203g and average at 100g.

A.11.33 The enclosure also produced a large quantity of unworked burnt flint which had been heated to a very high degree, causing it to become 'fire crazed' and a uniform grey-white colour. It has fragmented but many substantial pieces, weighing up to 200g, are present and these indicate that large flint nodules had been selected for deliberate burning.

Other Features

A.11.34 Natural sinkhole or hollow **5071** produced a large assemblage similar to those from enclosure **5007** although these are mostly in a weathered condition and must have been exposed on the surface for some time. It also contained a substantial quantity of unworked burnt flint and together these suggest the possibility that both the material from this feature and the later prehistoric material found in enclosure **5007** shared the same source.

Area 6 (ENF139699)

A.11.35 The only lithic material recovered during the excavations in Area 6 comprises a flint flake which is well struck but not otherwise diagnostic, and three fragment of unworked burnt flint weighing 33g, both pieces coming from natural layer 6021. A further two

pieces of unworked burnt flint were recovered during the evaluation, one from ditch **3804** which weighed 26g and the other from ditch **3806** which weighed 11g. The flake indicates prehistoric activity at the site and the unworked burnt flint the use of fires, but by themselves these are too small to indicate the precise chronology or nature of the activities conducted there.

Area 7 (ENF139700)

A.11.36 The excavations in Area 7 resulted in the recovery of only six struck flints, these being found scattered in five separate features. They are all likely to be residually deposited and none are particularly diagnostic although, with the possible exception of a badly struck decortication flake from ditch **7011**, all have been relatively competently produced and probably pre-date the Middle Bronze Age. Taken together, the struck flint demonstrates low level flintworking occurring at the site, possibly during more than one period.

Area 8 (ENF139701)

A.11.37 The only lithic material recovered during the excavations in Area 8 comprises a blade-like flake, three small core trimming chips and a small flake fragment, all recovered from fill 8009 of ditch **8002**. The assemblage represents knapping debris of probable Mesolithic or Early Neolithic date and indicates core reduction occurring in the vicinity, although it is probably residually deposited. A further six struck pieces were recovered during the evaluation, comprising a cortical flake, a cortical blade and a well struck flake from ditch **E3210**, a minimally struck core or core-tool from gully **E3212** and a further two flakes from gully **E3214**. None of this is very diagnostic but was most probably made over a long period.

Area 9 (ENF139702)

A.11.38 The excavation and preceding evaluation at Area 9 produced 62 struck flints and a small quantity of unworked burnt flint (Table 99).

	Decortication flake	*Decortication blade*	*Crested Blade*	*Chip <15mm*	*Flake*	*Blade-like flake*	*Prismatic blade*	*Non-prismatic blade*	*Flake fragment >15mm*	*Retouched implement*	*Core*	*Conchoidal chunk*	*Total Struck*	*Burnt Stone (no.)*	*Burnt Stone (wt:g)*
Pit 9008				2	9		1		1				**13**		
Other features	3	1	1	1	17	2	6	3	1	9	1	2	**47**	5	39
Eval	1				1								**2**		
Total	**4**	**1**	**1**	**3**	**27**	**2**	**7**	**3**	**2**	**9**	**1**	**2**	**62**	**5**	**39**

Table 99: Quantification of lithic material from NDR Area 9

A.11.39 The struck assemblage comprises a scatter of chronologically mixed flintwork found in low densities across the site, with few individual contexts containing more than a small number of pieces. No diagnostic pieces are present but the technological attributes of the material suggests a relatively high proportion is of Mesolithic or Neolithic date. The assemblage is generally in a good condition, suggesting little post-depositional

movement, but the low densities make it difficult to assess the extent to which the pieces have been incorporated into later features.

A.11.40 The largest assemblage from any single feature consists of a small group of 13 flakes and one prismatic blade recovered from pit **9008**. These are all of similar raw materials and include two flakes that refit, suggesting that these originate from a single knapping episode, although they only represent a small proportion of the debris that must have been generated. Flintwork was also found in a few of the Area's other pits although only in very small quantities and these include prismatic blades as well as crude retouched implements and thick flakes that suggest the pits were dug over a long period. Ditch **9049** contained four struck pieces, all retouched implements that came from its terminus. Three of these are quite crudely made scrapers or denticulated implements of probable Bronze Age or later date, the other a finely made long-end scraper that is more likely to be Neolithic or earlier. Tree-throw **9051** contained three blades, two of which may have been struck from the same core, and also a flake, whilst tree-throw **9086** produced a carefully crafted blade core with two platforms set at right angles, which is of Mesolithic or Early Neolithic date. Of a similar date are the burin and blade-like flake recovered from pit **9172**. Ditch **9520** contained a notably large non-systematic blade that measures in excess of 110mm and which could potentially be of Early Mesolithic or perhaps even late glacial date.

A.11.41 Overall, the assemblage from Area 09 represents widespread although low density flintworking activities of predominantly Mesolithic or Early Neolithic date that possibly focus around the tree-throw hollows and pits to the south-east of the site. There are few significant densities that might indicate specific area of core working or deliberate deposits of flintworking debris, the most convincing example of this perhaps being pit **9008** which contained a small and possibly deliberately deposited assemblage of selected knapping waste.

Area 10 (ENF139703)

A.11.42 The excavation and preceding evaluation in Area 10 produced 43 struck flints and two small fragments of unworked burnt flint (Table 100).

	Decortication flake	*Decortication blade*	*Core rejuvination flake*	*Flake*	*Blade-like flake*	*Prismatic blade*	*Non-prismatic blade*	*Flake fragment >15mm*	*Retouched implement*	*Conchoidal chunk*	*Total Struck*	*Burnt Stone (no.)*	*Burnt Stone (wt:g)*
Exc	3	1		8	3	2	1		10	1	29	1	2
Eval	1		1	9		1		1	1		14	1	3
Total	**4**	**1**	**1**	**17**	**3**	**3**	**1**	**1**	**11**	**1**	**43**	**2**	**5**

Table 100: Quantification of lithic material from NDR Area 10

A.11.43 The struck flint was present in small quantities within a variety of features and no evidence for *in-situ* working or the contemporary disposal of flintwork was evident. The largest quantities recovered from any single feature are the eight pieces recovered from ditch **2869** and five from pit **10402**. Both of these include well-made end-scrapers but many of the pieces are in a chipped condition and had been residually incorporated long after manufacture. There are few chronologically diagnostic pieces but variations in

the technological approaches suggest the assemblage was made over a long period with the majority probably belonging to the Neolithic.

A.11.44 Perhaps the most notable aspect is the high proportion of retouched implements that account for over a quarter of the assemblage, all but one of these being scrapers. These are varied in form and morphology but include some unusual types such as a double ended example and several have carefully formed symmetrically arced working edges, traits often seen in Later Neolithic examples. The other retouched implement comprises an edge-trimmed narrow flake which is not closely dateable but would comfortably fit with Neolithic industries.

A.11.45 Only two small fragments of unworked burnt flint with a combined weight of 5g were found in this Area, one from pit **10168** and the other from ditch **2867**.

A.11.46 The struck flint assemblage from Area 10 is mostly residual but the high proportion of scrapers found is significant and indicates the undertaking of fairly task-specific activities, probably during the Later Neolithic. Scrapers are traditionally associated with hide working, an activity that has been associated with riverside settlement (Bradley 1978) and it is perhaps significant that this site lies close to springs.

Area 11 (ENF139704)

A.11.47 Area 11 produced only six struck pieces and two fragments of unworked burnt flint. The struck flint include a lightly burnt prismatic blade from pit **11060**, a possible fragment of another from ditch **11025** and two well struck flakes from unstratified or sub-soil contexts, all of which can be dated to the Mesolithic or Early Neolithic periods. The other two pieces, which came from pit **11007** and ditch **11027**, are undiagnostic. Both pieces of unworked burnt flint which weighed a total of 41g came from pit **11060**.

Area 12 (ENF139705)

A.11.48 The excavation of Area 12 produced 17 struck flints and 658g of unworked burnt flint (Table 101).

	Decortication flake	*Flake*	*Blade-like flake*	*Prismatic blade*	*Non-prismatic blade*	*Flake fragment >15mm*	*Retouched implement*	*Core*	*Total Struck*	*Burnt Stone (no.)*	*Burnt Stone (wt:g)*
Pit **12237** Fill 12235	1	1	1	1	1			2	**7**	33	325
Pit **12237** Fill 12236										7	61
Other features	2	2		3		2	1		**10**	15	272
Total	**3**	**3**	**1**	**4**	**1**	**2**	**1**	**2**	**17**	**55**	**658**

Table 101: Quantification and composition of lithic material from NDR Area 12

A.11.49 The largest collection of struck flint and over half of the unworked burnt flint came from the two fills of pit **12237**. Its fill (12235) produced seven struck pieces that are in a good condition and they include two blade cores, a prismatic blade with a deep dorsal hinge scar and a blade-like flake, which refits to one of the cores. That core is a carefully prepared single platform 'front' type micro-blade core, the other is a large thick flake or

quartered cobble that has a few blades removed from one edge. Whilst it is entirely possible that the assemblage is contemporary with the infilling of the pit, it can only represent a very small proportion of the flintwork generated during the reduction of the cores and appears to consist of a selection of waste which may have been purposely deposited. This pit also contained a relatively large quantity of unworked burnt flint, amounting to 40 pieces weighing 386g, most of which came from the same fill as the struck flint. Although the quantities may not be of the scale seen elsewhere along the route scheme, it is by far the largest amount from any single feature at this site, which may also suggest an element of formal deposition. The material appears to represent a small but deliberately deposited collection of flintworking waste and hearth debris that might reflect a 'snap shot' of a relatively short-term occupation.

A.11.50 The remainder of the worked flint and unworked burnt flint from the site was found in small quantities in a variety of features. Much of the worked flint could easily be at least broadly contemporary with that from pit **12237** although there are no indications that any of this was deliberately deposited.

Area 13 (ENF139706)

A.11.51 Area 13 produced only five struck flints and a small quantity of unworked burnt flint. All of the struck flints came from different contexts and had been residually deposited. The assemblage comprises four undiagnostic struck flints which can only be broadly dated to the Neolithic or Bronze Age periods and a lightly burnt denticulated scraper made on a poorly detached flake that probably belongs to the later Bronze Age or possibly even the Iron Age. The unworked burnt flint comprises six pieces found in three separate contexts and indicates low levels of hearth use at the site.

A.11.52 Whilst indicative of prehistoric activity, the small size and lack contexts associations mean that it can contribute little to understandings of the precise chronology and nature of the occupation of the site.

Area 14 (ENF139707)

A.11.53 No struck flint or unworked burnt flint were recovered from this area during the excavations but a Later Neolithic or Early Bronze Age type scraper recovered from ditch **E4005** during the Evaluation phase of investigations demonstrates low level prehistoric activity in the vicinity.

Area 15 (ENF139708)

A.11.54 The excavation of Area 15 produced just two struck flints but no unworked burnt flint. The struck pieces comprise a thermally (frost) shattered core fragment that had probably produced blades and which can be dated to the Mesolithic or Early Neolithic periods from natural feature **15009**, and a small waste flake from pit **15004**.

Area 16 (ENF139709)

A.11.55 The excavations in Area 16 produced a single struck flint flake but no unworked burnt stone. The flake was recovered from pit **16040** but which can only be broadly dated to the Neolithic or Bronze Age periods.

Area 17 (ENF139710)

A.11.56 The excavation of Area 17 resulted in the recovery of 123 pieces of struck flint and 0.6kg of unworked burnt flint (Table 102).

	Decortication flake	*Decortication blade*	*Crested Blade*	*Chip <15mm*	*Flake*	*Blade-like flake*	*Prismatic blade*	*Non-prismatic blade*	*Flake fragment >15mm*	*Retouched implement*	*Core*	*Conchoidal chunk*	*Total Struck*	*Burnt Stone (no.)*	*Burnt Stone (wt:g)*
Pit Group 17074	1				13					6	1		**21**		
Pit 17189	1				7			1		1			**10**		
Pit 17496					3				2	1		1	**7**	26	515
Other features	6	1	1	5	30	4	3	1	1	12	2		**66**	6	114
Eval	1				11		2		3	1		1	**19**		
Total no.	**9**	**1**	**1**	**5**	**64**	**4**	**5**	**2**	**6**	**21**	**3**	**2**	**123**	**32**	**629**
Total struck %	*7.3*	*0.8*	*0.8*	*4.1*	*52*	*3.3*	*4.1*	*1.6*	*4.9*	*17.1*	*2.4*	*1.6*	***100***		

Table 102: Composition of the Lithic Assemblage from NDR Area 17

A.11.57 Although this is a relatively large assemblage, it mostly reflects a low density of flintworking with small quantities of pieces being recovered from many features scattered across the site. The technological characteristics of the assemblage as a whole indicate it had been manufactured over a long period, from at least the Early Neolithic through to the latter parts of the Bronze Age. However, it contains a notable proportion of large and sturdy but often narrow and generally well struck flakes and non-prismatic blades that are most typical of Later Neolithic industries; some even being reminiscent of Piggott's 'Secondary Neolithic Heavy Flint Industry' (1954, 279, 282-284). Similar material has been found in the Norwich area, such as at Great Melton (Clark and Halls 1918), although there are none of the large bifacially worked core-tools characteristic of these industries present here.

A.11.58 The assemblage as a whole contains a high proportion of retouched implements, which account for 17.1% of the struck pieces. Over half of these comprise a variety of scraper types with most of the others being narrow edge-retouched flakes, many of which were probably used as cutting implements. Whilst none of these is diagnostic, many could easily be Later Neolithic in date and this is particularly true for the pieces from Pit Group **17074**, with a number of these pits furnishing well-made scrapers with symmetrical working edges or edge retouched narrow flakes. Four of the pits in this group contained struck flint assemblages and although they are small it is perhaps notable that all included at least one retouched implement, suggesting the possibility that they all represent small deliberately deposited 'tool kits' or the residues from the undertaking of specific tasks. One of the pits, **17120**, also contained one of only three cores recovered from the site. This is an odd lenticular core of similar shape to the end-and-side scraper from the same fill and it may actually have been intended to be used as such. Although situated at some distance, Pit **17496** contained an assemblage of seven pieces in a generally good condition and which were technologically similar to those from pit group **17074**. It also contained a retouched implement consisting of an edge trimmed narrow flake with bifacial retouch and damage along the opposite margin consistent with having been used as a knife. Whilst not completely diagnostic, it is most reminiscent of Later Neolithic implements. This pit also produced a relatively large quantity of unworked burnt flint, amounting to just over 0.5kg which represents over

80% of the total from this area, and two heavily burnt struck flake fragments weighing a further 25g were also present. The burnt flint comprises large fragments that had been intensively and uniformly heated, raising the possibility that this had been done deliberately, although the quantities involved indicate that this was not part of any extensive or industrially scaled activities.

A.11.59 With the possible exception of these assemblages, most of the remaining struck pieces are likely to have been residually deposited with even the larger individual feature assemblages comprising pieces of mixed condition, raw materials and technological attributes. A possible exception to this is the collection of ten pieces from ditch **17116** which are mostly in a good condition and include some made from very similar raw materials. The majority are quite thick 'squat' flakes of which one has been retouched to form an awl-like piercer. Some of the others also have a few flakes detached from their edges and, if deliberately done, may constitute informal tools. This assemblage can be dated to between the Middle Bronze Age and Iron Ages and, although probably residually deposited, indicates flintworking having occurred in the vicinity. A small part of the remaining assemblages as well as a few of the retouched implements that are more irregularly and crudely produced are likely to be of a similar date and suggests widespread if not intensive flint use at the site during the later prehistoric periods.

A.11.60 Although the larger part of the struck flint assemblage from this area is residual, a number of pits contained potentially contemporary assemblages that can be dated to the Later Neolithic. These assemblages are small but appear to represent deliberately deposited collection that might reflect 'snap shots' of relatively short-term episodes of occupation. The use of 'pit depositions' as markers of Neolithic occupation is a recurring feature in East Anglia

Area 18 (ENF139711)

A.11.61 The excavations in Area 18 resulted in the recovery of 24 struck flints and a single fragment of unworked burnt flint (Table 103).

	Decortication flake	*Decortication blade*	*Flake*	*Blade-like flake*	*Prismatic blade*	*Retouched implement*	*Core*	*Conchoidal chunk*	*Total Struck*	*Burnt Stone (no.)*	*Burnt Stone (wt:g)*
Tree-throw **18122**	2		3		2	1			**8**		
Pit 18104		1	2		1	1	1		**6**		
Other pits	1	1	3	2	1			1	**9**	1	5
Evaluation								1			
Total	**3**	**2**	**8**	**2**	**4**	**2**	**1**	**2**	**24**	**1**	**5**

Table 103: Composition of the Lithic Assemblage from Area 18

A.11.62 The largest quantities of struck flint came from Tree throw **18122** which produced eight pieces from four different fills. These include a prismatic blade which can be dated to the Mesolithic or Early Neolithic periods and a well-made end-scraper which is probably Neolithic, but overall the assemblage appears to be of mixed date. There are also a lot of different raw materials represented and most pieces are in a fairly chipped and abraded condition, indicating that most, if not all, of the pieces were residually deposited.

A.11.63 Pit **18104** contained six struck pieces which also includes a prismatic blade, a single platform narrow flake core and a denticulated scraper. The condition of the pieces from this feature is generally good and, if they are all contemporary, most probably date to the Early Neolithic, and reflect a 'snap shot' of a relatively short-term Early Neolithic settlement.

A.11.64 Some of the other pits in this area also contained struck flint of Mesolithic or Early Neolithic date although all the pit assemblages are very small and the possibility that they are residually deposited cannot be excluded.

Area 19 (Area 139712)

A.11.65 Area 19 produced a substantial lithic assemblage comprising 735 pieces of struck flint along with just over 600g of unworked burnt flint. Two-thirds of the struck assemblage came from three individual features, pit **19332** and tree throws **19412** and **19139**, with the latter alone providing 281 pieces (Table 104). The preceding evaluation produced 33 struck flints and 110g of unworked burnt flint.

	Decortication flake	***Decortication blade***	***Crested Blade***	***Core rejuvination Flake***	***Chip <15mm***	***Flake***	***Blade-like flake***	***Prismatic blade***	***Non-prismatic blade***	***Flake fragment >15mm***	***Flake fragment <15mm***	***Retouched implement***	***Core-tool***	***Core***	***Conchoidal chunk***	***Shattered Cobble***	***Total Struck***	***Burnt Stone (no.)***	***Burnt Stone (wt:g)***
Tree throw **19139** no.	30		2		18	150		7	7	51	16						**281**		
*Tree throw **19139** %*	*10.7*		*0.7*		*6.4*	*53.4*		*2.5*	*2.5*	*18.1*	*5.7*						***100***		
Pit **19412** no.	8	3				52	9	16	9	4	4			2	9	2	**118**	4	68
*Pit **19412** %*	*6.8*	*2.5*				*44.1*	*7.6*	*13.6*	*7.6*	*3.4*	*3.4*			*1.7*	*7.6*	*1.7*	***100***		
Pit **19332** no.	5	1			8	27		8	13	8	11	12		1	3		**97**		
Pit **19432** no.						9	2	3	1	2		1					**18**		
Pit **19063** no.	3				5	5				3	1	3			1		**21**		
Ditch **19347** no.	1					9	1			2							**13**		
Pit **19364**					1	2	1			2				1			**7**		
Other Features no.	17	7	1	2	3	81	12	15	11	11	3	13		2	1	1	**180**	59	574
Other Features %	*9.4*	*3.9*	*0.6*	*1.1*	*1.7*	*45*	*6.7*	*8.3*	*6.1*	*6.1*	*1.7*	*7.2*		*1.1*	*0.6*	*0.6*	***100***		
Evaluation	5					19		3	2	1			1	2				6	110
Total no.	**69**	**11**	**3**	**2**	**35**	**354**	**25**	**52**	**43**	**84**	**35**	**29**	**1**	**8**	**14**	**3**	**735**	**69**	**752**
Total %	*9.4*	*1.5*	*0.4*	*0.3*	*4.8*	*48.2*	*3.4*	*7.1*	*5.9*	*11.4*	*4.8*	*3.9*	*0.1*	*1.1*	*1.9*	*0.4*	*100*		

Table 104: Composition of the Lithic Assemblage from NDR Area 19 (N.B. percentage figures are only given for assemblages containing in excess of 100 pieces)

A.11.66 The earliest evidence of activity at this site and quite possibly from the NDR scheme as a whole is the assemblage recovered from tree-throw hollow **19412** which can be dated to the Mesolithic period.

A.11.67 Its size and its representation of early activity have warranted it being examined more closely and details of its metrical and technological attributes are presented in Appendix C.6. The assemblage contains refitting sequences and is in a good condition, the raw materials present suggesting it represents the reduction of perhaps as few as two flint nodules; one of translucent dark brown flint with occasion small light yellow cherty patches, the other an opaque mid brown flint with lighter speckling. Both have a thin unweathered cortex but also heavily recorticated ancient thermal (frost) scars. Most stages in the reduction sequence are present including decortication and core shaping flakes, along with two retouched pieces and two cores. Reduction was clearly geared towards blade production although the relative paucity of these suggests many may have been removed for use elsewhere.

*Tree Throw **19139***

A.11.68 Tree Throw **19139** produced the largest assemblage from Area 19 and the second largest from any single feature encountered during the investigations along the road scheme. The material is in a slightly variable condition but most pieces are good or even sharp. It is technologically homogeneous, representing the reduction of perhaps even a single nodule; its essential integrity being demonstrated by the identification of at least two refitting sequences. Despite no end-products being present, metrical and technological analyses indicate it represents the debris from the manufacture of one or more bifacial core implements, most probably axeheads. The raw materials used consist of large nodular cobbles of fine grained flint that is predominantly opaque grey but which becomes translucent black towards the edges. Most elements in the manufacturing sequence are present, including large decortication flakes, core preparation and mass reduction flakes and many small, thin and wide 'shaping' and thinning flakes; but the preforms have been removed, probable for finishing elsewhere. The assemblage is easily contrasted with those from the other features; only a very few other flakes from the site could represent thinning or other bifacial reduction flakes. It appears that this assemblage represents the deliberately deposited waste from a limited number, and perhaps only a single, knapping episode, rather than material incorporated from wider spreads of debris. Due to the importance of this assemblage and its secure contextual associations, it has been subjected to a detailed metrical and technological analysis, the results of which are presented in Appendix C.6.

Other Features

A.11.69 Many of the others pits within the same Group as Tree throw **19412** also contained struck flint. The next largest assemblage comes from Pit **19432** which produced 18 pieces that are technologically comparable to those from **19412**. These are also geared towards the production of blades from a small number of cores, and are also in a mostly good if slightly variable condition. The only retouch implement present is a backed blade. The other pits in the group produced small numbers or single pieces of struck flint, few of which are diagnostic and it quite possible that some or all had been residually incorporated.

A.11.70 Pit **19332** of Pit Group **19400** also contained a large assemblage that is in a variable but predominantly good condition, although a few pieces have been burnt and four

seemingly unworked burnt flints were also recovered. The struck assemblage is technologically homogeneous and represents the reduction of a limited number of cores, perhaps only one. The flint used is mottled translucent black and opaque grey and has a thin but rough cortex and frequent thermal (frost) surface scars. All stages in the reduction sequence are presented, from the decortication of raw materials through to the manufacture, use and discard of tools, of which there is a high proportion. These mostly comprise lightly retouched narrow flakes that were probably used as cutting implements, with one finely made scraper also present. The reduction strategy clearly focussed on the manufacture of blades but most are non-prismatic and few can be described as truly systematically produced. The single core that recovered was centripetally worked and it has a large 'main' flake removed in a manner reminiscent of the 'Levallois' method. Due to the size of this assemblage and its secure contextual associations, it has been subjected to a detailed metrical and technological analysis, the results of which are presented in Appendix C.6.

A.11.71 Four of the other pits in the same Pit Group as Pit **19332** also contained struck flint, although the only one with more than a single piece was Pit **19364** which produced seven. That includes a single platform pyramidal blade core of Mesolithic date but the other pieces were all of different raw materials and their condition suggests they had all been residually deposited.

A.11.72 Pit **19063** of Pit Group **19050** contained 21 struck flints mostly comprising well struck flakes but also three scrapers, two of which are slightly 'nosed'. A few of the flakes may have been struck from the same core and the assemblage's condition is mostly good, suggesting it may have been selected from the debris generated during a limited number of knapping episodes. None of the assemblage is particularly diagnostic although the Later Neolithic or Early Bronze Age is perhaps the most likely date of manufacture.

A.11.73 Fill 19348 of ditch **19347** produced 13 struck flints that are mostly in a good condition and are technologically homogeneous, with similarities in the raw materials indicating they may have been produced during the reduction of a small number of cobbles. The assemblage comprises all flakes with no retouched implements or cores present. The flakes are mostly thick and often rather crudely produced, suggesting a latter prehistoric date, probably during the later Bronze Age or even Iron Age.

A.11.74 Just over 600g of unworked burnt flint was recovered during the excavations. This was found mostly in small quantities and scattered across a number of the pits and ditches with the only substantial amount, comprising 326g, came from **19387**, one of the same group as pit **19412**. This had been variably burnt and probably represents the dumping of hearth waste.

Discussion & Significant of the NDR Flintwork

A.11.75 The material recovered during the investigations along the NDR scheme demonstrate a widespread and, in some areas, an intensive production and use of struck flint that, in many respects, concords with the wealth and density of prehistoric occupation previously recorded throughout much of East Anglia. It reflects occupation from the Mesolithic through to the end of the Bronze Age or even into the Iron Age and its analysis has enabled an exploration of the changes in the circumstances under which flintwork was manufactured, used and disposed of across several millennia.

A.11.76 Struck flint was recovered from almost all of the areas where archaeological investigations were undertaken although in markedly different densities, reflecting the ways in which flintworking practices were structured across the landscape. Much of

what was recovered represents residual material that had been casually discarded onto the surface and subsequently incorporated into the fills of later features. In many cases it represents palimpsests of activities spanning many periods, although difficulties in assigning precise dates and the lack of contextual associations place limits on interpretation. Nevertheless, when taken together these assemblages do provide important insights into the intensity and organisation of settlement and other activities across the varied sections of this landscape. The investigations have also revealed a number of significant assemblages from a variety of features which are at least broadly contemporary. Notable are a number of Mesolithic and Neolithic pits and natural features (mostly tree throws) containing flintwork that were identified at Areas 1, 3, 9, 12, 17, 18 and 19. Additionally, there are a number of Bronze Age assemblages that were recovered from enclosures, field-systems and settlement features in Areas 1, 3, 4 and 5. Taken together, these provide interesting insights into the changes in technological approaches taken to the working of flint as well as broader cultural practices surrounding its manufacture, use and discard.

Mesolithic/Neolithic

A.11.77 Other than residual material, the Mesolithic and Neolithic flintwork was all recovered from pits or tree-throws present as isolated features or in small groups; no large 'pit sites' such have been recorded at Hurst Fen or Kilverstone, were identified (Clark *et al.* 1960; Garrow *et al.* 2006). In very broad terms, these and the residual Mesolithic and Neolithic worked flint indicate widespread presence across the landscape during these periods, but the dispersal of the features and the limited number of knapping episodes represented in each would be more consistent with low density occupation, perhaps by mobile communities moving across a much broader landscape of inhabitation.

A.11.78 In order to gain a better understanding of these industries, the four largest Mesolithic / Neolithic feature assemblages were subjected to metrical and principal attribute analysis, the result of which are presented in Appendix C.6. The features comprise an artefact-rich Early Neolithic pit from Area 3 (pit **20387**), a tree-throw hollow containing Mesolithic struck flint from Area 19 (tree-throw **19412**) and a tree-throw hollow and another pit both containing Neolithic flintwork also from Area 19 (tree-throw **19139** and pit **19332**). These all contained substantial assemblages of lithic material whilst many otherwise similar features found across the NDR route produced only relatively small quantities, but all demonstrate similarities in the ways the material was chosen for deposition. None of it had been knapped *in-situ* but it appears to have been debris from occupation deliberately dumped in to the features, which suggests a desire to remove cultural material from living or working areas and commit it into the earth. Such careful depositions of material culture that often includes worked flint is a widely recognized feature of Neolithic practices (Richards and Thomas 1984; Thomas 1999) and the recovery of Mesolithic material deposited in similar circumstances in tree-throw hollow **19412** suggests that this may have a long ancestry (*cf* Bishop 2008; Jacques *et al.* 2018; Conneller *et al.* 2018). As has been suggested for other sites, traditions involving selective deposition, perhaps marking and remarking the locality in the context of seasonal or repeated visitation, could potentially endure for millennia (Ashwin 2001, 29). Sometimes elaborate or prestigious items could be chosen for deposition, but here the selected material seems most likely to reflect the range of routine activities that were occurring at the site. This does not mean it was simply seen as mere rubbish needing convenient disposal, it may have been intended to convey some form of

meaning and certainly has the potential to communicate complex and culturally specific ideas about the site and what had happened there (*cf* Edmonds 1995, 42-45).

A.11.79 The routines of occupation may be reflected in subtle differences seen in the material found in Mesolithic and Neolithic features from along the NDR scheme. Some pits may have had only single or small quantities of struck flints. These may reflect only fleeting visits, although it is equally possible that the small quantities of material chosen had no bearing on the length or intensity of the associated occupation but reflected other concerns. Some, like the four assemblages described in Appendix C.6, are larger and can provide clearer understandings of the nature of occupation.

A.11.80 As well as the size of the individual assemblages, they also show other subtle differences or nuances in their pre-depositional histories. The Mesolithic material from tree-throw hollow **19412** was deposited in a fresh state and probably soon after manufacture. It contained a small number of tools, possibly associated with bone or antler working, and it is clear that most of the more useful pieces, such as blades and productive cores, were absent, presumably having been taken for use elsewhere. Early Neolithic pits **20387** and **19332** both predominantly contained knapping waste, but the latter produced notably high proportions of retouched implements, although these were limited in range to mostly simple cutting tools. Pit **20387** produced a smaller proportion of tools although these are more varied in range and as well as cutting implements include bone or hard-wood working tools and scrapers. Whilst the assemblages from the two features share many similarities in their manufacture and discard, their 'technological signatures' appear to reflect differences in the scale and nature of the activities that led to their creation. This would accord well with Ashwin's observations made during his survey of Neolithic sites in Norfolk, where he suggests, "*at least some of these sites were specialized or seasonally occupied elements in a diverse settlement and economic regime*" (Ashwin 1996, 47). This suggests that the assemblage here may indicate a relatively mobile inhabitation of the whole landscape, where particular activities were undertaken where deemed appropriate and when and as needed.

A.11.81 The clearest indication of this is perhaps provided by the material recovered from tree-throw **19139** in Area 19. This material represents the debris from the manufacture of a single or small number of bifacial implements, most probably axeheads. Although East Anglia is home to the largest flintmine complex in Britain at Grime's Graves, recent work has demonstrated that relatively few axes were being made there and axe production in Norfolk may have been chiefly associated with smaller surface extraction sites. Both Pitts (1996) and Barber *et al.* (1999) have compiled surveys of flint procurement in Britain and these document a number of long-known but largely neglected manufacturing sites in Norfolk, including at Markshall, Whitlingham, Ringland, Great Melton, Easton and Drayton. There appears to be a particular concentration in the Norwich region, particularly along the Yare, Wensum and Tas valleys, as earlier demonstrated by Healy (1984, fig. 5.7). There are many similarities with the assemblage from tree-throw hollow **19139** and the axehead manufacturing recently recorded at the Harford Park and Ride site to the south of Norwich (Bishop 2012). This includes the use of near identical raw materials and also the deposition of the waste in tree-throw hollows; at Harford it was likely that the tree-throws had exposed the raw materials and they were subsequently extended in the search for more. Close to this site, there is evidence of axehead manufacture associated with a pit at Brook Farm, c. 1km to the west (Bishop 2017b) and a layer of axehead working debris radiocarbon dated to the Middle Neolithic (3349-3093 cal BC) along with two incomplete roughouts and a partially polished chisel was uncovered on Brundall Low Road, *c.* 1km south of Area 19 (Green & Haskins 2015).

A.11.82 The Mesolithic and Neolithic material may therefore be characterized as representing forays by small mobile groups, perhaps from larger more broad-based settlement sites located along the major river valleys, staying for relatively short periods and sometimes engaged in task-specific activities.

Later Prehistoric Flintworking

A.11.83 By the middle of the second millennium BC (Middle Bronze Age), flintworking practice takes on a different character, both in the technologies of production and in the circumstances surrounding the manufacture, use and disposal of flintwork. The basic technological and typological characteristics of these industries are well established (Ford *et al.* 1984; Herne 1991; Young and Humphrey 1999; Ballin 2002; McLaren 2009). The industries reflect an unstructured approach towards obtaining serviceable edges on flakes and cores which were then either directly used or further modified. Although seemingly crude, it was clearly successful with suitable tools produced with a minimum of skill input whilst maximizing the limited potential of the often thermally flawed raw materials.

A.11.84 There are also notable differences apparent in the ways that the later prehistoric flintwork was being disposed of. Rather than specific deposits of cultural 'waste' being placed into purposefully dug pits or natural features scattered across the landscape, along the NDR route and particularly in Areas 1, 3, 4 and 5, later prehistoric struck flints were recovered singly or in small numbers from a variety of features, seemingly incidentally incorporated from general background waste. This reflects a pattern frequently seen in later prehistoric flintworking practices, where for the most part flint was gathered locally, only knapped when needed, used immediately and casually discarded close to where it was used (Edmonds 1995, 186). Flint tools continue to be manufactured for their practical roles but they needed only to provide suitable working edges. With the exceptions of a few specific circumstances and occasions there is equally a corresponding decline in the formal deposition of implements, as flint tools slowly lose their ability to act as markers of status, wealth or proficiency; "*By the mid second millennium there is little evidence to suggest that stone tools were customarily selected for inclusion in acts of formal deposition, or that complex conventions surrounded their routine use and disposal*" (Edmonds 1995, 177). Assemblages from this period therefore tend to be small, have a high utilization rate and are normally found in low densities within settlements or scattered across field-systems. Even at extensive settlement sites that have seen intensive excavation, struck flint assemblages of this period tend to be measurable in the dozens or at most low hundreds.

A.11.85 Possible exceptions to these patterns include the assemblages from boundary ditch **1141** and enclosure ditch **5007**; these are notably large and as only parts of the ditches were excavated, the total number of pieces present may have been in the thousands. The assemblage from enclosure **5007** is interesting technologically in that it contain elements that would normally be considered to be Early Bronze Age in date alongside others that are more typical of Middle or Late Bronze Age industries. The former would include the ground implements which are very unlikely to have been made after the Early Bronze Age, although they were probably of some antiquity when deposited, along with some of the more competently detached flakes and carefully crafted retouched implements. Probably the majority of the assemblage, however, is more typical of the later Bronze Age and consists of thick and often poorly detached squat flakes, crudely retouched tools and minimally or irregularly reduced cores. These reflect a decline in structured core working and controlled flake production, and the rise of a

much more simplistic and *ad hoc* approach to obtaining useable edges on crudely flaked raw materials. The rate and timing of these changes is unclear and even within securely contexted assemblages there can be considerable technological fluidity, with structured and unstructured forms of flintworking sometimes practiced side by side (*e.g*. Bishop 2014). The technological variability apparent in this assemblage may indicate that it represents a transitional industry between industries that are more characteristic of the Early Bronze Age and those of the Middle Bronze Age, or it may simply reflect longer term occupation in the vicinity of the enclosure that had commenced in the first half of the second millennium BC.

A.11.86 The assemblage from boundary ditch **1141** is technologically homogeneous and more typically later prehistoric in its composition. It can be favourably compared to many of the other assemblages recovered from the Middle to Late Bronze Age features identified along the NDR route.

A.11.87 This scale of flintworking indicated by the material from boundary ditch **1141** and enclosure **5007** is certainly not what is normally seen in settlement contexts; the quantities would seem unlikely to have accumulated from the sporadic disposal of flint generated from every day or routine use. The relatively unweathered condition of the struck flint would suggest that, although redeposited, it had not been lying around on the surface or in shallow deposits for any extended periods, and its distribution suggests it had been deposited as a series of episodic dumps, which happened after the features had partially silted up and possibly after they had gone out of use. The patterns and mode of deposition suggests the possibility that the material deposited within the holloways derive from midden-like accumulations of occupational debris. Whilst not common, such accumulations are becoming increasingly recognized as an important phenomenon of later Bronze Age and early Iron southern Britain (Waddington 2009; Waddington and Sharples 2011) and several examples of midden-like deposits have been identified in East Anglia (e.g. Trump 1956; Herne 1991; Prior 1998; Ballin 2002; Pollard 2002; Brudenell 2004; McLaren 2009, 253-265; Evans and Pattern 2011; Bishop 2013; 2014; forthcoming a; forthcoming b). In all of these cases, the artefact-rich deposits were made on or into earlier features, these ranging from relatively recently abandoned settlements to Early Bronze Age barrows and the long abandoned monuments of the Neolithic.

A.11.88 The later prehistoric struck flint recovered from the NDR has provided not only information on the technologies of later prehistoric flintworking but also glimpses into its social worth. The persistence in making and using flint tools as seen along the NDR route certainly give the impression that, despite the widespread adoption of other materials such as bronze, the working of flint remained an important and vibrant craft activity during the later prehistoric period, even if a decline in the skills used and the elaboration of the products is apparent. It may also have lost some of its importance as a social catalyst and marker of identity and status, but it was still routinely employed in the tasks that contributed to defining peoples' roles and its use remained an integral component of later Bronze Age households.

A.12 Other Worked Stone

By Ruth Shaffrey

Introduction

A.12.1 The stone was fully recorded – weighed, measured, described and entered into a Microsoft Access database (2010) but converted into Excel for storing in the project archive. The stone is described by area below. The more complete fragments are catalogued by Area whilst the non-diagnostic pieces are quantified in Table 105 and discussed fully as a whole assemblage.

Results by Site

Area 1

A.12.2 Four pieces of lava from the same rotary quern were found in a fill of pit **1238** (1239). The pit is modern in date but the quern is likely to be of medieval date.

Rotary quern fragments, probably lower stone. Lava. Four adjoining fragments. The larger one is grooved but the other three are pecked, which suggests that the three smaller fragments were reworked after being broken from the larger one. The lower face is crudely dressed. All the edges are worn, including the circumference so it is not possible to estimate the diameter. SF4. Measures >360mm diameter x 39mm max thickness. Weighs 1217g. Area 1. Ctx 1239, fill of pit **1238**.

Area 3

A.12.3 Three tiny fragments of lava rotary querns weighing only 5g were recovered from postholes **3240** and **3242** (fills 3241 and 3243 respectively). Given the presence of a Roman field system in Area 3, and the lack of later activity, these are most likely to represent intrusive Roman activity. There are no known lava querns from pre-Roman contexts in this country and so a Bronze Age date seems very unlikely (Fitzpatrick 2017).

Area 9

A.12.4 A total of nine fragments of lava rotary quern was recovered from two contexts in Area 9. One large fragment from a lower stone with radial grooving was found in Period 6 pit **9265** (9266, SF405) and eight undiagnostic rounded fragments were found in a fill of Period 7 construction cut **9513** (fill 9467).

Lower rotary quern fragment. Lava. Central fragment with part of eye surviving but not enough to determine size. Radial grooves, which don't look segmented. Roughly worked base. Both faces are flat. SF405. Measures 25mm thick x >320mm diameter. Weighs 890g. Area 9. Ctx 926, fill of pit **9265**. Period 6.

Area 10

A.12.5 Six undiagnostic lava quern fragments were recovered from Period 6.2 ditch **10263** (10265).

Area 12

A.12.6 A total of 36 fragments of lava rotary quern weighing 1.7kg was recovered from six contexts: 13 from Period 6.1 ditch **12018**, 3 from Period 8 ditch **12143** and the rest from

unphased pits and ditches. These are all undiagnostic fragments about which little can be said but they probably date to the medieval period in keeping with the other excavated evidence.

Rotary quern or millstone fragment. Lava. Eleven fragments almost certainly from same object, but only four could be certainly reconstructed. Measures 85mm thick. Weighs 1274g. Area 12. Ctx 12307, fill of boundary ditch **12306**. Period 6.1

Area 13

A.12.7 A total of 14 fragments of undiagnostic lava rotary quern was recovered from three Period 6.1 ditches (**13053**, **13210** and **13214**).

Area 17

A.12.8 A total of 64 fragments of lava rotary quern was recovered from nine contexts. Most of these are small or undiagnostic fragments, but two adjoining fragments from Period 6.1 ditch **17332** (17333) are from a quern measuring over 32cm diameter whilst two grooved fragments (probably not from the same quern) were recovered from Period 6.3 pit **17476** (17475).

Rotary quern fragment. Lava. Edge fragment with straight vertical edges, pecked flat grinding surface and flat worn other surface. Measures 64mm thick. Weighs 313g. Area 17. Ctx 17040, fill of ditch **17038**. Period 6.3 (AD 1400-1500)

Rotary quern fragments. Lava. Two adjoining fragments. Flat faces, one pecked and one roughly dressed so probably a lower stone. Circumference survives but is damaged so diameter cannot be measured. Measures >360mm diameter x 45mm thick. Weighs 1360g. Area 17. Ctx 17333, fill of ditch **17332**. Period 6.1

Area 18

A.12.9 A total of 14 fragments of lava quern weighing 4kg was recovered from three contexts. These were mostly larger than fragments from other areas. A large thick fragment was found in Period 6.2 pit **18001** (18002) along with seven other pieces. Two adjoining fragments with a grooved face and two other fragments were found in Period 6.3 gully **18029** (18030) whilst two adjoining fragments with segmented grooving were found in Period 6.3 pit **18031** (18032). These measure over 52cm diameter and are therefore likely to be from a millstone. All are likely to be medieval in date in keeping with most of the activity in this area. It is possible, perhaps even likely, that all the lava fragments from this area are from millstones rather than rotary querns. If so, they would seem likely to hail from a nearby windmill or a watermill on the River Yare to the south.

Probable millstone fragments. Lava. Two adjoining fragments of flat stone with slightly curved segmented radial grooves on one face and roughly worked on flat base. One section of the larger fragment is heavily blackened from burning. Measures >520mm diameter x 34mm. Weighs 2118g. Area 18. Ctx 18032, fill of pit **18031** (disuse). Period 6.3

Area 19

A.12.10 A total of 23 lava rotary quern fragments was recovered from 3 contexts (all Period 6.2). Two from pit **19046** (19047) are flat and pecked, whilst the others are undiagnostic.

Discussion

A.12.11 A total of 192 fragments of lava weighing 14.5kg was recovered (Table 105). No rotary quern or millstone fragments of other lithologies were found. One of the fragments is large enough to be identified as a probable millstone, and although no other fragments retain measurable diameters, it is possible that all the fragments are from millstones rather than rotary querns. By the 12th or 13th century, lava was more likely to have been used for millstones than rotary querns (Riddler and Vince 2005, 104).

Area	*Context*	*Cut*	*Number*	*Wt (g)*	*Period*
1	1239	1238	1	1217	8
3	3241	3240	2	3	2
3	3243	3242	1	2	2
9	9266	9265	1	890	6
9	9467	9513	8	186	7
10	10265	10263	6	192	6.2
12	12019	12018	13	109	6.1
12	12130	12129	2	47	6.1
12	12145	12145	3	162	8
12	12266	12264	5	84	6.1
12	12299	12298	2	90	6.1
12	12307	12306	11	1274	6.1
13	13054	13053	11	967	6.1
13	13211	13211	4	297	6.1
13	13215	13214	1	21	6.1
17	17040	17038	1	313	6.3
17	17143	17141	40	847	6.1
17	17202	17201	1	88	6.2
17	17257	17256	20	175	6.3
17	17333	17332	2	1360	6.1
17	17364	17362	1	122	6.3
17	17398	17396	8	287	6.2
17	17475	17473	2	831	6.3
17	17554	17553	9	52	7
18	18002	18001	8	1098	6.2
18	18030	18029	4	757	6.3
18	18032	18031	2	2118	6.3
19	19047	19046	2	474	6.2
19	19176	19175	4	333	6.2
19	19294	19285	17	149	6.2

Table 105: Quantification of lava quern fragments from the route

A.12.12 Watermills were numerous during medieval times in and around Norwich, at (for example) Horsham St Faith, in between Areas 6 and 7, Taverham on the River Wensum, to the south of Areas 1 and 3, Hellesdon to the south of Areas 5 and 6 and in the centre of Norwich at New Mills. If these fragments can be assumed to be from millstones, then their recovery from Areas 1, 3, 9, 10, 12, 13, 17, 18 and 19, makes their distribution widespread and does not help us identify the likely mill at which they originated. Analysis of the mean fragment weight (MFW) does not reveal a pattern of decreasing fragment size throughout the medieval period (which would have been suggestive of increased residuality), indeed, fragments from Period 6.3 are significantly larger than those from Period 6.1. Area 17 produced lava fragments from all medieval periods whilst Areas 10, 12 and 13 only produced them from Period 6.1 and 6.2 contexts and Areas 18 and 19 only from Periods 6.2 and 6.3. The evidence indicates that lava querns (and/or millstones) were in use in the area around Norwich throughout the medieval period. This is perfectly in keeping with what the documentary records tell us of millstone supply because East Anglia was dominated by German lava millstones in the early to middle medieval periods (Langdon 2004). It is also supported by the archaeological evidence from Norwich itself, which has produced medieval querns and millstones almost entirely of lava (Major 2012, 146) for example at Millennium Plain (Atkin *et al* 1985, 212).

Area	***6.1***	***6.2***	***6.3***
10		32	
12	8.4		
13	80.3		
17	21.2	41.7	60
18		137.3	1059
19		41.6	

Table 106: Mean fragment weight of lava querns from medieval contexts in grams

A.12.13 If the fragments are from millstones, they may have been brought away from the mills as usable rubble. If, however, the fragments are from querns, they may relate more directly to activity in the areas in which they were found. This does not necessarily mean that flour was being ground here as they could have been used for crushing hops or malt (Riddler and Vince 2005, 104) or indeed in industrial purposes as well, such as for the grinding of ore (Heslop 2008, 19). The possibility therefore exists that querns from Areas 9 to 12 were involved in iron working there.

A.13 Petrological Analysis

By Simon Timberlake

Introduction

A.13.1 A fragment of Greenstone (SF1; Fig. 4) was recovered from Field topsoil in field T8 (near to, and possibly from, tree throw **1413**, Trench 4) during the evaluation phase of mitigation. This object was technically unstratified, recovered from the edge of a tench within the field, although spatially associated with the tree throw. A thin section was taken from the object for microscopic analysis of the objects petrological make-up.

A.13.2 The shape of this small rectangular-round ended broken shafthole implement suggests a small Early battle-axe form rather than a cushion macehead (Roe 1979, 23-24 + 26). This example therefore represents the slightly-hammered butt end of a small battle axe of the type previously illustrated from the Stowmarket area (s.121) and from Cambridgeshire (Cam.88) in Roe (*ibid*. 24). The approximate length of the (complete axe head) to the tip of the blade end would be in the region of 90-100 mm. A Beaker date is suggested.

Macroscopic identification: A greenish-light grey greenstone with black spots, probably an altered dolerite with amphibole (Stone & Wallis 1951, 110)

Microscopic identification: In thin-section (Fig. 4) the mineralogy and texture of this rock is dominated by fibrous, often sheaf-like, sub 3mm sized masses of acicular pale green pleochroic amphibole (referred to as uralite) which exhibits a yellow – brown to blue birefringence under x-polars. Larger plates of what is probably hornblende with ragged ill-defined edges are also present as an alteration product of original augite (clino-pyroxene), but these are largely colourless to very pale brown in plane polarised light. Rare twinned crystals of augite (higher relief with characteristic cleavage and yellow-orange birefringence colours) do still survive in places. Elsewhere cryptocrystalline masses of small lath-like crystals of a moderately-altered twinned plagioclase (possibly albite or a seriticised andesine-oligoclase) dominate the groundmass of the rock in between the uralite and secondary hornblende. Associated with the amphibole are numerous small scattered grains of ilmenite which are partly altered to a semi-opaque leucoxene, occasional anhedral sphene, and moderately abundant very small prismatic crystals of apatite which are scattered throughout the groundmass.

Conclusion

A.13.3 This is a fragment of an Early battle-axe made from Cornish greenstone. The petrology of this is closest to a Group III or a Group IIIa stone axe source, although this varies slightly from the standard CBA Implement Petrology description of this group, and from the type slide sections in the author's possession, in that the plagioclase felspar is smaller and less altered than in the standard stone source. If a Group III source, then the extraction site for this almost certainly lies within the coastal exposure between Perranuthnoe and Marazion, near Trenow (or possibly Trenow Cove) in West Cornwall. No actual quarry (either for shafthole implements or for Group III Neolithic axes) has been identified, but the rock type here is nevertheless quite distinctive (Keiller *et al.* 1941; Stone & Wallis 1951). Given the wide area of possible outcrop for collection of stone, or for its extraction, it seems possible that we may be looking instead at several sub-types of rock present within this. Interestingly, some of the outcrop from here is described as a gabbro, and some of it as a micro-gabbro, which suggests that the felspar textures may be smaller and better preserved in some areas of the outcrop than others.

A.13.4 Other altered dolerites (epidiorites) within West Cornwall have likewise been used as axe extraction sites during the Neolithic. This includes Group I (Mounts Bay) and Group II (St. Ives) area, although all these petrologies are less similar to the rock type of

ENF137058 <1> than Group III. In conclusion, therefore, this is most likely represents a Group III source. The 'type specimen' used for Group III is in fact a battle-axe fragment (Wil. 004) found just NW of Long Stones, Avebury.

A.13.5 Roe notes that battle-axes made of Cornish greenstone (Groups I, III, IV and XVI) were traded as far east as Essex (Roe *ibid*. 26). This *may* therefore be one of the first examples to be recorded from Norfolk (NB the current implement distribution of Roe is based upon out-dated information and is currently in need of revision).

Appendix B. Environmental Reports

B.1 Human Skeletal Remains

By Zoë Uí Choileáin

Introduction

B.1.1 Four features containing cremated human bone were identified during excavations and are reported on below. A further five features containing very small quantities of calcined bone which could not be positively identified as either human or animal were also analysed. The deposits containing cremated bone date to the Middle Bronze Age and the Iron Age. In addition, two residual fragments of disarticulated human bone were identified in the fills of a high medieval enclosure (Table 107).

B.1.2 An unurned cremation burial (**20263**) and an unurned or token burial (**3002**) were identified in Area 3, cut into the top fill of Middle Bronze Age enclosure ditch **3008**. The former was cut into the ditch terminus and the latter was at the outer corner of the same enclosure ditch. The features containing unidentifiable calcined bone were also found in this area. Cremation 20263 was radiocarbon dated to 1448 – 1283 BC (3113 ± 33 Radiocarbon Age BP, Appendix D).

B.1.3 The two Iron Age features containing cremated human bone, **4160** in Area 4 and **17150** in Area 17, were both isolated, with no contemporary features nearby. The Area 17 example was radiocarbon dated to 189BC – AD54 (2105 ± 19 Radiocarbon Age BP, Appendix D).

B.1.4 The two disarticulated human bones were identified in Area 1 in the infill of the western ditch of the high medieval enclosure, **1066** and in ditch **1325**, an internal partition of enclosure **1066**.

Area	*Cut*	*Deposition*	*Period*
Area 1	1066	Disarticulated bone in ditches	High Medieval
Area 3	3002	Token burial? Or redepoited pyre debris	MBA
	20263	unurned cremation burial	MBA
Area 4	4160	Redeposited pyre debris? or urned cremation burial	IA
Area 17	17150	urned cremation burial	LIA

Table 107: Location and dates of features containing human bone

Methodology

B.1.1 All deposits containing calcined bone were 100% sampled on site, the soil wet sieved and sorted and, the cremated bone analysed in accordance with national guidelines (Mitchell and Brickley). Bone from cut **17150** was selected for radiocarbon dating.

B.1.2 Because of the degree of fragmentation and the absence of diagnostic elements the cremated bone was aged purely on the robustness of the bone fragments. Similarly the disarticulated human limb shafts from Area 1 were aged on their size and robustness.

B.1.3 The extent of erosion of the cortical bone was recorded using McKinley's scoring system (2004).

Results

Nature of the deposits containing cremated bone

B.1.4 Because of the degree of truncation and the small quantities of bone recovered (Table 108), determining what type of cremation related deposits these features were is problematic. In all of the features the bone fragments are small and are mixed with either a charcoal rich or charcoal stained matrix. In the Middle Bronze Age pit **20263** the calcined bone fragments were mixed with a charcoal rich lens near the surface of the pit meaning it could be an unurned burial, a 'token' deposit or a deposit of redeposited pyre debris. Again, the small quantity of bone recovered from the charcoal rich fill of pit **3002** may represent pyre debris. Similarly the small bone fragment size and the dark charcoal rich matrix of the Iron Age feature, **4160** suggests that this feature might be a deposit of pyre debris too. Although truncated/disturbed the Late Iron Age feature **17150** can confidentially be classified as an urned cremation burial, with a conclusive Late Iron Age radiocarbon date.

The cremated bone

B.1.5 All of the identifiable calcined fragments are from subadults/adults. All of the features containing cremated bone were truncated to an unknown degree and the depths of the features ranged from only 0.09-0.23m. This level of truncation means that it is unlikely that all of the bone that was originally deposited is present. Even so, the quantities of bone recovered from each feature is very small ranging from 3g-41g.

B.1.6 The degree of bone fragmentation is high in all of the features which severely limits the data that can be gleaned from the assemblage(Table 108). Bone fragmentation occurs at various stages in the funerary process but can also be affected by the burial environment. It may be that bone was deliberately broken prior to burial.

Area	*Cut*	*Fill*	*Depth of feature (m)*	*Largest fragment (mm)*	*Weight >10mm (g)*	*Identifiable bone*	*Weight 4-10mm*	*Identifiable bone*	*Total weight (g)*
3	3002	3003	0.09	4	0		3	Long bone	3
3	20263	20264	0.18	14	27	Humerus & femur shaft	14	Skull, long bone	41
17	17150	17151	0,22	12	20	limb	10		30
4	4160	4161	0.23	16	8	limb	9		17

Table 108: Fragmentation and weight of cremated

B.1.7 The colour of the cremated bone from all periods was primarily oxidised white. Colour reflects the degree of heat used during cremation, with bone that was exposed to the highest temperatures having a buff white appearance (Holck, 2008 110-115). This

implies that all of the bone was exposed to a consistent heat. All of the cremated bone displayed a mixture of transverse and curved transverse fractures and longitudinal fractures. Fractures like this are the result of bone heating then cracking as soft tissues and muscles shrink (Symes *et al* 2008, 43). Both transverse and longitudinal fracture patterns are believed to be representative of bone which has been cremated in flesh (McCarthy 2010).

B.1.8 Veveral features in Area3 contained a minimal amount of unidentified calcined bone. Weights are presented in Table 109.

Cut	*Deposit*	*Feature*	*Weight (g)*	*Comments*
20052	20050	layer	<1g	Unidentified cremated bone
20616	20617	posthole	<1g	Unidentified cremated bone
20387	20489	pit	<1g	Unidentified cremated bone
3242	3243	posthole	<1g	Unidentified cremated bone
3977	3978	pit	<1g	Unidentified cremated bone

Table 109: Summary of calcined bone from other features

Disarticulated Human Bone

B.1.9 Two disarticulated human bones were identified in Area 1 in the infill of the western ditch of the high medieval enclosure, **1066** and in ditch **1325**, an internal partition of enclosure **1066**. (Table 110). The disarticulated femur and tibia shafts are undated and have ancient post-mortem breaks to their ends. They may derive from a disturbed inhumation (or two inhumations) and whilst they could be from the same individual it is unlikely as they were found approximately 60metres from each other.

Cut	*fill*	*location*	*element*	*Condition of cortical bone*	*Age*
1231	1230	Enclosure ditch **1066**	Right femur shaft	Grade 3-4	Older subadult/adult
1325	1326	Internal partition ditch	tibia shaft	Grade 3-4	Older subadult/adult

Table 110: Summary of Area 1 disarticulated bone

Discussion

B.1.1 Whilst the quantities of cremated human bone recovered from these project are small and fragmentary (and thus of little osteological value) they are evidence of mortuary activity in both the Middle Bronze Age and Iron Age in this area. Whilst truncation might account for the low bone weights, similar weights and high degree of fragmentation have been recorded elsewhere in Norfolk and would seem to be characteristic of funerary deposits in the region, for example the Bronze Age cremation cemetery excavated at Blackborough End, north-west Norfolk (Gilmour 2017 and Robinson 2007).

B.2 Faunal Remains

By Hayley Foster

Introduction and Methodology

B.2.1 This report details the analysis of the animal bone recovered from Norwich northern distributor road, Norfolk. The assemblage was of a small size (3.3kg of identifiable material) and the number of recordable fragments totaled 84, 45 of which could be reliably dated. Faunal material was collected via hand-collection and recovered mainly from ditches and pits. The species represented includes cattle (*Bos taurus*), sheep/goat (*Ovis/Capra*), horse (*Equus caballus*), pig (*Sus scrofa*), dog (*Canis familiaris*), red deer (*Cervus elaphus*) and mole (*Talpa europaea*). A full catalogue of recordable faunal remains can be found in Appendix C.8.

B.2.2 The method used to quantify this assemblage was based on that used for Knowth by McCormick and Murray (2007) which was modified from Albarella and Davis (1996). This involves analysing and recording bones from the assemblage but omitting those fragments that are considered 'low grade' and not worthy of being counted. In order for an element to be recorded 50% of the diagnostic zone on a bone must be present. This method narrows down the assemblage so that fragmented elements are not counted multiple times. MNI (minimum number of individuals) was calculated for all species present. MNI estimates the smallest number of animals that could be represented by the elements recovered. For the main domestic mammals only, the atlas and axis were counted for vertebrae.

B.2.3 Identification of the faunal remains was carried out at Oxford Archaeology East. References to Hillson (1992), Schmid (1972), von den Driesch (1976) and Cohen & Serjeantson (1996) were used where needed for identification purposes.

B.2.4 Two methods of ageing was implemented when analysing the mammalian bone remains epiphysial fusion and dental wear according to Higham wear stages (1967), fusion was recorded according to Silver (1970) for horse and dog, and Schmid (1972) for cattle, sheep and pig.

B.2.5 Measurements were taken according to the specifications of von den Driesch (1976), Payne and Bull (1988) and Davis (1992).

B.2.6 The full assessment was undertaken by Ian Smith (in Moan 2017) and further details can be found in that report. This report summaries the results and highlights any data relevant to interpretation of the site's economy.

Results

B.2.7 The assemblage contains only a small amount of faunal material that dates primarily to the medieval period, with a small number of fragments from the Romano-British and post-medieval periods.

B.2.8 Fragmentation was high, with very few complete bones recovered. Preservation varied from moderate to poor.

Cattle	Sheep/Goat	Pig	Horse	Mole	Red Deer	Dog	Total
17	7	1	8	10	1	1	**45**

Table 111: Number of Identifiable and phased fragments (NISP) per species.

Area 1

B.2.9 The Area 1 assemblage consisted of four undated cattle fragments and other remains dating to Period 6.2 (high medieval). Cattle consisted of the highest number of remains from this period.

B.2.10 Red deer was represented by a single fragment of antler tine.

Period 6.2	NISP	NISP%	MNI	MNI%
Cattle	6	54.5	1	33.3
Horse	4	36.4	1	33.3
Red Deer	1	9.1	1	33.3
Total	**11**		**3**	

Table 112: Dated faunal remains from Area 1

Areas 3, 4 & 5

B.2.11 Area 3 contained only 4 identifiable animal remains, 1 pig metacarpal dating to Period 3.2 from ditch **3788**. Area 4 contained 5 undated fragments belonging to horse and sheep/goat.

Area 9

B.2.12 Area 9 contained cattle, sheep/goat and dog remains, mostly dating to the post-medieval period. A cattle mandible with a MWS of 18 was recovered, indicating an animal ageing to 36 months of age at death.

Period 7	NISP	NISP%	MNI	MNI%
Cattle	8	53.3	1	33.3
Sheep/Goat	6	40	1	33.3
Dog	1	6.7	1	33.3
Total	**15**		**3**	
Period 6	NISP	NISP%	MNI	MNI%
Cattle	1	100	1	100

Table 113: Dated faunal remains from Area 9

Area 10

B.2.13 Area 10 was solely made up of a partial mole skeleton and horse loose teeth. It is highly likely that the mole was an intrusive species as they are burrowing animals.

Period 6.2	*NISP*	*NISP%*	*MNI*	*MNI%*
Horse	2	20	1	50
Mole	10	83.3	1	50
Total	**12**		**2**	

Table 114: Dated faunal remains from Area 10

Areas 13, 17 & 18

B.2.14 Area 13 contained only one identifiable faunal fragment, belonging to a horse.

B.2.15 Area 17 contained only two identifiable fragments, one sheep/goat tooth from Period 7 and 9 pig elements from a high medieval pit (context 17429, pit **17428**). This pig was found to be near complete within the pit, buried with no signs of butchery or disturbance after burial. The geology meant survival of the bone was very poor however, with highly eroded, damaged and missing ends to all bones.

B.2.16 Area 18 contained only one fragment of horse from period 6.2. Other fragments were from sheep/goat, cattle and horse.

Evaluation Assemblage

B.2.17 Material from the archaeological evaluation is detailed in the table below. The remains from the evaluation contained the usual domestic species, mostly from features dated to the medieval period.

Context	Species	Element
444	Cattle	Loose Mandibular M3
444	Cattle	Loose Tooth
1604	Horse	Radius
1638	Cattle	Loose Tooth
1638	Cattle	Loose Tooth
1638	Cattle	Loose Tooth
1638	Cattle	Loose Tooth
1638	Cattle	Loose Tooth
1638	Cattle	Loose Tooth
1638	Cattle	Loose Tooth
1638	Cattle	Loose Tooth
2228	Pig	Mandible
2605	Sheep/Goat	Humerus
4620	Sheep/Goat	Loose Mandibular M12
4620	Sheep/Goat	Loose Mandibular Dp4
4620	Sheep/Goat	Loose Mandibular M12
5212	Cattle	Humerus

Table 115: Faunal remains from evaluation phase

B.2.18 Estimated shoulder heights could not be calculated for any of the remains recovered, as bone was fragmentary and/or weathered. Bone from context 1287 and 1350 was heavily weathered and eroded.

Area	Period	Species	Element	GL	Bd
10	6.2	Mole	Scapula	23.3	-
10	6.2		Scapula	23.3	-
10	6.2		Tibia	18.2	-
10	6.2		Tibia	18.2	-
10	6.2		Ulna	19.2	-
10	6.2		Radius	12.2	-
10	6.2		Radius	12.2	-
9	7	Sheep/Goat	Tibia	-	26.1
9	7	Sheep/Goat	Tibia	-	26.2
9	7	Cattle	First Phalanx	52.2	25.3

Table 116: Table of measurable remains

B.2.19 There was very little ageing data that could be gathered from this assemblage. Area 4 saw a young sheep with unfused femora and an unfused pelvis indicating a presence of animals less than 30-42 months and less than 6-10 months of age at death. Area 9 (Period 6) contained cattle ageing to 36 months of age at death.

Discussion

B.2.20 The evidence shows that domestic mammals were the mainstay of the food economy, with cattle being the most well represented species across all areas of the site.

B.2.21 There was a small amount of wild species represented by the mole skeleton and the fragment of red deer antler. It is likely that the mole is more of a modern specimen.

B.2.22 The small amount of data does not allow for solid interpretations about husbandry practices and dietary preferences at this site. The small quantity of remains from each of the areas unfortunately does not allow for any inter- or intra-site spatial analysis or discussion of chronological patterns.

B.3 Environmental samples

By Rachel Fosberry

Introduction and Methodology

B.3.1 Environmental bulk samples were taken during excavations of sites along the Norwich Northern Distributor Road in order to assess the quality of preservation of plant remains and their potential to provide useful data as part of further archaeological investigations. The results of the assessment of samples taken during the evaluation phase were used to determine the sampling schedule for the subsequent excavation of selected sites. Sample size was determined by the site supervisor and the type of contexts sampled. The amount of sample processed is variable; in most cases only one bucket (up to ten litres) of each sample was processed with the aim of assessing the contents of the sample and then deciding whether more should be processed. The total volume of any cremation or grave deposits was fully processed to ensure maximum retrieval of any human skeletal remains.

B.3.2 The samples were processed by water flotation (using a modified Siraff three-tank system). The floating component (flot) of the samples was collected in a 0.3mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieve. Both flot and residues were allowed to air dry. The dried residue was subjected to a secondary flotation due to the large number of charred grains retained. The resulting flots were combined and a sub-sample was examined under a binocular microscope. Individual cereal grains, chaff elements and seeds have been identified according to their morphology and counted. Identification of plant remains is with reference to the *Digital Seed Atlas of the Netherlands* and the authors' own reference collection. Nomenclature is according to Stace (2010) and Zohary et al (2012). 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).Fragmented cereal grains have been counted if over half of the grain has survived (embryo ends only).

B.3.3 Despite extensive sampling (with over 300 samples being taken along the route), preservation of plant remains was extremely poor. The only site that produced a sample worthy of further work was Area 3, Bell Farm, Horsford (ENF139696). Pit **3152** is thought to be associated with Structure **3240** located in the north of Area 3 that formed part of a significant Middle to Late Bronze Age settlement. Samples from the lower fill (3154) of the sub-rectangular pit produced large amounts of charred grain with an average density of approximately 4000 grains per litre of soil.

B.3.4 This report concentrates on the further analysis of this pit. Quantification data for all samples can be found in Appendix C.9.

Quantification

B.3.5 For the purpose of the assessment, items such as seeds, cereal grains and small animal bones have been scanned and recorded qualitatively according to the following categories

= 1-5, ## = 6-25, ### = 26-100, #### = 100+ specimens

B.3.1 Items that cannot be easily quantified such as charcoal have been scored for abundance

+ = rare, ++ = moderate, +++ = abundant

B.3.2 Selected samples have been fully quantified; Individual cereal grains, chaff elements and seeds have been identified according to their morphology and counted. Fragmented cereal grains have been counted if over half of the grain has survived (embryo ends only). Charcoal volumes were frequently large. An estimation of the total charcoal volume from both flot and residue has been made.

Results

B.3.3 A full account of all samples was produced for the Post-Excavation Analysis (Moan 2016). The below summarises the results of the sampling, with a concentration on the analysis of the ecofactual assemblage from pit **3152** on Area 3.

Area 1

B.3.4 Samples were taken from prehistoric, Bronze Age and high-medieval features. Preserved plant remains were sparse from the prehistoric deposits and the Bronze Age ditch fills with only occasional charred cereal grains occurring in a few of the features. Fill 1144 of boundary ditch **1141** produced a significant volume of charcoal in addition to a single charred barley (*Hordeum vulgare*) grain.

B.3.5 The high-medieval deposits were generally more productive; Early medieval pit **1270** produced occasional, mixed charred cereals and charred seeds of stinking mayweed (*Anthemis cotula*) and cornflower (*Centaurea* sp.). Charcoal volumes are low and there is no evidence of mineralised remains which would verify the interpretation of this feature as a cess pit. Gully **1284** is undated but it produced the largest assemblage of charred grain which is comprised of oats (*Avena* sp.), free-threshing wheat (*T. aestivum s.l.*), barley and rye (*Secale cereale*). A similar, although smaller assemblage was recovered from fill 1287 of high-medieval ditch **1288** and it is likely that gully **1284** is contemporary.

Area 2

B.3.6 The single fill (2015) of prehistoric pit **2014** produced 250ml of wood charcoal.

Area 3

B.3.7 Samples taken from Middle Bronze Age ditches; enclosure ditch **3008** and palisade ditch **3685** were generally unproductive with only two charred grains recovered from enclosure ditch **3008**

B.3.8 Samples were taken from pits and post holes that comprised the numerous alignments that characterised this particular area in addition to a number of presumed structures. Recovery of preserved plant remains from these features is scarce and when they do occur there is a high chance that they may not be contemporary as mainly single specimens are present. Post holes from structures frequently contained poorly-preserved charred cereal grains, usually as single specimens, that could have accumulated in the void around the post during the use of the structure.

Pit **3152**

B.3.9 The most productive sample from Area 3 (and the route as a whole) came from the lower fill 3154 of Late Bronze Age pit **3152** (Table 117). This charred plant assemblage is comprised of equal proportions of emmer (*Triticum turgidum* L subsp. *dicoccum* Shrank. Thell.) wheat and six-row barley (*Hordeum vulgare* L. subsp. *vulgare*) grains with an extremely good level of preservation, although a large proportion of the grains are fragmented. The wheat grains have been identified as emmer wheat through their characteristic morphology of the 'droplet' form as described by Jacomet (*ibid*) with a rounded, blunt apex (Fig. 5) and the presence of occasional spikelet forks. Emmer is a hulled wheat in which two grains are tightly held within a spikelet. The barley grains show evidence that they were originally hulled through the presence of lateral ridges and an angled cross-section. The variety of barley can be determined as six-row though the size of the grains and the presence of twisted grains (Fig. 6). Six-row barley has two sets of three spikelets (each containing one grain) arranged as a triplet on each side of the stem (as opposed to two single grains in spikelets in two-row barley) (Zohary *et al* 2012, 52). The two outer (lateral) grains within a six-row triplet are usually slightly smaller than the central grain and display twisting around the ventral groove. In total, 100 of the best-preserved grains were examined for twisting; 61% of grains showed obvious signs of twisting whereas 39% appeared to be straight. The expected proportion of twisted to straight grains should be 2:1 so the ratio of 1.5:1 is slightly low but the discrepancy is likely to be due to preservation and it is possibly that the twisted grains may have been more likely to fracture. The sample size is also statistically low.

B.3.10 Chaff in the assemblage is scarce with only occasional glume bases and spikelet forks of emmer wheat and even less rachis (cereal stem) fragments of barley. The barley chaff fragments are less well preserved and are not as diagnostic to species. Carbonisation can have a strong effect on the degree of preservation and morphology of the grain and there is evidence that grains are more likely to be preserved than chaff (Boardman and Jones 1990) but the scarcity of chaff in this assemblage indicates that the cereals have been fully de-husked and cleaned prior to burning.

B.3.11 Weed seeds are very rare within the assemblage, possibly as a result of the harvesting technique. If the cereal is harvested by hand through snapping off the ear then a cleaner crop will result. They are limited to occasional seeds of knotgrasses (*Polygonum* sp.), pale persicaria (*Persicaria lapathifolia*), small-seeded docks (*Rumex* sp.), fat hen (*Chenopodium album*), oats (*Avena* sp. Probably wild oats) and bromes (*Bromus* sp.). All of the plant species represented are common weeds of disturbed and arable ground that would have been harvested with the cereal crops. The seeds of these plants are mostly of a similar size to a cereal grain and would not have been lost during the sieving process. However, the proportion of seeds to grain is so low that they are negligible within the assemblage, showing the level of cleaning of contaminants was extremely high.

Sample No.		107
Context No.		3154
Cut No.		3152
Volume processed (L)		9
Flot volume (ml)		1200
% sorted		10
Cereals:		
Triticum turgidum cf. dicoccum caryopsis	Emmer grains	797

Hordeum vulgare subsp *vulgare* caryopsis	6-row barley grains	801
Triticum/Hordeum sp. caryopsis	wheat/barley grains	672
Triticum/Hordeum sp. caryopsis	wheat/barley grains (fragments)	1474
Avena sp. caryopsis	Oat grain	6
Total grain		3750
Chaff:		
Triticum turgidum subsp. *dicoccum* glume base	Emmer chaff	13
Triticum turgidum subsp. *dicoccum* spikelet fork	Emmer chaff	5
Hordeum vulgare subsp *vulgare* rachis	Barley chaff	1
Total chaff items:		19
Weed seeds:		
Bromus sp. caryopsis	Bromes	12
Chenopodium album L. seed	Fat hen	3
Chenopodium sp. seed	Goosefoots	1
Persicaria Lapathifolia L. seed	Pale persicaria	10
Polygonum sp. seed	Knotgrasses	7
Rumex sp. seed	Small-seeded docks	1
Total weeds:		34

*Table 117: Quantification of the Pit **3152** assemblage*

Area 4

B.3.12 Cremation pit **4160** did not contain any significant charcoal although an indeterminate charred cereal grain and a single charred seed of the knotgrass (Polygonaceae) family. Samples from Iron Age post holes were generally unproductive although a charred seed of black-bindweed (*Fallopia convolvulus*), a scrambling weed of disturbed ground, was noted in post hole **4007**.

Area 5

B.3.13 Samples from the Middle Bronze Age enclosure ditch fills not contain any significant preserved plant remains. Pit **5026** contains only a small fragment of charred hazelnut.

Area 7

B.3.14 A number of Roman pits within the area were sampled. Charred cereal remains were recovered from each of the pits and include barley (*Hordeum vulgare*), hulled wheat (*Triticum dicoccum/spelta*) and oats (*Avena* sp.). Chaff elements are rare with only a single spelt glume base noted. Occasional weed seeds are present and include bromes (*Bromus* sp.), black bindweed, docks (*Rumex* sp.) and goosefoots (*Chenopodium* sp.).

Area 8

B.3.15 Prehistoric ditch **8002** produced sparse charcoal only.

Area 9

B.3.16 Samples taken from Area 9 produced a sparse scatter of charred plant remains. Prehistoric pits **9008** and **9010** both contain charred hazelnut shells, possibly representing the burnt remnants of a collected wild food resource. Hazelnut shells survive particularly well once charred and are often the only evidence of food waste in early prehistoric features. Single charred grains recovered from Early Bronze Age pit **9008** and Late Neolithic tree throw **9074** may not be contemporary.

B.3.17 Medieval deposits were mainly unproductive and occasional charred cereal grains probably derived from wind blown rubbish into the open features. Building **9461** (cut **9513**) contains sparse evidence of food waste in the form of occasional charred grains and legumes.

Area 10

B.3.18 Samples that were taken from Anglo-Saxon charcoaling pits unsurprisingly produced charcoal. In many cases the charcoal volumes were very large. Charred plant remains occur infrequently, mainly as poorly-preserved cereal grains, some of which can be identified as barley. Three charred tubers of false oat grass (*Arrhenatherum elatium* ssp. *bulbosus*) were recovered from fill 10301 of pit **10299** probably relating to the burning of turf, possibly used on the roof structure of a pit kiln.

Area 11

B.3.19 Samples from Roman and Anglo-Saxon pit fills produced moderate amounts of charcoal with no evidence of any other preserved plant remains.

Area 12

B.3.20 As with the Area 10 examples, charcoal volumes from the Anglo-Saxon charcoaling pits were extremely large. Single poorly-preserved charred cereal grains were also recovered from pits **12015** and **12094**.

Area 13

B.3.21 Samples taken from charcoaling pits all produced charcoal. Ditch **13077** (part of enclosure **13157**) did not contain any preserved plant remains in fill 13078.

Area 14

B.3.22 Fill 14007 of probable ditch **14006** (Trench 1) did not contain any preserved plant remains although several magnetic spheroids were noted.

Area 15

B.3.23 Fill 15012 of ditch **15011** produced a significant amount of charcoal. Pit/hollow **15004** contains magnetic spheroids. This deposit and post hole **15007** do not contain any preserved plant remains.

Area 16

B.3.24 Samples taken from medieval pit fills produced occasional charred plant remains; fill 16008 of pit **16005** contains barley and wheat grains and a pea-sized legume. Fill 16022 of pit **16021** (pit group **16005**) contains four barley grains. Medieval boundary ditches **16001** and **16055** do not contain preserved plant remains.

Area 17

B.3.25 Samples from prehistoric features were largely unproductive other than moderate charcoal from some of the pits. Cremation **17150** also produced a moderate amount of charcoal (approximately 50ml) in addition to calcined bone.

B.3.26 Samples from medieval features were more productive, particularly in the high medieval period. Pit **17304** (fill 17305) which contains a mixed cereal assemblage of oats (*Avena sp.*), barley, wheat and rye (*Secale cereale*) and fill 17413 of the terminus of ditch **17412** (enclosure **17078**) also produced an assemblage of mixed cereals along with occasional peas and beans (*Fabaceae*). Samples from late medieval deposits were unproductive other than occasional small vetches/wild peas (*Vicia/Lathyrus* sp.) in pits **17246** and **17476**.

Area 18

B.3.27 The most productive sample from Area 18 was taken from fill 18032 of a high medieval pit (**18031**) which contains 21 barley grains and three barley chaff fragments along with seeds of stinking mayweed (*Anthemis cotula*), wild radish (*Raphanus raphanistrum ssp. raphanistrum)* and cornflower-type (*Centaurea* sp.) plants that were most probably associated with the barley crop. The prehistoric and other medieval pit fills from this area were unproductive.

Area 19

B.3.28 Samples from this area produced small flot volumes and a background scatter of occasional charred grains and pulses. Early Neolithic pit **19063** also contains charred hazelnut shells which may indicate a collected wild food resource.

B.3.29 Early medieval pits **19112** and **19123** were unproductive. High medieval pit **19144** contains untransformed elderberry seeds in the lower fill. These seeds are likely to be contemporary with the deposits as they are extremely durable and resistant to decay. High medieval **19152** (Pit Group **19050**) contains a similar assemblage which could indicate contemporaneity. Occasional wheat and barley grains were recovered from the high medieval deposits but not in any significant quantities.

Discussion

B.3.30 Despite extensive sampling along the route, retrieval of preserved plant remains was poor across all periods and feature types, most probably due to the poor preservation qualities of the acidic sandy geology. Clearly the most significant results were from pit **3152** on Bell Farm, which produced a very large assemblage of Emmer wheat and Six-row barley. Barley and emmer wheat are traditionally close companions in the Neolithic and Bronze Age after which emmer is gradually replaced by spelt (*T. aestivum subsp.*

spelta) as the most common wheat variety. Archaeological findings of charred deposits of mixed barley and emmer grains are frequent in prehistoric assemblages, particularly in the Early Iron Age. Assemblages from storage pits at Danebury, Hampshire (Jones 1984) and Wandlebury, Cambridgeshire (Ballantyne 2004) contain mixed deposits of barley ears and emmer spikelets. Assemblages that may be more comparable to the NDR asemblage have been observed by the author from excavations at Perkins Engines, Peterborough (provisionally dated as Middle Bronze Age) and Raunds, Northamptonshire (provisionally dated as Early Iron Age). In both sites exceptionally large amounts of hulled barley and fully-processed emmer wheat have been recovered from pit fills.

B.3.31 The function of large prehistoric pits has frequently been attributed to underground storage of grain. It is a method in which grain, particularly seed grain for subsequent sowing, can be stored in conditions that inhibit spoilage (Reynolds 1974) and relies on the outer grains germinating and producing carbon dioxide which inhibits germination of the rest of the grain within the pit. Archaeobotanical evidence of grain that has been stored in a pit is usually through the recovery of charred material that has been burnt in situ after the pit has been emptied and the remaining 'crust' of outer grain was burnt to cleanse the feature for subsequent use. It is also expected that some of the grain will show evidence of germination. Grain will store better if it is protected by its outer chaff; hulled barley has a thin covering (palea and lemma) that is hard to remove unless it is parched. Emmer is a hulled wheat in which the grain is enclosed in a spikelet that is extremely tough and offers protection against moisture and insect attack and emmer is also sown in spikelet form. Storage within spikelets is therefore the most efficient method and would have most certainly been employed, as has been proven at Danebury and Wandlebury. The assemblages of fully processed grain as found at this site (and Peterborough and Raunds) presumably have a different provenance. Had the assemblages represented the in-situ cleansing of a storage pit then emmer wheat chaff would be present with an expected ratio of 2 glume bases (or one spikelet fork) per grain. Even taking account of the differential effects of carbonisation on individual elements, the scarcity of chaff recovered indicates that the emmer had been completely de-husked prior to burning. The hulled barley would easily lose its thinner husk during burning which would not be expected to survive but the lack of rachis segments indicates that the barley had also been fully processed through separation from the ear. The lack of weed seeds also indicates that the grains had been sieved to remove all smaller components.

B.3.32 Why barley and emmer grains were stored as a mixed assemblage are not clear. At both Danebury and Wandlebury the two cereal types are thought to have been mixed after processing (due to the ratios of grain to chaff). The pit **3152** assemblage may also have been mixed after processing or it may be that the wheat and barley were a maslin crop, a practice in which two cereals are grown together in case one crop fails (van der Veen 1995, 335). This could explain why barley and wheat are so frequently found together in prehistoric sites.

B.3.33 The question remains as to why such enormous quantities of fully processed prime grain have been burnt and then buried. The base of the feature measured approximately 2m x 1m and the deposit is recorded as being 0.2m in depth. This suggests a cubic volume of *2m x 1m x 0.2m = 0.4 cubic meters = 400L soil.* It cannot be assumed that the concentration of grain was homogenous throughout the fill but, an approximation of 4000 grains per litre of soil could suggest somewhere around 160,000 charred cereal grains were origianlly within the deposit, clearly a highly significant amount.

B.3.34 Once grain has been fully processed, the only reason for it to then be subjected to fire would have been through cooking so one has to assume that the burning of such large quantities of grain must have been the result of a catastrophic fire or for a ritual purpose. There is no evidence of *in-situ* burning within the pit and so it is assumed that this is a secondary deposit. The fill above contained fired clay, loom weights and a spindle whorl was recovered from the grain deposit. The pit is associated with structures that were probably used for industrial activities such as weaving and it is possible that grain was stored within one of these structures and has been disposed of as a result of being burnt.

B.4 Charcoal Analysis

By Denise Druce

Introduction and Methodology

B.4.1 Charcoal assemblages from seven of the bulk samples were assessed in order to identify any fragments suitable for radiocarbon dating material, and to assess their potential for providing information on fuel use. Three of the samples comprised post hole fills (from post holes **3529**, **3667**, and **21884**). Three came from charcoal-rich pits (**10001**, **11004**, and **12044**) thought to be the remains of Anglo-Saxon charcoal production pits (charcoal clamps?), and one came from the remains of a furnace (**10421**).

B.4.2 Following standard processing and palaeoenvironmental assessment (*Section B4*) any charcoal fragments larger than 2mm in size were extracted and examined using a binocular microscope at up to x40 magnification. A representative amount of fragments from each sample were initially fractured to reveal transverse sections, and preliminary species identifications were made. In particular, the presence of any small round wood, sapwood, and short-lived wood species was noted, for the purpose of providing suitable material for radiocarbon dating. If appropriate, further identifications were made using a incident-light microscope at up to x400 magnification. The results were recorded on an assessment pro-forma, which will be kept with the site archive. Identifications were made with reference to Hather (2000), and modern reference material. Characteristics, such as possession of tyloses in hardwoods, any insect damage, or radial splitting were also noted as an aid to assessing wood maturity, and condition prior to charring.

Results

Radiocarbon Dates

B.4.3 Post holes **3529** and **3667** both produced alder (*Alnus glutinosa*) charcoal dated to the Bronze Age. Post hole **21884**, however, produced an indeterminate charred twig fragment dated to the post-medieval period. A fragment of hazel (*Corylus avellana*) charcoal from furnace **10421** returned a late Iron Age/Early Romano-British date. Although two of the charcoal clamps produced short-lived taxa dated to the late Anglo-Saxon period, one of them, **11004**, produced, what was thought to be a fragment of oak charcoal, dated to the Roman period. However, given that the positive identification of sapwood is not straightforward, especially when dealing with charcoal fragments, it is possible that the material did comprise a fragment of mature oak wood. If this is the case, the radiocarbon result could be subject to the 'old wood effect', which means it could provide a date hundreds of years older than when the tree was felled. If this is the case, then the result could be compatable with an Anglo-Saxon date. A fuller discussion of all the radiocarbon dating results from the site is given in Volume 1, Section 3.42.

Charcoal Analysis

B.4.4 The results of the assessment are presented in Table 118. Five of the seven samples, including the Bronze Age structural posthole (**3667**), furnace **10421**, and the three Anglo-Saxon charcoal production pits, produced common to abundant charcoal fragments dominated by oak (*Quercus* sp), including abundant fragments exhibiting tyloses, a feature more prevalent in mature trees at least 20 years in age (Dufraisse *et al* 2017). The charcoal samples from the charcoal production pits were particularly

large, and are likely to represent the residual remains from the charcoal making activity. Although the oak recovered from furnace **10421** is likely to comprise the remains of the fuel, the origin of the charcoal from structural post hole **3667** is less obvious, in that it could represent the remains of fuel debris from activity carried out nearby, or the remains of the post itself; the presence of rare alder/hazel (*Alnus glutinosa/Corylus avellana*) fragments in the same assemblage, however, may indicate it is more likely to represent fuel debris. Rare fragments of alder/hazel (both alder and hazel were positively identified for radiocarbon purposes) were also recorded in post hole **3529** and furnace **10421**. Rare fragments of holly (*Ilex aquifolium*) and possible lime (*Tilia cordata*) were recorded in charcoal production pit **10001**. The paucity of large charcoal fragments from Bronze Age post holes **3529** and **21884**, which both formed part of post hole alignments, suggests that these two features may have been situated away from the main areas of activity.

Sample no.	***Context no.***	***Feature no.***	***Feature type***	***>2mm Charcoal***	***Material submitted for c14 dating***
117	3530	**3529**	Posthole (alignment)	(1), includes short-lived taxa, including *Alnus glutinosa/Corylus avellana*	Charcoal: *Alnus glutinosa* fragment
120	3668	**3667**	Posthole (structure)	(4), dominated by *Quercus* sp, including common >4mm and rare >10mm fragments. Some mature wood. Rare *Alnus glutinosa/Corylus avellana*	Charcoal: *Alnus glutinosa* fragment
409	9173	**9172**	Charcoal production pit	Dominated by *Quercus sp.*	*Quercus sp.*
451	10002	**10001**	Charcoal production pit	(4), large charcoal-rich sample. Dominated by mature *Quercus* sp. Rare to frequent other taxa include *Ilex aquifolium* and possible *Tilia cordata*	Charcoal: *Ilex aquifolium* fragment
478	10422	**10421**	Furnace	(3), Dominated by mature *Quercus* sp. Common >4mm and rare >10mm fragments. Rare *Alnus glutinosa/Corylus avellana*	Charcoal: *Corylus avellana* fragment
504	***11005***	11004	Charcoal production pit	(4), large charcoal-rich sample. Dominated by *Quercus* sp	Charcoal: *Quercus* sp (cf sap wood)
551	***12045***	12094	Charcoal production pit	(4), large charcoal-rich sample. Dominated by *Quercus* sp. Abundant >4mm and >10mm fragments. Rare *Quercus* sp round wood	Charcoal: *Quercus* sp round wood fragment
1124	***21885***	21884	Post hole (alignment)	(1), *Quercus* sp and ideterminate twig fragment	Charcoal: indeterminate twig fragment

Table 118: Results of the charcoal assessment from the Norwich Road Scheme site.

Notes: (1) =< five items; (2) = 6-25 items, (3) = 26-100 items, (4) =>100 items

Discussion

B.4.5 The charcoal evidence from the Norwich Road Scheme suggests that oak wood provided the main fuel during all the periods represented by the features. This is not surprising, however, given that oak was the most widely used fuelwood throughout Britain (Edlin 1949, 157), where it exists. The limited evidence for alder, hazel, holly, and lime, suggests that these were also components of locally sourced woodland, but were not heavily utilised at the site.

B.4.6 With special reference to the Anglo-Saxon charcoal production pits, it is evident that they are ideally located in wooded regions, where the heavy branchwood or coppice was cut (Edlin 1949, 160). It is unclear what industry was being sustained by the

charcoal produced at the site, however, Edlin (1949, 162) suggests that the four main industries sustained by medieval charcoal production, certainly by the later medieval period, were iron smelting, and steel, glass and gunpowder manufacturing. However, as Hazell *et al* (2017, 195) point out, the demands of smaller scale industries, and domestic and craft-based activities should not be under-estimated.

B.4.7 The presence of mature oak in many of the samples suggests mature trees, either branches or trunks, rather than coppiced wood was being utilised at the site. It is possible that the wood used for the charcoal production represents offcuts derived from other industries such as timber manufacture. However, it is not possible to prove this on the present evidence. Wood and charcoal records, and evidence for woodland management during the earlier medieval period in Britain are extremely sparse (Murphy, 2001, 21; Smith, 2002, 35; Huntley, 2010, 30). Therefore the charcoal data from the Norwich Road Scheme site provides important information with regards woodland and fuel use during this period.

Appendix C. Finds & Environmental Catalogues and Other Data

C.1 Prehistoric Pottery Fabrics by Excavation Area

Area	Spot date	Fabric	Quantity	Weight (g)	% weight
Area 1	Late Neolithic	F1	1	3	0.02
		QGQu	9	21	0.13
	Early Bronze Age	G1pale	4	17	0.11
		QG	7	2	0.01
		QpaleG	1	8	0.05
	Later Neolithic early Bronze Age	F2	1	5	0.03
		QGF	19	47	0.29
	Middle Bronze Age	F1	1	19	0.12
		F2	5	78	0.49
		G1	16	103	0.65
		QF	1	4	0.03
		QpaleG	3	27	0.17
	Post Deverel-Rimbury	F1	13	25	0.16
		F2Q	1	18	0.11
		Q1	1	1	0.01
	Later Iron Age	Q2	5	33	0.21
	Undiagnostic pre	F1	4	2	0.01
		F2	2	2	0.01
		G	1	1	0.01
		Q1	4	3	0.02
		QpaleG	1	13	0.08
Area 2a	Earlier Neolithic	F1	2	20	0.13
		F2	5	14	0.09
	Early Bronze Age	G1	1	10	0.06
Area 2b	Later Iron Age	Q1	1	26	0.16
		Q1voids	1	7	0.04
Area 3	Early Bronze Age	G1	2	23	0.14
		QG	6	8	0.05
	Later Neolithic early Bronze Age	F1	1	15	0.09
		G1Qu	1	6	0.04
		G2	2	16	0.1
		G2mica	1	3	0.02
		QG2	3	21	0.13
		Qgvoids	2	29	0.18
		Qqu	1	2	0.01
		QQuG	1	4	0.03
	Early to mid-Bronze Age	G1	7	76	0.48
		GQQu	1	18	0.11
		QG1	3	14	0.09
	Middle Bronze Age	F	1	1	0.01
		G1	10	70	0.44
		G1coarse	207	3637	22.82
		G2	1	13	0.08
		GF	2	72	0.45
		QF	1	8	0.05
		QFSH	1	3	0.02
		QG	1	8	0.05

Area	Spot date	Fabric	Quantity	Weight (g)	% weight
		S1	5	46	0.29
	Later Bronze Age	F1	504	6946	43.58
		F1coarse	43	823	5.16
		F2	39	230	1.44
		F2fine	1	7	0.04
		F2voids	2	28	0.18
		F3	5	56	0.35
		F4	1	7	0.04
		QF	24	139	0.87
		Qfvoids	1	5	0.03
		QsparseF	2	10	0.06
	Iron Age	Q1	1	4	0.03
	Later Iron Age	Q1	8	99	0.62
		QF	4	12	0.08
	Undiagnostic prehistoric	F1	1	1	0.01
		G1	1	1	0.01
		Q1	1	1	0.01
Area 4	Early Bronze Age	G1	2	10	0.06
	Earlier Iron Age	F1	1	6	0.04
		QF2	3	15	0.09
		QG	1	6	0.04
	Iron Age	Q1mica	22	250	1.57
	Later Iron Age	Q2	2	4	0.03
Area 5	?Later Neolithic early Bronze Age	F1	1	5	0.03
	Middle Bronze Age	F1	3	23	0.14
		F2	1	2	0.01
		G1	34	427	2.68
		G1F	1	129	0.81
		G2	7	47	0.29
		G3	1	10	0.06
		GQ	3	53	0.33
		QG	6	114	0.72
		QGF	1	7	0.04
	Later Iron Age	Q2	1	6	0.04
Area 6	Earlier Iron Age	F2	12	37	0.23
		F2fine	1	4	0.03
Area 7	Earlier Iron Age	F2	1	1	0.01
		QF	1	5	0.03
		QQuspF	1	7	0.04
Area 8	Early Bronze Age	G1	3	12	0.08
	Undiagnostic prehistoric	F2	2	3	0.02
		QfineF	1	5	0.03
Area 9	Earlier Neolithic	F1	1	18	0.11
	Later Neolithic early Bronze Age	F3	1	8	0.05
		QfineF	3	10	0.06
		QG	5	31	0.19
		QGF	2	5	0.03
		QGspF	1	7	0.04
Area 10	Late Neolithic	G2	1	70	0.44
	Later Neolithic early Bronze Age	QF1	5	45	0.28
Area 13	Early to mid-Bronze Age	G1	1	10	0.06

Area	Spot date	Fabric	Quantity	Weight (g)	% weight
Area 14	Post Deverel-Rimbury	FQ	1	11	0.07
Area 15	Middle Bronze Age	G1	1	8	0.05
	Earlier Iron Age	F2	1	1	0.01
Area 17	Later Neolithic early Bronze Age	FfineG	12	65	0.41
		GspF	2	28	0.18
		QfineF	9	51	0.32
		QfineFvoids	1	38	0.24
	Later Bronze Age	F2	52	253	1.59
	Iron Age	Q1	62	355	2.2
	Undiagnostic prehistoric	F2	9	13	0.08
		G	1	1	0.01
		Q	1	1	0.01
Area 18	Earlier Neolithic	F4	41	269	1.69
		F4 voids	1	5	0.03
		F5	10	128	0.8
Area 19	Earlier Neolithic	F1	11	40	0.25
		F4	2	18	0.11
		F5	8	80	0.5
	Later Neolithic early Bronze Age	QF	2	18	0.11
		QfineF	1	2	0.01
		QGF	1	184	1.15
	Iron Age	Q1F2	1	10	0.06
	Undiagnostic pre	F2	1	2	0.01
Total			**1370**	**15939**	**100.00%**

C.2 Prehistoric Pottery Fabric Descriptions

Spot date	Fabric	Description
Earlier Neolithic	F1	Common medium angular flint >4mm in fine clay matrix
	F2	Moderate fine to medium angular flint 2-4mm in fine clay matrix
	F4	Sparse to moderate coarse flint 4-6mm with sparse sub-rounded chalk
	F4 voids	Sparse to moderate coarse flint 4-6mm ,with sparse sub-rounded voids
	F5	Common fine to medium angular flint 2-4mm in fine clay matrix
Late Neolithic	F1	Common medium angular flint >4mm in fine clay matrix
	G2	Moderate fine sub-angular grog with some sand
	QGQu	Sandy clay with sparse sub-angular grog >3mm and rare white sub-rounded quartzite
Later Neolithic early Bronze Age	F1	Common medium angular flint >4mm in fine clay matrix
	F2	Moderate fine to medium angular flint 2-4mm in fine clay matrix
	F3	Common fine angular flint c.2mm in fine clay matrix
	FfineG	Common fine to medium angular flint 2-4mm in fine clay matrix with sparse sub-angular grog c.2mm
	G1Qu	Moderate medium sub-rounded grog in sandy clay matrix
	G2	Common fine sub-angular grog
	G2mica	Common fine sub-angular grog with sparse silver mica plate
	GspF	Common fine sub-angular grog with sparse angular flint c.2mm
	QF	Sandy clay with sparse fine to moderate angular flint
	QF1	Sandy clay with common medium angular flint
	QfineF	Sandy clay with sparse fine angular flint

Spot date	Fabric	Description
	QfineFvoids	Sandy clay with sparse fine angular flint sparse sub-rounded voids
	QG	Sandy clay with sparse fine to medium sub-angular grog
	QG2	Sandy clay with moderate fine sub-angular pale grog
	QGF	Sandy clay with moderate medium sub-angular pale grog and sparse fine to moderate angular flint c.3mm
	QGspF	Sandy clay with sparse fine to moderate sub-angular grog and sparse medium flint c3mm
	Qgvoids	Sandy clay with sparse fine to medium sub-angular grog and rare sub-angular voids
	Qqu	Sandy clay with sparse fine to medium sub-rounded white quartzite
	QQuG	Sandy clay with sparse fine to medium sub-rounded white quartzite and sparse sub-rounded grog
Early Bronze Age	G1	Common large sub-angular medium grog 4-6mm
	G1pale	Common large sub-angular pale grog 4-6mm
	QG	Sandy clay with sparse fine to medium sub-rounded grog
	QpaleG	Sandy clay with sparse fine to medium sub-rounded pale grog
Early to mid-Bronze Age	G1	Common large sub-angular medium grog 5-6mm
	GQQu	Common large sub-angular medium grog 4-6mm
	QG1	Sandy clay with moderate medium sub-angular grog
Middle Bronze Age	F	Undiagnostic fabric with flint
	F1	Common coarse angular flint 4-7mm in fine clay matrix
	F2	Moderate fine to medium angular flint 2-4mm in fine clay matrix
	G1	Common medium sub-angular medium grogc. 4mm
	G1coarse	Common coarse sub-angular medium grog 4-6mm
	G1F	Common large sub-angular medium grog 4-6mm with sparse angular flint c.3mm
	G2	Common medium sub-angular medium grog c.4mm
	G3	Common fine sub-angular medium grog >4mm
	GF	Common large sub-angular medium grog 4-6mm sparse angular flint c.4mm
	GQ	Common large sub-angular medium grog 4-6mm with moderate rounded quartz sand
	QF	Sandy clay with moderate medium angular flint
	QFSH	Sandy clay with moderate shell
	QG	Sandy clay with moderate medium sub-angular grog
	QGF	Sandy clay with moderate medium sub-angular grog and sparse angular flint
	QpaleG	Sandy clay with moderate medium sub-angular pale grog
	S1	Common white shell plates
Post Deverel-Rimbury	F1	Common coarse angular flint 4-7mm in fine clay matrix
	F2Q	Moderate fine to medium angular flint 2-4mm in sandy clay matrix
	FQ	Common medium angular flint 2-4mm in sandy clay matrix
	Q1	Fine sandy clay
Later Bronze Age	F1	Common coarse angular flint 4-7mm in fine clay matrix
	F1coarse	Common coarse angular flint 6-7mm in fine clay matrix
	F2	Moderate fine to medium angular flint 2-4mm
	F2fine	Moderate fine angular flint c.2mm
	F2voids	Moderate fine angular flint c.2mm with occasional voids
	F3	Moderate medium angular flint c.3mm
	F4	Sparse fine angular flint c.2mm
	QF	Sandy clay with moderate fine angular flint c.2mm
	Qfvoids	Sandy clay with moderate fine angular flint c.2mm and sparse sub-angular voids
	QsparseF	Sandy clay with sparse fine angular flint c.2mm
Earlier Iron Age	F1	Common coarse angular flint 4-7mm in fine clay matrix
	F2	Moderate fine to medium angular flint 2-4mm

Spot date	Fabric	Description
	F2fine	Moderate fine angular flint c.2mm
	QF	Sandy clay with moderate fine angular flint c.2mm
	QF2	Sandy clay with moderate fine angular flint c.2mm
	QG	Sandy clay with moderate medium sub-angular grog c.3mm
	QQuspF	Sandy clay with moderate sub-rounded white quartzite and sparse fine angular flint c.2mm
Iron Age	Q1	Common rounded quartz sand
	Q1F2	Common rounded quartz sand with rare sub-angular banded flint
	Q1mica	Common rounded quartz sand with moderate silver mica plates
Later Iron Age	Q1	Common rounded quartz sand
	Q1voids	Common rounded quartz sand with sparse elongated voids
	Q2	Common rounded quartz sand with common elongated voids
	QF	Common rounded quartz sand with sparse sub-angular banded flint
Undiagnostic pre	F1	Common coarse angular flint 4-7mm in fine clay matrix
	F2	Moderate fine to medium angular flint 2-4mm
	G	Undiagnostic grog fabric
	G1	Sub-angular pale grog
	Q	Undiagnostic quartz sand
	Q1	Common rounded quartz sand
	QfineF	Sandy clay with sparse fine angular flint
	QpaleG	Sandy clay with sparse medium pale grog

C.3 Prehistoric Pottery Form Types by spot date & Area

Area	Spot date	Vessel type	Form	Fabric	Vessel count
1	Early Bronze Age	Jar	Barrel	QpaleG	1
	Middle Bronze Age	Jar	Ellipsoid	G1	1
3	Middle Bronze Age	Jar	Bucket	G1coarse	1
				QG	1
				S1	1
			Ellipsoid	G1	1
	Later Bronze Age	Jar	Uncertain	F1	1
			B ellipsoid	F1coarse	1
			D	QF	1
			E Bipartite	F1	1
				F2voids	1
				QF	1
			F High rounded shoulder	F1	1
				QF	1
			G Slack	QF	2
			I tripartite	F1	2
				F1coarse	1
4	Iron Age	Jar	S profile	Q1mica	1
15	Middle Bronze Age	Jar	Barrel	G1	1
17	Later Neolithic Early Bronze Age	Beaker	Globular	GspF	1
				QfineF	1
	Later Bronze Age	Bowl	K4	F2	1
	Iron Age	Jar	S profile	Q1mica	1
18	Earlier Neolithic	Bowl	Plain bowl baggy	F5	1
19	Earlier Neolithic	Bowl	Plain bowl shouldered	F1	1
				F5	1
Total					**27**

C.4 Ceramic Building Material Catalogue

Area Code	Area	Context	Cut	Feature	Sample	Form	Descr	Date	Fabric	Frags	Refits	WT (g)	Faces	L (mm)	W (MM)	Th (mm)	Flange Thickness (mm)	Edge Thickness (mm)	Comments
ENF139693	1	1144	1141	ditch		Tile	Fragment	Med? - Post Med?	B	2	1	32	2			14			Scorched upper surface
ENF139693	1	1243	1242	ditch		Tile	Tegula	Roman	A	1		111	5			23	23		Flange fragment from a Roman tegula. Sanded outer faces, right angled turn and finger smoothed inner face.
ENF139695	2	2015	2014	pit		Tile	Fragment	Post Med	C	1		27	1						
ENF139696	3	3167	3166	pit		Brick	Fragment	15th Century	D	1		688	5		106	50		47	Half brick fragment. Wedge shaped section. Streaking and broken face show brick construction very well. Sanded on three sides. Piece of glass is present as inclusion.
ENF139696	3	20640	20638	ditch		Brick	Fragment	Med - Post Med?	E	2	1	59	2						Quite square, therefore probably late, but too fragmentary. Fine moulding sand.
ENF139696	3	20653	20652	pit		Undiag	Fragment	No Date	B	1		37							
ENF139697	4	4205	4206	ditch		Undiag	Fragment	No Date	E	1		5							
ENF139699	6	6013	6014	pit		Tile	Fragment	Post Med	F	1		4							
ENF139700	7	7001	0	subsoil		Tile	Fragment	Post Med	B	1		16	2			13			
ENF139700	7	7003	7005	ditch		Brick	Fragment	18th Century	G	1		371	3			40			Fragment of brick, upper bed is smoothed whilst the brick remains unweathered. Very likely an 18th century floor brick, judging by the yellow colour.
ENF139700	7	7003	7005	ditch		Undiag	Frag	No Date	E	1		2	1						
ENF139700	7	7006	7007	post hole		Undiag	Fragment	No Date	F	1		3							
ENF139700	7	7029	7030	firepit		Undiag	Fragment	No Date	C	1		2							
ENF139700	7	7033	0	subsoil		Undiag	Fragment	No Date	F	1		8							
ENF139700	7	7040	7042	fire-pit		Brick	Fragment	No Date	E	1		69	2						
ENF139700	7	7065	7064	ditch		Tile	Fragment	No Date	F	1		23	2			6			

Area Code	Area	Context	Cut	Feature	Sample	Form	Descr	Date	Fabric	Frags	Refits	WT (g)	Faces	L (mm)	W (MM)	Th (mm)	Flange Thickness (mm)	Edge Thickness (mm)	Comments
ENF139700	7	7070	7071	natural		Tile	Imbrex	Roman	A1	1		212	3			24		18	Possible basal end fragment of an imbrex tile. Fragment has a very slight curve, so may be part of a large imbrex tile. Sanded on outer and inner faces.
ENF139702	9	9011	9010	pit		Undiag	Undiag	No Date	F	1		5	1						
ENF139702	9	9023	9022	pit		Undiag	Undiag	No Date	C	1		6	1						
ENF139702	9	9036	9035	ditch		Undiag	Undiag	No Date	C	1		1							
ENF139702	9	9362	0	subsoil		Tile	Flat Tile	Post Med	C	1		109	3			14		13	
ENF139702	9	9255	9254	pit/ hollow		Brick	Wall Brick	16th C	H	2		756	4			45			Patches of grey and white glazing on some surfaces, the patterns of the glaze suggests it comes from the over firing of the brick rather than any decorative intention. Mould made, moderate/coarse sanding and wiped upper bed. Brick is quite thin, a floor brick?
ENF139702	9	9255	9254	pit/ hollow		Brick	Fragment	Med? - Post Med?	B	2		1053	3			55			
ENF139702	9	9255	9254	pit/ hollow		Brick	Wall Brick	16th C	H	1		961	5			49			Very even shape. Over firing glaze evident.
ENF139702	9	9255	9254	pit/ hollow		Brick	Wall Brick	16th C	I	1		436	5			45			Very even shape. Over firing glaze evident.
ENF139702	9	9255	9254	pit/ hollow	416														20 fragments of abraded undiag. Cbm. Not fully assessed.
ENF139702	9	9403	0	subsoil		Tile	Flat Tile	Post Med	B	2	1	448	4			14		11	"Tile Sample". Fragments of same flat tile.
ENF139702	9	9403	0	subsoil		Tile	Flat Tile	Post Med	B	13		1515	3			15		15	"Tile Sample". Fragments of at least four tiles.
ENF139702	9	9403	0	subsoil		Tile	Peg Tile	Post Med	B1	18		1415	3			15		15	"Tile Sample". Fragments of at least three tiles. One square peg hole seen.
ENF139702	9	9235	9234	pit		Tile	Flat Tile	?	E	1		12	2			11			
ENF139702	9	9268	9267	pit		Tile	Flat Tile	?	C	1		22	3			16		16	
ENF139702	9	9285	9285	ditch		Tile	Flat Tile	Post Med	B1	1		23	3			13		14	
ENF139702	9	9287	9288	pit		Tile	Flat Tile	?	A	2		32	1			14			
ENF139702	9	9346	9347	post hole		Brick	?Floor Brick	18th C?	H	1		364	3			42			Thin red brick, floor brick?
ENF139702	9	9346	9347	post hole		Brick	Fragment	No Date	I	1		15	1						

Area Code	Area	Context	Cut	Feature	Sample	Form	Descr	Date	Fabric	Frags	Refits	WT (g)	Faces	L (mm)	W (MM)	Th (mm)	Flange Thickness (mm)	Edge Thickness (mm)	Comments
ENF139702	9	9314	9314	ditch		Tile	Flat Tile	?	I	3		62	2			14			
ENF139702	9	9314	9314	ditch		Tile	Flat Tile	?	B	2		44	2			13			
ENF139702	9	9314	9314	ditch		Tile	Flat Tile	?	H	1		26	2			13			
ENF139702	9	9331	9330	ditch		Tile	Flat Tile	Post Med	B	1		35	3			14		14	
ENF139702	9	9365	9365	ditch		Undiag	Undiag	No Date	C	2		5	1						
ENF139702	9	9366	9365	ditch		Brick	Fragment	No Date	B	1		212	1						
ENF139702	9	9346	9347	post hole		Tile	Flat Tile	Late Med-Post Med	I	1		239	4			13		14	Corner of a flate tile. Warped and overfired. Use or during firing, not clear
ENF139702	9	9350	9351	post hole		Tile	Flat Tile	?	I	1		9	1						
ENF139702	9	9356	9357	post hole		Tile	Fragment	Late Post Med?	I	2		40	2			14			
ENF139702	9	9366	9365	ditch		Tile	Flat Tile	No Date	E	1		26	2			14			
ENF139702	9	9388	9387	post hole		Tile	Fragment	?	I	1		22	2			15			
ENF139702	9	9403	0	subsoil		Undiag	Fragment	No Date	B	2		93							
ENF139702	9	9403	0	subsoil		Brick	Wall Brick	16th Century	H	3		4920	6	215	102	46			Two and a half bricks. Two complete bricks have reduced surfaces. All have remains of lime mortar on all long faces. The same form and appearance of the wall bricks from 9255.
ENF139702	9	9403	0	subsoil		Brick	Wall Brick	16th Century	I	2		1860	5		110	45			Two brick fragments with lime mortart remains, similar style to others in this context and those in 9255
ENF139702	9	9403	0	subsoil		Brick	Wall Brick	16th Century	I	1		898	5		105	50			Half brick fragment with gravelly lime mortart remains on all faces apart from the stretchers.
ENF139702	9	9403	0	subsoil		Flint	Flint + Mortar												Triangular lump of squared flint with lime mortar. 110x110x116 and 120m thick.
ENF139702	9	9403	0	subsoil		Brick	Square	late 15th?	K	1		1027	6		13	13			A square brick. Chalkier fabric than others in the context. Mortart on most faces. Poorly formed. Possibly eaelier - late 15th? A five inch square, probably made for a specific purpose
ENF139702	9	9403	0	subsoil		Brick	Fragment	16th Century	I	1		1356	5		105	~45-50			Brick fragment, lower bed has sheered off, but probably 45-50mm thick. Covered on all other faces by gravelly lie mortar with cbm inclusions
ENF139702	9	9403	0	subsoil		Brick	Fragment	?	K	1		1300	~6	170	140	52			Brick with large amount of lime mortar with chalky inclusions attached. Very abraded, abraded and then covered in lime mortar -

Area Code	Area	Context	Cut	Feature	Sample	Form	Descr	Date	Fabric	Frags	Refits	WT (g)	Faces	L (mm)	W (MM)	Th (mm)	Flange Thickness (mm)	Edge Thickness (mm)	Comments
																			reuse of a much earlier brick?
ENF139702	9	9404	9402	rubble deposit		Undiag	Undiag	No Date	J	2		16							
ENF139702	9	9425	9424	pit		Tile	Flat Tile	?	F	1		62	4			14		14	Corner of a flate tile. Use wear or carboised sanded surfaces. Possibly overfired asfeels dense for its size.
ENF139702	9	9431	9426	pit		Tile	Flat Tile	Post Med	B	9		435	3			14		14	At least two tiles
ENF139702	9	9431	9426	pit		Tile	Flat Tile	No Date	I	1		66	2			12			
ENF139702	9	9431	9426	pit		Tile	Flat Tile	No Date	B1	1		36	2			14			
ENF139702	9	9431	9426	pit		Brick	?Floor Brick	18th/19th C?	I	4		291	3			48			Patches of grey and white glazing on some surfaces, the patterns of the glaze suggests it comes from the over firing of the brick rather than any decorative intention. Mould made, moderate/coarse sanding and wiped upper bed. Brick is quite thin, a floor brick?
ENF139702	9	9431	9426	pit		Brick	Fragments	No Date	H	8		257							Fragments of at least one brick, quite abraded.
ENF139702	9	9431	9426	pit		Brick	Fragments	No Date	B1	3		119							Fragments of at least one brick, quite abraded.
ENF139702	9	9429	9428	pit		Tile	Flat Tile	?	F	2		42	2			14			
ENF139702	9	9429	9428	pit		Tile	Flat Tile	?	I	1		27	2			12			
ENF139702	9	9429	9428	pit		Tile	Flat Tile	?	C*	1		37	3			12		14	Overfired to grey
ENF139702	9	9440	9438	pit		Undiag	Undiag	No Date	E	1		3							
ENF139702	9	9446	9445	pit		Tile	Fragment	No Date	I	1		28	2			15			
ENF139702	9	9448	9447	post hole		Brick	?Floor Brick	?	H	1		61	2			33			
ENF139702	9	9448	9447	post hole		Brick	Fragment	No Date	B	1		30	?1						Abraded
ENF139702	9	9489	9488	pit		Tile	Fragment	No Date	H	1		45	2			13			Abraded
ENF139702	9	9467	9513	occupation deposit		Brick	Fragment	?	B	2		37	~1						from two different bricks
ENF139702	9	9467	9513	occupation deposit		Tile	Flat Tile	?	E	1		21	2			13			

Area Code	Area	Context	Cut	Feature	Sample	Form	Descr	Date	Fabric	Frags	Refits	WT (g)	Faces	L (mm)	W (MM)	Th (mm)	Flange Thickness (mm)	Edge Thickness (mm)	Comments
ENF139702	9	9489	9488	pit		Undiag	Fragment	No Date	F	2		28							Abraded
ENF139702	9	9542	9531	ditch		Brick	Floor Brick	Late Med-Post Med	H	2	1	960	4			40		38	Two fragmenst fo a large floor brick. Upper bed is smoothed/polished probably through use with very rough lower bed face.
ENF139703	10	10056	10055	capping/ blocking deposit		Undiag	Undiag	No date	E	1		16	~1						patch of poor mixing or folding
ENF139703	10	10109	10108	ditch		Undiag	Undiag	No date	C	1		14	1						
ENF139703	10	10141	10139	ditch		Brick	Fragment	16th-17th	L	1		180				45			thin brick fragment in a deeper red fabric than examples in Area 9. Grey overfiring glaze evident.
ENF139703	10	10170	10168	pit		Undiag	Undiag	No date	D	1		2	~1						
ENF139703	10	10170	10168	pit		Undiag	Undiag	No date	C	1		1							
ENF139703	10	10203	10203	natural		Tile	Fragment	Post Med	G	1		26	2			14			
ENF139703	10	10211	10209	ditch		Undiag	Undiag	No date	A	1		220	~1						maybe a fragment of roman tile/brick
ENF139703	10	10247	0	subsoil		Tile	Flat Tile	Post Med	B1	1		28	2			13			
ENF139703	10	10247	0	subsoil		Undiag	Undiag	No date	A1	5		54							very abrdaed and rounded
ENF139703	10	10426	10427	ditch		Tile	Flat Tile	Post Med	E	1		55	3			13		14	
ENF139703	10	10426	10427	ditch		Tile	Flat Tile	Post Med	B1	1		36	2			11			
ENF139704	11	11026	11025	ditch		Brick	Fragment	Med - Post Med	F	1		160	3			52			
ENF139704	11	11026	11025	ditch		Undiag	Undiag	No date	H	1		70							
ENF139704	11	11040	11039	ditch		Tile	Fragment	Post Med	F	1		9	1						
ENF139705	12	12166	12097	pit		Tile	Flat Tile	Post Med	B	1		32	3			14	15		
ENF139705	12	12263	12262	gully		Tile	Flat Tile	Post Med	C	2		72	3			10	14		
ENF139705	12	12263	12262	gully		Tile	Fragment	Med to Post med	M	1		18	2			14			

Area Code	Area	Context	Cut	Feature	Sample	Form	Descr	Date	Fabric	Frags	Refits	WT (g)	Faces	L (mm)	W (MM)	Th (mm)	Flange Thickness (mm)	Edge Thickness (mm)	Comments
ENF139706	13	13012	13013	ditch		Brick	Fragment	15th - 16th Century	H	1		1092	4		110	50			
ENF139706	13	13012	13013	ditch		Brick	Fragment	15th - 16th Century	L	1		250	~2						abraded
ENF139706	13	13012	13013	ditch		Tile	Floor Tile	Late Med - Post Med	N	1		237	~3						Abraded fragment of floor tile, no date apparent but seems likey to be a late-med to post-med floor tile
ENF139710	17	17284	17285	ditch		Undiag	Brick?	Post Med	G	1		15							
ENF139710	17	17364	17362	pit		Tile	Flat Tile	Post Med	C	1		45				14			
ENF139710	17	17376	17380	ditch		Tile	Flat Tile	Med - Post Med	B1	1		24				15			
ENF139710	17	17377	17380	ditch		Tile	Pan Tile	Med - Post Med	A1	1		33				11		11	Pan tile flange
ENF139710	17	17462	17461	ditch		Tile	Fragment	Med - Post Med	B	1		15	2			14			
ENF139710	17	17511	17510	ditch		Brick	Fragment	17th - 18th C	O	1		1506	5		105	60			Reddened fabric with large chunks of grog present. Mold made with turning marks present. Form and colour of 17th-18th c brick. Slightly smoothed upper face, a floor brick? Seems to thick to be a floor brck.
ENF139710	17	17517	17516	ditch		Tile	Flat Tile	Post Med	A	2		13	2			9			
ENF139710	17	17517	17516	ditch		Tile	Fragment	Med - Post Med	B	4		33	2			14			
ENF139710	17	17539	17535	ditch		Brick	Fragment	18th?	B	1		381	4			59			corner fragment of a orange brick, well formed mold made. Some blackening on outer surfaces from weathering?
ENF139710	17	17544	0	subsoil		Undiag	Undiag	No date	F	3		10							
ENF139710	17	17549	17548	ditch		Tile	Flat Tile	Post Med	B1	2		35	2			12			
ENF139710	17	17552	17550	ditch		Tile	Fragment	Med - Post Med	F	4		32	2			14			
ENF139710	17	17571	0	subsoil		Tile	Flat Tile	Med - Post Med	F	2		78	2			14			
ENF139710	17	17571	0	subsoil		Tile	Flat Tile	Med - Post Med	B1	1		67	2			14		18	
ENF139710	17	17571	0	subsoil		Tile	Flat Tile	Med - Post Med	J	1		25	2			11			
ENF139710	17	17613	17614	ditch		Brick	Bullnose Header	17th - 18th C	O1	1		754		100	110	52			Abraded but near complete bullnose header. Square header with a sloping upper header, from 35mm to 52mm. Hand made brick, quite roughly made.

Area Code	Area	Context	Cut	Feature	Sample	Form	Descr	Date	Fabric	Frags	Refits	WT (g)	Faces	L (mm)	W (MM)	Th (mm)	Flange Thickness (mm)	Edge Thickness (mm)	Comments
ENF139711	18	18013	18014	ditch		Undiag	Undiag	No date	N/A	2		1							
ENF139711	18	18018	18017	ditch		Tile	Flat Tile	Med - Post Med	B	1		256	4			15			Corner of a larger flat tile, smoothe surface suggests wear? A floor tile?
ENF139711	18	18050	18052	ditch		Undiag	?Tile	No date	B	1		58	2						
ENF139711	18	18050	18052	ditch		Undiag	?Brick	No date	B1	1		28							
ENF139711	18	18072	18071	pit/ pond		Undiag	Undiag	No date	N/A	1		1							
ENF139711	18	18120	18119	pit		Tile	Flat Tile	No date	A1	1		25				15			
ENF139712	19	19272	19271	natural		Tile	Flat Tile	Med to Post med	C	1		7				17			
ENF139712	19	19330	19331	pit		Tile	Gazed Roof Tile	Medieval to Late Med	P	1		253	3			14		15	Mediveal green glazed roof tile, glaze shows some weathering but seems mostly patchy due to poor application. No eveidence of cuvature of te tile, so is probably a flat tile.
ENF139712	19	19439	19438	pit		Tile	Peg Tile	Med to Post med	B1	5		218							Fragments of a peg tile
ENF139712	19	19439	19438	pit		Brick	Floor Brick	Med to early post med	A1	1		681							Corner of a ?floor brick. Wiped and slightly polished upper bed. No mortar, so likely used in a cellar

C.5 Fired Clay Catalogue

Area	Area Code	Context	Cut	Amorphous Count	Structural Weight(g)	Total Count	Total Weight (g)	Count	Weight (g)
1	ENF139693	1009	1008			2	18	2	18
		1091	1092			1	171	1	171
		1271	1270	1	4			1	4
		1280	1279			2	842	2	842
			Total	**1**	**4**	**5**	**1031**	**6**	**1034**
3	ENF139696	3144	3132	10	66	6	270	16	337
		3153	3152			36	2130	36	2130
		3243	3242	9	34			9	34
		3355	3354			1	12	1	12
		3357	3356	1	24	2	55	3	79
		3530	3529			11	110	11	110
		3735	3733	4	36			4	36
		3897	3896	1	3			1	3
		20050	20049	7	191	4	13	11	204
		20055	20054	54	258	42	1710	96	1968
		20299	20299	1	0			1	0
		20489	20387	6	15			6	15
		20491	20490	12	110	5	142	17	252
			Total	**105**	**736**	**107**	**4442**	**212**	**5179**
4	ENF139697	4115	4116	1	5			1	5
		4207	4208	1	3			1	3
			Total	**2**	**8**			**2**	**8**
5	ENF139698	5015	5014	1	1			1	1
		5046	5042	1	32			1	32
		5058	5062	2	9			2	9
		5064	5066	1	1	2	71	3	72
			Total	**5**	**43**	**2**	**71**	**7**	**114**
7	ENF139700	7029	7030	8	25			8	25
		7037	7039			1	54	1	54
			Total	**8**	**25**	**1**	**54**	**9**	**79**
9	ENF139702	9212	9211	5	2			5	2
		9255	9254	1	5			1	5
		9335	9332	2	1			2	1
		9365	9365	1	3			1	3
			Total	**9**	**11**			**9**	**11**
10	ENF139703	10089	10088	3	5			3	5
		10248	10240	4	322			4	322
		10423	10421	5	41			5	41

Area	Area Code	Context	Cut	Amorphous	Structural	Total Count	Total Weight (g)	Count	Weight (g)
				Count	Weight(g)				
			Total	**9**	**363**	**3**	**5**	**12**	**368**
11	**ENF139704**	11124	11126			24	1146	24	1146
		11125	11126	5	113	8	2609	13	2722
			Total	**5**	**113**	**32**	**3755**	**37**	**3868**
12	**ENF139705**	12043	12042	2	3			2	3
		12050	12050			5	42	5	42
		12155	12154	4	7			4	7
		12156	12154	3	84			3	84
		12160	12097			1	2	1	2
		12165	12097	1	1			1	1
		12173	12172			17	273	17	273
		12190	12188			4	140	4	140
		12196	12195	1	4			1	4
		12235	12237	1	4			1	4
			Total	**12**	**103**	**27**	**457**	**39**	**560**
13	**ENF139706**	13064	13063	7	23			7	23
		13101	13099	2	15			2	15
		13139	13140	2	4	1	24	3	28
		13154	13153	1	4			1	4
		13223	13222	5	33			5	33
			Total	**17**	**79**	**1**	**24**	**18**	**103**
17	**ENF139710**	17305	17304	28	98	1	16	29	114
		17419	17418			2	171	2	171
		17467	17468	1	5			1	5
		17545	0			1	233	1	233
			Total	**29**	**103**	**4**	**420**	**33**	**523**
18	**ENF139711**	18032	18031	10	29	2	39	12	68
		18050	18052	1	10			1	10
		18055	18053			16	76	16	76
			Total	**11**	**39**	**18**	**115**	**29**	**154**
Grand Total				**213**	**1627**	**200**	**10374**	**413**	**12001**

Table 119: NNDR Fired Clay Catalogue

C.6 Metrical and technological analyses of Mesolithic and Neolithic struck flint

Introduction

C.6.1 A number of pits and natural features, such as tree-throw hollows, that contained struck flint were excavated along the NDR scheme. Whilst many of these contained relatively small assemblages unconducive to detailed analysis, four have been identified that are of sufficient size and contextual integrity to permit metrical and technological analysis. The results are presented in Tables 120 to 125 and these are followed by a descriptive summary based on that data for all four assemblages. The features comprise an artefact-rich Early Neolithic pit from Area 3 (pit **20387**), a tree-throw hollow containing Mesolithic struck flint from Area 19 (tree-throw **19412**) and a tree-throw hollow and another pit both containing Neolithic flintwork also from Area 19 (tree-throw **19139** and pit **19332**). The term 'TT' used within certain tables, below, describe features identified as a 'Tree Throw'.

Metrical and Technological Information for the Selected Assemblages

	Decortication flake	***Decortication blade***	***Crested Blade***	***Core rejuvination flake***	***Chip <15mm***	***Flake***	***Blade-like flake***	***Prismatic blade***	***Non-prismatic blade***	***Flake fragment >15mm***	***Flake fragment <15mm***	***Retouched implement***	***Core***	***Conchoidal chunk***	***Shattered cobble***	***Total Struck***	***Burnt Stone (no.)***	***Burnt Stone (wt:g)***
TT **19412** no.	8	3				52	9	16	8	3	4	2	2	9	2	118	4	68
*TT **19412** %*	*6.8*	*2.5*				*44.1*	*7.6*	*13.6*	*6.8*	*2.5*	*3.4*	*1.7*	*1.7*	*7.6*	*1.7*	*100*		
Pit **20387** no.	30	7		4	27	143	34	44	35	29	16	24	12	7	2	414	36	1755
*Pit **20387** %*	*7.2*	*1.7*		*1*	*6.5*	*34.5*	*8.2*	*10.6*	*8.5*	*7*	*3.9*	*5.8*	*2.9*	*1.7*	*0.5*	*100*		
TT **19139** no.	30		2		18	150		7	7	51	16					281		
*TT **19139** %*	*10.7*		*0.7*		*6.4*	*53.4*		*2.5*	*2.5*	*18.1*	*5.7*					*100*		
Pit **19332** no.	5	1			8	27		8	13	8	11	12	1	3		97		
*Pit **19332** %*	*5.2*	*1*			*8.3*	*27.8*		*8.3*	*13.4*	*8.3*	*11.3*	*12.4*	*1*	*3.1*		*100*		

Table 120: Quantification and Composition of the Assemblages from the Four Features

Complete Flakes Measuring 15mm or More in at Least One Dimension					
	Length (mm)	Breadth (mm)	Thickness (mm)	Breadth / Length Ratio	Thickness / Length ratio
TT 19142 Maximum	77	51	20	1.67	0.4
TT 19142 Minimum	17	8	2	0.19	0.06
TT 19142 Average	37	24	5.7	0.73	0.17
Pit 20387 Maximum	114	54	19	1.43	0.52
Pit 20387 Minimum	14	7	2	0.2	0.05
Pit 20387 Average	35	24.3	6.3	0.73	0.18
TT 19139 Maximum	109	82	18	1.71	0.39
TT 19139 Minimum	18	10	2	0.38	0.08
TT 19139 Average	43.4	42.3	6.9	1.04	0.17
Pit 19332 Maximum	72	70	20	1.3	0.58
Pit 19332 Minimum	23	11	2	0.32	0.07
Pit 19332 Average	43.6	35	7.4	0.63	0.18

Table 121: Metrical Characteristics of Flakes and Blades

Pitts 1978a, 194	***Very Narrow blades***	***Narrow blades***	***Blades***	***Narrow flakes***	***Flakes***	***Broad flakes***
Breadth / Length Ratio	<0.2	0.21-0.4	0.41-0.6	0.61-0.8	0.81-1.0	1
E. Meso	2	43	27	13	6.5	9
L. Meso	0.5	15.5	30.5	22	14.5	17
E. Neo	0	11	33	27.5	14.5	13
L. Neo	0	4	21.5	29	20	25.5
Chalcolithic	0	2.5	15	24	24	35
Bronze Age	0	3.5	14.5	23	23	35.5
TT 19412	**2.7**	**13.5**	**37.8**	**18.9**	**2.7**	**24.3**
Pit 20387	**0**	**11.4**	**22.9**	**25.7**	**28.6**	**11.4**
TT 19139	**0**	**2.7**	**5.4**	**16.2**	**29.7**	**45.9**
Pit 19332	**0**	**17.1**	**40**	**25.7**	**8.6**	**8.6**

Table 122: Complete Flake Breadth/Length Ratios as Recorded by Pitts (1978)

	Striking Platform Attributes: Complete Flakes >15mm													
	Striking platform type %				Striking Platform Width (mm)					Striking Platform Preparation %				
	TT 19412	Pit 20387	TT 19139	Pit 19332		TT 19412	Pit 20387	TT 19139	Pit 19332		TT 19412	Pit 20387	TT 19139	Pit 19332
Cortical	13.5	9.9	5.4	11	Max	10	12	11	10	Abraded edge	29.7	7.1	10.8	17.1
Dihedral	5.4	4.3	13.5	11.4	Avg	2.8	3.9	3.5	3.3	Edge Trimmed	27	64.8	43.2	45.7
Facetted	0	4.3	37.8	5.7	Min	1	1	1	1	None	43.2	28.1	48.6	37.2
Flake scar	64.9	62.9	27	63.3										
Shattered / Not present	16.2	18.6	16.2	8.6										

Table 123: Striking Platform Attributes

	Bulb of Percussion Type %				***Distal Termination Type %***				
	TT 19412	Pit 20387	TT 19139	Pit 19332		TT 19412	Pit 20387	TT19139	Pit 19332
Diffuse	27.1	41.8	43.2	45.7	Feathered	75.7	79.9	75.7	80
Pronounced	27.1	19.6	29.7	28.6	Hinged	21.6	11.4	18.9	17.1
Hemispherical	45.8	38.6	27	25.7	Stepped	0	4.3	0	0
					Overshot	2.7	4.4	5.4	2.9

Table 124: Principal Ventral Surface Attributes of the Complete Flakes and Blades

Dorsal Scar Pattern (%)					***Cortical Dorsal Surface (%)***				
Scar Alignment	TT 19412	Pit 20387	TT 19139	Pit 19332	Proportion Covered	TT 19412	Pit 20387	TT19139	Pit 19332
Fully Cortical	0	1.4	0	5.7	None	40.6	42.8	62.2	31.4
Orthogonal	0	12.9	2.7	2.9	1-33%	37.8	30	29.7	57.1
Multi-directional	8.1	10	29.7	11.4	34-66%	10.8	18.6	5.4	2.9
Opposed	0	4.3	29.7	2.9	67-99%	10.8	7.1	2.7	2.9
Parallel	43.2	20.4	5.4	37.1	100%	0	1.4	0	5.7
Undirectional	48.7	51	32.4	40					

Table 125: Principal Dorsal Surface Attributes of the Complete Flakes and Blades

Description of the Selected Assemblages

Tree Throw **19412** (?Mesolithic)

C.6.2 The earliest evidence of activity at this site, and quite possibly from the NDR scheme as a whole, is the assemblage recovered from tree-throw hollow **19412** located in Area 19 which can be dated to the Mesolithic period. The hollow produced 118 pieces of struck and four small fragments of unworked burnt flint, most of which came from fill 19415 but with seven struck pieces coming from fill 19416. The struck flint was made from a limited range of raw materials that include a translucent brown flint with occasion small light yellow cherty patches and a thin chalky cortex, along with a speckled opaque brown flint that has a weathered but still rough thin cortex. Interestingly, and in contrast with the use of mostly locally obtained raw materials seen along the NDR scheme route, it is likely that the flint had been gathered from sources located close to the parent chalk and brought to the site, probably in the form of pre-prepared cores.

C.6.3 The assemblage is in a very good condition; most pieces are still sharp and show only very occasional edge chipping. Moreover, many pieces still have knapping ‘dust’ and micro-splinters adhering, which can be found on freshly knapped pieces but which is quickly lost through handling and general attrition. This suggests that the assemblage had been deposited into the hollow very shortly after manufacture although the paucity of micro-debitage and missing waste pieces would preclude *in-situ* working. It is possible that the tree-throw had disturbed an earlier knapping scatter or that the material was produced close to the hollow with only parts becoming incorporated. The good condition of the assemblage is reflected in its low breakage rate as, although

there are many thin and fragile pieces present, over four fifths (81%) of the flakes and blades remain substantially complete. The basic integrity of the assemblage is also confirmed by the presence of at least one refitting sequence which comprises two blades that had been removed in quick succession with at least one other blade, which was not present, removed in-between. The first removal is a thick blade with c.50% dorsal coverage, probably intended to shape and partially decorticate the core although the presence of some parallel blade scars suggests this was detached as an attempt at expanding the productivity of the core rather than during preparation of a new core. The other is a thin although not particularly narrow blade (L/B = 2.08) with one cortical and one very sharp lateral margin. A small number of pieces (4.2%) had been burnt, suggesting the use of fire accompanied the knapping events.

C.6.4 The assemblage represents most stages in the reduction sequence; it includes core preparation and maintenance flakes, but reduction was clearly geared towards producing narrow flakes and often very narrow prismatic blades which include micro-blades (blades <10mm wide). Blades contribute nearly a quarter (24.6%) of the entire assemblage and of almost two-thirds (62.1%) have parallel sides and dorsal scars indicative of systematic production. Additionally, flakes with parallel dorsal scars were also generated during systematic blade-based reduction and contribute a further 7.6% of the assemblage. The technological traits of the assemblages indicate that reduction was skilful although not complex. Nearly all of the blades were produced from single platformed cores as evidenced by the abundance of parallel and uni-directional dorsal scars. Striking platforms mostly comprise simple flake scars with some cortical examples also present. Just over half of the striking platforms edges had been accentuated by either trimming or, relatively frequently, by abrasion which allowed the blow to be struck close to their edges; the platforms averaging at only 2.8mm deep.

C.6.5 Two cores were recovered although neither of these had been intensively or systematically worked and, although they are of similar raw materials to the rest of the assemblage, it appears that the cores responsible for much of the rest of the assemblage were not recovered. One of the cores recovered is a rather cursorily worked single-platformed blade type that weighs 39g. It had only produced a few blades from one face but does have a shallow notch cut into the back which would have greatly facilitated handling, especially as the core is quite small. It was made using a thermally fractured chunk, probably a fragment from an earlier core that had disintegrated along thermal flaws; if so, this would represent a brief attempt at maximizing the available raw materials at hand. The other core is a multi-platformed type that weighs 66g. It has a blade-producing platform on one side and two further platforms created on its ‘top‘ and ‘back’ that have produced relatively wide flakes. Whether these were made purposefully to produce flakes or are abandoned attempts at creating further platforms remains uncertain. The presence of several fragments of conchoidally fractured shatter suggests that other raw materials had been used but had disintegrated during reduction.

C.6.6 Two retouched implements were also identified, both of which are types that are most commonly encountered within Mesolithic assemblages. One of these comprises a prismatic blade that has been obliquely truncated along its distal end using abrupt retouch. Truncated pieces are commonly found within Mesolithic tool inventories and at least some of these are likely to have been used as boring and piercing tools. They are often found in conjunction with microliths and it has suggested that truncated blades may have been used in the manufacture of arrow shafts (R Jacobi, pers comm). The other is also diagnostically Mesolithic and comprises a segment of a large flake or blade that has had its proximal and distal ends and right lateral margin snapped off. The scar of the proximal break has then been lightly retouched and a number of burin spalls

removed longitudinally along both of the segment's lateral margins. There is no evidence for any extensive rounding or wear to the burin's margins, but there are indications of some crushing around the presumed working edges, suggesting use on hard materials. The distal break was also lightly retouched and there is also some crushing around the angles between the break and the laterals margins, suggesting this end may also have been used in a similar fashion the proximal end.

Pit **20387** (Period 1.1)

C.6.7 The largest assemblage from any individual feature excavated during the NDR investigations was recovered from pit **20387** in Area 3. Virtually all of the material came from fill 20489 whilst its other fill, 20388, produced a small collection of technologically similar pieces including two blade cores, which almost certainly derives from the same source as the larger collection in fill 20489.

C.6.8 The raw materials used to manufacture the assemblage appear to be limited in number and mostly comprise a 'glassy' mottled light grey / translucent brown fine-grained flint that has a thin, weathered cortex and frequent recorticated thermal (frost fractured) surfaces. A small number of flakes within the assemblage exceeded 100mm in length and it is evident that the raw materials used consisted of large thermally fractured nodular fragments that were probably gathered from the local glacial tills. The flint is of good knapping-quality although this is hampered by the presence of thermal flaws, which has resulted in some flakes detaching badly.

C.6.9 The condition of the assemblage is variable with around half of the pieces showing some evidence of post-depositional edge chipping and abrasion, although this is mostly very light, and 40% of the flakes and blades are broken. Around 15% of the assemblage had been burnt although, again, the intensity of this is variable with most pieces showing evidence for only light heating in the form of internal spalling, but with some having been heavily burnt to the extent that they have changed colour and become 'fire-crazed'. The overall condition of the assemblage, along with the relatively low proportions of micro-debitage present, suggests the assemblage had experienced a complex and varied history between manufacture and final deposition within the pit.

C.6.10 The assemblage from the pit represents all stages in the reduction sequence, from the preparation of raw materials to the manufacture and discard of retouched implements. Nevertheless, it is clear that only a small proportion of the material that would have been generated is present and the paucity of micro-debitage (flakes, flake fragments and shatter measuring less than 15mm in any dimension) indicates that the assemblage had been gathered from a larger accumulation of knapping debris.

C.6.11 Flakes and blades account for over 94% of the macro-debitage, with cores and conchoidally fractured fragments making up the remainder. The flakes present in the assemblage vary considerably in shape and size, this at least partially reflecting their origin from the different stages in the reduction sequence. Micro-debitage (flakes and flake fragments measuring less that 15mm in maximum dimension) formed only 10.4% of the overall assemblage, the majority of these coming from sieved samples. Such small flakes and pieces of shatter are generated in considerable numbers during reduction, from the deliberate trimming of cores and the retouching of flakes and blades, and also accidentally as by-products generated during the detaching of larger flakes. Their relatively low representation in the assemblage would indicate that the knapping occurred away from the pit and that only the larger pieces were being selected for inclusion.

C.6.12 The flakes and blades range considerably in size but the majority are small, with 75% measuring 40mm or less in length and 30mm or less in width. A small proportion is considerably larger, however, with some pieces exceeding 100mm in length. The abundance of small pieces most probably reflects the efforts expended on core preparation and maintenance. The average lengths and breadths of the flakes and blades are only just over 30mm and only 6% exceed 50mm in either length or breadth. Despite their small size, the flakes and blades tend to be thin, with an average thickness to length ratio of 0.18. There is also considerable variation in the shape of the complete flakes and blades, although they have a marked tendency to be narrow, with 88.6% being narrower than they are long and 24.3% achieving blade dimensions by being twice as long as wide, a fairly impressive proportion given that blades are more prone to breakage as they tend to be thinner and more fragile. Around a third of the blades can be regarded as truly prismatic in that they exhibit parallel dorsal scars indicative of the repeated production of blades. There are also quite high proportions of flakes that have parallel dorsal scars, suggesting repeated production was aimed for and often successfully accomplished.

C.6.13 The principal technological attributes of the unretouched flakes also demonstrate a careful and considered approach to reduction that resulted in the production of thin and long flakes and blades. Modifications to the actual striking platforms were not frequently undertaken. There are a few dihedral platforms but the presence of the ridge on the platform is probably incidental rather than created as a deliberate technique. Similarly, the few facetted platforms present are likely to represent core rejuvenation (*cf* core tablets) or the use of keeled platforms, rather than deliberate use of this technique as an aid in detaching flakes. Nearly 10% have cortical platforms, these partially reflecting pieces from the early stages in reduction (core dressing) but also that the cores were not often completely decorticated before flake and blade production had commenced. Nearly a fifth of the flakes had shattered platforms caused by the point of percussion landing so close to the edge that either practically nothing remained of the striking platform or it had shattered.

C.6.14 The predominant use of soft hammer precursors combined with good control over the force and angle of detachment resulted in only 18.6% of the pieces having visible points of percussion and even fewer, 17.1%, had extra, undeveloped Hertzian cones from failed prior attempts at detachment. Good flaking control is also evident in that 79.9% of the flakes and blades have feathered terminations with the majority of the remainder having only slightly hinged terminations. Somewhat conversely, only 41.8% of the flakes and blades have diffuse bulbs of percussion although a further 38.6% having a small and isolated hemispherical bulb, these being associated with soft hammer percussion and which are mostly present on the blades and smaller flakes (Table). Pieces with prominent bulbs of percussion and hinged distal terminations are more likely to be larger and thicker and belong to earlier stages in the reduction sequence. Whilst these attributes cannot always be directly attributed to hammer mode, the evidence here suggests that it is likely that the earlier stages in core preparation were undertaken with hard hammers with routine flake and blade production using soft hammers.

C.6.15 True primary flakes make up 1.4% of the flakes and blades whilst only 20% have 50% or more of their dorsal surfaces covered with cortex. Tertiary flakes, retaining no cortex, account for 42.8%.

C.6.16 The low proportions of cortical flakes, particularly primary flakes, may indicate that the early stages in raw material processing are unrepresented although it also testifies to the intensity to which the cores were reduced, and those that are present show that

cores were being prepared and that most of the reduction sequence is represented. The dorsal scar patterns on the blades and flakes vary considerably. Whilst over half are uni-directional, there are fairly high proportions with parallel scars, indicative of systematic reduction. There are also a small but significant number with orthogonal scars, which are likely to represent attempts at core rejuvenation and core rotation.

C.6.17 The twelve cores present contribute 3.2% of the macro-debitage with conchoidal chunks, many of which represent cores that had disintegrated during reduction, a further 2.4%.

C.6.18 The complete cores varied in shape and ranged from 38g to 144g in weight. The largest measured 78mm in length and given the presence of even larger flakes amongst the assemblages it is evident that, overall, they had been extensively reduced. Seven of the ten complete cores focussed on the production of blades, the others having produced flakes. Two of the cores, both blade producing, had only been minimally worked with less than ten detachments made from a single platform on what are largely unmodified cobbles. The remainder had been extensively reduced and comprise two single platform types, one with two platforms and the remainder with three or more platforms. All have platforms which have been edge trimmed but seven of the twelve cores also have at least one platform that utilize thermal scars or cortex. Those with more than one platform usually employ an earlier core face for developing further platforms but only three have had flake removals covered their entire surface; most have either faceted backs or retain cortex on at least one side.

C.6.19 The twelve retouched implements contribute a relatively high 6.5% of the macro-debitage although they include a restricted range of identifiable types. The majority comprise relatively small blades and a few flakes with very fine retouch or serrations along one of their lateral edges, some of which show wear patterns consistent with cutting activities. Probably forming a continuum with these is a number of other flakes and blades that have minor traces of wear or very light retouch but which cannot confidently be differentiated from post-depositional damage. Although these cannot be precisely quantified, it does appear likely that a high proportion of the assemblage was used, if only briefly, as cutting implements. Alongside these expedient or informally used tools are two large blades that have erratic but much heavier bifacial retouch and edge damage. The damage seen on these blades resembles ‘bruising’ and both are likely to have been used as chopping type implements on relatively hard materials, such as wood or bone. There are also three scrapers present. Two of these comprise rather expediently retouched side-scrapers made on relatively small flakes. The other is much larger and comprises a well-made end-scraper.

C.6.20 Overall the assemblage is the result of a complex reduction process. Surviving cores and conchoidally fractured fragments indicate that relatively large nodules were worked down and possibly quartered to produce cores that were carefully shaped. The ultimate objective of the reduction strategy was clearly oriented towards the production of blades and, although a high proportion are prismatic and indicate repeated production, the wide variety of core types show that reduction also involved a degree of expediency. This was at least partly occasioned by the thermally flawed nature of the raw materials which resulted in the generation of high numbers of poorly detached flakes, shattered pieces and other irregular waste throughout the reduction sequence. Interestingly, although the cores started off considerably in excess of 100mm in maximum dimension, very few blades exceed 50mm in length. This suggests a bipartite process, with the earlier stages in reduction involving the mass reduction of raw materials and the careful shaping of cores through the removal of large thick flakes. Although generated as

'waste', use was made of these chunky and irregular flakes with some being converted into retouched implements, such as the larger bifacially worked pieces and some of the scrapers. The efforts at mass reduction and shaping resulted in the creation of blade cores which were then further reduced to produce small and thin regularly shaped blades and flakes, of which many show evidence of light retouch, serration and use-wear indicative of light scraping and cutting uses.

Tree Throw **19139** (Period 1.1)

C.6.21 Tree-throw hollow 19139 was located on the northern edge of Area 19 and produced the second largest assemblage from any single feature investigated along the NDR route. The assemblage clearly comprises the waste from manufacturing bifacial core-tools, almost certainly axeheads. This can be dated to the Neolithic period although it is not possible to be more precise than this; it should be noted that both Early Neolithic and Later Neolithic activity is well attested in Area 19.

C.6.22 The raw materials used were limited in number and may have comprised a single nodule. This comprised a semi-translucent black flint with very frequent mottled grey inclusions, the mottling ranging from almost matt porcelain white through creamy grey and it appears that the nodules had an opaque grey central mass surrounded by fine-grained translucent black flint beneath the cortex. Remnants of cortex are thin but relatively unweathered and indicate that the raw materials were gathered as large thermally affected nodules, probably from the local glacial tills. The raw materials are very similar to those used for making axeheads at Harford Park and Ride site and it is possible that this type of flint was specifically selected for this purpose. At Harford, it appears that the flint had been gathered from glacial deposits exposed in tree-throw hollows, which were subsequently expanded through shallow quarrying into their sides (Bishop 2012).

C.6.23 The assemblage is in a generally good condition but around two-thirds of the flakes exhibit light edge chipping and abrasion and a high proportion have broken edges, although none of the pieces have been burnt. The high attrition rate is at least partly due to the flakes often having very thin margins and, overall, it appears that the material was deposited in the hollow not long after manufacture.

C.6.24 This is supported by the presence of refitting sequences of up to three sequentially detached flakes which also demonstrates the assemblage's basic integrity as being from a single or limited number of knapping events. However, it is also clear that a great number of pieces are missing and there is also very few pieces of micro-debitage, indicating that like many Neolithic pit assemblages, only a proportion of the generated waste was selected for deposition.

C.6.25 None of the assumed products, namely axeheads, are present and the evidence relating to the purposes of reduction entirely comprises waste flakes. Nevertheless, these indicate that most stages in the manufacturing sequence are present and follow the typical pattern of roughing-out and reducing to a pre-form and then thinning and shaping into the finished product. The basics of this sequence and its characteristic products have been described elsewhere (e.g. Newcomer 1971; Burton 1980; Hansen and Madsen 1983; Whittacker 1994, chapter 8; Butler 2005, 139-142).

C.6.26 Evidence of roughing-out was provided by a small number of decortication and mass reduction flakes. These tended to be large, thick and irregularly shaped and with thick, plain or cortical platforms and pronounced bulbs of percussion. No true primary flakes, with entirely cortical dorsal surfaces, were present and it is possible that the initial

dressing of the nodules occurred elsewhere, although nearly two-fifths (37.8%) of all flakes retained some degree of cortex. As reduction progressed, the flakes tended to become smaller and much thinner. Although they remained irregular and varied in shape, they often assumed a marked curvature in profile and had diffuse or hemispherical bulbs of percussion. The technological traits suggest that, as far as can be inferred (e.g. Pelcin 1997), the decortication and initial shaping of the core was achieved using hard hammer percussion, whilst the subsequent thinning and finishing employed soft hammers. High proportions of the flakes have a distinctive ridged or bevelled striking platform which was often facetted and with a distinct lip (cf edge-bite flakes: Whittacker 1994, fig 8.11). Thinning flakes appeared to have been designed to continue just over the medial ridge of the pre-form. A few overshot flakes were identified, where the flake continued right across the pre-form removing part of its opposite edge, although it is not thought that this was a deliberate or regularly employed technique. Axeheads appear to have been reduced to a largely finished state at the site as evidence by many small thinning flakes although, not surprisingly, it is difficult to demonstrate that they had been completely finished or polished at the site and, as noted elsewhere, it is possible that this was accomplished at a different location (*cf* Pitts 1996, 314).

C.6.27 No retouched implements or cores were present. A few blades, including prismatic types, were recovered although it is unclear if these were being deliberately made as part of a parallel reduction strategy or are just fortuitously narrow by-products from biface thinning. Two 'crested' blades were also recovered. These are not typical and appear to have been struck longitudinally along the edge of the biface, possible to rectify problems that had preventing further thinning.

C.6.28 Taken as a whole the complete flakes measuring over 15mm are remarkably broad. They have an average breadth / length ratio of 1.04 with nearly half (45.9%) falling into Pitts (1978, 194) 'broad flake' category, meaning that they are wider than they are long. They also tend to be very thin although this is obscured to some extent by many of the flakes having pronounced or hemispherical bulbs of percussion, so that on average they have a thickness / breadth ratio of 0.17. This has resulted in many flakes having a marked wedged profile. Typically, the flakes have a thin or bevelled striking platform but quickly become thick at the proximal end, then thinning notably towards the distal end with many flakes having very thin edges and most distal terminations (75.7%) being feathered. The thinnest of the flakes' edges has resulted in a very high breakage rate with the majority having some parts of their edges missing.

Pit **19332** (Period 1.1)

C.6.29 Pit **19332** was located on the central eastern side of Area 19 and has been dated to the Early Neolithic period by its contained pottery. The struck flint assemblage comprises 97 pieces which are technologically comparable to the assemblage from pit 20387 and likewise represents a skilful, blade-based reduction strategy geared towards producing both blades and relatively thick flakes that are suitable for conversion into a variety of tool forms.

C.6.30 The raw materials comprise a 'cloudy' mottled opaque grey / translucent black slightly vesicular flint which has a thin and rough but abraded cortex. A few pieces of opaque light grey coarser-grained flint are also present that may have come from a different piece of raw material, but it is likely that all were gathered from the local glacial tills. The assemblage is in a good condition overall although around half of the flakes and blades

exhibit minor edge chipping and just over a third (34.1%) are broken to some extent and four flake fragments (4.1%) have been burnt. As with pit **20387**, the variable condition of the assemblage and the paucity of micro-debitage indicate that the material had not been knapped *in-situ*, but had been gathered from a larger accumulation of knapping debris prior to its final deposition into the pit.

C.6.31 The assemblage contains most elements in the reduction sequence but it is dominated by retouched implements and other potentially useable narrow flakes and blades, the latter contributing 12.4% of the assemblage, and there is very little obvious waste, such as chunky decortication or core shaping flakes. The assemblage contains similar proportions of blades to that from pit **20387** but fewer of these are prismatic (38.3% compared to 55.5%). There are also few flakes with parallel dorsal scars and in comparison with the pit **20387** assemblage there appears overall to be a decline in, or at less interest placed, on the systematic and repeated production of standardized blades. Nevertheless, metrical analysis shows that as many if not narrow and thin flakes and blades were being manufactured and that there was no decline in the efficacy of the products. This move away from systematic production may hint at the possibility that this assemblage is somewhat later in date than that from pit **20387** although they both belong to similar flintworking traditions. A possibly later date for this assemblage is also suggested by the single core recovered. This comprises a lenticular, split or 'quartered' nodular spall that has been bifacially worked around most of its perimeter but also has one larger flake removed from the 'internal' face. In this respect it resembles the Levallois-like cores that are usually associated with industries dating to later in the Neolithic period.

C.6.32 There is a high proportion of retouched implements but most of these comprise flakes or blades that have light retouch or heavy use-wear along one or both of their lateral margins. Many other flakes also exhibit varying degrees of edge damage but, due to similarities with accidental post-depositional damage, these cannot be shown convincingly to have been deliberately used. Those with convincing retouch vary in shape and size although most are made on blades or narrow blade-like flakes, the largest attaining 84mm in length (SF913), the smallest only 35mm. None exhibits any intensive edge damage accruing from use but slight rounding along the retouch, which is mostly slightly acute, suggests they were used, probably rather briefly, as cutting or sawing implements on reasonably hard materials. The only exception to these simple edge-trimmed flakes is a large and carefully crafted end-scraper made on a blade-like flake (SF913).

C.7 Worked Flint Catalogue

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
1		1009	SF1	pit	1008																				1	1			Undated	Flaked slightly facetted sub-spherical grindstone or possibly hammerstone / pounder Virtually all surfaces covered in chattermarking, some parts smooth-worn. 55-59m diam. 242g.	2.1
1		1018		pit	1019								2										1			3			MBA-IA	Chip. corer fragment and 'squat' flake	2.2
1		1020		natural	1021																					0	1	24	Undated	Heavily burnt flint	0
1		1025		ditch	1024																					0	10	120	Undated	Heavily burnt flint	6?
1		1025		ditch	1024								1						1							2			MBA-IA	Both rather 'squat'. One has crude inverse edge retouch or crushing on left margin	6?
1		1050		tree throw	1051								1													1			Neo-BA	Thick and partially cortical but relatively well struck	0
1		1053		tree throw	1052																					0	1	14	Undated	Heavily burnt flint	2.1
1		1059		tree throw	1058											1										1			Neo-BA	Narrow but not systematically produced	2.1
1		1061		tree throw	1060														1							1			Neo-BA	Nice end-scraper with inverse 'resharpening' retouch	2.1
1		1130		ditch	1129	1109	Enclosure1072																			0	1	10	Undated	Heavily burnt flint	6.2
1		1130		ditch	1129	1109	Enclosure1072						1													1			BA-IA	Badly detached	6.2
1		1144	<13>	ditch	1141	1141	boundary1141					1	1													2			BA-IA	Rather 'squat' flake	2.2
1		1144		ditch	1141	1141	boundary1141																			0	39	780	Undated	Heavily burnt flint	2.2
1		1144		ditch	1141	1141	boundary1141	1					1						1			5				8			MBA-IA	Typical 'squat' flake and cores either irregularly or minimally worked. Retouched is a 'squat' flake with fine retouch / crushing around distal end	2.2
1		1146		ditch	1141	1141	boundar																			0	1	47	Undated	Heavily burnt flint	2.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
							y1141																								
1		1146		ditch	1141	1141	boundary1141	1									1									2			MBA-IA	DF very 'squat', both badly detached	2.2
1		1148		ditch	1141	1141	boundary1141																			0	6	187	Undated	Heavily burnt flint	2.2
1		1148		ditch	1141	1141	boundary1141	1					1										1	1		4			BA-IA	Both Fs large and thick	2.2
1		1156		ditch	1151	1141	boundary1141					1			1	4										6			Mixed	prismatic blade is Meso or ENeo, the other Fs are not very diagnostic but at least some could also be earlier	2.2
1		1158		ditch	1151	1141	boundary1141															2	1			3			BA-IA	Poorly reduced multi-platform globular core and a very irregularly worked core	2.2
1		1153		ditch	1152	1072	Enclosure1072						1													1			BA-IA	Not well struck	6.2
1		1165		ditch	1164	1164	boundary1164																			0	2	73	Undated	Heavily burnt flint	6.2
1		1169		post hole	1168																	1				1			BA-IA	Irregularly and minimally worked core	2.1
1		1260		ditch	1178	1141	boundary1141										1									1			Undated	Thin but undiagnostic	2.2
1		1191		ditch	1190	1190	ditch1190																			0	5	104	Undated	Heavily burnt flint	6.2
1		1201		ditch	1203	1203	enclosure1066																			0	15	320	Undated	Heavily burnt flint	6.2
1		1201		ditch	1203	1203	enclosure1066	1	1				1											1		4			Undated	Undiagnostic	6.2
1		1211		ditch	1210	1002	ditch1002	1																		1			BA-IA	Badly detached	2.2
1		1213		ditch	1212	1141	boundary1141																			0	3	122	Undated	Heavily burnt flint	2.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
1		1213		ditch	1212	1141	boundary1141	9	2			1	16			1			6	1		1	2			39			MBA-IA	Classic MBA-IA assemblage in good condition. Fs are mostly 'squat' and often poorly detached. Retouched implements comprise two slightly denticulated side scrapers, one of which has been burnt, a side-and-end scraper, a narrow flake with light edge retouch, a flake with a possible small inverse notch, a coarsely denticulated large decortication flake and a coarsely denticulated core-tool. Minimally reduced core	2.2
1		1245		ditch	1226	1141	boundary1141																			0	1	36	Undated	Heavily burnt flint	2.2
1		1245		ditch	1226	1141	boundary1141	1					1										1			3			BA-IA	Large poorly detached flake and a	2.2
1		1246		ditch	1226	1141	boundary1141	1					1													2			BA-IA	DF is quite narrow, the F poorly detached	2.2
1		1239		pit	1238																					0	3	59	Undated	Heavily burnt flint	8
1		1239		pit	1238																	1				1			BA-IA	Residual multiplatformed irregularly reduced core	8
1		1241		ditch	1240	1141	boundary1141																			0	6	249	Undated		2.2
1		1241		ditch	1240	1141	boundary1141	13	2			2	40			3			5	3		2	1	2		73			MBA-IA	Some variation but nearly all in a good condition and mostly a typical MBA-IA assemblage. Retouched include two decortication flakes with fine edge retouch, a side scraper, a flake with an inverse notch, a coarsely denticulated flake, a core-tool with a large flaked notch and two coarsely denticulated core-tools. Cores are a multiplatformed, irregularly reduced example with multiple incipient Hertzian cones, and a small minimally reduced type.	2.2
1		1243		ditch	1242	1242	enclosure1066						1													1			Meso/ENeo	Rather badly detached prismatic blade and an undiagnostic F	6.2
1		1254		pit / posthole	1255											1										1			Neo-BA	Narrow and thin but not systematically produced	0

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
1		1266		tree throw	1265																					0	56	1163	Undated	Variably but mostly heavily burnt flint	2.1
1		1266		tree throw	1265																	1	1			2			Meso-EBA	Extensively reduced well maintained multi-platformed narrow flake core, re-used as a hammerstone.	2.1
1		1267	<20>	tree throw	1265			1				4	6	1			3	1	1				1			18			Meso-Neo	Mostly undiagnostic knapping debris but some pieces are well struck and relatively early Retouched is a burnt narrow but thick side-and-end scraper with fine retouch but which could be early or late	2.1
1		1267		tree throw	1265																					0	1	18	Undated	Heavily burnt flint	2.1
1		1267		tree throw	1265								1						1							2			Meso/ENeo	Undiagnostic flake and a blade-like flake with fine bifacial retouch along its straight distal end cf wedge or 'bevelled edge' implement	2.1
1		1271		well	1270																			1		1			Undated	Thermally shattered chunk, possibly not deliberately struck	6.2
1		1287		ditch	1288	1288																				0	1	17	Undated	Heavily burnt flint	6.2
1		1314		post hole	1313		PH1317								1											1			Meso/ENeo	Very worn	6.2
1	T8	1414	Tr4	Tree-throw	1413																		1						Undated	Fragment of a core?	
1	T8	1414	Tr4	Tree-throw	1413																						6	80	Undated	Moderate to heavily burnt flint fragments	
1	T8	1414	Tr4	Tree-throw	1413								1																Meso/ENeo	Small, blade-like	
1	T8	1425	Tr8	Posthole	1424																						14	87	Undated	Heavily burnt flint fragments	
1	T8	1443	Tr10	Ditch	1445																						1	35	Undated	Heavily burnt flint fragment	
1	T8	1476	Tr23	Tree-throw	1475																						5	17	Undated	Moderate to heavily burnt flint fragments	
1	T7	1621	Tr3	Ditch	1622								1																MBA-IA	Classic 'squat' flake	
1	T7	1632	Tr5	Ditch	1631																						1	36	Undated	Heavily burnt flint fragment	
1	T7	1632	Tr5	Ditch	1631																	1							Neo-BA	Thermally fractured nodular fragment with a few flakes removed from a number of	

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
																													directions. 262g	
1	T7	1632	Tr5	Ditch	1631								1																Neo-BA	Thin but with wide cortical platform	
1	T7	1623	Tr3	Ditch	1634																						1	18	Undated	Heavily burnt flint fragment	
1	T7	1643	Tr2	Ditch	1644																						2	71	Undated	Heavily burnt flint fragments	
1	T7	1654	Tr7	Ditch	1653																						3	36	Undated	Heavily burnt flint fragments	
1		1001		subsoil															1							1			BA-IA	Rather crude end-and-side-scraper	8
1		1006		?																						0	2	8	Undated	Heavily burnt flint	2.1
1		1249		?									1						1							2			MBA-IA	Typical 'squat' flake and a fragment of an decortication flake with fine, irregular and slightly denticulated steep retouch.	2.1
1		1269		?																						0	2	19	Undated	Heavily burnt flint	6.2
1		1269		?				1					1									1				3			BA-IA	Minimally reduced core, rest are rather undiagnostic	6.2
1		1320		?																						0	10	124	Undated	Heavily burnt flint	2.2 ?
1		1320		?				2																		2			BA-IA	Both quite 'squat'	2.2 ?
1	T8	1400	Tr11	Unstrat?															1										?LNeo	Appears to be a large flake that has been heavily and bifacially retouched to form a 'Y' shaped tool with the wider end comprising four 'prongs'. Max size: 62x43x20mm	
1	T8	1400	Tr16	Unstrat?									1																Neo-BA	Has patches of heavy chattermarking on dorsal - either used as a hammerstone / ponder or struck from flint querns	
1	T8	1400	Tr4	Unstrat?				1																					Undated	Narrow	
1	T8	1400	Tr4	Unstrat?																1									LNeo/EBA	Polished greenstone macehead fragment	
1	T8	1400	Tr4	Unstrat?																		1							Meso-EBA	Small nodular piece of 'horned' flint with a few narrow flakes removed from either end. 20g	

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
1	T8	1400	Tr11	Unstrat?									1																Neo-BA	Thick, badly stuck	
1	T8	1400	Tr20	Unstrat?									1																Neo-BA	Wide and relatively thin	
1	T8	1401	Tr27	Unstrat?															1										Neo-BA	Side scraper: Decortication flake with fine, moderately steep convex scalar flaking along left Margin. Moderate wear	
1	T7	1601	Tr7	Unstrat?												1													Meso-EBA	Large, thick blade	
2		2021		spread	0																					0	2	8	Undated	Heavily burnt flint	2?
2	D2/3	1215	Tr6	Posthole	1215																	1							Neo-BA	Nodular fragment with a few flakes removed from different directions. 72g	6.2
2	D2/3	1216	Tr6	Posthole	1215								1																Meso-EBA	Thin	6.2
2	D2/3	1224	Tr10	Ditch	1223																						2	21	Undated	Heavily burnt flint fragments	6.2
2	D2/3	1228	Tr4	Tree-throw	1227																						2	71	Undated	Heavily burnt flint fragments	6.2
2	D2/3	1230	Tr1	Ditch	1229			1																					Undated	Possibly utilized	6.2
2	D2/3	1230	Tr1	Ditch	1229																	1							Meso/ENeo	Thermally fractured chunk with many flakes and blades removed on its front and both sides from a flaked and possibly rejuvenated platform. Base and back unworked. 72g	6.2
2	D2/3	1230	Tr1	Ditch	1229								1																Meso-EBA	Thin	6.2
2	D2/3	1232	Tr2	Layer	1232																						24	182	Undated	Heavily burnt flint fragments	6.2
2		2023		ditch	2022																					0	1	5	Undated	Heavily burnt flint	6.2 ?
2		2023		ditch	2022			1																		1			Neo-BA	Rather chipped, undiagnostic	6.2 ?
2	D2/3	1200	Tr2	Unstrat?													1												Meso-EBA	Proximal end of a well struck flake with possible bifacial retouch around striking platform	6.1
2	D2/3	1200	Tr14	Unstrat?																		1							Meso/ENeo	Small 'front' type blade core with a flaked platform and unmodified base and back. 27g	6.1

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
2	D2/3	1200	Tr8	Unstrat?									1																Neo-BA		6.1
2		Area 2b		Subsoil															1							1				Broken distal end of a large cortical blade with steep retouch along its left margin and distal and possibly along the break, possibly making a scraper or knife, but it's very battered so uncertain	
3	H5	805	Tr7	Ditch	804																						4	58	Undated	Heavily burnt flint fragments	
3	H5	813	Tr7	Ditch	808																						2	33	Undated	Heavily burnt flint fragments	
3	H5	813	Tr7	Ditch	808																	1							Meso-EBA	Small nodule with many small flakes removed from several directions, possibly originally a 'front' type blade core? 39g	
3	H5	809	Tr9	Ditch	810																						2	20	Undated	Heavily burnt flint fragments	
3	H5	817	Tr6	Ditch	815																	1							Neo-BA	'Horn' flint with a flake removed lengthways	
3	H5	817	Tr6	Ditch	815																	1							MBA-IA	Angular wedge-shaped chunk with a few irregular flakes removed and damage along acute edge suggestive of chopping. 80x39x36mm	
3	H5	817	Tr6	Ditch	815														1										MBA-IA	Badly struck flake with fine edge retouch / utilization damage 45x50x15mm	
3	H5	817	Tr6	Ditch	815								1																MBA-IA	Classic 'squat' flake	
3	H5	817	Tr6	Ditch	815																		1						Undated	Disintegrated core or large flake fragment	
3	H5	817	Tr6	Ditch	815																	1							Neo-BA	Extensively reduced but not exhausted nodular fragment with flakes removed from many platforms.	
3	H5	817	Tr6	Ditch	815																						53	1752	Undated	Heavily burnt flint fragments	
3	H5	817	Tr6	Ditch	815																		1						MBA-IA	Large badly struck flake / disintegrated core	
3	H5	817	Tr6	Ditch	815																		1						MBA-IA	Large badly struck flake / disintegrated core	
3	H5	817	Tr6	Ditch	815								1																Neo-BA	Narrow but thick	
3	H5	817	Tr6	Ditch	815			1																					MBA-IA	Rather 'squat, possibly utilized	

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
3	H5	817	Tr6	Ditch	815								1																Neo-BA	Small	
3	H5	817	Tr6	Ditch	815								1																Neo-BA		
3	H5	817	Tr6	Ditch	815												1												Undated		
3	H5	823	Tr14	Ditch	824																						1	65	Undated	Heavily burnt flint fragment	
3		3013		ditch	3008	3008	enclosure3008						2													2			Neo-BA	One F is crude but possibly struck from hammerstone / pounder / flint quern?	2.2.1
3		3014		ditch	3008	3008	enclosure3008																			0	5	107	Undated	Heavily burnt flint	2.2.1
3		3016		ditch	3015			1																		1			Undated	Undiagnostic	8
3		3026		pit	3025								1													1			Meso-EBA	Thin, well struck	2.2.1
3		3028		natural	3027		PG20230																			0	11	68	Undated	Heavily burnt flint	4
3		3036		ditch	3035	3008	enclosure3008															1				1			Meso/ENeo	Front type single platformed A2 blade core with a facetted back and heavily flaked platform (an earlier platform?)	2.2.1
3		3038		ditch	3035	3008	enclosure3008						1													1			Undated	Undiagnostic	2.2.1
3		3039		ditch	3035	3008	enclosure3008																			0	4	140	Undated	Heavily burnt flint	2.2.1
3		3039		ditch	3035	3008	enclosure3008	1					4													5			BA-IA	Mixed raw materials and condition although mostly good. DF is burnt	2.2.1
3		3050		pit	3049																					0	1	4	Undated	Heavily burnt flint	0
3		3060		gully	3059	3033							1													1			Neo-BA	Large and chunky	4
3		3066		pit	3065																					0	2	14	Undated	Heavily burnt flint	5
3		3079		natural	3078								1													1			Undated	Possible light retouch on distal	2?
3		3081		pit	3082														1							1			Neo-BA	End scraper made on a circular flake with well executed, medium, moderately steep scalar retouch around its irregularly convex distal end. Moderate wear	2.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
3		3101		ditch	3095	3008	enclosure3008																			0	2	105	Undated	Heavily burnt flint	2.2.1
3		3101		ditch	3095	3008	enclosure3008																1			1			Undated	Heavily burnt large fragment of probable core	2.2.1
3		3111		ditch	3108	3008	enclosure3008																			0	20	943	Undated	Heavily burnt flint	2.2.1
3		3111		ditch	3108	3008	enclosure3008	1					6						5			1	1			14			MBA-IA	Mixed raw materials and variable but mostly good condition. All of the retouched implements have been irregularly worked; 4 have coarse steep retouch, the other coarse denticulations. The core is minimally worked	2.2.1
3		3137		pit	3128		PG20230																			0	1	26	Undated	Heavily burnt flint	4
3		3137		pit	3128		PG20230	1					2													3			Undated	Poor condition and mixed raw materials and technology	4
3		3138		pit	3128		PG20230																			0	1	3	Mixed	Heavily burnt flint	4
3		3138		pit	3128		PG20230	1					2													3			Neo-BA	Rather undiagnostic	4
3		3144		pit	3132																					0	8	212	Undated	Variably burnt flint	2.2.2
3		3144		pit	3132								5			1	3		1		2			2		14			Neo	Difficult to classify as all burnt or stained black. The retouched implement is a fragment of a burnt probable PB with a serrated right margin. One of the quern fragments is large - 281g, the other a small flake struck from a quern. Two of the flakes may have been struck from a hammerstone / pounder	2.2.2
3		3153		pit	3152														1							1			LNeo-BA	Large flake with coarse bifacial shallow notches on right margin and distal end and similar but concave retouch on left margin, forming a roughly triangular= or 'Y' shaped tool.	2.3
3		3155		gully	3155	3033																				0	16	253	Undated	Heavily burnt flint	4

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
3		3156		gully	3155	3033							1													1			Undated	Undiagnostic	4
3		3159		pit	3157		PG2023 0																			0	40	360	Undated	Heavily burnt flint	4
3		3159		pit	3157		PG2023 0						4	1												5			Meso-EBA	Nothing diagnostic but most pieces reasonably well struck	4
3		3161		gully	3160	3106		1					1													2			Undated	Undiagnostic	4
3		3163		gully	3162	3106																				0	1	46	Undated	Heavily burnt flint	4
3		3163		gully	3162	3106												1								1			Undated	Undiagnostic	4
3		3167		pit	3166																					0	8	123	Undated	Heavily burnt flint	4
3		3167		pit	3166			1					2													3			BA-IA	Thick flakes, 2 have been burnt	4
3		3171		ditch	3168	3008	enclosure3008																			0	16	288	Undated	Heavily burnt flint	2.2.1
3		3171		ditch	3168	3008	enclosure3008	1					7		1		1		1			1				12			EBA-LBA	Somewhat variable condition but technologically homogeneous collection of small flakes and a thick blade of similar raw materials. The retouched implement is a flake with a short stretch of fine, shallow retouch around its irregularly convex distal end. The core is an irregularly worked single platform type removing small flakes and which could be a denticulated core tool. The PB may have been utilized	2.2.1
3		3182		ditch	3180	3008	enclosure3008																			0	16	915	Undated	Heavily burnt flint	2.2.1
3		3182		ditch	3180	3008	enclosure3008	2					4				1		2			1	1		2	13			LNeo-BA	Retouched implements both end scrapers and comprise a cortical flake with a short stretch of well executed, medium, shallow retouch around its convex distal end, and narrow tear-drop shaped flake with well executed symmetrical medium to coarse steep scalar retouch around its distal end. The core is an irregular multi-platformed type. One of the HSs is a nearly complete spherical example with all-over chattermarking, the other is a small	2.2.1

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
																													fragment and may have been struck from the larger, although the former is burnt and the latter is not. One of the Fs and the CC are also burnt	
3		3203		post hole	3202		ST3200																			0	49	353	Undated	Variably burnt flint	2.3
3		3203		post hole	3202		ST3200						1													1			Meso/ENeo	Small but systematically struck	2.3
3		3237		pit	3236		PH3232						1													1			Meso-EBA	Well struck	2.3
3		3237	<108>	pit	3236		PH3232					1		1	1											3			Meso/ENeo	Good condition, the PB and BLF were struck from the same core. The chip is a platforming trimming flake	2.3
3		3239		post hole	3238		ST3240																			0	5	52	Undated	Heavily burnt flint	2.3
3		3241	<111>	post hole	3240		ST3240										1									1			Meso-EBA	Lightly burnt and fragmented but thin and well struck	2.3
3		3243	<139>	post hole	3242		ST3240						1													1			Undated	undiagnostic	2.3
3		3245		post hole	3244		ST3240																			0	3	107	Undated	Heavily burnt flint	2.3
3		3251		post hole	3250		ST3240																			0	2	16	Undated	Heavily burnt flint	2.3
3		3255		pit	3254																					0	53	3008	Undated	Heavily burnt flint	2.3
3		3276		post hole	3275		ST3269																			0	2	45	Undated	Heavily burnt flint	2.3
3		3276	<113>	post hole	3275		ST3269						1			1										2			Neo-BA	Thick F and small Non-prismatic blade	2.3
3		3306		post hole	3305		ST3317																			0	1	4	Undated	Heavily burnt flint	2.3
3		3318		post hole	3317		ST3317																			0	5	134	Undated	Heavily burnt flint	2.3
3		3326	<114>	post hole	3325		ST3317	1																		1			Undated	Very abraded - possibly natural	2.3
3		3328		post hole	3327		ST3317																			0	4	78	Undated	Heavily burnt flint	2.3

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
3		3348		pit	3347																					0	2	20	Undated	Variably burnt flint	2.3
3		3348		pit	3347			1					1													2			Neo-BA	Undiagnostic	2.3
3		3351		post hole	3351																					0	1	33	Undated	Heavily burnt flint	2.3
3		3357		cremation?	3356		PG3350																			0	7	230	Undated	Heavily burnt flint	2.3
3		3442	<118>	pit	3441		PHA3493					1														1			Undated	Small, very abraded, possibly natural	2.2.3
3		3478		pit	3477		PHA3493																			0	3	261	Undated	Heavily burnt flint	2.3
3		3478		pit	3477		PHA3493												1							1			LNeo/EBA	Long end scraper made on a thick hard hammer decortication blade with well executed medium to coarse steep scalar retouch around its convex distal end.	2.3
3		3530		post hole	3529		PHA3503																			0	7	199	Undated	Heavily burnt flint	2.2.2
3		3534		post hole	3533		PHA3503																			0	3	86	Undated	Heavily burnt flint	2.2.2
3		3689		ditch	3687	3008	enclosure3008	1					2				1									4			Neo-BA	Nothing very diagnostic but probably mixed date	2.2.1
3		3716	<125>	post hole	3715		ST3711					1						1								2			Undated	Undiagnostic	2.2.1
3		3720		post hole	3719		ST3711										1						1			2			Undated	Both heavily burnt	2.2.1
3		3753		post hole	3752		PHA3493								1											1			Meso/ENeo	Mesial section of thick but systematically produced PB	2.2.3
3		3757		post hole	3756		PHA3493													1						1			BA-IA	Extensively worked lenticular core with some finer working at one end possibly making a blunt spurred piercer	2.2.3
3		3763		post hole	3762		PHA3493						1													1			Meso-EBA	Thin, very chipped	2.2.3
3		3775		post hole	3774		PHA3493	1																		1			Undated	Primary flake	2.2.3
3		3785		post hole	3784		PG3350																			0	5	137	Undated	Heavily burnt flint	2.3

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
3		3790		ditch	3788	3329																				0	3	31	Undated	Heavily burnt flint	4
3		3794		ditch	3792	3008	enclosure3008																			0	12	493	Undated	Heavily burnt flint	2.2.1
3		3794		ditch	3792	3008	enclosure3008	1					1			1										3			Meso-EBA	Nothing diagnostic but reasonably well struck	2.2.1
3		3795		ditch	3792	3008	enclosure3008																			0	15	780	Undated	Heavily burnt flint	2.2.1
3		3795		ditch	3792	3008	enclosure3008	1					1													2			Meso-EBA	F is almost blade-like	2.2.1
3		3808	<131>	post hole	3807		ST3807					1						1								2			Undated	undiagnostic	2.2.1
3		3855		ditch	3854	3854																				0	4	92	Undated	Heavily burnt flint	4
3		3857		pit	3856																					0	183	3765	Undated	Heavily burnt flint	2.2.1
3		3859		ditch	3858	3858																				0	16	374	Undated		3
3		3859		ditch	3858	3858							1													1			Neo-BA	Undiagnostic	3
3		3867		post hole	3866		PHA3643												1							1			BA-IA	Badly detached flake with coarse denticulations along its right margin and finer steep scalar retouch along its straight distal end.	2.2.2
3		3883		pit	3882		PG20230						1						1							2			BA-IA	Badly detached flake with coarse, steep scalar retouch along its slightly convex right margin. The F is typically 'squat'	4
3		3887		pit	3885		PG20230																			0	2	54	Undated	Heavily burnt flint	4
3		3887		pit	3885		PG20230						1						1							2			BA-IA	Distal end of an irregular F with coarse denticulations / double notch cut into its right margin	4
3		3901		post hole	3900		PG3900																			0	1	11	Undated	Heavily burnt flint	2.3
3		3905	<133>	post hole	3904		PG3900											2								2			Undated	undiagnostic	2.3
3		3958		ditch	3957	201577	ditch201577																			0	11	185	Undated	Heavily burnt flint	6

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
3		3958		ditch	3957	201577	ditch201577	1					3						1				1			6			BA-IA	Rather crudely produced Fs. Retouched is a DF with a short stretch of fine, moderately steep scalar retouch around pa convex part of its distal end.	6
3		3961		pit	3959		PG20230																			0	1	2	Undated	Heavily burnt flint	4
3		3961		pit	3959		PG20230						1													1			BA-IA	Poorly detached	4
3		3970		pit	3969																					0	2	39	Undated	Heavily burnt flint	2.3
3		3970		pit	3969			1					2													3			BA-IA	All rather chipped	2.3
3		3985		ditch	3986	3858							1													1			Neo-BA	Reasonably well struck, possibly edge retouched but very chipped	3
3		20011		post hole	20012		PHA3503																			0	1	4	Undated	Heavily burnt flint	2.2.2
3		20018		pit	20017																					0	2	57	Undated	Heavily burnt flint	2.2.1
3		20018		pit	20017								2													2			BA-IA	Both rather 'squat'.	2.2.1
3		20027		post hole	20028		PHA3503																			0	2	27	Undated	Variably burnt flint	2.2.2
3		20027		post hole	20028		PHA3503												1							1			Neo-BA	Typical 'squat' flake but has well executed medium to coarse moderately steep scalar retouch around its slightly convex distal end	2.2.2
3		20029		post hole	20030		PHA3503																			0	1	2	Undated	Heavily burnt flint	2.2.2
3		20033		post hole	20034		PHA3503																			0	1	6	Undated	Heavily burnt flint	2.2.2
3		20050	<135>	pit	20049										1											1			Meso/ENeo	Very small	2.2.1
3		20050	<137>	pit	20049													1								1			Undated	undiagnostic	2.2.1
3		20055		pit	20054																					0	8	160	Undated	Heavily burnt flint	3
3		20055		pit	20054								1													1			Neo-BA	Undiagnostic	3

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
3		20183		pit	20179		PG20230						2						1					2		5			BA-IA	All rather chipped. Ret is a very thick 'squat' flake with a few smaller flakes removed from its ventral surface	4
3		20195		post hole	20195																					0	3	64	Undated	Heavily burnt flint	2.2
3		20195		post hole	20195											1										1			Neo-BA	Possible retouch along its right margin but very chipped	2.2
3		20197		post hole	20196																					0	8	91	Undated	Variably burnt flint	2.2
3		20209		pit	20208																					0	33	1102	Undated	Heavily burnt flint	2.2.1
3		20209		pit	20208								1													1			BA-IA	Typical 'squat' flake	2.2.1
3		20215		pit	20214		PG20230																			0	7	229	Undated	Heavily burnt flint	4
3		20217		pit	20217																					0	16	227	Undated	Heavily burnt flint	4
3		20272		ditch	20270	20270	enclosure20300																			0	2	9	Undated	Heavily burnt flint	4
3		20278		pit	20280		PG20280																			0	3	40	Undated	Heavily burnt flint	4
3		20278		pit	20280		PG20280						1													1			Undated	undiagnostic	4
3		20281		pit	20280		PG20280																			0	2	26	Undated	Heavily burnt flint	4
3		20285		pit	20286		PG20280																			0	2	24	Undated	Heavily burnt flint	4
3		20285		pit	20286		PG20280							1												1			Meso/ENeo	Distal missing, possible PB	4
3		20287		ditch	20289	20300	enclosure20300																			0	8	165	Undated	Variably burnt flint	4
3		20296		ditch	20295	20295	enclosure20300																			0	1	54	Undated	Heavily burnt flint	4

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
3		20296		ditch	20295	20295	enclosure20300	1							1							1				3			Meso/ENeo	The PB is probably Meso - ENeo but the others are undiagnostic. The core is heavily burnt and has a few flakes removed from different directions on its 'front' 'front'	4
3		20294		ditch	20296																					0	6	150	Undated	Heavily burnt flint	4
3		20299		ditch	20299																					0	1	4	Undated	Moderately burnt flint	4
3		20309		pit	20307		PG20280																			0	1	21	Undated	Heavily burnt flint	4
3		20319	<145>	pit	20318								1													1			Undated	Very abraded - possibly natural	0
3		20388		pit	20387			1					1	1		1						2				6			Meso/ENeo	Technologically homogeneous, similar raw materials and in good condition. Both cores are blade producing, one is a single platformed type worked around most of its platform, the other is multiplatformed	1
3		20489	<1003>	pit	20387			2	2		1	21	5	4	5	3	2	9	1							55			ENeo	Technologically homogeneous mostly small knapping debris. Retouched is a small broken blade with very fine retouch / heavy use-wear along its right margin. The CRF is a small partial core-tablet.	1
3		20489		pit	20387																					0	36	1755	Undated	Heavily burnt flint	1
3		20489	SF102	pit	20387														1							1			Neo	Large NPB with extensive bifacial edge damage, superficially resembling a 'bruised blade' from the Upper Palaeolithic although it is otherwise technologically consistent with an ENeo date	1
3		20489		pit	20387			27	5		3	6	137	29	39	31	27	7	22			10	7	2		352			ENeo	Technologically homogeneous, many similar raw materials and in mostly a good condition. The retouched implements comprise: a large narrow flake with extensive bifacial edge damage; a large well made end scraper; two small shallowly retouched side scrapers; 4 chunky flakes with irregular inverse flaking, and 10 blades and 4 flakes with fine retouch or heavy use-wear along their lateral margins, some of which is comparable to very fine serrations.	1

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
																													The cores are variable and have been reduced to varying extents. They include two minimally worked examples, a multi-platformed flake core, two multiplatformed blade cores, two single platformed flake cores, two opposed platformed blade cores and a centripetally worked flake core. CRFs include plunged flake, transverse CRF, small core tablet	
3		20390		ditch	20389	20470	enclosure3008																			0	2	7	Undated	Heavily burnt flint	2.2.1
3		20391		ditch	20389	20470	enclosure3008																			0	1	49	Undated	Heavily burnt flint	2.2.1
3		20391		ditch	20389	20470	enclosure3008	1	1				3						1							6			Neo-BA	Nothing very diagnostic, probably later rather than earlier and mostly in a good condition and similar raw materials. The retouched implement is a NPB with a short stretch of medium, moderately steep scalar retouch along a straight part of its distal end.	2.2.1
3		20399		pit	20398			1					4						1							6			Neo-BA	Nothing very diagnostic. The retouched implement is a wide flakes with fine, denticulated retouch along its slightly sinuous right margin	2.2
3		20401		post hole	20400		ST20400																			0	1	49	Undated	Heavily burnt flint	2.2.3
3		20435		post hole	20435														1							1			Neo	Side scraper made on a large thick decortication flake with symmetrically arced and very well executed coarse. moderately steep scalar retouch around its convex left margin.	2.2
3		20457		post hole	20456																					0	2	79	Undated	Heavily burnt flint	2.2.2
3		20474		ditch	20470	20470	enclosure3008																			0	1	37	Undated	Heavily burnt flint	2.2.1
3		20474		ditch	20470	20470	enclosure3008						1			1										2			Neo-BA	Not very diagnostic. NPB has possible utilization damage and the F has a smaller	2.2.1

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
																													flake struck from its ventral	
3		20480		post hole	20479								1													1			Neo-BA	Undiagnostic	2.2
3		20497	<1011>	post hole	20496		ST20500					2	1													3			Neo-BA	Abraded - undiagnostic, some possibly natural	2.2.3
3		20553		pit	20552																		1			1			Undated	Undiagnostic	2.2
3		20557		ditch	20554	20470	enclosure3008																			0	17	430	Undated	Heavily burnt flint	2.2.1
3		20557		ditch	20554	20470	enclosure3008												1							1			LNeo/EBA	Circular scraper with well executed, coarse, sallow, invasive and occasionally parallel retouch around all convex margins covering most of dorsal surface	2.2.1
3		20563		ditch	20561	3008	enclosure3008																			0	8	204	Undated	Heavily burnt flint	2.2.1
3		20576		ditch	20574	20577	ditch201577																			0	4	105	Undated	Heavily burnt flint	6
3		20579		ditch	20577	20577	ditch201577																			0	13	164	Undated	Heavily burnt flint	6
3		20579		ditch	20577	20577	ditch201577						2													2			Undated	Both very battered and undiagnostic - one is possibly from a hammerstone / pounder	6
3		20618		burned layer	20618																					0	47	876	Undated	Heavily burnt flint	2.2
3		20622		ditch	20621	3008	enclosure3008																			0	4	211	Undated	Heavily burnt flint	2.2.1
3		20623		ditch	20621	3008	enclosure3008																			0	8	245	Undated	Heavily burnt flint	2.2.1
3		20624		ditch	20621	3008	enclosure3008																			0	4	120	Undated	Heavily burnt flint	2.2.1
3		20624		ditch	20621	3008	enclosure3008						1									1				2			BA-IA	Thick F and a minimally reduced bifacially worked thermal spall - possibly a coarsely denticulated core-tool?	2.2.1
3		20626		pit	20625																					0	1	26	Undated	Moderately burnt flint	2.2
3		20626		pit	20625								1													1			Neo-BA	Undiagnostic	2.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
3		20632		pit	20631																					0	1	12	Undated	Heavily burnt flint	2.2
3		20637		ditch	20635	20577	ditch201577																			0	1	4	Undated	Heavily burnt flint	6
3		20637		ditch	20635	20577	ditch201577	1	1																	2			Undated	Undiagnostic	6
3		20640		ditch	20638	201577	ditch201577																			0	2	16	Undated	Heavily burnt flint	6
3		20640		ditch	20638	201577	ditch201577	2					4													6			BA-IA	Mixed condition and raw materials but mostly quite crude and later prehistoric looking	6
3		20643		pit	20641		PG20475																			0	1	27	Undated	Heavily burnt flint	2.2.3
3		20653		pit	20652		PA21562																			0	90	1651	Undated	Variably burnt flint	2.2.2
3		20655		pit	20654		PG20475						1													1			Meso-EBA	Reasonably well struck	2.2.3
3		20667	<1028>	pit	20666		PG20674					1														1			Meso-EBA	Platform trimming chip	2.2.3
3		20673		pit	20672		PHA3503																			0	1	36	Undated	Heavily burnt flint	2.2.2
3		21031		post hole	21030		PA21014																			0	8	137	Undated	Heavily burnt flint	2.2.2
3		21037		post hole	21036		PA21014																			0	3	14	Undated	Heavily burnt flint	2.2.2
3		21039		post hole	21039																					0	2	45	Undated	Heavily burnt flint	2.2.2
3		21039		post hole	21039																	2				2			Neo-BA	Both rather irregularly reduced with a few flakes removed from many directions using unprepared platforms	2.2.2
3		21041		post hole	21040		PA21014																			0	1	7	Undated	Heavily burnt flint	2.2.2
3		21051		post hole	21050		PA21014																			0	1	2	Undated	Heavily burnt flint	2.2.2
3		21055		post hole	21054		PA21014								1											1			Meso-EBA	Thick, not necessarily systematically produced, proximal end missing	2.2.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
3		21075		post hole	21074		PA21014																			0	1	6	Undated	Heavily burnt flint	2.2.2
3		21075		post hole	21074		PA21014						1				1									2			Undated	Small and abraded, both possibly natural	2.2.2
3		21079		post hole	21078		PA21014						1													1			Neo-BA	Undiagnostic	2.2.2
3		21105		post hole	21104		PA21014						1													1			Neo-BA	Undiagnostic	2.2.2
3		21109	<1104>	post hole	21108		PA21014						1													1			Neo-BA	Thick flake, possible inverse retouch on distal	2.2.2
3		21111		post hole	21110		PHA21110						1													1			Neo-BA	Badly detached	2.2.1
3		21285		post hole	21284																					0	2	42	Undated	Heavily burnt flint	2.2
3		21315	<1112>	post hole	21314		PHA21308					1														1			Undated	Undiagnostic	2.2.3
3		21315		post hole	21314		PHA21308						1													1			Meso-EBA	Undiagnostic but reasonably well struck	2.2.3
3		21345		post hole	21344		PHA21308						1													1			Undated	Badly detached	2.2.3
3		21413		post hole	21412		PHA21308																			0	2	98	Undated	Heavily burnt flint	2.2.3
3		21463		post hole	21462		PHA21476																			0	1	72	Undated	Heavily burnt flint	2.2.3
3		21465		post hole	21464		PHA21476						1													1			Meso-EBA	Small, undiagnostic but thin and reasonably well struck	2.2.3
3		21493		post hole	21493																					0	1	28	Undated	Heavily burnt flint	2.2
3		21493		post hole	21493								1													1			Neo-BA	Large but undiagnostic	2.2
3		21561		post hole	21560		PHA21154						1													1			Neo-BA	Small, reasonably well struck	2.2.3
3		21565		post hole	21564		PA21562																			0	1	11	Undated	Heavily burnt flint	2.2.2
3		21567		post hole	21566		PA21562																			0	1	26	Undated	Heavily burnt flint	2.2.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
3		21567		post hole	21566		PA21562												1							1			Neo-BA	Partially cortical flake with slightly irregular fine moderately steep retouch around most of its convex margins.	2.2.2
3		21569		post hole	21568		PA21562																			0	1	6	Undated	Heavily burnt flint	2.2.2
3		21571		post hole	21570		PA21562	1																		1			Neo-BA	Undiagnostic	2.2.2
3		21577		post hole	21576		PA21562																			0	1	24	Undated	Heavily burnt flint	2.2.2
3		21579		post hole	21578		PA21562																			0	2	60	Undated	Heavily burnt flint	2.2.2
3		21581		post hole	21580		PA21562																			0	3	26	Undated	Heavily burnt flint	2.2.2
3		21583		post hole	21582		PA21562																			0	2	60	Undated	Heavily burnt flint	2.2.2
3		21585		post hole	21584		PA21562																			0	21	338	Undated	Variably burnt flint	2.2.2
3		21627		post hole	21626		PA21562	1																		1			Undated	Undiagnostic	2.2.2
3		21631		post hole	21630		PA21562																			0	1	51	Undated	Heavily burnt flint	2.2.2
3		21635		post hole	21634		PA21562																			0	6	75	Undated	Heavily burnt flint	2.2.2
3		21635		post hole	21634		PA21562	1				2	2													5			Neo-BA	Small mostly abraded	2.2.2
3		21701		post hole	21700																					0	1	79	Undated	Heavily burnt flint	2.2
3		21701		post hole	21700								1													1			Neo-BA	Undiagnostic	2.2
3		21725	<1114>	post hole	21724							1														1			Undated	Very abraded - possibly natural	2.2
3		21761		post hole	21760		PHA21452					2			1											3			Meso/ENeo	The chips are very abraded and possibly natural	2.2.3
3	H3-4	1001	Tr6	??																							2	29	Undated	Heavily burnt flint fragments	8

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
3	H3-4	1009	Tr7	??																							1	6	Undated	Heavily burnt flint fragment	2.1
3	H3-4	1011	Tr7	??																							1	16	Undated	Heavily burnt flint fragment	2.2
3	H3-4	1013	Tr7	??																							1	26	Undated	Heavily burnt flint fragment	0
3	H3-4	1025		??									1																Meso-EBA	Well struck, possibly utilized?	6?
3	H3-4	1035		??									1																MBA-IA	Classic 'squat' flake	2.2
3	H3-4	1035		??									1																MBA-IA	Classic 'squat' flake	2.2
3	H3-4	1035		??																							15	642	Undated	Heavily burnt flint fragments	2.2
3	H3-4	1036		??																							1	32	Undated	Heavily burnt flint fragment	2.2
3	H3-4	1040		??																							3	39	Undated	Heavily burnt flint fragments	2.2
3	H3-4	1046		??																							3	42	Undated	Heavily burnt flint fragments	2.2
3	H3-4	1048		??																							12	430	Undated	Heavily burnt flint fragments	1.2
3	H3-4	1048		??									1																Meso-EBA	Well struck	1.2
3	H3-4	1052	Tr6	??																							8	168	Undated	Heavily burnt flint fragments	2.1
3		3001		??									6		1	1			1							9			Neo-BA	Rather undiagnostic flakes. The retouched implement is a sturdy narrow flake with inverse, coarse shallow retouch at its distal end - chisel-like?	
3		99999											1													1			Meso-EBA	Well struck, almost blade-like	
3	H5	99999	Tr12	U/S																							5	79	Undated	Heavily burnt flint fragments	
3	H5	99999	Tr17	U/S																		1							Meso/ENeo	Small nodule with blades removed from 'front' and rejuvenated striking platform. 86g	
4	H7	606	Tr17	43305	605																						1	59	Undated	Heavily burnt flint fragment	
4	H7	621	Tr20	Natural	620										1														Meso/ENeo	Distal missing	
4	H7	621	Tr20	Natural	620																						51	327	Undated	Heavily burnt flint fragments	
4	H7	621	Tr20	Natural	620			1																					Neo-BA	Rather 'squat'	

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
4	H7	621	Tr20	Natural	620															1									MBA-IA	Thermal 'potlid' spall with flaking around edges forming three slightly concave denticulated edges	
4	H7	621	Tr20	Natural	620			1																					Undated		
4	H7	624	Tr20	Natural	620																						60	358	Undated	Heavily burnt flint fragments	
4	H7	633	Tr20	Natural	637																	1							Meso-ENeo	Angular thermal chunk, possibly a 'quartered' nodule, with a series of broad blades removed from a single platform. 55g	
4	H7	633	Tr20	Natural	637																	1							Meso-EBA	Angular thermal chunk, possibly a 'quartered' nodule, with a series of flakes removed from numerous directions on one face. 48g	
4	H7	633	Tr20	Natural	637																						17	147	Undated	Heavily burnt flint fragments	
4	H7	633	Tr20	Natural	637			1																					Undated	Large block-like thermal chunk with heavy battering around edges and several flakes detached. 339g Max dimension 81mm	
4	H7	633	Tr20	Natural	637												1												Meso-EBA	Narrow	
4	H7	633	Tr20	Natural	637																								Undated	Small fragment	
4	H7	647	Tr6	Ditch	646																						1	8	Undated	Heavily burnt flint fragments	
4	H7	657	Tr12	Ditch	656																	1							Neo-BA	Extensively reduced multi-platformed globular core. One surface has numerous incipient Hertzian cones. 93g	
4	H7	659	Tr12	Ditch	658																						1	23	Undated	heavily burnt flint fragment	
4	H7	659	Tr12	Ditch	658																	1							MBA-IA	Small nodule wit a series of small broad flakes removed from one end. Forms a steep edge and possibly used as a core tool. 99g	
4	H7	660	Tr15	Ditch	660														1										Meso-EBA	End scraper made on narrow flake with additional ventral retouch. 39x34x9mm	
4	H7	669	Tr5	Pit	668																						1	9	Undated	Heavily burnt flint fragment	
4		4002		natural	4000																					0	114	1490	Undated	Heavily burnt flint	3

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
4		4006	<151>	post hole	4007		PH4007					3														3			Undated	Small knapping debris	3
4		4014		post hole	4015		PH4007																			0	1	11	Undated	Heavily burnt flint	3
4		4016		post hole	4017		PH4007																			0	4	14	Undated	Heavily burnt flint	3
4		4022		post hole	4023		PH4007																			0	1	22	Undated	Heavily burnt flint	3
4		4024		post hole	4025		PH4007																			0	1	6	Undated	Heavily burnt flint	3
4		4033		gully/ ditch	4032	4032	ditch4032																			0	8	68	Undated	Heavily burnt flint	5
4		4041		post hole	4041		PH4007																			0	47	963	Undated	Heavily burnt flint	3
4		4041		post hole	4041		PH4007	2					3				4		2	3		2	1	4		21			MBA-IA	Classic late prehistoric assemblage of badly struck 'squat' flakes, a minimally worked and an irregularly worked core, irregular debris and a high % of tools comprising three coarsely denticulated core-tools, a coarsely denticulated flake and an irregular flake with crushed edge. One of the flakes may have been detached from a hammerstone or pounder	3
4		4042		post hole	4043		PH4007																			0	2	25	Undated	Heavily burnt flint	3
4		4050		post hole	4051		PH4007					1														1			Undated	Small knapping debris	3
4		4052		post hole	4053	4068																				0	1	73	Undated	Heavily burnt flint	3
4		4074		gully	4073	4073	ditch4073																			0	4	16	Undated	Heavily burnt flint	4
4		4113		pit	4114		PH4114																			0	24	103	Undated	Heavily burnt flint	3
4		4115		pit	4116		PH4114																			0	54	406	Undated	Heavily burnt flint	3
4		4117		post hole	4118																					0	20	87	Undated	Heavily burnt flint	3
4		4122		post hole	4122		PH4114																			0	9	33	Undated	Heavily burnt flint	3
4		4126		post hole	4127		PH4114																			0	13	62	Undated	Heavily burnt flint	3
4		4162		post hole	4163		PH4114																			0	4	6	Undated	Heavily burnt flint	3

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
4		4179		ditch	4180	4073	ditch4073																			0	37	599	Undated	Heavily burnt flint	4
4		4183		ditch	4184	4004	ditch4004																			0	1	7	Undated	Heavily burnt flint	4
4		4200		ditch	4199	4135	Ditches4129												1							1			Neo-BA	Nicely made end and side scraper with semi-invasive retouch ?LNeo/EBA	4
4		4202		gully	4201	4145	Ditches4129						2													2			Neo-BA	Undiagnostic	4
4		4205		ditch	4206	4073	ditch4073																			0	9	157	Undated	Heavily burnt flint	4
4		4205		ditch	4206	4073	ditch4073															1				1			BA-IA	Simple minimally worked core, possibly a denticulated core-tool. Heavily burnt	4
4		4207		ditch	4208	4073	ditch4073																			0	9	59	Undated	Heavily burnt flint	4
4		4216		natural	4215																					0	19	147	Undated	Heavily burnt flint	0
4		4216		natural	4215											1										1			Meso-Neo	Laterally split possible prismatic blade in a chipped condition	0
4	H7	627	Tr20	Natural	??																						48	424	Undated	Heavily burnt flint fragments	
4	H7	627	Tr20	Natural	??								1																Meso-EBA	Wide but almost blade-like	
4	H7	628	Tr20	Natural	??																						28	165	Undated	Heavily burnt flint fragments	
4	H7	628	Tr20	Natural	??								1																Undated	Small	
4	H7	629	Tr20	Natural	??																						31	313	Undated	Heavily burnt flint fragments	
4	H7	630	Tr20	Natural	??								1																MBA-IA	Classic 'squat' flake	
4	H7	630	Tr20	Natural	??																						39	367	Undated	Heavily burnt flint fragments	
4	H7	630	Tr20	Natural	??			1																					Undated	Small	
4		4221		?																						0	5	47	Undated	Heavily burnt flint	8

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
4		4221		?				7	1			1	24	4	7	4	7	2	6							63			Mixed	Mixed condition, raw materials and technology. Includes pieces from Meso/ENeo (probably the latter) through to the MBA-IA. Retouched pieces include a large a well-produced (Neo?) circular scraper, two slightly denticulated end scrapers, a large denticulated flake, a flake with heavy battering along one edge that has been used as a pounder or chopping tool, and an edge retouched flake fragment. Other pieces may have been retouched but post-depositional damage has made them impossible to verify	8
5	H8	411	Tr6	Ditch	412																						3	116	Undated	Heavily burnt flint fragments	
5	H8	411	Tr6	Ditch	412			1																					Undated	Small	
5	H8	442	Tr9	Ditch	440								1																Neo-BA	Small	
5	H8	443	Tr9	Ditch	440								1																Neo-BA	Badly detached	
5	H8	443	Tr9	Ditch	440												1												Undated	Distal fragment	
5	H8	443	Tr9	Ditch	440																						90	1246	Undated	Heavily burnt flint fragments	
5	H8	443	Tr9	Ditch	440								1																MBA-IA	Rather 'squat	
5	H8	444	Tr9	Ditch	440			1																					MBA-IA	classic 'squat' flake, possibly utilized	
5	H8	444	Tr9	Ditch	440														1										MBA-IA	End scraper made on a very thick and badly struck predominantly cortical flake with extensive steep slightly denticulated convex retouch around distal and extending partially along sides. 43x41x27mm	
5	H8	444	Tr9	Ditch	440														1										MBA-IA	End scraper. Narrow but rather crude flake with a heavily battered striking platform and fine steep slightly denticulated convex retouch around distal. 50x36x12mm	
5	H8	444	Tr9	Ditch	440																		1						Undated	Fragmented core / shattered cobble	
5	H8	444	Tr9	Ditch	440																						41	898	Undated	Heavily burnt flint fragments	

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
5	H8	444	Tr9	Ditch	440								1																Neo-BA	Possibly utilized	
5	H8	446		Pit	445																						1	27	Undated	Heavily burnt tabular flint fragment	
5	H8	446		Pit	445																		1						LN/EBA	Fragment from a bifacially worked core?	
5	H8	446		Pit	445								1																Meso-EBA	Fragmentary	
5	H8	446		Pit	445			1																					Undated	Small	
5	H8	446		Pit	445								1																Neo-BA	Very wide	
5	H8	425	Tr18	Posthole	1426										1														Meso/ENeo	Distal end	
5		5003		natural	5004																					0	2	22	h		0
5		5005		ditch/ gully	5006																					0	1	14	Undated	Heavily burnt flint	7?
5		5008	SF208	ditch	5007	5042	enclosure5007													1						1			Neo-EBA	Fragment of white stained light yellow fine siliceous sandstone that appears to have a ground domed surface although no striations are visible. It has 'crazed' and may have been burnt. It is a fragment from a single face and measures a maximum of 60mm in extent, and its size would suggest possibly an axe or, given what it is made from, more probably a macehead.	2.2
5		5008	SF209	ditch	5007	5042	enclosure5007												1							1			LNeo-BA	Flake fragment with fairly well executed fine to medium, steep scalar retouch on its extant ?distal end (it is possibly a thermal spall)	2.2
5		5008	SF210	ditch	5007	5042	enclosure5007												1							1			BA-IA	Flake with inverse and normal rather irregular shallow retouch sporadically around all margins.	2.2
5		5008		ditch	5007	5042	enclosure5007																			0	97	5864	Undated	Heavily burnt flint	2.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
5		5008		ditch	5007	5042	enclosure5007	6					16				3		12	1		5	3	1		47			BA-IA	Mostly good but somewhat mixed condition and many different raw materials although technologically homogeneous. None of the retouched implements are standard types and include: a decortication flake with fine retouch / crushing along its straight left margin; 6 very differently shaped and sized flakes with variable extents of medium to coarse, steep and often denticulated scalar retouch on parts of their margins; 1 large flake with a smaller flake removed inversely from right margin; a large narrow flake with 2 flakes removed bifacially from its left margin; two flakes with wide shallow notches cut into their margins, and a narrow flake with an inverse wide shallow notch on its right margin and a steeply denticulated edge made along it left margin, both removing its proximal end. The core-tool has coarse notches / denticulations along one side and a steeply 'retouch' opposite edge. All of the cores are irregularly and simply worked and comprise: a minimally worked thermally fractured nodule; a single platformed core on a split cobble; 2 multi-platformed examples, and a bifacially worked discoidal core, which could in fact be a core-tool	2.2
5		5010	SF201	ditch	5009	5009	enclosure5007													1						1			Neo	Butt end of an opaque light grey flint axehead. Both faces are c. 50% grinding and 50% flake scars and there is at least two episodes of flake followed by polishing indicated. It is oval in section with rounded but fairly acute lateral margins and it has a squared-off butt. . Its break resembles an 'end-shock' fracture.	2.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
5		5010		ditch	5009	5009	enclosure5007	5					12			1	4		3		1	3	1			30			BA-IA	Mostly good but somewhat mixed condition and many different raw materials but mostly technologically homogeneous. The retouched implement include an side-and-end scraper with relatively well executed medium to coarse, steep scalar retouch along its straight left margin and its convex distal end. The other three are irregular and include a flake with a small stretch of inverse shallow retouch near its proximal end; a large flake with fine moderately steep retouch along its left margin and possible chopping-like damage to its right margin, and a flake with fine abrupt retouch along its distal end. The cores comprise two minimally worked and one multi-platformed type.	2.2
5		5022	SF211	ditch	5009	5009	enclosure5007												1							1			LNeo-BA	End-and-side scraper made on a thick but narrow flake with reasonably well executed medium, steep scalar retouch around its slightly convex distal end and extending along both lateral margins.	2.2
5		5022		ditch	5009	5009	enclosure5007																			0	4	83	Undated	Heavily burnt flint	2.2
5		5022		ditch	5009	5009	enclosure5007						3			1			2							6			BA-IA	The Fs are typically 'squat', the non-prismatic blade could also easily be later prehistoric. The retouched pieces comprise a side-and-end scraper made on a large flake with reasonably well executed coarse, steep scalar retouch around its convex left margin and distal end that turns into a well formed notch near its proximal end, and a burnt thick flake that appears to have battering and edge crushing around its distal end.	2.2
5		5017	SF202	ditch	5012	5042	enclosure5007													1						1			Neo	Heavily burnt mesial fragment of a bifacially worked implement. It has parallel, possibly slightly converging acute margins and has been flaked over both faces but also has what appear to small patches of	2.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
																													grinding surviving It is most reminiscent of narrow axes or chisels	
5		5017	SF203	ditch	5012	5042	enclosure5007												1							1			LNeo/EBA	Non-prismatic blade with well executed, medium, steep scalar retouch around its slightly convex distal end. Working edge worn smooth.	2.2
5		5017	SF204	ditch	5012	5042	enclosure5007													1						1			BA-IA	Large thermal spall with coarse, moderately steep scalar retouch around c. 3/4 of its convex perimeter.	2.2
5		5017	SF205	ditch	5012	5042	enclosure5007						1													1			LNeo/EBA	Reasonably well struck	2.2
5		5017		ditch	5012	5042	enclosure5007																			0	43	763	Undated	Heavily burnt flint	2.2
5		5017		ditch	5012	5042	enclosure5007	6					13			1	1		4	2		2		5		34			BA-IA	Mostly good but somewhat mixed condition. Several different raw materials but many pieces are similar and it is technologically homogeneous. The retouched implements include the distal end of an end scraper with very well executed medium, shallow scalar retouch around its convex distal end and extending along both lateral margins. The others are all irregular and comprise a coarsely denticulated flake and 2 flakes with steep irregular retouch. The core tools comprise two coarsely denticulated spalls. A few other flakes appear to have been utilized. One of the cores is a minimally reduced single platform type, the other a globular multi-platformed type that had been reused as a hammerstone / pounder.	2.2
5		5015		ditch	5014	5009	enclosure5007																			0	52	1055	Undated	Heavily burnt flint	2.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
5		5015		ditch	5014	5009	enclosure5007	8	1			1	29			5	9	1	4			3	4	7		72			BA-IA	Mostly good but somewhat mixed condition. Several different raw materials but many pieces from similar core including a DF that refits to a core. Mostly technologically homogeneous although a very few possibly blade-based pieces. The retouched pieces comprise 2 scrapers, one an end scraper with well executed coarse , steep scalar retouch around its convex distal end, the other a side scraper with medium, moderately steep slightly denticulated retouch around its convex right margin, and also 2 flakes with smaller flakes removed from their ventral surfaces Cores are all irregularly reduced multi-platformed types. One of the CCs is a hammerstone / pounder fragment.	2.2
5		5024		NF5025	5025																					0	50	851	Undated	Heavily burnt flint	0
5		5024		NF5025	5025								7			2			3				1	1		14			BA-IA	Mixed condition and raw materials. Most if not all are later prehistoric; the CC might be a rough blade core. The retouched pieces comprise a coarse denticulate made on a squat flake, a FF with steep edge retouch and an end-scraper with extra inverse flaking. Some of the other [pieces may also have been utilized	0
5		5032		TT5033	5033																					0	4	142	Undated	Heavily burnt flint	0
5		5035		ditch/ gully	5036	5036																				0	9	80	Undated	Heavily burnt flint	7?
5		5035		ditch/ gully	5036	5036		1					3	1			1		1				1			8			Mixed	Mixed condition, raw materials and technology. Retouched implement is a badly struck thick flake with coarse denticulations / notches cut around margins	7?
5		5045	SF212	ditch	5042	5042	enclosure5007																		1	1			Undated	Spherical / squarical flaked pounder / hammerstone with all over heavy battering. 55x53x52mm 213g	2.2
5		5045		ditch	5042	5042	enclosure5007																			0	9	479	Undated	Heavily burnt flint	2.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
5		5045		ditch	5042	5042	enclosure5007						1											1		2			Meso-EBA	F is fairly thin and well struck	2.2
5		5046		ditch	5042	5042	enclosure5007																			0	17	360	Undated	16 pieces of heavily burnt flint weighing 311g and 1 fragment of quartzite weighing 49g	2.2
5		5046		ditch	5042	5042	enclosure5007		1				3			1	2		1							8			Undated	Nothing diagnostic but most pieces are fairly crudely struck. Retouched implement is a thick but narrow flake with steep retouch accentuating a blunt awl-like point on the distal end.	2.2
5		5047	<203>	ditch	5042	5042	enclosure5007							1												1			Undated	Burnt platform trimming flake, possibly Meso/ENeo?	2.2
5		5047		ditch	5042	5042	enclosure5007																			0	13	155	Undated	Heavily burnt flint	2.2
5		5047		ditch	5042	5042	enclosure5007										1									1			Undated	Heavy burnt fragment	2.2
5		5051		ditch	5048	5042	enclosure5007																			0	14	328	Undated	Heavily burnt flint	2.2
5		5051		ditch	5048	5042	enclosure5007	2					11						2			1	2			18			EBA-LBA	A few different raw materials but good condition and technologically homogeneous. The retouched pieces comprise a slightly nosed end-scraper made on a thick flake with well executed fine to medium,. steep, scalar retouch around its distal end and extending up its lateral margins. The other is 'squat' flake with a small area of fine, moderately steep scalar retouch around its convex left margin. The core is an unprepared single platform type with mostly broad flakes removed from a thermal scar surface. The Fs are all fairly squat suggestive of a later BA date but the scraper is well made and more reminiscent of EBA types. Two of the CCs are heavily burnt	2.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
5		5053		ditch	5052	5009	enclosure5007						4			1			2							7			LNeo/EBA	Different raw materials but good condition and technologically homogeneous. The retouched pieces comprise a side scraper made on a decortication blade with medium, moderately steep scalar retouch along its convex left margin, and a small squat flake with minimal flaking around its left margin accentuating a blunt spur-like piercer on its distal end.	2.2
5		5055	SF213	ditch	5052	5009	enclosure5007												1							1			LNeo/EBA	Side and end scraper made from a partially cortical flake with medium to coarse, moderately shallow scalar retouch around its convex distal and extending up its convex right margin. moderate wear.	2.2
5		5055		ditch	5052	5009	enclosure5007																			0	7	202	Undated	Heavily burnt flint	2.2
5		5055		ditch	5052	5009	enclosure5007						1													1			Undated	F is heavily burnt	2.2
5		5058		ditch	5062	5042	enclosure5007																			0	45	1361	Undated	Heavily burnt flint	2.2
5		5059		ditch	5062	5042	enclosure5007																			0	1	48	Undated	Heavily burnt flint	2.2
5		5059		ditch	5062	5042	enclosure5007												1							1			BA-IA	End scraper made on a decortication flake with rather crude medium to coarse steep scalar retouch around its convex distal end. Moderate wear, some inverse retouch / sharpening	2.2
5		5063		ditch	5066	5009	enclosure5007																			0	90	1277	Undated	Heavily burnt flint	2.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
5		5063		ditch	5066	5009	enclosure5007	3				2	12			1	2		5	1		1	4	3		34			EBA-LBA	Technologically homogeneous and some similar raw materials. Retouched implements comprise: a core tool with a coarsely and steeply 'retouched' side making a coarse denticulate; the proximal end of a flake with a few small flakes removed inversely from the break; a decortication flake with inverse shallow wide notches / coarse denticulations along both margins; a non-prismatic blade with a small notch cut into its right margin; a 'squat' flake with a small notch cut inversely into its distal end; a thick narrow decortication flake with fine/medium denticulations cut into its left margin, and a small squat' flake with fine steep scalar retouch on a short stretch of its convex distal. The core is an irregular plano-convex chunk with bifacial removals	2.2
5		5064	<205>	ditch	5066	5009	enclosure5007					1														1			Undated	Small knapping debris	2.2
5		5064	SF215	ditch	5066	5009	enclosure5007																		1	1			Undated	Globular flaked 'core' with heavy battering around all of one face and much of the other- the flake scars may have accrued from use. 60x60x42mm 182g	2.2
5		5064		ditch	5066	5009	enclosure5007																			0	103	1882	Undated	Heavily burnt flint	2.2
5		5064		ditch	5066	5009	enclosure5007	1	1				9		1		3		1					2		18			EBA-LBA	Mixed condition, raw materials and technology, but mostly later prehistoric crudely struck flakes although the prismatic blade is Meso / ENeo. The retouched implement is a blade with well executed fine to medium moderately steep scalar retouch along its straight right margin and this may also be early. One of the flakes was probably struck from a hammerstone or pounder although not the one that was recovered from this context. 2 Fs and 2 FFs are burnt	2.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
5		5067		ditch	5068																					0	13	187	Undated	Heavily burnt flint	7?
5		5072		solution hollow/ sink hole	5071																					0	55	1316	Undated	Heavily burnt flint	6.1
5		5072		solution hollow/ sink hole	5071			7				1	22				4		1				6	2		43			BA-IA	Mostly in a poor condition and mixed raw materials although nearly all appear to be later prehistoric. The retouched implement is a large flake with crude, coarse, steep scalar retouch along part of its left margin. Many other pieces may have also been retouched but is masked by post-depositional damage. The cores include two small extensively but irregularly reduced multi-platformed types and a minimally worked narrow flake core which could be earlier but shows very little skill. 2 Fs and a CC have been used or struck from hammerstone / pounders.	6.1
5	H8	409	Tr6	??																		1							Meso/ENeo	Split, possibly deliberately 'quartered', nodular fragment with a short series of blades removed from one side. very battered. 537g	
6	S2	3803	Tr13	Ditch	3804																						1	26	Undated	Heavily burnt flint fragment	2.2.1
6	S2	3805	Tr8	Ditch	3806																						1	11	Undated	Heavily burnt flint fragment	2.2.1
6		6021	TP1	Na6021																						0	1	33	Undated	Heavily burnt flint	3
6		6021	TP1	Na6021									1													1			Meso-EBA	Rather undiagnostic but well struck flake	3
7		7001		subsoil	0																					0	7	59	Undated	Variably burnt flint	8
7		7033		fire-pit	0																					0	3	47	Undated	Variably burnt flint	3?
7		7003		ditch	7005	7005																				0	11	91	Undated	Heavily burnt flint	8
7		7003		ditch	7005	7005																	1			1			Undated	Burnt possible core fragment	8

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
7		7006		post hole	7007		PG7007																			0	2	11	Undated	Variably burnt flint	8
7		7006		post hole	7007		PG7007						1													1			Neo-BA	Undiagnostic, possible light retouch on distal	8
7		7008		ditch	7011	7011		1					1													2			BA-IA	DF is very badly struck, the F is undiagnostic	8
7		7012		post hole	7013		PG7007																			0	2	14	Undated	Heavily burnt flint	4
7		7016		post hole	7017		PG7007																			0	3	14	Undated	Variably burnt flint	8
7		7018		post hole	7019		PG7007																			0	3	5	Undated	Variably burnt flint	8
7		7020		post hole	7021		PG7007	1																		1			Undated	Thin, probably quite early?	8
7		7022		post hole	7023		PG7007																			0	7	81	Undated	Heavily burnt flint	8
7		7024		post hole	7026		PG7007																			0	2	3	Undated	Heavily burnt flint	8
7		7027		post hole	7028		PG7045																			0	1	7	Undated	Moderately burnt flint	4
7		7029		firepit	7030		PG7045																			0	7	105	Undated	Variably burnt flint	4
7		7037		fire-pit	7039		PG7045																			0	6	37	Undated	Variably burnt flint	4
7		7040		fire-pit	7042		PG7045																			0	2	17	Undated	Variably burnt flint	4
7		7043		fire-pit	7045		PG7045																			0	3	12	Undated	Heavily burnt flint	4
7		7048		pit	7049		PG7045																			0	1	11	Undated	Heavily burnt flint	4
7		7050		ditch	7051																					0	4	85	Undated	Variably burnt flint	4
7		7065		ditch	7064	7011		1																		1			Neo-BA	Small, not badly struck	8
7		7066		gully	7067	7052																				0	1	17	Undated	Heavily burnt flint	4
7		7068		natural	7069	7069																				0	1	19	Undated	Heavily burnt flint	4
8	S15	3209	Tr1	Ditch	3210				1																				Meso/ENeo	Primary blade	2.3
8	S15	3209	Tr1	Ditch	3210			1																					Undated	Small, recorticated	2.3
8	S15	3209	Tr1	Ditch	3210								1																Meso-EBA		2.3

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
8	S15	3211	Tr6	Gully	3212																	1							Neo-BA	Angular chunk with flakes removed irregularly around perimeter - possible core-tool? 46g	2.3
8	S15	3213	Tr 5	Gully	3214								1																Neo-BA	Narrow but hard hammer struck	2.3
8	S15	3213	Tr 5	Gully	3214								1																Meso-EBA	Small well struck	2.3
8		8009	<350>	ditch	8008	8002						3		1				1								5			Meso/ENeo	Small knapping debris from blade-based reduction	2
9		9067		hill wash	0								2													2			Neo-BA	Both thick but not badly struck	0
9	S16	3027	Tr7	Ditch	3028			1																					Meso/ENeo	Very worn but blade-like	4
9	S16	3037	Tr13	Ditch	3038								1																Meso-EBA	Large, well struck, curved profile	2.2.1
9		9002		pit	9001		PG9020								1											1			Meso/ENeo	Complete	1
9		9007		pit	9003		PG9020						1						1							2			Neo-BA	Large thick flakes. retouched has a few flakes removed inversely from right margin making a double notch / coarse denticulate	1
9		9009	<400>	pit	9008		PG9008					2	1													3			Meso-EBA	Knapping debris, but quite blade-based.	1
9		9009		pit	9008		PG9008						8		1		1									10			LNeo/EBA	Similar raw materials, at least two flakes REFIT and others might be from the same core. One flake burnt	1
9		9011	<401>	pit	9010		PG9008					1	1													2			Meso-EBA	Rather undiagnostic but well struck flake	1
9		9013		pit	9012		PG9008						2						1							3			Neo-BA	Both Fs rather irregular, retouched is a side scraper made on a thick flake	1
9		9028		ditch	9026	9026							1													1			Neo-BA	Reasonably well struck	6.1
9		9036	SF401	ditch	9035	9035													1							1			Neo-BA	Narrow flake with crude bifacial retouch along both lateral margins forming denticulated edges	Prehistoric
9		9036		ditch	9035	9035							1													1			Neo-BA	Rather irregular but not badly struck	Prehistoric

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
9		9050	SF402	ditch terminus	9049	9035													1							1			Meso-EBA	End scraper made on a small narrow flake or blade with fine slightly invasive retouch around distal.	Prehistoric
9		9050		ditch terminus	9049	9035													3							3			Neo-BA	Side scraper and coarsely denticulated flake both made on thick irregular flakes, and a more finely produced end scraper	Prehistoric
9		9052		natural	9051		Trees9065								1	2										3			Meso-EBA	One non-prismatic blade is plunged	1
9		9062		natural	9061		Trees9065						1													1			Undated	Thick core shaping flake	1
9		9076		ditch	9074	9074							1		1											2			Meso/ENeo	Nice blade, small undiagnostic F	1
9		9087	SF403	natural	9086		Trees9065															1				1			Meso/ENeo	Classic 'front and back' blade core with platforms set at right angles.	1
9		9097		pit	9096								2										1			3			Neo-BA	Undiagnostic	2?
9		9099		ditch	9098	9100				1																1			Meso/ENeo	Very chipped	7
9		9103		ditch	9102	9100											1									1			Meso/ENeo	Distal end of a prismatic blade or BLF?	7
9		9126		ditch	9125	9125			1																	1			Meso-EBA	Probably systematic	6.1
9		9168		ditch	9167	9167									1											1			Meso/ENeo	From opposed platform core. Rather chipped	6.1
9		9173		pit	9172									1					1							2			Meso/ENeo	Burin made on the mesial section of a large prismatic blade and with longitudinal burin spall removed from proximal break. The distal break may also have been used as an graver but has no burin removals	5
9		9219		ditch	9218	9218	ditches9205																			0	2	7	Undated	Heavily burnt flint	6.1
9		9219		ditch	9218	9218	ditches9205						1													1			Neo-BA	Small, a bit 'squat'	6.1

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
9		9232		ditch	9231	9309	ditches9320						1	1	2											4			Meso/ENeo	Similar technology but different raw materials and variable condition	6.2
9		9250		ditch	9249	9309	ditches9320																1			1			Undated	Moderately burnt ?core fragment	6.2
9		9255		pit/ hollow	9254		PG9254																			0	1	3	Undated	Heavily burnt flint	7
9		9324		pit	9323		PG9254																			0	1	19	Undated	Heavily burnt flint	7
9		9324		pit	9323		PG9254	2																		2			Undated	Undiagnostic - one is in a chipped condition and quite possibly naturally struck	7
9		9336		pit	9332																					0	1	10	Undated	Moderately burnt flint	6.1
9		9336		pit	9332			1																		1			Neo-BA	Thick - possibly later prehistoric?	6.1
9		9452	SF422	ditch	9451		ditches9451						1													1			Undated	Undiagnostic although thin and well struck	6
9		9478		ditch/ hollow	9477		ditches9520						2			1										3			Meso-EBA	The non-prismatic blade is large (>110mm in L) and made from a distinctive opaque red flint, could even be Upper Palaeolithic. One of the Fs is also of opaque red flint. All rather chipped	6.3
9		9000		?															1							1			Neo-BA	Large decortication flake with fine retouch forming an end scraper	
9		99999		US				1																		1			Undated	Fairly thick	
10	C1	2827	Tr27	Ditch	2828								1																Meso-EBA	Thin, well struck	
10	C1	2841	Tr25	Ditch	2842								1																Meso-EBA	Small platform trimming flake	
10	C1	2843	Tr25	Buried soil	2844								1																Neo-BA	Badly detached	
10	C1	2843	Tr25	Buried soil	2844								1																Neo-BA	Rather 'squat', possible inverse retouch but could be post-depositional	
10	C1	2863	Tr26	Ditch	2863								1																Meso-EBA	narrow, almost blade-like	
10	C1	2866	Tr26	Ditch	2867												1												Meso/ENeo	Appears to be a medial section of a prismatic blade 11mm width	
10	C1	2866	Tr26	Ditch	2867																						1	3	Undated	Heavily burnt flint fragment	

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
10	C1	2868	Tr26	Ditch	2869								1																Meso-EBA	Almost blade-like	
10	C1	2868	Tr26	Ditch	2869										1														Meso/ENeo	Complete 39x16x5	
10	C1	2868	Tr26	Ditch	2869														1										?LNeo	Large end scraper made on a thick flake with broad steep convex scalar retouch around its distal and some inverse working along its right margin. 60x58x25mm	
10	C1	2868	Tr26	Ditch	2869								1																Neo-BA	Rather 'squat'	
10	C1	2868	Tr26	Ditch	2869								1																Undated	Small	
10	C1	2868	Tr26	Ditch	2869								1																Undated	Small trimming chip	
10	C1	2868	Tr26	Ditch	2869						1																		Meso/ENeo	Struck transversely across the face of a blade core	
10	C1	2868	Tr26	Ditch	2869			1																					Undated		
10		10138		ditch	10136	10050	enclosure10201																1			1			Undated	Possibly a naturally fractured chunk	6.2
10		10144		ditch	10145	10263	enclosure10201						1													1			Meso-EBA	Rather chipped, almost blade-like	6.2
10		10170		pit	10168		PG10199																			0	1	2	Undated	Heavily burnt flint	8
10		10170		pit	10168		PG10199	1					1													2			Meso-EBA	F is thin and well struck. DF non-descript	8
10		10224		pit	10223									1	1											2			Meso/ENeo	prismatic blade from opposed platformed core. F is small and narrow	8
10		10227		pit	10225		PG10199	1											2							3			Neo-BA	Two unremarkable side and end scrapers with fine edge retouch	5
10		10258		pit	10255								2													2			Meso-EBA	Both fairly narrow and well struck	6.1
10		10295		ditch	10293	10333	enclosure10201						1	1												2			Meso-EBA	Neither very diagnostic	6.2
10		10322		pit	10318		PG10370												1							1			Neo-BA	Side scraper made on a broad well struck flake with inverse slightly invasive retouch	6.1

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
																													along its right convex margin.	
10		10368		natural	10369		PG10290							1												1			Meso-EBA	flake fragment is also possibly a BLF	6.1
10		10404		pit	10402			1	1				1			1			1							5			Neo-BA	Short-end scraper made on a cortical flake. Mixed condition, nothing very diagnostic.	6.1
10		10444		pit	10443		PG10290												1							1			Neo-BA	End-and-side scraper made on an irregular flake.	6.1
10		10447		natural	10448		PG10510						1													1			Meso-EBA	Thin, probably quite early?	2
10		10463		ditch	10462	10472							1													1			Neo-BA	Irregular, possible edge retouch?	6.3
10		10515		natural	10514		PG10510								1											1			Meso/ENeo	Good condition, proximal end missing	2
10		10000	SF453	?															1							1			?LNeo	Double ended scraper made on a large cortical flake with	
10		10000	SF462	?															1							1			?LNeo	Short end scraper made on large cortical flake with symmetrical arced working edge	
10		10000	SF468	?															1							1			?LNeo	Side-and-end scraper with retouch on both lateral margins and a slightly 'nosed' distal edge	
10		10000	SF469	?															1							1			?LNeo	Short end scraper with a fine relatively shallow working edge	
10		10000		?															1							1			?LNeo	Edge trimmed large narrow almost blade-like flake	
11		11008	506>	pit	11007							1														1			Undated	Good condition but undiagnostic	6.1
11		11026		ditch	11025												1									1			Undated	Possible prismatic blade or BLF fragment	8
11		11028		ditch	11027								1													1			Neo-BA	Undiagnostic, not particularly well struck	8
11		11063		pit	11060																					0	2	41	Undated	Heavily burnt flint	6.1
11		11063		pit	11060										1											1			Meso/ENeo	Lightly burnt	6.1
11	R1	2600	Tr5	U/S									1																Meso-EBA	Well struck quite possibly a scraper but is very chipped and abraded	

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
11	R1	2601	Tr2	subsoil									1																Meso-EBA	Narrow	
12		12050		post hole	12050		DG12018																			0	1	28	Undated	Heavily burnt flint	6.1
12		12141		ditch	12142	12142																				0	3	44	Undated	Heavily burnt flint	8
12		12141		ditch	12142	12142		1					1		1											3			Meso/ENeo	prismatic blade may have very light retouch along its lateral margins and the F is narrow and may have blunting cf for use as knife.	8
12		12167		pit	12168		PG12095	1																		1			Undated	Undiagnostic	6.1
12		12179		post hole	12178	12042	DG12018						1													1			Meso-EBA	Small but well struck and lightly burnt	6.1
12		12181		post hole	12180	12042	DG12018								1											1			Meso/ENeo	Distal missing	6.1
12		12196		pit	12195		PG12233																			0	3	66	Undated	Variably burnt flint	6.1
12		12213		gully	12212	12142																				0	1	2	Undated	Heavily burnt flint	8
12		12232		pit	12231		PG12095										2		1							3			Neo-BA	Steeply retouched thick cortical flake fragment. . Very chipped	6.1
12		12235		NF12237	12237		PG12095																			0	33	325	Undated	Variably burnt flint	6.1
12		12235		NF12237	12237		PG12095	1					1	1	1	1						2				7			Meso/ENeo	Good condition, one of the BLFs REFITS to one of the cores. The cores comprise a classic front type A2 micro-blade core and a thick flake with a few blades removed from one side cf pseudo-burin.	6.1
12		12236		NF12237	12237		PG12095																			0	7	61	Undated	Variably burnt flint	6.1
12		12240		ditch	12238																					0	2	33	Undated	Heavily burnt flint	7
12		12256		Na12256	12256																					0	1	43	Undated	Heavily burnt flint	0
12		12275		pit	12272																					0	2	21	Undated	Heavily burnt flint	8
12		12288		ditch	12289		DG12295																			0	1	23	Undated	Heavily burnt flint	8

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
12		12288		ditch	12289		DG12295								1											1			Meso/ENeo	Appears to have very fine retouch / heavy use-wear along right margin?	8
12		12313		ditch	12312		DG12295																			0	1	12	Undated	Heavily burnt flint	8
13		13064	<602>	pit	13063								1													1			Undated	Non-descript 'Janus' flake	5
13		13079		ditch	13080	13208	enclosures13157																			0	2	14	Undated	Heavily burnt flint	6.1
13		13079		ditch	13080	13208	enclosures13157						1													1			Undated	Irregular flake - heavily burnt	6.1
13		13139		ditch	13140	13140	enclosures13157						1													1			Undated	Small, undiagnostic	6.1
13		13143		ditch	13144	13140	enclosures13157																			0	3	37	Undated	Moderately burnt flint	6.1
13		13158		gully	13158														1							1			MBA-IA	End scraper made on a large poorly detached flake with coarse, steep, denticulated retouch around its convex distal and sporadic inverse coarse retouch. Moderate to heavy wear. Lightly burnt. 47x52x14mm	6.1
13		13161		gully	13160		enclosure13097																			0	1	23	Undated	Heavily burnt flint	6.1
13		13171		pit	13170								1													1			Meso-EBA	Rather non-descript but thin	6.1
14	R7	4006	Tr6	Ditch	4005														1										Meso-EBA	Distal end of a finely worked end-scraper with a symmetrical working edge. >26x30x7mm	3
15		15006	<701>	pit/ hollow	15004							1														1			Undated	Small knapping shatter	0
15		15010		NF15009	15009																		1			1			Meso/ENeo	thermally shattered core fragment probably a blade core	2.2
16		16040		pit	16039		PG16039						1													1			Neo-BA	Quite broad but rather undiagnostic	6.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
17		17571		Layer	0			1																		1			Undated	Undiagnostic	7
17	G6	5007	Tr3	Ditch	5008								1																MBA-IA	Rather 'squat'	2.2
17	G6	5055	Tr24	Ditch	5056														1										Meso-EBA	End scraper: partially cortical flake with medium, steep convex scalar retouch around its wide distal end (actually look more like a side-scraper). 29x40x10mm	2.2
17	G6	5055	Tr24	Ditch	5056												1												Undated		2.2
17	G6	5067	Tr14	Ditch	5066								1																Undated	Badly detached	7?
17	G6	5067	Tr14	Ditch	5066										1														Meso/ENeo	Burnt, both ends missing	7?
17	G6	5067	Tr14	Ditch	5066												1												Undated	Fragment of a thin flake	7?
17	G6	5067	Tr14	Ditch	5066												1												Undated	Fragment of a thin flake	7?
17	G6	5067	Tr14	Ditch	5066								1																Meso/ENeo	Narrow and blade-like	7?
17	G6	5067	Tr14	Ditch	5066								1																Meso-EBA	Narrow, well struck	7?
17	G6	5067	Tr14	Ditch	5066								1																Meso-EBA	Small	7?
17	G6	5067	Tr14	Ditch	5066								1																Meso-EBA	Thick but well struck	7?
17	G6	5067	Tr14	Ditch	5066										1														Meso/ENeo	Wide: 36x17x3mm	7?
17	G6	5086	Tr21	Ditch	5086			1																					Undated	Thick	
17	G6	5091	Tr22	Pit	5092								1																Meso-EBA	Thin, well struck, almost blade-like	
17	G6	5093	Tr22	Hedge	5094																		1						Undated	Shattered chunk, possibly a core or core-tool	
17	G6	5113	Tr17	Pit	5112								1																Meso-EBA	Well struck, distal missing	
17		17000		ditch	17000	17000							3		1				5			1				10			Meso-EBA	Mixed condition and raw materials. Retouched implements comprise: Long-end scraper made on a non-prismatic blade, three side-and-end scrapers, one short end scraper Core is a multi-platformed blade core	6.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
17		17028	<800>	pit	17027				1			4														5			Meso-EBA	Small blade and(some blade-based?) knapping debris	6.1
17		17073		pit	17071		PG1707 4						1						2							3			LNeo/EBA	Retouched are both knives, one made from a large sturdy blade with medium to coarse shallow scalar retouch at distal end of left margin and cortex 'backing' on right margin. Other is a tear-drop shaped flake with fine retouch around convex right margin and a steeply edged left margin. The F is poorly struck	1
17		17091		ditch	17089	17036								1												1			Meso-EBA	Rather thick with a cortical platform	6.3
17		17108		ditch	17107	17105	ditch170 47						1						1							2			LNeo/EBA	Well made side-and-end scraper, possibly laterally split after manufacture. F is non-descript	2.2 ?
17		17119		D17118	17118		ditch171 60						1	1												2			Meso-EBA	Poorly detached F and heavily burnt and recorticated prismatic blade or BLF fragment	1
17		17121	<809>	pit	17120		PG1707 4						4						1							5			LNeo/EBA	End scraper made on a cortical flake with well-executed medium, moderately steep scalar retouch around its convex distal end. Minimal wear. The Fs are mostly small knapping debris in a good condition, some could be from the same raw materials.	1
17		17121		pit	17120		PG1707 4						1						1			1				3			LNeo/EBA	Well made end-and-side scraper with coarse, shallow invasive retouch forming a symmetrically arced edge. The core is an A2 type extensively reduced lenticular thermal spall. Odd shape, similar to the scraper, - possibly a core-tool scraper? Large wide non-descript F	1
17		17123		pit	17122		PG1707 4	1					5						1							7			LNeo/EBA	Well made side scraper with medium, shallow, semi-invasive invasive retouch forming a symmetrically arced edge. The Fs are in a good condition and although variable are mostly rather poorly struck	1
17		17136	<811>	pit	17135		PG1707 4						2						1							3			Meso-EBA	All three are burnt but to different degrees. Edge trimmed narrow flake with very fine retouch / serrations along its straight right	1

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
																													margin, heavily burnt	
17		17144		ditch	17144	17105	ditch17047						2													2			Neo-BA	One is well struck, the other poorly	2.2?
17		17145		ditch	17144	17105	ditch17047						1													1			Undated	Thick core shaping flake	2.2?
17		17166		ditch	17164	17006	enclosure17006																			0	1	5	Undated	Heavily burnt flint	6.1
17		17166		ditch	17164	17006	enclosure17006	1					3													4			Neo-BA	Disparate group of mostly poorly struck Fs	6.1
17		17167		ditch	17164	17006	enclosure17006																			0	1	88	Undated	Heavily burnt flint	6.1
17		17167		ditch	17164	17006	enclosure17006						1						1							2			Neo-BA	End scraper with fine slightly invasive scalar retouch around convex distal end. Non-descript F	6.1
17		17182		ditch	17178	17006	enclosure17006						2													2			Neo-BA	One F is large core modification in a very battered condition, the other is non-descript	6.1
17		17190		ditch	17189	17116		1					7			1			1							10			BA-IA	Collection of later prehistoric Fs, good condition and some similar raw materials, possibly in-situ or not re-deposited from far. Retouched is piercer made on a 'squat' flake with a small notch cut into its distal end forming a awl-like sharp point. Some of the other flakes also have a few small flakes detached form their edges and might represent some kind of informal tool	1
17		17192		ditch	17191	17191													1							1			BA-IA	Edge retouched large flake with sporadic inverse and normal fine to medium steep scalar retouch around its margins. Also has multiple incipient Hertzian cones on its dorsal face.	6.2
17		17198		ditch	17197	17011		1																		1			Neo-BA	Reasonably well struck but very chipped	6.1
17		17203		ditch	17201	17191		1							1											2			Meso-EBA	DF is undiagnostic, the prismatic blade is	6.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
																													thick and partially cortical	
17		17206		pit	17206								1													1			Neo-BA	Not very well struck	0
17		17253		pit	17252														1							1			Neo-BA	Flake fragment in a chipped condition which has what appears to be a notch and steep retouch on its right margin. Could be a notch, a scraper type implement or even a spurred piercer	6.2
17		17257		ditch	17256	17340	enclosure17078						2													2			Neo-BA	Both undiagnostic but reasonably well struck flakes	6.2
17		17264		ditch	17261	17006	enclosure17006												1							1			Meso-EBA	Notch / edge retouched implement made on a large non-prismatic but thin and well struck blade with inverse steep scalar retouch forming two shallow notch along its left margin. Chipped condition	6.1
17		17286		hollow	17287	17340	enclosure17078						1													1			Neo-BA	Thick but not badly struck	6.2
17		17293		ditch	17292	17242													1							1			Neo-BA	Edge retouched flake with fine to medium, steep scalar retouch along its sinuous left margin. Cortex 'backing along right margin	6.1
17		17320		natural	17319		PG17212																			0	1	10	Undated	Heavily burnt flint	1
17		17320		natural	17319		PG17212						2						1							3			BA-IA	Coarse denticulate made on a large flake with irregular medium to coarse steep scalar retouch forming coarse denticulations along its right margin and distal end. The F may also be retouched but this could be post-depositional damage. One of the Fs is almost blade-like and could be earlier.	1
17		17325		ditch	17325	17078	enclosure17078						3													3			Neo-BA	Large sturdy flakes, very chipped condition, one is moderately burnt	6.2
17		17413		ditch terminus	17412	17340	enclosure17078			1			3													4			Meso-EBA	All in a chipped condition, Fs are fairly well struck and some almost blade-based but quite robust	6.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
17		17429		pig skeleton	17428			1																		1			Undated	Undiagnostic	6.2
17		17430		pit	17428							1														1			Undated	Undiagnostic	6.2
17		17449		ditch	17448	17000		1					1	2		1	1									6			Mixed	Mixed condition, raw materials and technology. Includes probably Meso/ENeo pieces as well as later, Neo-BA types. Some of the Fs could be retouched but cannot be positively identified as such due to post-depositional damage	6.2
17		17451		pit	17452		PG17296																			0	3	11	Undated	Heavily burnt flint	6.1
17		17487		ditch	17488		track17510								1											1			Meso/ENeo	Well made but quite robust and partially cortical. Very chipped condition. 77x18x7mm	7
17		17495		pit	17496		PG17296																			0	26	515	Undated	Heavily burnt flint	6.1
17		17495		pit	17496		PG17296										2									2			Undated	Both heavily burnt undiagnostic fragments	6.1
17		17495		pit	17496		PG17296						3						1				1			5			Neo-BA	All in good condition. Edge trimmed narrow flake with sporadically bifacial medium, steep scalar retouch (blunting?) along left margin and damage along right suggesting use as a knife. Not completely diagnostic but most reminiscent of LNeo types	6.1
17		17494		natural	17498		PG17296						2													2			Neo-BA	Undiagnostic	6.1
17		17554		ditch	17553	17600																1				1			Undated	Thermally fractured chunk with a few flakes, one of blade proportions, removed from one side. Probably abandoned due to frequent thermal flaws.	6.1
17		17613		ditch	17614	17322							1													1			LNeo/EBA	Narrow, well struck almost non-prismatic blade, possibly edge retouched but chipped condition makes positive identification]action difficult	6.2
17	G6	5001	Tr26	subsoil									1																Neo-BA	Badly detached	
17	G6	5070	Tr14	??									1																Meso-EBA	Well struck	0

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
17	G6	5070	Tr14	??									1																Meso-EBA	Well struck	0
18	G7	5211	Tr3	Ditch	5209																		1						Undated	Shattered core?	
18		18002		pit	18001		PG18001							1												1			Meso-EBA	Probably Meso/ENeo but quite sturdy	6.3
18		18018		ditch	18017	18009		1					1													2			Undated	Undiagnostic	7
18		18061		pit	18060								1													1			Undated	Laterally split	1
18		18065		pit	18064		PG18100							1												1			Meso-EBA	Probably Meso/ENeo but quite sturdy	6.2
18		18074		pit	18073		PG18034		1				1		1											3			Meso/ENeo	DB has slight cresting. All in good condition	1.1
18		18105		pit	18104		PG18034																			0	1	5	Undated	Heavily burnt flint	1.1
18		18105		pit	18104		PG18034		1				2		1				1			1				6			Meso/ENeo	Denticulated scraper made on the broken distal end of a narrow flake with coarse, steep, scalar retouch around denticulated convex distal end. Moderate wear. Core is a narrow flake single platform A2 'front' type made on a small nodular cobble. One of the Fs is very big: 75x85x30mm. All fairly good condition.	1.1
18		18120		pit	18119		PG18001																1			1			Undated	Thermally (frost) disintegrated core fragment	6.2
18		18124		natural	18122								1		1											2			Meso/ENeo	prismatic blade is systematically produced although the F is badly detached and could be later	1.1
18		18125		natural	18122			2																		2			Neo-BA	Both undiagnostic and in a chipped condition	1.1
18		18126		natural	18122										1				1							2			Meso-EBA	End scraper made on a well struck flake with minimal, fine to medium, steep scalar retouch around its convex distal end. Both pieces are in a chipped condition.	1.1
18		18127		natural	18122								2													2			Neo-BA	Undiagnostic, probably later rather than earlier. Both somewhat chipped	1.1

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
19		19024	SF906	unstratified	0																	1				1			Neo-BA	Irregular two platformed core made on a rounded cobble with a few small flakes removed from either end. One end resembles the working edge of a scraper and this may be a (?later prehistoric) core-tool. Very chipped	0
19		19209		Na19209	0														1							1			LNeo/EBA	Elaborate scraper or knife made on a narrow flake with coarse, moderately steep semi-invasive scalar retouch along both margins and extending around both ends. Similar to plano-convex knives	6.2
19	P1	5807	Tr3	Gully	5808												1												Undated	Burnt fragment of a large flake	
19	P1	5807	Tr3	Gully	5808								1																MBA-IA	Classic 'squat' flake	
19	P1	5807	Tr3	Gully	5808								1																Meso-EBA	Thin	
19	P1	5809	Tr3	Ditch	5810								1																Neo-BA	Thick	
19	P1	5812	Tr4	Pit	5811								1																Neo-BA	Rather 'squat', possible shallow inverse retouch but could be post-depositional	
19	P1	5814	Tr4	Pit	5813								1																Undated	Small quite cortical	
19	P1	5827	Tr12	Pit	5828															1									MBA-IA	Thermally fractured nodular fragment with possible steep retouch forming a concave scraping-type edge at one end. 45x40x20mm	
19	P1	5832	Tr8	Ditch	5834																	1							Meso/ENeo	Angular nodular fragment with flakes and some blades removed from numerous platforms, some attempts at creating new platforms but appears largely unsuccessful. 43g	
19	P1	5832	Tr8	Ditch	5834								1																Meso-EBA	Core edge-trimming flake	
19	P1	5832	Tr8	Ditch	5834											1													Meso-EBA	Distal missing	
19	P1	5832	Tr8	Ditch	5834																						5	49	Undated	Heavily burnt flint fragments	
19	P1	5832	Tr8	Ditch	5834											1													Neo-BA	Narrow but thick and badly struck	
19	P1	5832	Tr8	Ditch	5834								1																Meso-EBA	Narrow, well struck	

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
19	P1	5832	Tr8	Ditch	5834										1														Meso/ENeo	Proximal end of probable blade	
19	P1	5832	Tr8	Ditch	5834								1																Neo-BA	Small	
19	P1	5832	Tr8	Ditch	5834								1																Neo-BA		
19	P1	5844	Tr1	Ditch	5845										1														Meso/ENeo	Proximal end missing. Possible small notch cut into right margin	
19	P1	5844	Tr1	Ditch	5845			1																					Undated		
19	P1	5848	Tr9	Ditch	5846								1																MBA-IA	Fairly 'squat'	
19	P1	5848	Tr9	Ditch	5846								1																MBA-IA	Fairly 'squat'	
19	P1	5848	Tr9	Ditch	5846			1																					Undated	Large, started to plunge	
19	P1	5848	Tr9	Ditch	5846			1																					Undated	Possible light edge trimming along left margin but could be post-depositional	
19	P1	5848	Tr9	Ditch	5846								1																Meso-EBA	Thick but reasonably well struck	
19	P1	5854	Tr11	Quarry	5853								1																Neo-BA	Fairly 'squat'	
19	P1	5854	Tr11	Quarry	5853								1																Neo-BA	Fairly 'squat'	
19	P1	5854	Tr11	Quarry	5853																						1	61	Undated	Heavily burnt flint fragment	
19	P1	5854	Tr11	Quarry	5853								1																Meso-EBA	Narrow, proximal end missing	
19	P1	5854	Tr11	Quarry	5853								1																Meso-EBA	Reasonably well struck	
19	P1	5854	Tr11	Quarry	5853			1																					Meso-EBA	Reasonably well struck	
19	P1	5854	Tr11	Quarry	5853								1																Undated	Thin flake fragment	
19	P1	5854	Tr11	Quarry	5853								1																Meso-EBA	wide but thin, possible edge trimming	
19	P1	5854	Tr11	Quarry	5853			1																					Undated		
19	P1	5859	Tr6	Pit	5858										1														Meso/ENeo	Prismatic but detached badly	
19	P1	5863	Tr10	Ditch	5862																	1							Meso/ENeo	Extensively reduced producing flakes and blades from a number of platforms on both the front and back of a rounded cobble. 58g	

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
19		19003		pit	19002										1											1			Meso-EBA	Fairly chunky and not systematic	6.2
19		19019		ditch	19018														1							1			Neo-BA	Side-and-end scraper with well executed medium, moderately steep scalar retouch around convex left margin and distal end. Moderate wear.	6.2
19		19032		ditch	19030	19106									2											2			Meso/ENeo	Both systematic	6.2
19		19036		ditch	19035								1													1			BA-IA	Poorly detached	6.2
19		19038		pit	19037																					0	2	47	Undated	Heavily burnt flint	6.2
19		19038		pit	19037					1			1		1		1									4			Meso/ENeo	Variable condition and raw material but most blade-based	6.2
19		19039		pit	19037									2												2			Meso/ENeo	Both chipped. One has possible inverse retouch forming a shallow notch	6.2
19		19056		pit	19055		PG19050						1	1		1										3			Meso-EBA	Mixed condition, the BLF is probably Meso/ENeo but the others could be later	1
19		19060		ditch	19059	19014							2			1										3			Neo-BA	All rather chipped. One of the Fs is large with a facetted platform, possibly LNeo, the others are undiagnostic, possibly later	6.2
19		19062		ditch	19061	19061							2													2			Neo-BA	One F is well struck, the other very badly. Both chipped	6.2
19		19064	<903>	pit	19063		PG19050	3				5	4				3	1	2				1			19			Neo-BA	Two end scrapers, one made on a partially cortical F with fine to medium, rather irregular steep scalar retouch around its convex distal end, the other has fine to medium steep scalar retouch around its slightly 'nosed' distal end and extending partly up both lateral margins. Both show moderate wear. The rest of the assemblage is rather undiagnostic but rather crude although a LNeo/EBA date may be most appropriate. It is in a mostly good but somewhat variable condition and the CC is burnt. Some pieces are likely to have been struck from the same core	1

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
19		19064		pit	19063		PG19050						1						1							2			Neo-BA	Side-and-end scraper with medium, moderately steep semi-invasive scalar retouch around convex right margin and steeper scalar retouch around left margin and forming a slight 'nosed' on that the distal end. Moderate wear. F is relatively well struck	1
19		19072		ditch	19071	19237							1													1			Neo-BA	Wide, undiagnostic	6.2
19		19074		pit	19073																					0	1	20	Undated	Heavily burnt flint	6.2
19		19074		pit	19073			1					2			1							1			5			Mixed	Mixed raw materials, condition and technology, although mostly later prehistoric looking	6.2
19		19078		ditch	19077	19119													1							1			LNeo/EBA	Side-and-end scraper made on a narrow flake with moderate to coarse, steep scalar retouch around slightly convex distal and extending part way up both margins where it becomes moderately shallow and slightly invasive. Moderate wear and some crushing to edges. Flake is small and almost 'squat'	6.2
19		19080		pit	19079		PG19400		1					2												3			Mixed	One of the BLF is M/Early Neolithic like, the other more chunky and could be later although not necessarily so.	1
19		19082		pit	19081		PG19050						1													1			Neo-BA	Large, quite chunky	1
19		19109		ditch	19108	19119								1												1			Meso-EBA	Quite chunky	6.2
19		19110	<906>	pit	19112			1					1													2			Meso-EBA	Undiagnostic, F is quite narrow	6.2
19		19110		pit	19112								2													2			Neo-BA	One F is a typical 'squat', the other is better struck. Both are quite chipped	6.2
19		19118		pit	19117				1				4													5			Mixed	Mixed raw materials, condition and technology, although DB has possible inverse edge retouch	6.2
19		19128		ditch	19127	19237							1													1			Neo-BA	Undiagnostic	6.2
19		19132		ditch	19131	19237							1													1			BA-IA	Thick flake, possibly edge retouched	6.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
19		19136		pit	19135								1													1			Neo-BA	undiagnostic	6.2
19		19140		natural	19139			30		2		18	150		7	7	51	16								281			Neo	Contemporary biface / axe reduction debris	1.1
19		19142		natural	19141																					0	3	7	Undated	Heavily burnt flint	1
19		19142		natural	19141			1					1		2	1										5			Meso/ENeo	Mostly good condition but different raw materials	1
19		19150		natural	19144												1									1			Undated	Undiagnostic	0
19		19155		pit	19154									1												1			Meso/ENeo	Distal missing, possibly a prismatic blade	6.2
19		19159		pit	19158		PG19050								1											1			Meso/ENeo	Partially cortical. Possible light retouch but chipped	6.2
19		19169		ditch	19168	19106									1											1			Meso/ENeo	Mesial section. Possible light retouch but chipped	6.2
19		19171		ditch	19170	19106		1																		1			Neo-BA	Undiagnostic	6.2
19		19172		ditch	19172								1													1			BA-IA	Rather 'squat'	6.2
19		19180		ditch	19179	19237								1												1			Meso/ENeo	Distal missing	6.2
19		19203		pit	19202			2					2			1		1								6			Mixed	Nothing very diagnostic but probably mixed date	6.2
19		19221		ditch	19220	19027			2								2									4			Undated	Undiagnostic. One of the flake fragments is burnt	6.2
19		19223		pit	19222		PG19050					1	3													4			Meso-EBA	All thin and well struck, in a good condition and possibly from the same core.	6.2
19		19234		post hole	19234		PHG19234						1						1							2			BA-IA	Edge retouched 'squat' flake with inverse irregular medium moderately shallow scalar retouch on convex distal end. Moderate wear/ Both pieces chipped	2
19		19268	<917>	ditch	19267	19247											1									1			Undated	Undiagnostic	2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
19		19268		ditch	19267	19247													1							1			Neo-BA	Side-and-end scraper with medium, moderately shallow scalar retouch around convex right margin and distal end. Moderate wear.	2
19		19270		pit	19269		PG1905 0						1													1			Neo-BA	Well struck, slightly chipped	6.2
19		19272		natural	19271				1			1	1	1	4	2										10			Meso/ENeo	Technological homogeneous but different raw materials and whilst the condition is mostly good there is some variation and one of the non-prismatic blades is burnt	0
19		19277		ditch	19278	19280																				0	3	26	Undated	Heavily burnt flint	6.2
19		19277		ditch	19278	19280							3													3			Neo-BA	One F is thin and curved cf 'biface thinning flake' the other two are thicker and more 'squat' like	6.2
19		19279		ditch	19280	19280		2					4						1							7			Neo-BA	Side scraper with minimal, medium, moderately steep scalar retouch on part of convex right margin. moderate wear Mixed condition, raw materials and technology but most rather crude and probably MBA-IA	6.2
19		19281		ditch	19282	19280		3			1		1		1	1			1			1				9			Mixed	Circular scraper with fine to medium, moderately steep to semi-invasive retouch around c. 90% of circular margins. Moderate wear. Not unlike 'thumbnail' types. core rejuvenation flake was struck transversely across the platform / core face angle. Core is a small extensively work multi-platformed type, producing small thick flakes.	6.2
19		19288		pit	19289																					0	3	71	Undated	Heavily burnt flint	6.2
19		19288		pit	19289								6						1							7			Neo-BA	End scraper with medium, steep scalar retouch around convex distal end. Moderate wear. Most of the Fs are in reasonably good condition LNeo-BA types	6.2
19		19302		pit	19302		PG1943 2						1				1									2			Meso/ENeo	Small trimming flake and flake fragment is possibly the proximal end of a prismatic blade	1
19		19312		ditch	19311	19106							2													2			Neo-BA	One F is badly detached, the other has a	6.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
																													facetted platform	
19		19316		ditch	19315	19315		1					6				1									8			Neo-BA	Rather disparate group but nothing diagnostic. Probably multi-period	2
19		19324		ditch	19323	19319	DG1942 1							1					1							2			Mixed	Edge retouch thick poorly struck flake with inverse irregular shallow scalar retouch / crushing around most of both straight margins. Moderate wear. Most probably later prehistoric but the BLF is earlier and in a chipped condition	2
19		19330	<919>	pit	19331						1															1			Undated	Trimming flake, possibly from blade-based reduction	6.2
19		19333	SF913	pit	19332		PG1940 0												1							1			Neo	Edge trimmed lanceolate shaped flake with fine abrupt retouch along both straight margins. Moderate wear.	1
19		19333		pit	19332		PG1940 0						2				1	1								4			Meso-EBA	Not very diagnostic but both Fs reasonably well struck. Also in good condition and similar raw materials. flake fragments are both lightly burnt	1
19		19334	SF912	pit	19332		PG1940 0												1							1			Neo-EBA	End scraper made on a large thin, almost blade-like, flake with well-executed, medium, steep scalar retouch around its convex distal end	1
19		19334		pit	19332		PG1940 0	5	1			8	25		8	13	7	10	10			1	3			91			(L?) Neo	Technologically homogeneous reduction of single / few nodules and production of narrow flakes used as cutting tools. Core is a centripetally worked nodular fragment with a large flake removed from the face, similar to the Levallois-like method. All of the retouched are narrow flakes with fine abrupt retouch along parts of their margins. Also lots of small pieces of knapping waste. The assemblage is mostly in a good condition but some variation and some pieces have been burnt.	1
19		19341		ditch	19339	19339																				0	1	57	Undated	Heavily burnt flint	6.2
19		19348		ditch	19347	19347		1					9	1			2									13			Neo-BA	Mostly good condition and technologically homogeneous involving reduction of single / few nodules. Mostly fairly thick	2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
																													crudely struck flakes suggesting a later prehistoric date	
19		19350		natural	19349		PG1943 2								1											1			Meso-EBA	Large, prismatic but not necessarily very systematic.	1
19		19354		ditch	19353	19347							2			1										3			BA-IA	The non-prismatic blade is possibly earlier but very chipped	2
19		19356		ditch	19355	19421	DG1942 1						2													2			Neo-BA	Rather undiagnostic thick flakes, one of the Fs is possible edge retouched	2
19		19357		ditch	19357	19315																				0	1	4	Undated	Heavily burnt flint	2
19		19357		ditch	19357	19315												1								1			BA-IA	Irregular scraper with well executed medium, moderately steep scalar retouch around its convex striking platform. Moderate wear. Possibly a re-sharpening flake	2
19		19365		pit	19364		PG1940 0					1	2	1			2					1				7			Meso/ENeo	Extensively reduced A1 type almost pyramidal blade core. The other pieces could also be Meso/ENeo but are of different raw materials and condition	1
19		19369		pit	19367		PG1943 2	1	1				3													5			LNeo-BA	All rather thick and crude flakes	1
19		19382		ditch	19381	19247							1													1			Undated	Small, undiagnostic	2
19		19386		pit	19385		PG1940 0						1													1			Undated	Small, undiagnostic	1
19		19388		pit	19387		PG1943 2																			0	44	326	Undated	Variably but mostly heavily burnt flint	1
19		19388		pit	19387		PG1943 2						5						2							7			LNeo-BA	Both end scrapers, one made on a large thick flake with fine, steep retouch around its convex dorsal, the other on a thinner narrow flake with minimal, fine steep scalar retouch arounds its distal end. Both show moderate wear. The other Fs are variable in condition and raw materials.	1
19		19397		natural	19396		PG1943 2						1													1			Undated	Small, undiagnostic	1
19		19399		pit	19398								1													1			Meso-EBA	Thick, but well struck	6.2

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
19		19401		natural	19400		PG19400										1									1			Undated	Undiagnostic	1
19		19403	<923>	pit	19402		PG19432																			0	1	16	Undated	Moderately burnt flint	1
19		19405		natural	19404		PG19432					1		1												2			Meso/ENeo	From a micro-blade core?	1
19		19407		natural	19406		PG19432	1	1				2			1								1		6			Meso-EBA	Good condition. non-prismatic blade appears to have been utilized	1
19		19415	<924>	pit	19412		PG19432	1	1				1		1			2								6			Meso/ENeo		1
19		19415		pit	19412		PG19432																			0	4	68	Undated	Heavily burnt flint	1
19		19415		pit	19412		PG19432	7	1				49	7	15	8	3	2	2			2	7	2		105			Meso?	Technologically homogeneous, limited number of raw materials and nearly all in a good condition. Cores are a minimally reduced angular chunk with a few blades removed from one side with some blunting along the back, and an extensively reduced C type multi-platformed flake and blade core. Retouch comprise a truncated prismatic blade and a double ended burin	1
19		19416		pit	19412		PG19432		1				2	2									2			7			Meso/ENeo	Same material as from [19415]	1
19		19420		natural	19419		PG19432						1													1			Undated	Undiagnostic	1
19		19431		pit	19430		PG19432								1											1			Meso/ENeo	Small	1
19		19433		pit	19432		PG19432						9	2	3	1	2		1							18			Meso/ENeo	Technologically homogeneous, limited number of raw materials and nearly all in a good condition. Backed prismatic blade with fine abrupt retouch along its mostly straight right margin. Unworn - retouch might be blunting to aid handling	1.1

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
19		19435		pit	19434		PG1943 2						1	1												2			Meso/ENeo	The BLF has possible light retouch / utilization damage on right margin	1
19		19441		natural	19440		PG1943 2						1				1									2			Meso-EBA	Reasonably well struck	1
19	P1	5801	?	subsoil									1																Meso-EBA	Large and thin but laterally split	
19		19326		?														1								1			Neo	Denticulated large narrow flake with c. 2-4 denticulations per 10mm along part of right margin at distal end.	
19		19532		?									3				2									5			Meso-EBA	Reasonably well struck, one F has edge crushing possibly from utilization	
19		19999		unstratified				3					3			1			2							9			Mixed	Mixed condition, raw materials and technology. Leaf-shaped slightly asymmetrical arrowhead with well executed pressure flaking over both faces. One tip is missing. Circular scraper with inverse, fine, steep retouch around c. 90% of circular margins.	
	T2	1824	Tr8	Tree-throw	1823																						7	172	Undated	Heavily burnt flint fragments	
	F1a	2204	Tr1	Natural	2202																						2	14	Undated	Heavily burnt flint fragments	
	F1a	2204	Tr1	Tree-throw	2202								1																Neo-BA	Has patches of heavy chattermarking on dorsal - probably natural but cf flakes struck from flint querns	
	F1a	2204	Tr1	Tree-throw	2202								1																Neo-BA	Wide but thin	
	F1a	2208	Tr1	Pit	2207			1																					Undated		
	F1a	2212	?	Ditch	2214																						20	584	Undated	Heavily burnt flint fragments	
	F1a	2212	?	Ditch	2214								1																Neo-BA	Rather 'squat'	
	F1a	2212	?	Ditch	2214								1																Neo-BA	Thick, badly stuck	
	F1a	2212	?	Ditch	2214								1																Meso-EBA	Thin well struck	
	F1a	2218	Tr7	Ditch	2217								1																Neo-BA	Rather 'squat'	
	F1a	2218	Tr7	Ditch	2217			1																					Undated	Small thick	

Excavation Area	Evaluation Field	Context	Ref	Feature	Cut	Feature No.	Group	Decortication flake	Decortication blade	Crested blade	Core rejuvenation flake	Chip <15mm	Flake	Blade-like flake	Prismatic blade	Non-prismatic blade	Flake fragment >15mm	Flake fragment <15mm	Retouched implement	Core-tool	Flint quern fragment	Core	Conchoidal chunk	Shattered cobble	Hammerstone	Context Total	Burnt Stone (no.)	Burnt Stone (g)	Suggested Date	Comments	Period
	F1a	2218	Tr7	Ditch	2217			1																					Undated	Small thick	
	F1a	2218	Tr7	Ditch	2217								1																Meso/ENeo	Very rolled possibly a 'starch' fracture	
	F1a	2220	Tr7	Pit / tree-throw	2219																						3	96	Undated	Heavily burnt flint fragments	
	F1a	2222	Tr7	Pit / tree-throw	2221																						2	14	Undated	Heavily burnt flint fragments	
	F1a	2222	Tr7	Pit / tree-throw	2221								1																Meso-EBA	Well struck but very worn	
	F1a	2224	Tr7	Pit / tree-throw	2223																						4	31	Undated	Heavily burnt flint fragments	
	F1a	2226	Tr8	Pit	2225			1																					Undated	Wide but thin	
	F1a	2228	Tr8	Pit	2225								1																Meso-EBA	Fairly well struck	
	F1a	2228	Tr8	Pit	2225																						12	246	Undated	Heavily burnt flint fragments	
	R2A	2423	Tr3	Pit	2424																						3	45	Undated	Heavily burnt flint fragments	
	R2A	2423	Tr3	Pit	2424								1																Meso-EBA	Small but well struck	
	G4	4624	Tr8	Ditch	4622								1																Neo-BA	Poorly struck	
	T2	1800	Tr2	Unstrat?									1																Neo-BA	Badly detached	
	T2	1800	Tr2	Unstrat?									1																Meso-EBA	Distal end of a thin well struck flake	
	T2	1800	?	Unstrat?																1									MBA-IA	Large thermally shattered nodular fragment with steep very slightly concave scalar retouch on part of one side. 70x48x20mm	
	T2	1800	Tr2	Unstrat?				1																					Undated	Large, poorly struck	
	T2	1800	Tr2	Unstrat?				1																					Undated		
	T2	1819	Tr1	??																							55	1414	Undated	Heavily burnt flint fragments	
	R2A	2423	Tr3	??																							3	45	Undated	Heavily burnt flint fragments	
	R2A	2423	Tr3	??									1																Meso-EBA	Small but well struck	

C.8 Recordable Faunal Remains fragments

Context	Area	Period	Species	Element
1077	1	6.2	Horse	Loose Mandibular Tooth
1153	1	6.2	Horse	Loose Mandibular Tooth
1153	1	6.2	Horse	Loose Mandibular Tooth
1201	1	6.2	Cattle	Loose Maxillary Tooth
1248	1	6.2	Cattle	Loose Mandibular Tooth
1248	1	6.2	Cattle	Loose Mandibular Tooth
1248	1	6.2	Cattle	Loose Mandibular Tooth
1248	1	6.2	Cattle	Loose Mandibular Tooth
1252	1	6.2	Red Deer	Antler
1287	1	6.2	Cattle	Metatarsal
1308	1	6.2	Cattle	Loose Mandibular Tooth
1308	1	6.2	Cattle	Loose Mandibular Tooth
1308	1	6.2	Cattle	Loose Mandibular Tooth
1350	1	6.2	Cattle	Metatarsal
3011	1	6.2	Horse	Femur
3074	3	0	Cattle	Astragalus
3074	3	0	Sheep/Goat	Loose Maxillary Tooth
3074	3	0	Horse	Radius
3790	3	4	Pig	Metacarpal 3
4195	4	0	Horse	Scapula
4195	4	0	Sheep/Goat	Femur
4195	4	0	Sheep/Goat	Femur
4195	4	0	Sheep/Goat	Pelvis
4195	4	0	Sheep/Goat	Pelvis
9237	9	7	Sheep/Goat	Metatarsal
9237	9	7	Cattle	Metapodial
9255	9	7	Sheep/Goat	Tibia
9255	9	7	Sheep/Goat	Tibia
9255	9	7	Cattle	Loose Mandibular Tooth
9255	9	7	Cattle	Loose Maxillary Tooth
9255	9	7	Cattle	Metacarpal
9255	9	7	Cattle	Metacarpal
9255	9	7	Cattle	Metatarsal
9255	9	7	Cattle	First Phalanx
9255	9	7	Sheep/Goat	Humerus
9335	9	6	Cattle	Mandible
9361	9	0	Cattle	Radius
9404	9	7	Dog	Pelvis
9417	9	7	Sheep/Goat	Loose Mandibular Tooth
9417	9	7	Sheep/Goat	Loose Mandibular Tooth
9440	9	6	Cattle	Loose Maxillary Tooth
10118	10	6.2	Horse	Loose Mandibular Tooth
10118	10	6.2	Horse	Loose Mandibular Tooth

Context	Area	Period	Species	Element
10294	10	6.2	Mole	Cranium
10294	10	6.2	Mole	Scapula
10294	10	6.2	Mole	Scapula
10294	10	6.2	Mole	Mandible
10294	10	6.2	Mole	Mandible
10294	10	6.2	Mole	Tibia
10294	10	6.2	Mole	Tibia
10294	10	6.2	Mole	Ulna
10294	10	6.2	Mole	Radius
10294	10	6.2	Mole	Radius
13191	13	7	Horse	Pelvis
17020	17	7	Sheep/Goat	Loose Maxillary Tooth
17419	17	0	Pig	Loose Mandibular Tooth
17419	17	0	Pig	Loose Mandibular Tooth
17429	17	0	Pig	Metapodial
17429	17	0	Pig	Humerus
17429	17	0	Pig	Humerus
17429	17	0	Pig	Cranium
17429	17	0	Pig	Cranium
17429	17	0	Pig	Mandible
17429	17	0	Pig	Loose Mandibular Tooth
18016	18	6.3	Cattle	Loose Mandibular Tooth
18016	18	6.3	Cattle	Loose Mandibular Tooth
18051	18	7	Horse	Mandible
E444	EVAL	EVAL	Cattle	Loose Mandibular Tooth
E444	EVAL	EVAL	Cattle	Loose Tooth
E1604	EVAL	EVAL	Horse	Radius
E1638	EVAL	EVAL	Cattle	Loose Maxillary Tooth
E1638	EVAL	EVAL	Cattle	Loose Maxillary Tooth
E1638	EVAL	EVAL	Cattle	Loose Maxillary Tooth
E1638	EVAL	EVAL	Cattle	Loose Maxillary Tooth
E1638	EVAL	EVAL	Cattle	Loose Maxillary Tooth
E1638	EVAL	EVAL	Cattle	Loose Maxillary Tooth
E1638	EVAL	EVAL	Cattle	Loose Maxillary Tooth
E1638	EVAL	EVAL	Cattle	Loose Maxillary Tooth
E2228	EVAL	EVAL	Pig	Mandible
E2605	EVAL	EVAL	Sheep/Goat	Humerus
E4620	EVAL	EVAL	Sheep/Goat	Loose Mandibular Tooth
E4620	EVAL	EVAL	Sheep/Goat	Loose Mandibular Tooth
E4620	EVAL	EVAL	Sheep/Goat	Loose Mandibular Tooth
E5212	EVAL	EVAL	Cattle	Humerus

Table 126: All recordable faunal remains fragments from the NDR works

C.9 Environmental Sample Quantification

Note: CPR = Charred Plant Remains

Sample No.	Context No.	Cut No.	Feature Type	Total buckets	% sampled	Area No.	Comments	Vol processed (L)	Pottery	HSR	Fired clay	CBM	Burnt flint	Worked flint	Flint debitage	Charcoal	CPR	Glass	Metal Fe	Slag
1	1006	1007	Pit	2		1	Contains burnt material. Prehistoric?	9	0	0	0	0	0	0	0	+	0	0	0	0
2	1009	1008	Pit/posthole	3	100	1	Small, dark pit fill with (possibly) Neolithic/BA pottery.	9	0	0	0	0	0	0	0	+	0	0	0	0
3	1018	1019	Pit	2	100	1	Small, dark pit fill with Early Prehistoric pottery.	7	0	0	0	0	0	0	0	+ NR	0	0	0	0
4	1048	1049	Tree throw	2	20	1	Tree throw containing Prehistoric pottery.	9	0	0	0	0	0	0	0	+	0	0	0	0
5	1058	1059	Tree throw	2	100	1	Tree throw containing pottery.	8	0	0	0	0	0	0	0	+ NR	0	0	0	0
6	1031	1030	Pit	1	50	1	Posthole in fence line.	8	0	0	0	0	0	0	0	+	0	0	0	0
7	1037	1036	Posthole	1	50	1	Posthole in fence line.	9	0	0	0	0	0	0	0	+	0	0	0	0
8	1091	1092	Tree throw	2	50	1	Burnt tree throw, originally thought to be an oven.	9	0	0	0	0	0	0	0	++	0	0	0	0
9	1094	1093	Ditch	2	<10	1	Enclosure ditch, parallel to [1129].	8	0	0	0	0	0	0	0	+	0	0	0	0
10	1130	1129	Ditch	2	<5	1	Enclosure ditch, parallel to [1093].	9	0	0	0	0	0	0	0	+	0	0	0	0
11	1084	1082	Ditch	2	<5	1	Enclosure ditch.	10	0	0	0	0	# NR	0	0	+ NR	0	0	0	0
12	1097	1095	Ditch	2	<5	1	Enclosure ditch.	9	0	0	0	0	0	0	0	+ NR	0	0	0	0
13	1144	1141	Ditch	1	100	1	Enclosure ditch.	10	0	0	0	0	# NR	0	#	++	0	0	0	0
14	1153	1152	Ditch	2		1	Boundary ditch with small sherds of Medieval pottery.	8	0	0	0	0	0	0	0	+ NR	0	0	0	0
16	1213	1212	Ditch	4	<1	1	Single fill contained within NESW running Prehistoric boundary/defensive ditch. Samples taken from the base.	7	0	0	0	0	0	0	0	0	0	0	0	0
17	1245	1226	Ditch	4	<30	1	Dark secondary fill of large Prehistoric ditch running NNE/SSW.	7	0	0	0	0	0	0	0	+ NR	0	0	0	0
18	1244	1226	Ditch	4	<30	1	Primary fill of large Prehistoric ditch running NNE/SSW.	8	0	0	0	0	0	0	0	+ NR	0	0	0	0
19	1271	1270	Cess pit	2	<20	1	Lower fill of Medieval cess pit. Charcoal-rich.	7	0	0	0	0	0	0	0	++	0	0	0	0

Sample No.	Context No.	Cut No.	Feature Type	Total buckets	% sampled	Area No.	Comments	Vol processed (L)	Pottery	HSR	Fired clay	CBM	Burnt flint	Worked flint	Flint debitage	Charcoal	CPR	Glass	Metal Fe	Slag
20	1267	1265	Tree throw	1	100	1	Charcoal-rich fill of tree throw.	10	##	0	0	0	## NR	0	##	+	0	0	0	0
21	1260	1178	Ditch	4	20	1	Primary fill of Prehistoric ditch. Samples taken from the base.	7	0	0	0	0	0	0	0	+ NR	0	0	0	0
22	1285	1284	Gully	2	80	1	Single fill of gully, charcoal and burnt clay present.	7	0	0	0	0	0	0	0	++	+	0	0	0
23	1287	1288	Ditch	2	20	1	Burnt fill of ditch containing primary deposited Medieval pottery.	9	#	0	0	0	# NR	0	0	+	0	0	0	0
24	1271	1270	Cess pit	4	<30	1	Lower fill of Medieval cess pit. Charcoal-rich.	8	0	0	0	0	# NR	0	#	+	0	0	0	0
25	1330	1329	Burnt pit	4	<80	1	Burnt deposit in pit.	7	#	0	0	0	0	0	0	+++	0	0	0	0
26	1320	1319	Burnt pit	1	100	1	Fill containing burtn flint and flecks of charcoal.	9	0	0	0	0	###	0	0	++	0	0	0	0
27	1241	1240	Ditch	4		1	Bottom fill of Prehistoric ditch.	8	0	0	0	0	0	0	0	+ NR	0	0	0	0
50	2015	2014	Pit	2	25	2b	Small pit containing charcoal.	8	0	0	0	0	0	0	0	+++	0	0	0	0
100	3003	3002	Cremation?	1	100	3	Localised burning deposit cutting into top fill of BA enclosure ditch. S.400.	9	0	++?	0	0	0	0	0	++ NR	0	0	0	0
101	3062	3061	Pit	2	50	3	Very dark fill of pit.	10	0	0	0	0	0	0	0	+ NR	0	0	0	0
102	3056	3056	Pit	2	<20	3	Small pit, some charcoal present.	9	0	0	0	0	0	0	0	+	0	0	0	0
103	3081	3082	Pit	2	<20	3	Lower fill of BA cess/rubbish pit.	8	0	0	0	0	# NR	0	0	+	0	0	0	0
104	3111	3108	Ditch	2	<10	3	Lower fill of BA ditch slot.	9	#	0	0	0	# NR	0	0	+ NR	+	0	0	0
105	3143	3142	Pit	1	~20	3	Fill of pit with charcoal present.	9	0	0	0	0	# NR	0	0	++	+	0	0	0
106	3144	3132	Pit	9	100	3	Fill of burnt prehistoric pit containing pottery and flint etc.	8	0	0	0	0	# NR	0	0	+ NR	0	0	0	0
107	3154	3152	Furnace pit	4	40	3	Fill/rake out of possible furnace pit.	9	0	0	0	0	0	0	0	++	++++	0	0	0
108	3237	3236	Pit	2	<10	3	Fill of pit containing pottery.	7	0	0	0	0	0	#	#	+ NR	0	0	0	0
109	3239	3238	Posthole	1	50	3	Posthole fill containing pottery.	5	0	0	0	0	0	0	0	+ NR	0	0	0	0
110	3241	3240	Posthole	1	50	3	Posthole fill containing pottery.	6	#	0	# NR	0	0	0	0	+ NR	0	0	0	0
111	3243	3242	Posthole	1	50	3	Posthole fill containing pottery.	6	##	0	0	0	0	#	0	+ NR	0	0	0	0

Sample No.	Context No.	Cut No.	Feature Type	Total buckets	% sampled	Area No.	Comments	Vol processed (L)	Pottery	HSR	Fired clay	CBM	Burnt flint	Worked flint	Flint debitage	Charcoal	CPR	Glass	Metal Fe	Slag
112	3255	3254	Pit	1	<10	3	Possible fire pit remains, a lot of burnt flint present.	9	0	0	0	0	##### NR	0	0	++	0	0	0	0
113	3276	3275	Posthole	1	50	3	Posthole fill containing pottery.	5	#	0	0	0	0	0	#	+ NR	0	0	0	0
114	3326	3325	Posthole	1	50	3	Posthole fill containing burnt flint.	6	0	0	0	0	# NR	0	#	+ NR	0	0	0	0
115	3355	3354	Posthole	2	~20	3	Posthole fill containing pottery.		0	0	0	0	0	0	0	0	0	0	0	0
116	3357	3356	Posthole or cremation?	2	~20	3	Posthole fill containing pottery, possible cremation.	18	##	0	0	0	# NR	0	0	+ NR	0	0	0	0
117	3530	3529	Posthole	2	50	3	Posthole fill containing burnt flint.	8	0	0	0	0	#	0	0	+ NR	0	0	0	0
118	3442	3441	Pit	2	50	3	Charcoal-rich pit.	7	0	0	0	0	# NR	0	#	++	0	0	0	0
119	3478	3477	Pit	1	50	3	Charcoal and pottery-rich pit.	7	0	0	0	0	0	0	0	+ NR	0	0	0	0
120	3668	3667	Posthole	2 bags	50	3	Posthole fill containing burnt flint and pottery.	4	0	0	0	0	++++ NR	0	0	+++	#	0	0	0
121	3724	3723	Posthole	1 bag	50	3	Dark fill of posthole from BA roundhouse.	5	0	0	0	0	0	0	0	+ NR	0	0	0	0
122	3728	3726	Posthole	1 bag	50	3	Dark fill of posthole from BA roundhouse.	2	0	0	0	0	0	0	0	0	##	0	0	0
123	3730	3729	Posthole	1 bag	50	3	Dark fill of posthole from BA roundhouse.	1	0	0	0	0	0	0	0	0	#	0	0	0
124	3718	3717	Posthole	1 bag	50	3	Dark fill of posthole from BA roundhouse.	2	0	0	0	0	0	0	0	+ NR	0	0	0	0
125	3716	3715	Posthole	1 bag	50	3	Dark fill of posthole from BA roundhouse.	2	0	0	0	0	0	0	#	+ NR	0	0	0	0
126	3720	3719	Posthole	?	50	3	Dark fill of posthole from BA roundhouse.	4	0	0	0	0	0	#	0	# NR	0	0	0	0
127	3830	3829	Posthole	2	50	3	Posthole of possible structure.	6	0	0	0	0	0	0	0	0	0	0	0	0
128	3834	3833	Posthole	2	50	3	Posthole of possible structure.	7	0	0	0	0	0	0	0	0	0	0	0	0
129	3826	3825	Posthole	1 bag	50	3	Posthole of possible structure.	2	0	0	0	0	# NR	0	0	+ NR	0	0	0	0
130	3806	3805	Posthole	1 bag	50	3	Posthole of possible structure.	1	#	0	0	0	0	0	0	+	0	0	0	0
131	3808	3807	Posthole	1 bag	50	3	Posthole of possible structure.	4	0	0	0	0	0	0	#	+	0	0	0	0
132	3911	3910	Posthole	1	50	3	Posthole.	7	0	0	0	0	0	0	0	+	+	0	0	0
133	3905	3904	Posthole	1	50	3	Postpipe.	8	0	0	0	0	## NR	0	#	++	0	0	0	0
134	3978	3977	Pit	1	50	3	Pit.	8	0	0	0	0	0	0	0	0	0	0	0	0

Sample No.	Context No.	Cut No.	Feature Type	Total buckets	% sampled	Area No.	Comments	Vol processed (L)	Pottery	HSR	Fired clay	CBM	Burnt flint	Worked flint	Flint debitage	Charcoal	CPR	Glass	Metal Fe	Slag
135	20050	20049	Pit	2 bags	<10	3	Pit containing charcoal.	4	0	0	0	0	0	0	#	+++	0	0	0	0
136	20053	20052	Spread	2	<10	3	Spread of burnt flint and charcoal.	8	0	0	0	0	### NR	0	0	+	0	0	0	0
137	20055	20054	Pit	2	~20	3	Pit containing charcoal: possible furnace.	8	0	0	###	0	## NR	0	#	++ NR	0	0	0	0
138	20113	20112	Posthole	2 bags	~50	3	Posthole.	5	0	0	0	0	0	0	0	0	0	0	0	0
139	3243	3242	Pit/posthole	1	50	3	Dark fill of pit/posthole, containing lots of pottery.	9	###	0	#	0	0	0	#	0	0	0	0	0
140	20203	20202	Pit	2	50	3	Pit.	10	0	0	0	0	0	0	0	0	0	0	0	0
141	20264	20263	Cremation pit	4	100	3	Fill of pit containing cremated remains and burnt flint. Surrounding rooting also taken for maximum recovery of HSR.	32	0	++	0	0	##	0	0	0	0	0	0	0
142	20291	20290	Posthole	2	20	3	Sample of large posthole, containing charcoal.	16	0	0	0	0	0	0	0	+	0	0	0	0
143	20273	20272	Ditch	2	<5	3	Fill of probable IA/Roman ditch.	7	0	0	0	0	0	0	0	0	0	0	0	0
144	20296	20295	Ditch	2	20	3	Ditch fill of probable Roman date.	9	0	0	0	0	0	0	0	0	0	0	0	0
145	20319	20318	Pit	2	<10	3	Fill of isolated, undated pit.	8	0	0	#	0	0	0	#	++	0	0	0	0
146	20391	20389	Ditch terminus	2	<5	3	Fill of ditch terminus.	8	0	0	0	0	0	0	0	0	0	0	0	0
147	20419	20418	Ditch	2	<5	3	Fill of ditch, thought to be for a palisade.	7	0	0	0	0	0	0	0	0	0	0	0	0
148	20399	20398	Pit	2	~10	3	BA pit.	9	#	0	0	0	0	0	0	++	0	0	0	0
149	20401	20400	Posthole	1	50	3	Posthole.	7	0	0	0	0	0	0	0	0	0	0	0	0
150	4161	4160	Cremation	2	100	4	Possible cremation.	20	0	## NR	### NR	0	0	0	0	++ NR	0	0	0	0
151	4006	4007	Posthole	1	50	4	Belongs to building 4068.	6	0	0	0	0	## NR	0	# ?	+	0	0	0	0
152	4024	4025	Posthole	1	50	4	Belongs to building 4068.	4	0	0	0	0	## NR	0	0	+	0	0	0	0
153	4050	4051	Posthole	1	50	4	Belongs to building 4068.	6	0	0	0	0	## NR	0	# ?	+	0	0	0	0
154	4070	4069	Ditch	1	<1	4	Roman ditch.	9	0	0	0	0	## NR	0	0	+	0	0	0	0
155	4113	4114	Pit	1	40	4	Prehistoric pit.	8	0	0	0	0	## NR	0	# ?	+	0	0	0	0
156	4126	4127	Posthole	1	50	4	From fourpost structure.	5	0	0	0	0	## NR	0	0	+ NR	0	0	0	0
157	4121	4122	Posthole	1	50	4	From fourpost structure.	4	0	0	0	0	## NR	0	0	+	0	0	0	0
200	5027	5026	Pit?	1	20	5	Single fill.	8	0	0	0	0	0	0	0	+ NR	+	0	0	0
201	5056	5025	Ditch	2	<20	5	Primary fill of enclosure ditch.	7	0	0	0	0	0	0	0	+	0	0	0	0
202	5022	5009	Ditch	2	<20	5	Secondary fill of enclosure ditch terminus.	8	0	0	0	0	0	0	0	+	0	0	0	0

Sample No.	Context No.	Cut No.	Feature Type	Total buckets	% sampled	Area No.	Comments	Vol processed (L)	Pottery	HSR	Fired clay	CBM	Burnt flint	Worked flint	Flint debitage	Charcoal	CPR	Glass	Metal Fe	Slag
203	5047	5042	Enclosure ditch	2	<1	5	Upper burnt fill of enclosure ditch terminus.	8	0	0	+ NR	0	# NR	0	#	++	0	0	0	0
204	5008	5007	Enclosure ditch	2	<1	5	Fill of enclosure ditch terminus.	9	#	0	0	0	0	0	0	+ NR	0	0	0	0
205	5064	5066	Enclosure ditch	2	<20	5	Secondary fill of enclosure ditch.	8	0	0	0	0	# NR	0	#	0	0	0	0	0
350	8009	8010	Ditch	2	10	8	Fill of small, possibly Prehistoric, ditch.	8	0	0	0	0	0	0	#	+	0	0	0	0
400	9009	9008	Pit		50	9	Small pit, one of a series of three.	8	#	0	0	0	0	0	#	+++	0	0	0	0
401	9011	9010	Pit		50	9	Small pit, one of a series of three.	9	#	0	0	0	# NR	0	#	++	++	0	0	0
402	9013	9012	Pit		50	9	Small pit, one of a series of three.	7	0	0	0	0	# NR	0	0	++	+	+	0	0
403	9036	9035	Ditch	2	10	9	Ditch fill.	9	0	0	0	0	0	0	0	0	0	0	0	0
404	9050	9049	Ditch	2		9	Ditch terminus fill.	7	0	0	0	0	0	0	0	+ NR	0	0	0	0
405	9091	9090	Pit	2	10	9	Burnt pit fill.	9	0	0	0	0	0	0	0	++	0	0	0	0
406	9076	9074	Ditch	2	<10	9	Prehistoric ditch fill containing flint fleck and pottery.	8	0	0	0	0	0	0	0	+ NR	0	0	0	0
407	9128	9127	Ditch	2	<10	9	Bottom of ditch.	8	0	0	0	0	0	0	0	0	0	0	0	0
408	9153	9152	Pit	2	50	9	Top fill of small burnt pit.	7	0	0	0	0	0	0	0	+ NR	0	0	0	0
409	9173	9172	Pit	2	10	9	Burnt layer in bottom of charcoaling pit.	8	0	0	0	0	0	0	0	+++	0	0	0	0
410	9178	9177	Pit	2	20	9	Charcoal-rich fill within small pit.	8	0	0	0	0	0	0	0	+++	0	0	0	0
411	9224	9225	Pit	1	50	9	Small organic pit fill, containing some CBM/burnt clay.	8	0	0	0	0	0	0	0	+	+	0	0	#
412	9260	9259	Ditch	2	<10	9	Fill within NESW running linear, rare charcoal present but no other finds.	7	0	0	0	0	0	0	0	+ NR	0	0	0	0
413	9212	9211	Ditch	2	<10	9	Primary fill of ditch. Medieval pottery recovered and moderate charcoal present.	7	0	0	#?	#?	0	0	0	+	0	0	0	0
414	9240	9238	Pit	1	25	9	Lower fill of pit with no finds present.	7	0	0	0	0	0	0	0	+ NR	0	0	0	0
415	9239	9238	Pit	2	10	9	Fill of pit with no finds present.	7	0	0	0	0	0	0	0	+	+	0	0	0
416	9255	9254	Pit or hollow	2	<10	9	Fill of shallow hollow or pit, containing metal, pottery and bone.	8	#	0	0	##	0	0	0	+	0	0	0	0

Sample No.	Context No.	Cut No.	Feature Type	Total buckets	% sampled	Area No.	Comments	Vol processed (L)	Pottery	HSR	Fired clay	CBM	Burnt flint	Worked flint	Flint debitage	Charcoal	CPR	Glass	Metal Fe	Slag
417	9324	9323	Lined pit	2	<10	9	Upper fill of possible grain storage pit.	8	0	0	0	0	0	0	0	+	0	0	0	0
418	9325	9323	Lining of pit	1	<25	9	Clay 'lining' at base of possible grain storage pit.	7	0	0	0	0	0	0	0	+ NR	0	0	0	0
419	9335	9332	Pit	2	25	9	Fill of pit, lots of pottery clay present.	6	#	0	#	0	0	0	0	0	0	0	0	0
420	9336	9332	Pit	1	10	9	Fill of pit containing some pieces of pottery and worked flint?	7	0	0	0	0	0	0	0	++	0	0	0	0
421	9337	9332	Pit	2	50	9	Fill of pit containing a 'lens' of charcoal.	8	0	0	0	0	#	0	0	+++	0	0	0	0
422	9452	9451	Ditch	2		9	Ditch fill containing charcoal.	9	0	0	0	0	### NR	0	#	+	0	0	0	0
423	9456		Deposit	2		9	Burnt rubble deposit inside building 9461.	10	0	0	0	0	0	0	0	+ NR	0	0	0	0
424	9461	9513	Building	2	<10	9	Backfill deposit within flintbuilt structure 9461.	9	0	0	0	0	0	0	0	+ NR	0	0	+	0
451	10002	10001	Pit	2		10	Bulk sample from area of concentrated burning in circular pit. Very Charcoal-rich.	7	0	0	0	0	# NR	0	0	++++	0	0	0	0
452	10003		Pit	2		10	Bulk sample of pit ditch (10003). Lots of charcoal.	8	0	0	0	0	0	0	0	+++	0	0	0	0
453	10089	10034	Pit	2		10	Bulk sample of burning in pit. Lots of charcoal.	5	0	0	0	0	0	0	0	++++	0	0	0	0
454	10043	10042	Pit	2	100	10	Fill of pit containing lots of slag and charcoal.	8	#	0	#	0	0	0	0	++++	0	0	0	###
455	10045	10044	Pit	2	100	10	Fill of pit containing lots of charcoal and some slag.	7	#	0	#	0	0	0	0	+++	0	0	0	##
456	10063	10062	Pit	2		10	Fill of pit containing slag (?) and charcoal.	7	0	0	0	0	0	0	0	++++	0	0	0	0
457	10049	10050	Ditch	2		10	Fill of possible enclosure ditch.	8	#	0	0	0	0	0	0	+	0	0	0	0
458	10065	10064	Pit	2	50	10	Burned fill of pit.	7	0	0	0	0	0	0	0	++	0	0	0	0
459	10083	10081	Pit	4		10	Fill of burned pit in situ. Contains lots of charcoal.	8	0	0	#?	0	0	0	0	++++	0	0	0	0
460	10084	10074	Ditch	2	20	10	Bottom fill of boundary ditch. Possible metal working,	9	0	0	0	0	0	0	0	+	0	0	0	0
461	10077	10076	Ditch	2	20	10	Top fill of ditch containing possible metal working.	9	0	0	0	0	0	0	0	+	0	0	0	0
462	10086	10087	Ditch	2		10	Fill of ditch terminus.	9	0	0	0	0	0	0	0	+	0	0	0	0

Sample No.	Context No.	Cut No.	Feature Type	Total buckets	% sampled	Area No.	Comments	Vol processed (L)	Pottery	HSR	Fired clay	CBM	Burnt flint	Worked flint	Flint debitage	Charcoal	CPR	Glass	Metal Fe	Slag
463	10071	10070	Pit	1	50	10	Charcoal-rich fill of small pit with insitu burning.	9	0	0	0	0	0	0	0	++++	0	0	0	0
464	10153	10152	Pit	2	~10	10	Very Charcoal-rich fill of pit with evidence of burning.	6	0	0	0	0	0	0	0	++++	0	0	0	0
465		10052	Pit	<10		10	Sample of charcoal recovered from (10153) in pit [10152].													
466	10189	10188	Pit	2	~10	10	Sample of fill rich in charcoal, big dual pit.	8	0	0	0	0	0	0	0	++++	0	0	0	0
467	10229	10225	Pit	2	<10	10	Silty sand fill of pit, hopefully contains lots of slag.	7	0	0	0	0	0	0	0	++	0	0	0	#
468	10241	10240	Furnace	3	100	10	Clay layer of hearth foundation.	8	0	0	##	0	0	0	0	++	0	0	#	#
469	10256	10255	Pit/slag layer	2	50	10	Black slag layer of pit.	7	#	0	#	0	0	0	0	0	0	0	0	####
470	10257	10255	Pit	2	~10	10	Brown sand/silt fill beneath slag layer in pit.	7	0	0	0	0	0	0	0	0	0	0	0	++
471	10249	10240	Furnace	1	100	10	Layer of charcoal insitu, related to furnace.	9	0	0	0	0	0	0	0	0	0	0	0	###
472	10289	10288	Posthole	2	50	10	Fill of burnt out posthole. Very Charcoal-rich.	8	0	0	0	0	0	0	0	++	0	0	0	###
473	10301	10299	Pit burning	2	50	10	Fill of pit burnt layer with pottery sherds recovered. Charcoal-rich.	9	#	0	0	0	0	0	0	+++	0	0	0	0
474	10308	10240	Furnace	<10	100	10	Layer of charcoal within hearth: spot sample.													
475	10349	10348	Pit	1	50	10	Charcoal-rich fill of pit.	8	0	0	0	0	0	0	0	++	0	0	0	0
476	10379	10378	Pit	2	<10	10	Charcoal-rich fill of pit.	9	0	0	0	0	0	0	0	++++	0	0	0	0
477	10414	10313	Furnace	1	50	10	Layer of charcoal in furnace.	8	0	0	0	0	0	0	0	++	0	0	0	#
478	10422	10421	Furnace	2	<20	10	Charcoal-rich fill in possible furnace.	8	0	0	0	0	0	0	0	++	0	0	0	##
479	10429	10428	Pit	1	50	10	Charcoal-rich fill of pit.	7	0	0	0	0	0	0	0	+++	0	0	0	#
480	10456	10435	Pit	1	30	10	Pit fill containing charcoal.	7	0	0	#?	#?	0	0	0	++	0	0	0	##
481	10439	10438	Furnace	1	30	10	Furnace containing charcoal and slag.	7	0	0	##	0	0	0	0	++	0	0	0	####
482	10431	10430	Furnace pit	1	25	10	Fill of possible furnace pit, rich in charcoal.	8	0	0	0	0	0	0	0	+++	0	0	0	###
483	10449	10440	Furnace pit?	1	25	10	Upper fill of possible furnace pit.	8	0	0	0	0	0	0	0	+	0	0	0	#
484	10488	10487	Pit	1	20	10	Charcoal-rich fill of pit.	8	0	0	0	0	0	0	0	++++	0	0	0	0
485	10501	10500	Pit	1	50	10	Charcoal and slag rich fill of possible furnace.	7	0	0	0	0	0	0	0	+++	0	0	0	###

Sample No.	Context No.	Cut No.	Feature Type	Total buckets	% sampled	Area No.	Comments	Vol processed (L)	Pottery	HSR	Fired clay	CBM	Burnt flint	Worked flint	Flint debitage	Charcoal	CPR	Glass	Metal Fe	Slag
500	11021	11020	Pit	2	<5	11	Rectangular pit, probable industrial activity/process.	8	0	0	0	0	0	0	0	++++	0	0	0	0
501	11001	11009	Pit	2	<5	11	Probable backfilling of charcoal pit.	9	0	0	0	0	0	0	0	+++	0	0	0	0
502	11010	11009	Pit	2	<5	11	Insitu charcoal fill of charcoal pit.	8	0	0	0	0	0	0	0	++++	0	0	0	0
503	11003	11001	Pit	2	<5	11	Probable industrial purposes: industrial activity waste? Ash?	10	0	0	0	0	0	0	0	+++	0	0	0	0
504	11005	11004	Pit	2	<5	11	Insitu charcoal of possible charcoal pit: industrial process.	8	0	0	0	0	0	0	0	++++	0	0	0	0
505	11006	11004	Pit	2	<5	11	Probable backfilling.	9	0	0	0	0	0	0	0	+++	0	0	0	0
506	11008	11007	Pit	2	<10	11	Very mixed deposit within pit.	7	0	0	0	0	0	0	#	++	0	0	0	0
507	11030	11029	Pit	2	<5	11	Charcoal pit fill.	9	0	0	0	0	0	0	0	+++	0	0	0	0
550	12017	12015	Pit	2	5	12	Charcoal land on the bottom of pit.		0	0	0	0	0	0	0	0	0	0	0	0
551	12045	12044	Pit	2	10	12	Charcoal-rich fill of pit.		0	0	0	0	0	0	0	0	0	0	0	0
552	12098	12094	Pit	2	<10	12	Pure charcoal deposit of pit.		0	0	0	0	0	0	0	0	0	0	0	0
553	12100	12094	Pit	2	<10	12	Charcoal-rich secondary fill of pit.		0	0	0	0	0	0	0	0	0	0	0	0
554	12161	12097	Pit	2	<10	12	Basal fill of large pit, contained charcoal and very organic.		0	0	0	0	0	0	0	0	0	0	0	0
555	12155	12154	Pit	2	10	12	Fill of Post-Med (?) charcoal pit.		0	0	0	0	0	0	0	0	0	0	0	0
556	12181	12180	Posthole	2	100	12	Fill of posthole.		0	0	0	0	0	0	0	0	0	0	0	0
557	12196	12195	Pit	2	<10	12	Charcoal-rich fill of pit.		0	0	0	0	0	0	0	0	0	0	0	0
558	12209	12208	Pit	2	<10	12	Charcoal-rich fill of pit.		0	0	0	0	0	0	0	0	0	0	0	0
559	12243	12242	Pit	2	<10	12	Charcoal-rich fill of pit.		0	0	0	0	0	0	0	0	0	0	0	0
560	12275	12272	Pit	2	<10	12	Charcoal-rich fill of pit, also containing burnt flint.		0	0	0	0	0	0	0	0	0	0	0	0
561	12265	12264	Pit	1	10	12	Rich, dark earth layer on the bottom of large pit.		0	0	0	0	0	0	0	0	0	0	0	0
600	13003	13002	Pit	2	5	13	Charcoal/sand basal fill of pit. No dating evidence recovered.		0	0	0	0	0	0	0	0	0	0	0	0
601	13040	13038	Pit	2	<10	13	Heavily scorched pit, suggestssome type of industrial process?		0	0	0	0	0	0	0	0	0	0	0	0

Sample No.	Context No.	Cut No.	Feature Type	Total buckets	% sampled	Area No.	Comments	Vol processed (L)	Pottery	HSR	Fired clay	CBM	Burnt flint	Worked flint	Flint debitage	Charcoal	CPR	Glass	Metal Fe	Slag
602	13064	13063	Pit	2	<10	13	Lightly scorched pit, possible undustrial process?		0	0	0	0	0	0	0	0	0	0	0	0
603	13078	13077	Enclosure	2	<5	13	Fill from Prehistoric enclosure.		0	0	0	0	0	0	0	0	0	0	0	0
604	13076	13075	Pit	2	~20	13	Fill from charcoal (?) pit.		0	0	0	0	0	0	0	0	0	0	0	0
650	14007	14006	Ditch	2	<1	14	Silty/sandy fill of ditch, possibly Prehistoric but no dating evidence to prove this.	7	0	0	0	0	0	0	0	+NR	0	0	0	0
700	15012	15011	Ditch	0/2	<10	15	Fill of shallow ditch.	5	0	0	0	0	0	0	0	++++	0	0	0	0
701	15006	15004	Pit/hollow	0/2	<10	15	Upper fill of large pit/hollow.	4	0	0	0	#	0	0	#	+	0	0	0	0
702	15008	15007	Post?	1	10	15	Back fill of undated posthole. Very 'humil'.	4	#	0	0	0	0	0	0	+ NR	0	0	0	0
750	16002	16001	Ditch	2		16	Fill of ditch S.3000.		0	0	0	0	0	0	0	0	0	0	0	0
751	16008	16005	Pit	2		16	Upper fill of pit. S.3001.		0	0	0	0	0	0	0	0	0	0	0	0
752	16022	16021	Pit	1	50	16	Charcoal-rich deposit of small charcoal pit. S.3005.		0	0	0	0	0	0	0	0	0	0	0	0
753	16060	16059	Ditch	2		16	Fill of ditch. S.3022.		0	0	0	0	0	0	0	0	0	0	0	0
800	17028	17027	Pit	1	100	17	Fill of small burnt pit.	9	0	0	#NR	#	0	0	##	0	0	0	0	0
801	17052	17051	Pit	2	<10	17	Fill of charcoal making pit.	7	0	0	0	0	0	0	0	+NR	0	0	0	0
802	17054	17053	Pit	2	20	17	Fill of charcoal making pit.	8	0	0	0	0	0	0	0	+++	0	0	0	0
803	17059	17057	Pit	2	<10	17	Charcoal-rich fill of pit.	8	0	0	0	0	0	0	0	++	0	0	#	0
804	17035	17061	Pit	2	<10	17	Upper fill about pot SF803.	9	0	0	0	0	0	0	0	+NR	0	0	0	0
805	17035	17061	Pit	2	<10	17	Lower fill below pot SF803.	8	0	0	0	0	#NR	0	0	++	0	0	0	0
806	17072	17071	Pit	2	100	17	Lower fill of pit containing BA pottery.	9	0	0	0	0	0	0	0	+NR	0	0	0	0
807	17073	17071	Pit	2	100	17	Upper fill of pit containing BA pottery.	8	0	0	0	0	0	0	0	+	0	0	0	0
808	17075	17074	Pit	2	20	17	Fill of charcoal making pit.	8	0	0	0	0	0	0	0	+NR	0	0	0	0
809	17121	17120	Pit	4	50	17	Fill of BA pit.	9	#	0	0	0	#NR	0	#	+	0	0	0	0
810	17123	17122	Pit	4	100	17	Fill of BA(?) pit.	9	0	0	0	0	0	0	0	+	0	0	0	0
811	17136	17135	Pit	2	10	17	Fill of charcoal making pit.	9	#	0	0	0	0	0	#	+++	0	0	0	0
812	17138	17137	Pit	2	50	17	Fill of small charcoal making pit.	8	0	0	#	0	0	0	0	++	0	0	0	0
813	17151	17150	Cremation/HSR	6	100	17	Fill of cremation. Contains HSR.	53	#NR	##	0	0	0	0	0	+++NR	0	0	0	0
814	17160	17160	Ditch	1	5	17	Fill of Prehistoric ditch.	7	0	0	0	0	0	0	0	+NR	0	0	0	0
815	17168	17169	Burning pit	2	50	17	Fill of burning pit, containing an intense charcoal deposit.	10	0	0	#	0	0	0	0	+++	0	0	0	0

Sample No.	Context No.	Cut No.	Feature Type	Total buckets	% sampled	Area No.	Comments	Vol processed (L)	Pottery	HSR	Fired clay	CBM	Burnt flint	Worked flint	Flint debitage	Charcoal	CPR	Glass	Metal Fe	Slag
816	17249	17246	Pit	2	<5	17	Upper fill of large Med pit.	8	#	0	0	0	0	0	0	+	0	0	0	0
817	17272	17271	Pit	2	<10	17	Only fill of pit.	9	0	0	0	0	0	0	0	+	0	0	0	0
818	17263	17261	Ditch	2	<5	17	Secondary fill of Med enclosure ditch corner.	8	#	0	0	0	0	0	0	+NR	0	0	0	0
819	17284	17285	Ditch	2	<5	17	Relatively charcoalrich backfill of ditch.	10	#	0	0	0	0	0	0	+	0	0	0	0
820	17305	17304	Pit	1	50	17	Burnt pit containing charcoal.	8	0	0	##	0		0	0	+	0	0	0	0
821	17315	17313	Ditch	2	<5	17	Upper fill of Med enclosure ditch.	9	#	0	0	0	0	0	0	+NR	0	0	0	0
822	17347	17346	Pit	2	10	17	Fill of burnt pit: charcoal making?	9	0	0	0	0	0	0	0	+++	0	0	0	0
823	17333	17332	Ditch	2	<10	17	Fill of ditch containing worked stone.	7	0	0	0	0	0	0	0	+NR	0	0	0	0
824	17413	17412	Ditch	2	<10	17	Fill containing heavy volumes of charcoal.	10	##	0	0	0	0	0	0	++	0	0	0	0
825	17439	17440	Pit	2	100	17	Small shallow burning pit containing charcoal.	8	0	0	0	0	0	0	0	+++	0	0	0	0
826	17442	17441	Pit	1	50	17	Small shallow charcoal pit.	7	0	0	0	0	0	0	0	++++	0	0	0	0
827	17430	17428	Pit	2	25	17	Animal burial.	9	0	0	0	0	0	0	0	+NR	0	0	0	0
828	17467	17468	Pit/hollow	2	<5	17	Fill containing much LMU & Grimston pottery. Early 14thC.	8	0	0	0	0	0	0	0	+	0	0	0	0
829	17349	17348	Pit	2	<5	17	Fill of subrectangular, elongated pit.	8	#	0	0	0	0	0	0	+	0	0	0	0
830	17474	17473	Pit	2	<10	17	Primary fill of pit.	8	#	0	0	0	0	0	0	+NR	0	0	0	0
831	17478	17476	Pit	2	<10	17	Secondary fill of pit.	9	0	0	0	0	0	0	0	+NR	0	0	0	0
832	17492	17493	Pit	2	<10	17	Fill of well defined and dated Med pit.	9	#	0	0	0	0	0	0	+	0	0	0	0
833	17495	17496	Pit	2	<30	17	Redeposited burnt flint fill of Neolithic pit.	9	0	0	0	0	###NR	0	0	+	0	0	0	0
834	17107	17108	Ditch terminus	2	<10	17	Fill of ditch terminus.	9	0	0	0	0	0	0	0	+	0	0	0	0
850	18032	18031	Natural hollow?	2	<5	18	Natural hollow fill	9	0	0	##	0	0	0	0	+++	0	0	0	0
851	18054	18053	Pit	2	~50	18	Primary fill of pit showing extensive burning.	7	0	0	0	0	0	0	0	+NR	0	0	0	0
852	18055	18053	Pit	2	~50	18	Secondary fill of pit showing extensive burning.	6	0	0	##	0	0	0	0	+	0	0	0	0
853	18062, 18063	18060	Pit	2	~50	18	Combined sample from primary 'use' fill of burning pit/hearth.	7	0	0	0	0	0	0	0	+	0	0	0	0

Sample No.	Context No.	Cut No.	Feature Type	Total buckets	% sampled	Area No.	Comments	Vol processed (L)	Pottery	HSR	Fired clay	CBM	Burnt flint	Worked flint	Flint debitage	Charcoal	CPR	Glass	Metal Fe	Slag
854	18098	18087	Pit	2	<10	18	Secondary deposit of large pit.	7	0	0	0	0	0	0	0	+	0	0	0	0
855	18107	18104	Pit	2	10	18	Fill of pit.	8	0	0	0	0	0	0	0	+	0	0	0	0
856	18117	18116	Pit	2	<20	18	Basal fill of pit.	8	0	0	0	0	0	0	0	+	0	0	0	0
900	19007	19006	Pit	2	<5	19	Fill of subrectangular pit, containing Med pottery and charcoal.	9	0	0	0	0	0	0	0	+ NR	0	0	0	0
901	19023	19022	Ditch	2	<10	19	Fill of ditch containing pottery.	6	0	0	0	0	0	0	0	+ NR	0	0	0	0
902	19056	19055	Pit	1	50	19	Fill of pit containing charcoal and flint.	8	0	0	0	0	0	0	0	++	0	0	0	0
903	190?	19063	Pit	2	50	19	Fill of pit containing charcoal and flint.	8	#	0	0	0	### NR	#	##	+++	##	0	0	0
904	19098	19097	Pit	2	50	19	Backfill of fire pit: charcoal preset.	1	0	0	0	0	0	0	0	+ NR	0	0	0	0
905	19109	19108	Gully	2	~1	19	Fill of NS running gully.	8	0	0	0	0	0	0	0	+ NR	0	0	0	0
906	19110	19112	Pit	2	<10	19	Upper fill of Med cess(?)/rubbish pit.	9	0	0	0	0	# NR	0	#	+ NR	0	0	0	0
907	19124	19123	Pit	2	<10	19	Sole fill of large pit.	9	0	0	0	0	0	0	0	+ NR	0	0	0	0
908	19153	19152	Pit	2	<10	19	Charcoalrich fill of pit.	7	0	0	0	0	0	0	0	+	0	0	0	0
909	19150	19144	Ditch/pit	2	<10	19	Primary fill of pit/ditch of unknown function.	7	0	0	0	0	0	0	#	+ NR	0	0	0	0
910	19151	19183	Ditch	2	<10	19	Secondary fill of ditch containing Med pottery.	6	0	0	0	0	0	0	0	+ NR	0	0	0	0
911	19185	19158	Pit	2	<5	19	Silty clay fill containing Med pottery.	8	0	0	0	0	0	0	0	+	0	0	0	0
912	19201	19200	Pit	2	15	19	Fill of pit.	9	#	0	0	0	0	0	0	+ NR	0	0	0	0
913	19233	19232	Pit	2	10	19	Fill of pit containing Prehistoric pottery.	8	0	0	0	0	0	0	0	+ NR	0	0	0	0
914	19236	19237	Ditch	2	<10	19	Fill of Med ditch segment, containing more charcoal than expected.	9	0	0	0	0	# NR	0	0	+ NR	0	0	0	0
915	19233	19232	Pit	1 bag	<5	19	Fill of pit containing Prehistoric pottery and charcoal.	1	0	0	0	0	0	0	0	+ NR	0	0	0	0
916	19264	19263	Ditch	2	<1	19	1m slot of ditch.	6	0	0	0	0	0	0	0	+ NR	0	0	0	0
917	19268	19267	Ditch	2	<10	19	Fill of ditch.	7	0	0	0	0	# NR	0	#	+ NR	0	0	0	0
918	19284	19283	Ditch	2	<5	19	Fill of ditch.	9	#	0	# NR	0	0	0	0	+ NR	0	0	0	0
919	19330	19331	Pit	2	<10	19	Fill of late Med (?) pit.	9	0	0	0	0	## NR	0	#	+ NR	0	0	0	0
920	19334	19332	Pit	2	30	19	Top fill of BA pit, containing a flint scatter and pottery.	8	0	0	0	0	0	0	0	+ NR	0	0	0	0

Sample No.	Context No.	Cut No.	Feature Type	Total buckets	% sampled	Area No.	Comments	Vol processed (L)	Pottery	HSR	Fired clay	CBM	Burnt flint	Worked flint	Flint debitage	Charcoal	CPR	Glass	Metal Fe	Slag
921	19365	19364	Pit	1	50	19	Fill of Prehistoric pit.	8	0	0	0	0	0	0	0	++	0	0	0	0
922	19203	19202	Pit	2	30	19	Lower fill of deep pit.	7	0	0	0	0	# NR	0	0	+ NR	0	0	0	0
923	19403	19402	Pit	2	20	19	Fill of burnt pit.	7	0	0	0	0	#### NR	0	#	+ NR	0	0	0	0
924	19415	19412	Pit	2	<10	19	Fill of large pit containing charcoal and struck flint.	7	0	0	0	0	0	0	##	+ NR	0	0	0	0
925	19039	19037	Pit	2	5	19	Fill of large pit.	10 & 10	0	0	0	0	# NR	0	0	+ NR	#	0	0	0
1000	20411	20410	Posthole	1	50	3	Posthole.	6	0	0	0	0	0	0	0	0	0	0	0	0
1001	20427	20426	Pit	2	<50	3	Burnt pit, containing flint and pottery.	8	#	0	0	0	+++ NR	0	0	+	0	0	0	0
1002	20489	20387	Pit	1 bag	U/K	3	Possible fill of broken pot.	<1	0	0	0	0	0	0	0	# NR	0	0	0	0
1003	20489	20387	Pit	5	<50	3	Secondary fill, containinglarge amounts of pottery and degraded bio matter.	7	#	0	# NR	0	+++ NR	#	++	++	0	0	0	0
1004	20491	20490	Posthole	1	100	3	Fill of posthole, containing burnt clay.	8	0	0	+++	0	0	0	0	++ NR	#	0	0	0
1005	20465	20464	Posthole	1 bag	~20	3	Fill of posthole in roundhouse.	7	0	0	0	0	0	0	0	+ NR	0	0	0	0
1006	20433	20432	Posthole	1 bag	~10	3	Fill of posthole in roundhouse.	7	0	0	0	0	0	0	0	+ NR	0	0	0	0
1007	20429	20428	Posthole	1 bag	~20	3	Fill of posthole in roundhouse.	7	0	0	0	0	# NR	0	0	+ NR	0	0	0	0
1008	20543	20542	Posthole	1 bag	40	3	Fill of posthole in round building.	4	0	0	0	0	0	0	0	0	0	0	0	0
1009	20537	20536	Posthole	1 bag	50	3	Fill of posthole in round building.	2	0	0	0	0	0	0	0	+ NR	0	0	0	0
1010	20493	20492	Posthole	1 bag	50	3	Fill of posthole in roundhouse/building.	4	0	0	0	0	0	0	0	+	0	0	0	0
1011	20497	20496	Posthole	1 bag	50	3	Fill of posthole in roundhouse/building.	4	0	0	0	0	0	0	#	+ NR	0	0	0	0
1012	20501	20500	Posthole	1 bag	50	3	Fill of posthole in roundhouse/building.	6	0	0	0	0	0	0	0	0	#	0	0	0
1013	20525	20524	Posthole	1 bag	50	3	Fill of posthole in roundhouse/building.	5	0	0	0	0	0	0	0	0	0	0	0	0
1014	20513	20512	Posthole	1 bag	50	3	Fill of posthole in roundhouse/building.	7	0	0	0	0	0	0	0	+ NR	0	0	0	0
1015	20567	20566	Ditch	2	~2	3	Enclosure ditch. Sample taken from the base of the fill.	10	0	0	0	0	0	0	0	0	0	0	0	0
1016	20563	20561	Ditch terminus	2	<10	3	Charcoal containing secondary deposit in enclosure ditch terminus.	8	0	0	0	0	# NR	0	0	+	0	0	0	0

Sample No.	Context No.	Cut No.	Feature Type	Total buckets	% sampled	Area No.	Comments	Vol processed (L)	Pottery	HSR	Fired clay	CBM	Burnt flint	Worked flint	Flint debitage	Charcoal	CPR	Glass	Metal Fe	Slag
1017	20585	20584	Posthole	1	50	3	Posthole, possibly part of a building.	5	0	0	0	0	0	0	0	0	0	0	0	0
1018	20593	20592	Posthole	2	50	3	Posthole, possibly part of a building.	15	0	0	0	0	0	0	0	0	0	0	0	0
1019	20611	20610	Posthole	1	50	3	Posthole, possibly part of a building.	8	0	0	0	0	0	0	0	0	0	0	0	0
1020	20617	20616	Cremation	1	100	3	Small pit containing burnt bone.	5	0	#	0	0	0	#	0	0	0	0	0	0
1021	20569	20568	Posthole	2	<10	3	Row of postholes.	9	0	0	0	0	0	0	0	0	#	0	0	0
1022	20626	20625	Pit	2	10	3	Pit with possible Neolithic pottery and burnt flint present.	8	#	0	0	0	# NR	0	0	+	0	0	0	0
1023	20622	20621	Ditch	2	<10	3	Primary fill of enclosure ditch.	8	0	0	0	0	0	0	0	0	0	0	0	0
1024	20624	20621	Ditch	2	<10	3	Secondary fill of enclosure ditch.	9	0	0	0	0	0	0	0	0	0	0	0	0
1025	20653	20652	Burnt pit	2	50	3	Burning pit, contained a high degree of burnt flint and charcoal.	9	0	0	0	0	0	0	0	0	0	0	0	0
1026	21973	21972	Posthole	1	50	3	Posthole near BA ditch terminus.	9	0	0	0	0	0	0	0	0	0	0	0	0
1027	20640	20638	Ditch	2	<5	3	Secondary fill of ditch.	8	0	0	0	0	0	0	0	0	0	0	0	0
1028	20667	20666	Pit	2	~5	3	Pit.	8	0	0	0	0	0	0	0	0	0	0	0	0
1100	21029	21028	Posthole	1	50	3	BA post alignment.	8	0	0	0	0	0	0	0	0	0	0	0	0
1101	21039	21038	Posthole	1	50	3	BA post alignment.	8	+	0	0	0	0	0	0	+	0	0	0	0
1102	21047	21046	Posthole	2	50	3	BA post alignment.	17	0	0	0	0	0	0	0	0	0	0	0	0
1103	21075	21074	Posthole	1	50	3	BA post alignment.	8	0	0	0	0	0	0	0	0	0	0	0	0
1104	21109	21108	Posthole	1	50	3	BA post alignment.	10	0	0	0	0	0	0	0	0	0	0	0	0
1105	21128	21129	Posthole	1	50	3	BA post alignment.	7	0	0	0	0	0	0	0	0	0	0	0	0
1106	21133	21132	Posthole	2	50	3	BA post alignment.	17	0	0	0	0	0	0	0	0	0	0	0	0
1107	21169	21168	Posthole	1	50	3	BA post alignment.	8	0	0	0	0	0	0	0	0	0	0	0	0
1108	21181	21180	Posthole	2	50	3	BA post alignment.	19	0	0	0	0	0	0	0	0	0	0	0	0
1109	21194	21195	Posthole	2	50	3	BA post alignment.	16	0	0	0	0	0	0	0	0	0	0	0	0
1110	21201	21200	Posthole	1	50	3	BA post alignment.	6	0	0	0	0	0	0	0	0	0	0	0	0
1111	21253	21252	Posthole	1	50	3	BA post alignment.	7	0	0	0	0	0	0	0	0	0	0	0	0
1112	21315	21314	Posthole	1	50	3	BA post alignment.	8	0	0	0	0	0	0	0	0	0	0	0	0
1113	21485	21484	Posthole	1	50	3	BA post alignment.	8	0	0	0	0	0	0	0	0	0	0	0	0
1114	21725	21724	Posthole	1 bag	50	3	BA post alignment.	7	0	0	0	0	0	0	#	+ NR	0	0	0	0
1115	21809	21808	Posthole	2 bags	50	3	BA post alignment.	7	0	0	0	0	0	0	0	+ NR	0	0	0	0
1116	21987	21986	Posthole	2	50	3	BA post alignment.	17	0	0	0	0	0	0	0	0	0	0	0	0

Sample No.	Context No.	Cut No.	Feature Type	Total buckets	% sampled	Area No.	Comments	Vol processed (L)	Pottery	HSR	Fired clay	CBM	Burnt flint	Worked flint	Flint debitage	Charcoal	CPR	Glass	Metal Fe	Slag
1117	21997	21996	Posthole	1	50	3	BA post alignment.	10	0	0	0	0	0	0	0	0	0	0	0	0
1118	21585	21584	Posthole	1	50	3	BA post alignment.	8	0	0	0	0	0	0	0	0	0	0	0	0
1119	22035	22034	Posthole	1	50	3	BA post alignment.	10	0	0	0	0	# NR	0	0	+ NR	0	0	0	0
1120	21443	21442	Posthole	1	50	3	BA post alignment.	9	0	0	0	0	0	0	0	0	0	0	0	0
1121	21937	21396	Posthole	1	50	3	BA post alignment.	9	0	0	0	0	0	0	0	0	0	0	0	0
1122	21761	21760	Posthole	1	50	3	BA post alignment.	9	0	0	0	0	0	#	#	+ NR	+	0	0	0
1123	21663	21662	Posthole	1	50	3	BA post alignment.	9	0	0	0	0	0	0	0	0	0	0	0	0
1124	21885	21884	Posthole	1	50	3	BA post alignment.	10	0	0	0	0	0	0	0	0	0	0	0	0

Appendix D. Radiocarbon Date Certificates

Area	Context	Cut	Feature Number/Type	Period	Sample no	Sample Type	Results	Radiocarbon Age BP
1	1260	1178	boundary ditch 1141	2.2	20	CPR: Hordeum sp.	n/a	Failed
3	3081	3082	Posthole Alignment 20140	2.2	103	unid charcoal	2206-1985BC	3719 ± 33
3	3154	3152	Pit	2.3	107	CPR: Hordeum sp.	972-823BC	2745 ± 28
3	3241	3240	Structure 3240	2.3	111	CPR: Hordeum Vulgare	898-802BC	2682 ± 30
3	3530	3529	Posthole Alignment 3503	2.2	117	Charcoal: Alnus Glutinosa	1611-1448BC	3246 ± 30
3	3668	3667	Structure 3401	2.2	120	Charcoal: Alnus Glutinosa	1451-1294BC	3121 ± 30
3	3728	3726	Structure 3711	2.2	122	CPR: Triticum cf. Dicoccum	1496-1301BC	3132 ± 30
3	20264	20263	Cremation	2.2	1024	unid charcoal	1448-1283BC	3113 ± 33
3	20622	20389	Enclosure 3008	2.2	1023	unid charcoal	n/a	Failed
3	20513	20512	Structure 20500	2.2	1014	Charcoal: Betulacaeae	404-211BC	2281 ± 30
3	20390	20561	Enclosure 3008	2.2	n/a	unid charcoal	1742-1559BC	3360 ± 29
3	20563	20621	Enclosure 3008	2.2	1016	unid charcoal	1422-1260BC	3077 ± 33
3	21039	21038	Pit Alignment 21014	2.2	1101	unid charcoal	1734-1523BC	3346 ± 29
3	21585	21584	Pit Alignment 21562	2.2	1118	charcoal: Quercus sp. Sapwood	1500-1311BC	3149 ± 29
3	21809	21808	Posthole Alignment 21110	2.2	1115	CPR: Poaceae	n/a	Failed
3	21885	21884	Posthole Alignment 3920	2.2	1124	charcoal: unid	AD1483-1646	320 ± 30
3	21987	21986	Posthole Alignment 21154	2.2	1116	unid charcoal	3487-3109BC	4561 ± 28
3	20489	20389	Pit	1		Residue on pot	n/a	Failed
5	5047	5042	Enclosure 5007	2.2	203	Charcoal: Maloideae	1385-1128BC	3010 ± 29
9	9173	9172	Charcoaling Pit	5	409	Charcoal	AD 776 – 980	1142 ± 32
10	10002	10001	Charcoaling Pit	5	451	Charcoal	AD 729-951	1181 ± 30
10	10189	10188	Charcoaling Pit	5	466	Charcoal: Quercus sp.	AD 689-881	1231 ± 29
10	10422	10421	Pit Group 10413	4	478	Charcoal: Quercus sp.	39BC-123AD	1956 ± 30
11	11005	11004	Charcoaling Pit	4	504	Charcoal: Quercus sp.	AD 66-222	1880 ± 30
12	12045	12044	Charcoaling Pit	5	551	Charcoal: Quercus sp.	AD 887-1013	1100 ± 30
17	17151	17150	Cremation	5	813	Cremated bone	189BC-AD54	2105 ± 19

Table 127: Radiocarbon dating results, all areas (95.4% probability)

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Scottish Universities Environmental Research Centre
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RADIOCARBON DATING CERTIFICATE

25 January 2017

Laboratory Code	GU42671
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139693
Context Reference	1260
Sample Reference	21
Material	Charred plant remains : Hordeum sp
Result	Failed on AMS.

N.B. Any questions directed to the Radiocarbon Laboratory should quote the GU coding given above.

The contact details for the laboratory are email Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

Checked and signed off by :- P. Naysmith Date :- 25-1-17

University of Glasgow
The University of Glasgow, charity number SC004401

The University of Edinburgh
The University of Edinburgh is a charitable body, registered in Scotland, with registration number SC005336

Scottish Universities Environmental Research Centre

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

RADIOCARBON DATING CERTIFICATE

25 January 2017

Laboratory Code	SUERC-71024 (GU42672)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139696
Context Reference	3081
Sample Reference	103
Material	Charcoal : unid
$\delta^{13}C$ relative to VPDB	-24.8 ‰
Radiocarbon Age BP	3719 ± 33

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

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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

Conventional age and calibration age ranges calculated by :- E. Dunbar Date :- 25/01/2017

Checked and signed off by :- P. Naysmith Date :- 25/01/2017

University of Glasgow

The University of Glasgow, charity number SC004401

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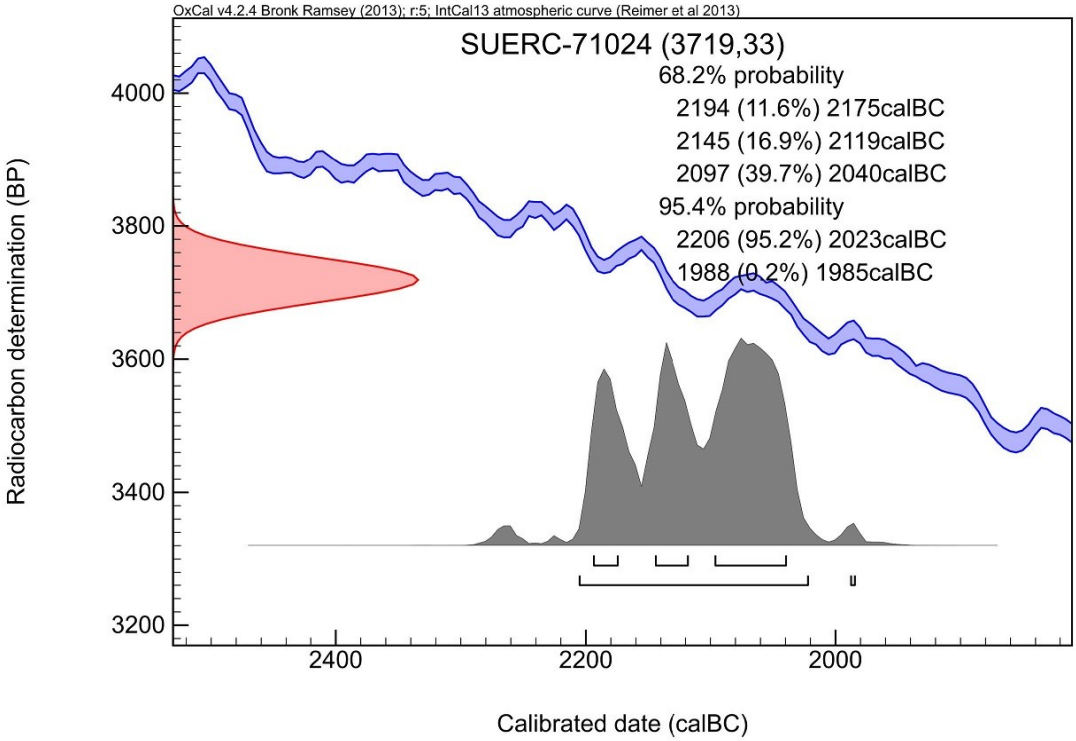
Calibration Plot



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Director: Professor R M Ellam Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE

07 November 2016

Laboratory Code	SUERC-69924 (GU42122)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139696
Context Reference	3154
Sample Reference	107
Material	Charred plant remains : Hordeum sp.
$\delta^{13}C$ relative to VPDB	-22.8 ‰
Radiocarbon Age BP	2745 ± 28

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

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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

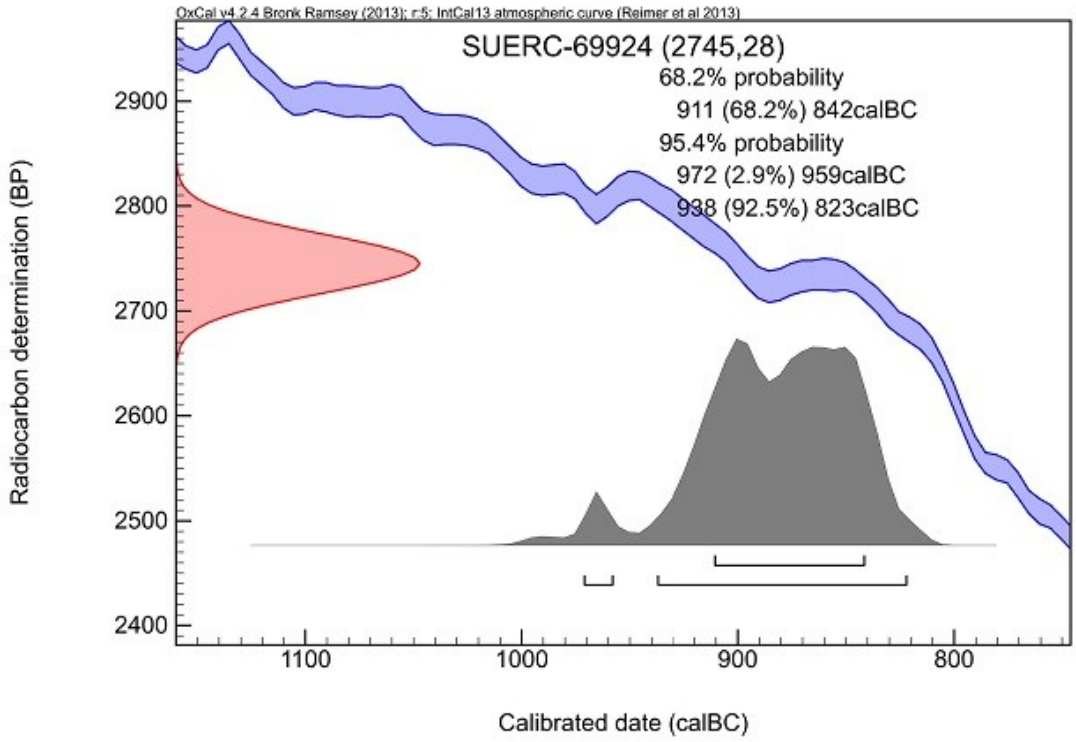
Conventional age and calibration age ranges calculated by :- E. Dunbar Date :- 07/11/2016

Checked and signed off by :- P. Naysmith Date :- 07/11/2016

University of Glasgow
The University of Glasgow, charity number SC004401

The University of Edinburgh is a charitable body, registered in Scotland, with registration number SC005336

Calibration Plot



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RADIOCARBON DATING CERTIFICATE
24 October 2017

Laboratory Code	SUERC-75482 (GU45236)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139696
Context Reference	3241
Sample Reference	111
Material	Charred plant remains : Hordeum vulgare
$\delta^{13}C$ relative to VPDB	-25.0 ‰ assumed
Radiocarbon Age BP	2682 ± 30

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

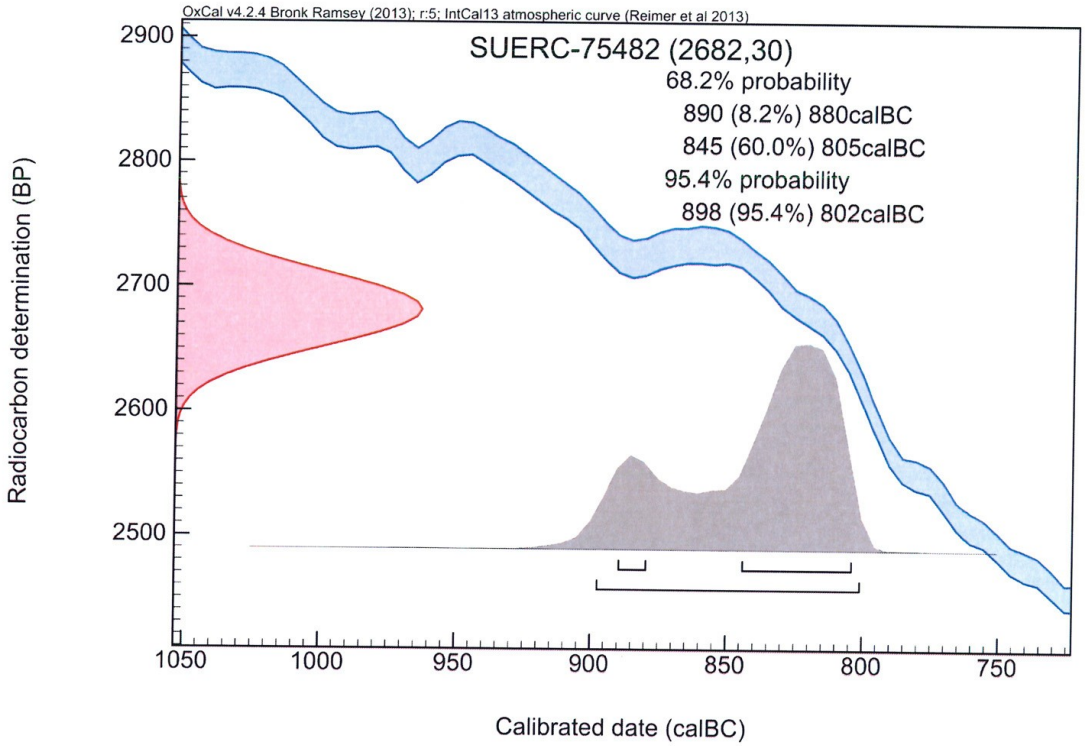
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk .

Conventional age and calibration age ranges calculated by : E Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4. *

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve. †

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE
24 October 2017

Laboratory Code	SUERC-75479 (GU45232)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139696
Context Reference	3530
Sample Reference	117
Material	Charcoal : Alnus glutinosa
$\delta^{13}C$ relative to VPDB	-24.3 ‰
Radiocarbon Age BP	3246 ± 30

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

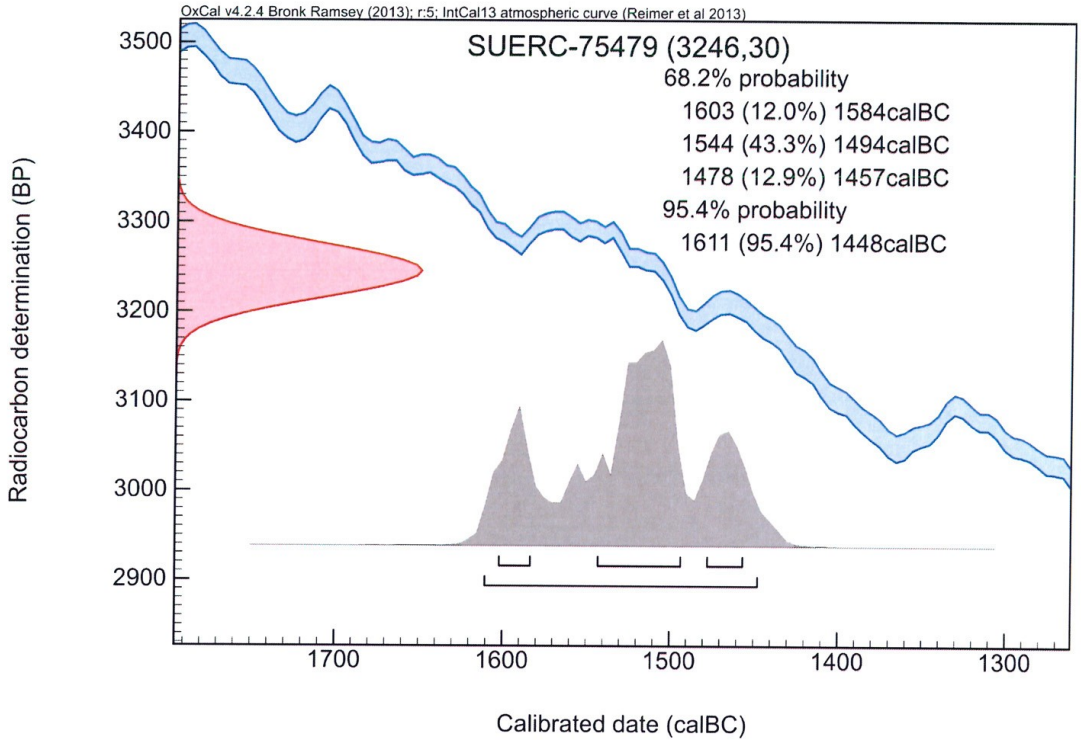
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk .

Conventional age and calibration age ranges calculated by : E Dunbar

Checked and signed off by : P Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4. *

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve. †

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE
24 October 2017

Laboratory Code	SUERC-75480 (GU45233)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139696
Context Reference	3668
Sample Reference	120
Material	Charcoal : Alnus glutinosa
$\delta^{13}C$ relative to VPDB	-26.5 ‰
Radiocarbon Age BP	3121 ± 30

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

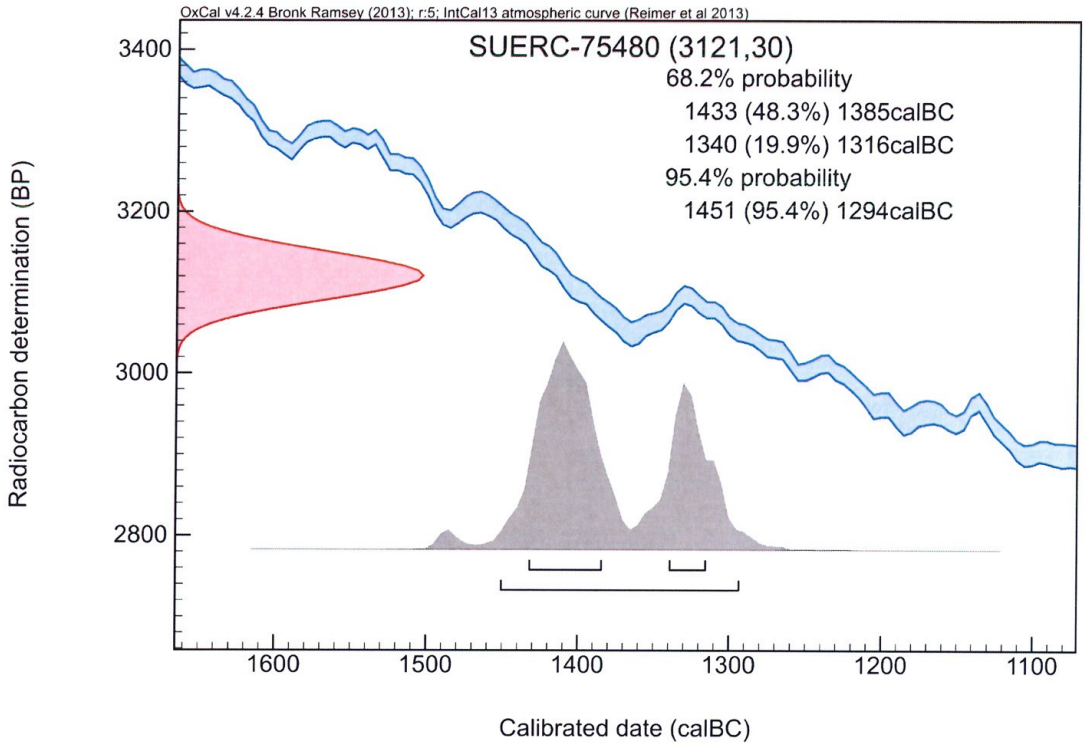
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk .

Conventional age and calibration age ranges calculated by : E Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve.†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE
24 October 2017

Laboratory Code	SUERC-75481 (GU45234)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139696
Context Reference	3728
Sample Reference	122
Material	Charred plant remains : Triticum cf. dicoccum
$\delta^{13}C$ relative to VPDB	-25.0 ‰ assumed
Radiocarbon Age BP	3132 ± 30

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

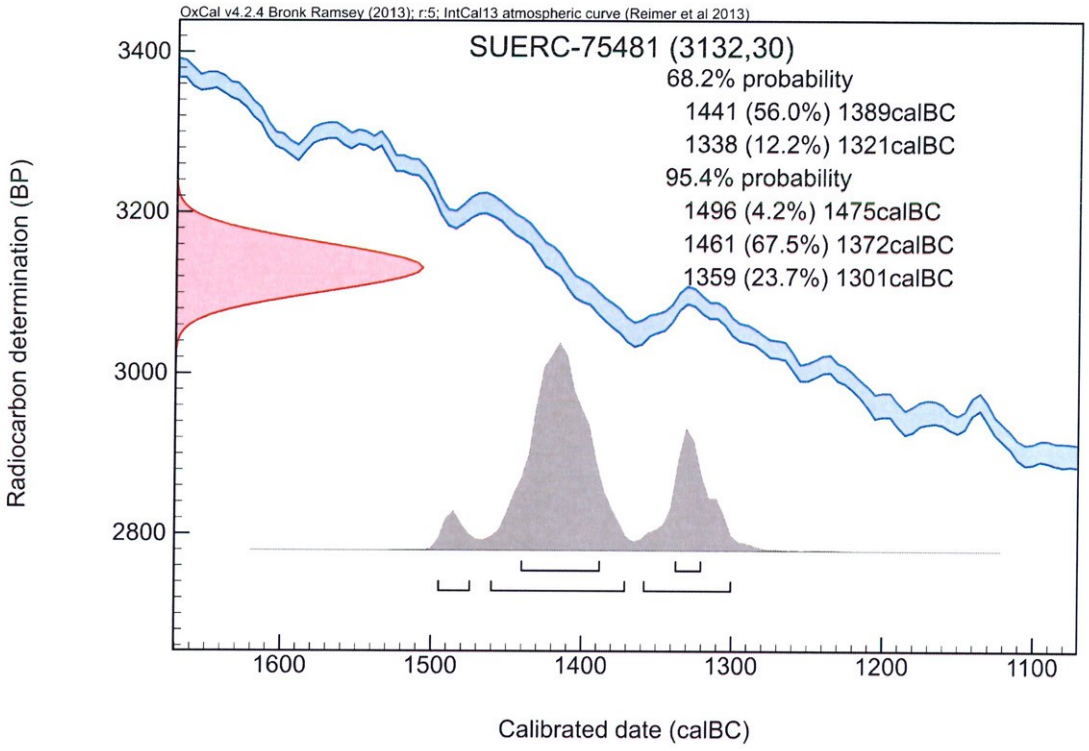
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk .

Conventional age and calibration age ranges calculated by : E Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4. *

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve. †

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE

17 February 2017

Laboratory Code	SUERC-71673 (GU42882)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF 139698
Context Reference	5047
Sample Reference	203
Material	Charcoal : Maloideae
δ ^{13}C relative to VPDB	-25.9 ‰
Radiocarbon Age BP	3010 ± 29

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

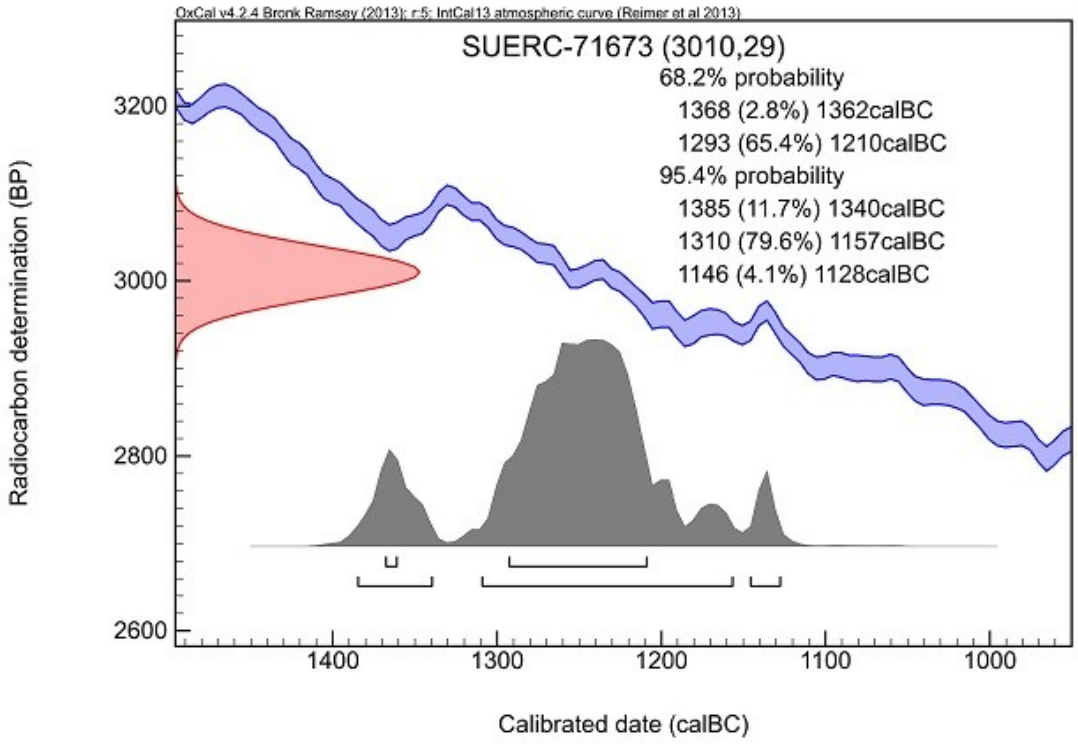
The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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

Conventional age and calibration age ranges calculated by :- Date :- 17/02/2017

Checked and signed off by :- Date :- 17/02/2017

Calibration Plot



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RADIOCARBON DATING CERTIFICATE
03 May 2018

Laboratory Code	SUERC-79348 (GU47447)
Submitter	Zoe Ui Choileain Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambridgeshire CB23 8SQ
Site Reference	ENF139702
Context Reference	9178
Sample Reference	409
Material	Charcoal : Unidentified
$\delta^{13}C$ relative to VPDB	-26.1 ‰
Radiocarbon Age BP	1142 ± 32

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

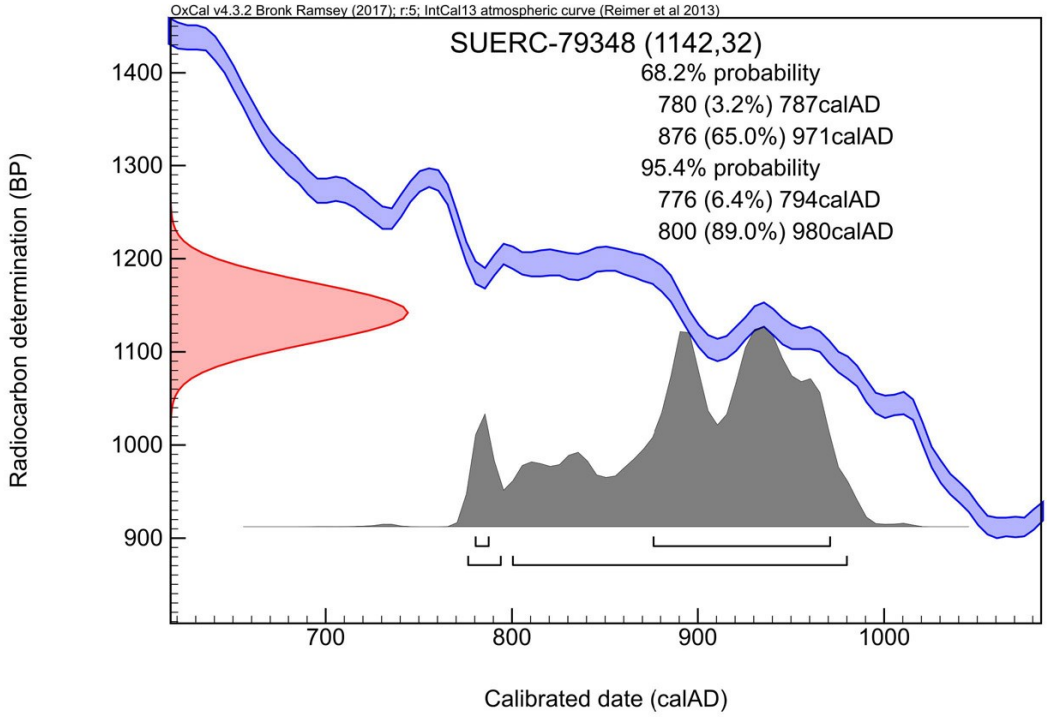
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E. Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE
24 October 2017

Laboratory Code	SUERC-75488 (GU45239)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139703
Context Reference	10002
Sample Reference	451
Material	Charcoal : Ilex aquifolium
$\delta^{13}C$ relative to VPDB	-26.1 ‰
Radiocarbon Age BP	1181 ± 30

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

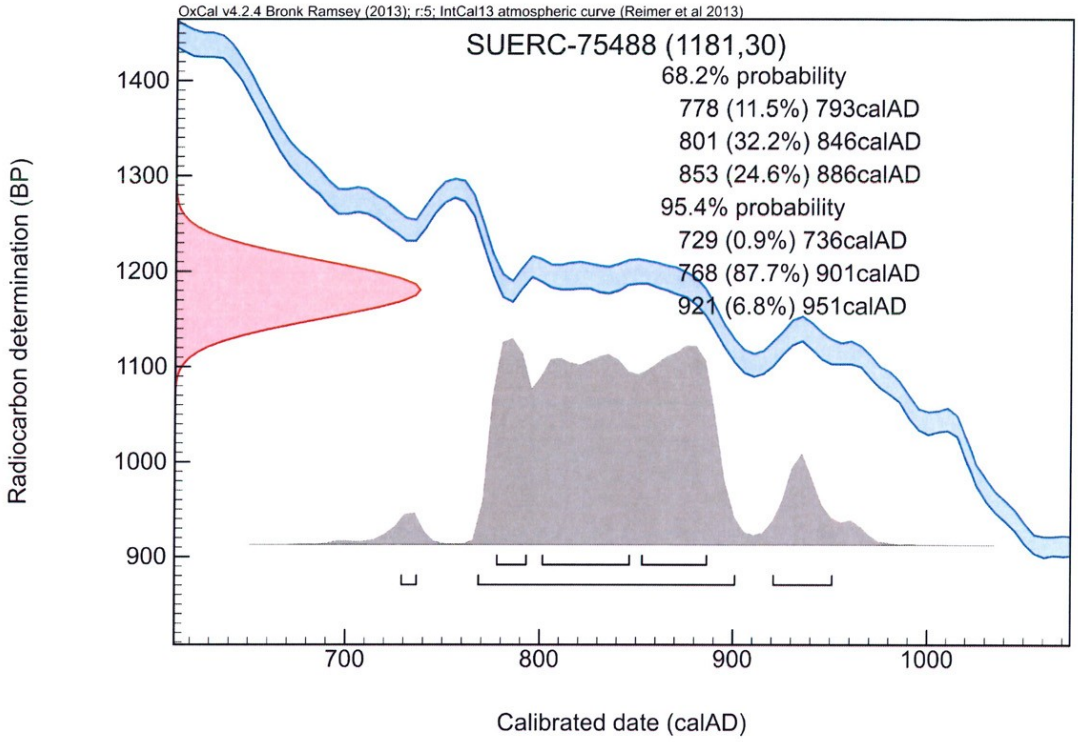
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk .

Conventional age and calibration age ranges calculated by : E Dunbo

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4. *

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve. †

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE

17 February 2017

Laboratory Code	SUERC-71675 (GU42884)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139703
Context Reference	10189
Sample Reference	466
Material	Charcoal : Quercus sp.
$\delta^{13}C$ relative to VPDB	-25.1 ‰
Radiocarbon Age BP	1231 ± 29

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

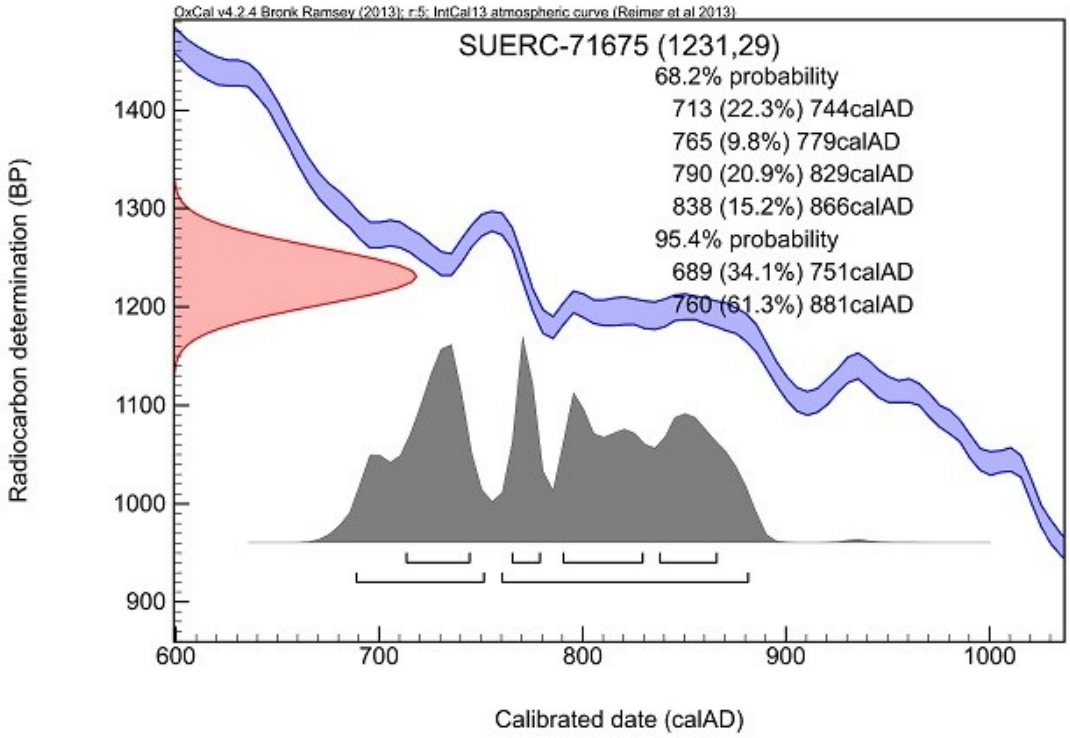
The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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

Conventional age and calibration age ranges calculated by :- Date :- 17/02/2017

Checked and signed off by :- Date :- 17/02/2017

Calibration Plot



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RADIOCARBON DATING CERTIFICATE
24 October 2017

Laboratory Code	SUERC-75489 (GU45240)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139703
Context Reference	10422
Sample Reference	478
Material	Charcoal : Corylus avellana
$\delta^{13}C$ relative to VPDB	-25.5 ‰
Radiocarbon Age BP	1956 ± 30

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

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

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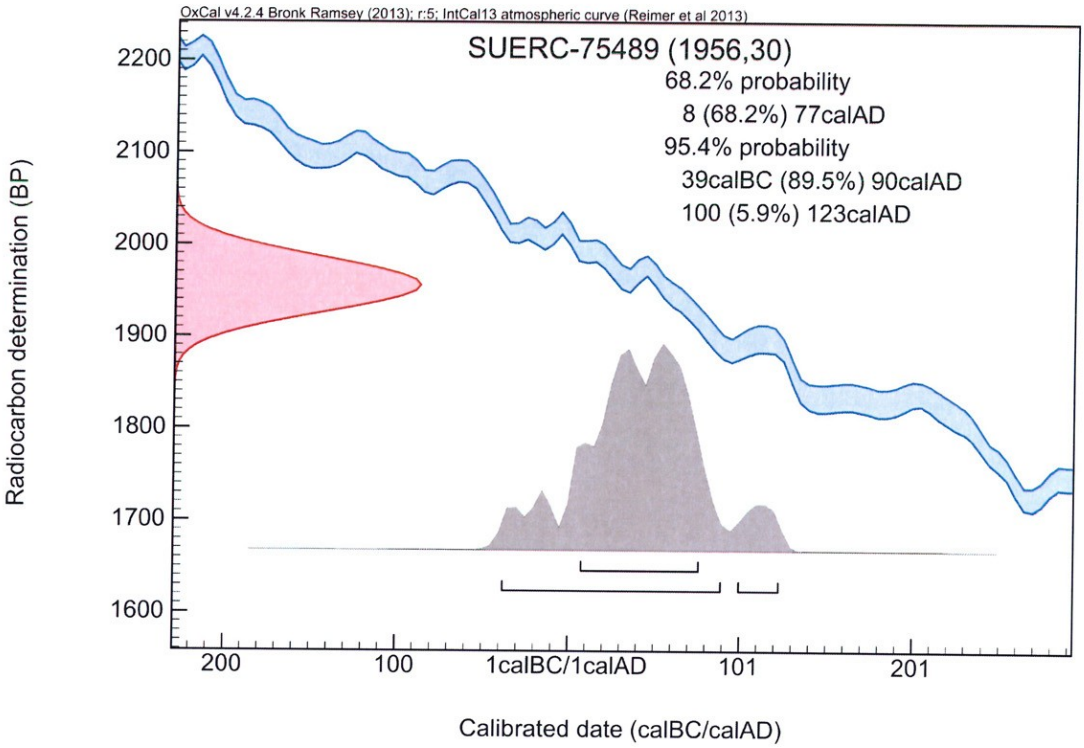
For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk .

Conventional age and calibration age ranges calculated by : E Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve.†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE
24 October 2017

Laboratory Code	SUERC-75490 (GU45241)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139704
Context Reference	10005
Sample Reference	504
Material	Charcoal : Quercus sp, cf sapwood
$\delta^{13}C$ relative to VPDB	-26.7 ‰
Radiocarbon Age BP	1880 ± 30

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

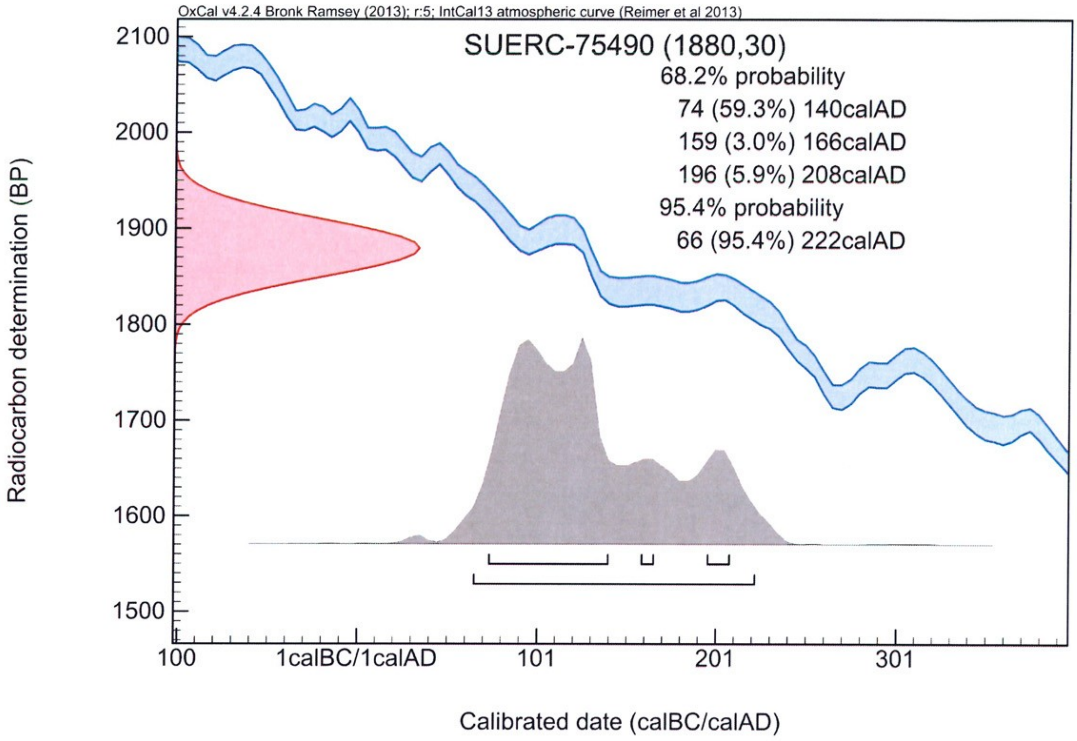
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk .

Conventional age and calibration age ranges calculated by : E Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4. *

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve. †

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE
24 October 2017

Laboratory Code	SUERC-75491 (GU45242)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139705
Context Reference	12045
Sample Reference	551
Material	Charcoal : Quercus sp, round/sapwood, outer 7 rings
$\delta^{13}C$ relative to VPDB	-25.6 ‰
Radiocarbon Age BP	1100 ± 30

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

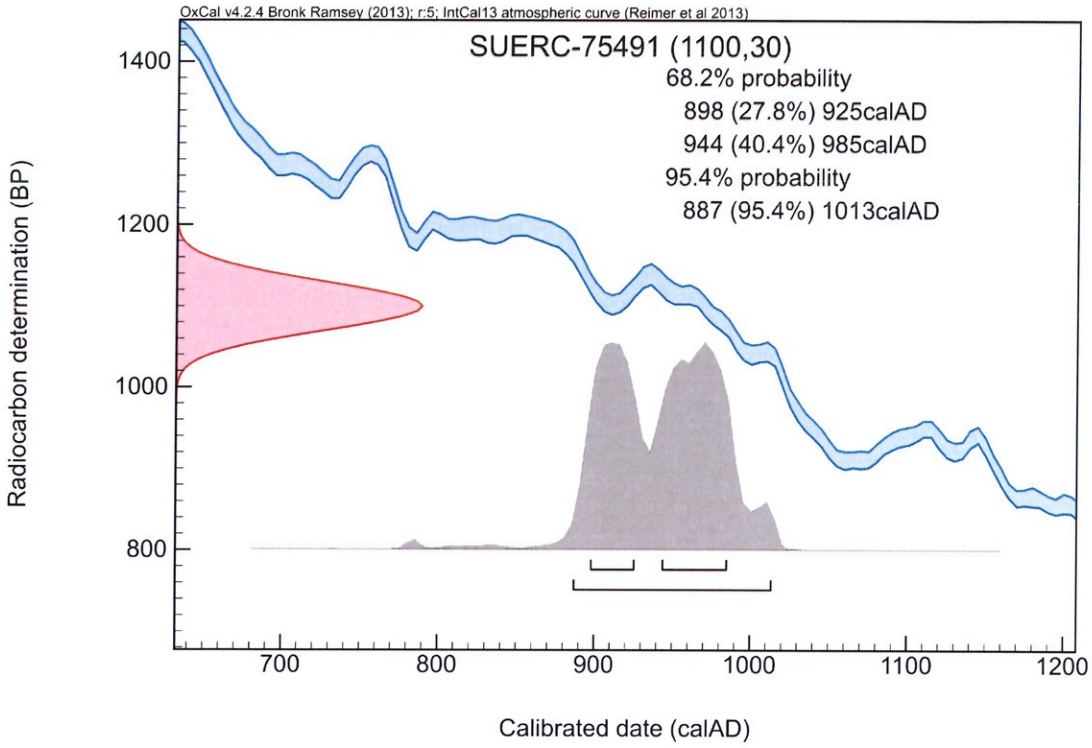
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk .

Conventional age and calibration age ranges calculated by : E Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve.†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE
18 April 2018

Laboratory Code	SUERC-78949 (GU47245)
Submitter	Zoe Ui Choileain Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambridgeshire CB23 8SQ
Site Reference	XNFNNR15
Context Reference	17151
Sample Reference	813
Material	Cremated bone : HSR
$\delta^{13}C$ relative to VPDB	-25.5 ‰
Radiocarbon Age BP	2105 ± 19

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

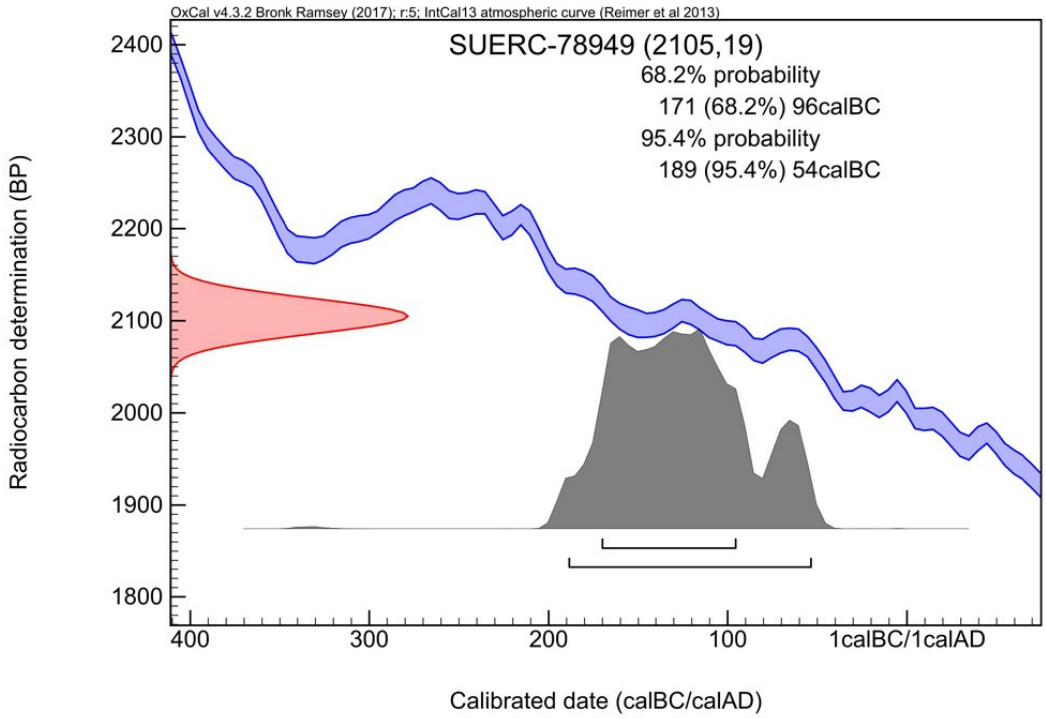
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E. Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE

07 November 2016

Laboratory Code	SUERC-69925 (GU42123)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139696
Context Reference	20390
Material	Charcoal : unid
$\delta^{13}C$ relative to VPDB	-25.2 ‰
Radiocarbon Age BP	3360 ± 29

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

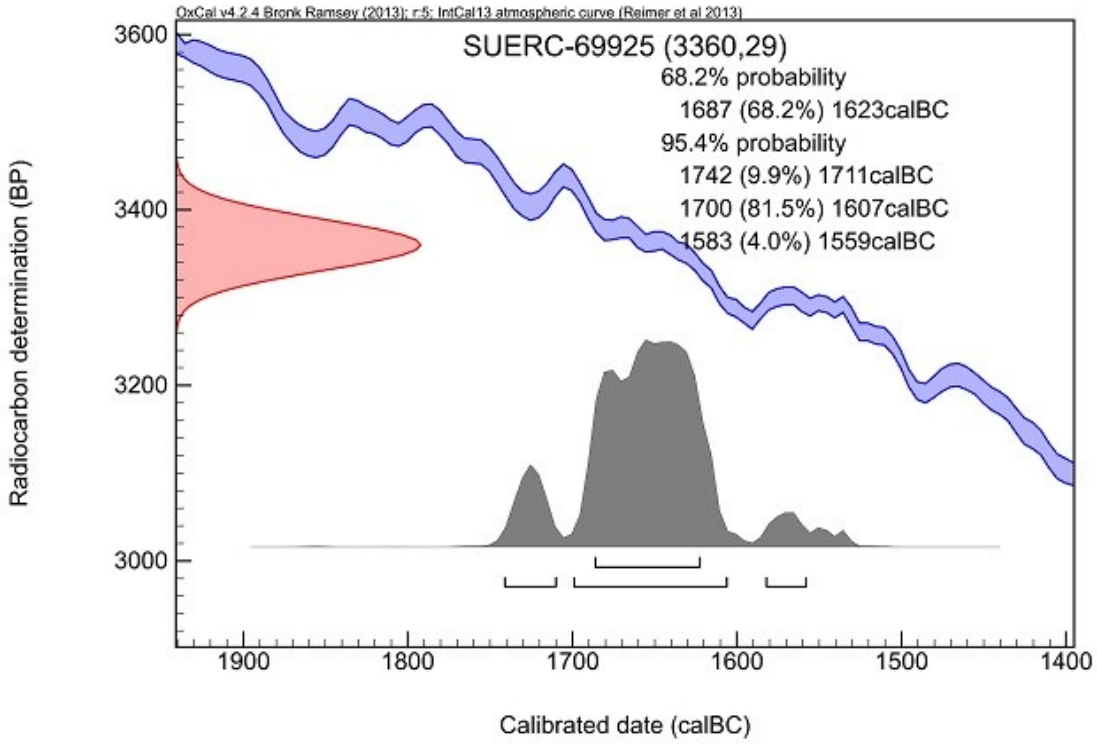
The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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

Conventional age and calibration age ranges calculated by :- E. Dunbar Date :- 07/11/2016

Checked and signed off by :- P. Naysmith Date :- 07/11/2016

Calibration Plot



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RADIOCARBON DATING CERTIFICATE
10 April 2018

Laboratory Code	GU47055
Submitter	Zoe Ui Choileain Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambridgeshire CB23 8SQ
Site Reference	XNFNNR15
Context Reference	20489
Material	residue
Result	Failed due to insufficient carbon.

N.B. Any questions directed to the laboratory should quote the GU coding given above.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Checked and signed off by : P. Naysmith

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RADIOCARBON DATING CERTIFICATE
24 October 2017

Laboratory Code	SUERC-75486 (GU45237)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139696
Context Reference	20513
Sample Reference	1014
Material	Charcoal : Betulacaeae
$\delta^{13}C$ relative to VPDB	-25.0 ‰ assumed
Radiocarbon Age BP	2281 ± 30

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

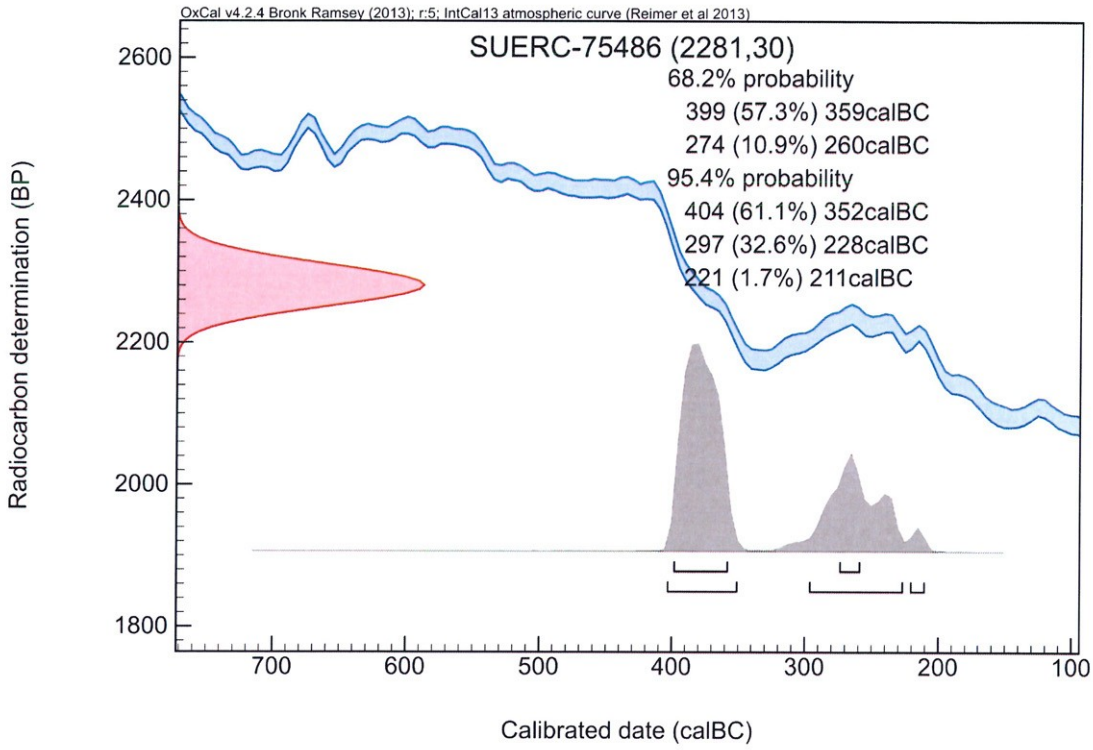
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk .

Conventional age and calibration age ranges calculated by : E Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4. *

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve. †

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE

25 January 2017

Laboratory Code	SUERC-71026 (GU42674)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139696
Context Reference	20563
Sample Reference	1016
Material	Charcoal : unid
δ ^{13}C relative to VPDB	-25.9 ‰
Radiocarbon Age BP	3077 ± 33

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

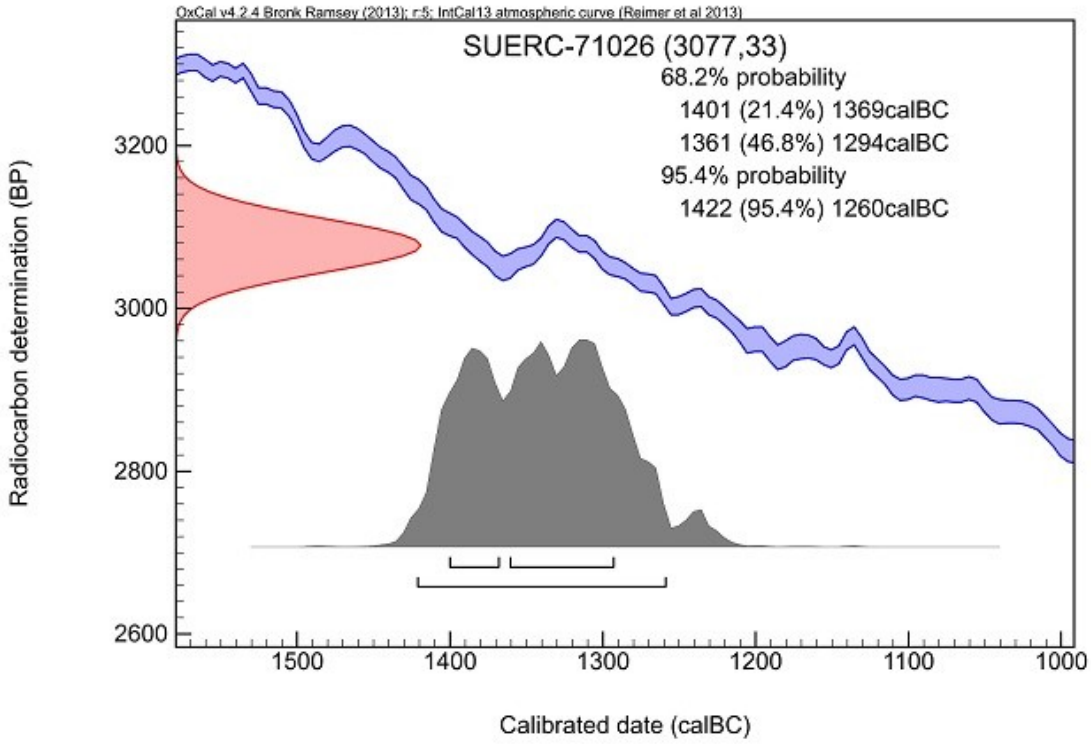
The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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

Conventional age and calibration age ranges calculated by :- E. Dunbar Date :- 25/01/2017

Checked and signed off by :- P. Naysmith Date :- 25/01/2017

Calibration Plot



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RADIOCARBON DATING CERTIFICATE

07 November 2016

Laboratory Code	GU42119
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139696
Context Reference	20622
Sample Reference	1023
Material	Charcoal : unid
Result	Failed: insufficient carbon.

N.B. Any questions directed to the Radiocarbon Laboratory should quote the GU coding given above.

The contact details for the laboratory are email Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

Checked and signed off by :- P. Naysmith Date :- 07/11/2016

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RADIOCARBON DATING CERTIFICATE

25 January 2017

Laboratory Code	SUERC-71025 (GU42673)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139696
Context Reference	20624
Sample Reference	1024
Material	Charcoal : unid
δ ^{13}C relative to VPDB	-25.0 ‰
Radiocarbon Age BP	3113 ± 33

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

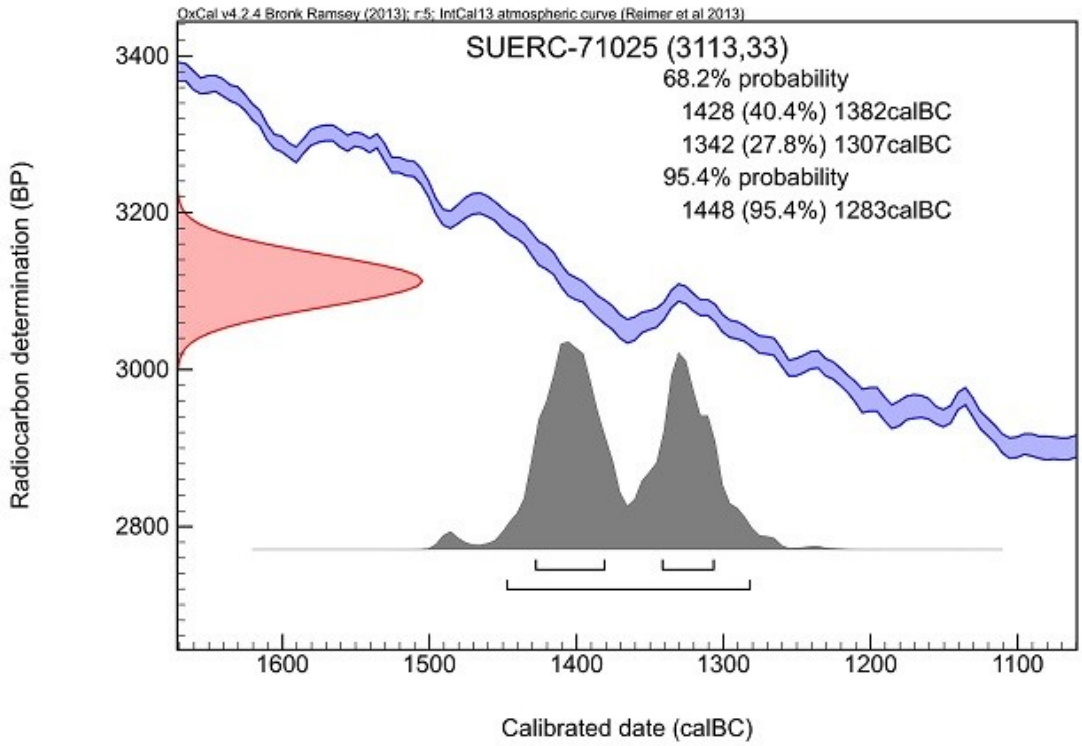
The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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

Conventional age and calibration age ranges calculated by :- E. Dunbar Date :- 25/01/2017

Checked and signed off by :- P. Naysmith Date :- 25/01/2017

Calibration Plot



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RADIOCARBON DATING CERTIFICATE

07 November 2016

Laboratory Code	SUERC-69922 (GU42120)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139696
Context Reference	21039
Sample Reference	1101
Material	Charcoal : unid
$\delta^{13}C$ relative to VPDB	-24.8 ‰
Radiocarbon Age BP	3346 ± 29

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

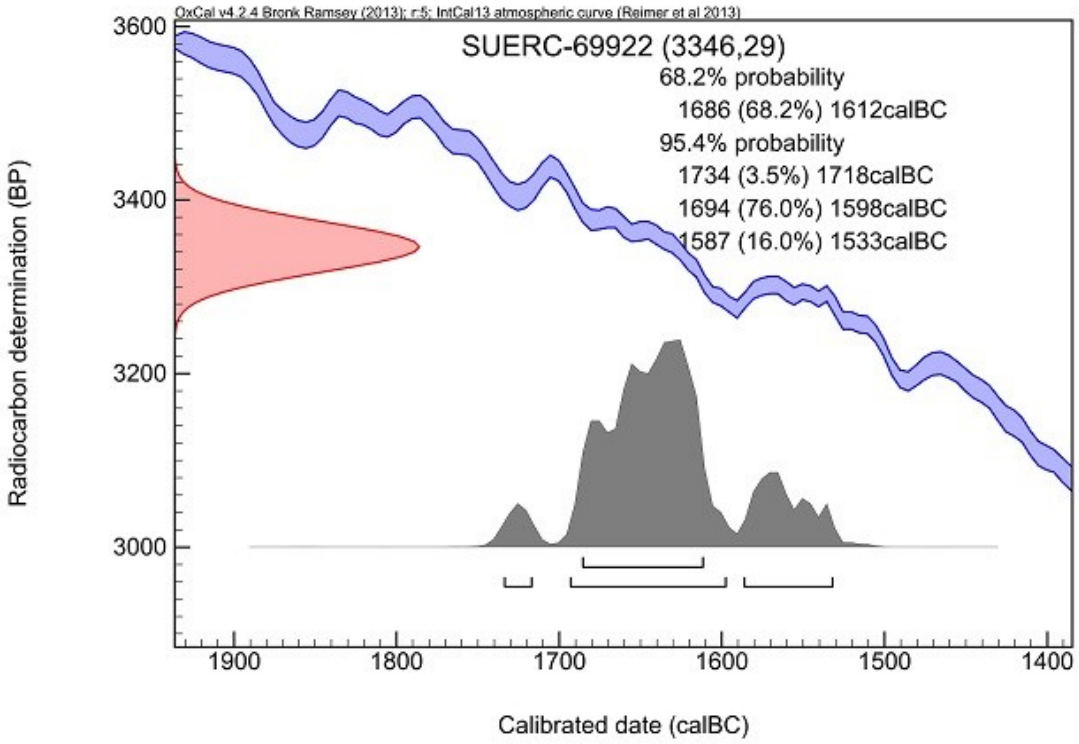
The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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

Conventional age and calibration age ranges calculated by :- E. Dunbar Date :- 07/11/2016

Checked and signed off by :- P. Naysmith Date :- 07/11/2016

Calibration Plot



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RADIOCARBON DATING CERTIFICATE

17 February 2017

Laboratory Code	SUERC-71674 (GU42883)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139696
Context Reference	21585
Sample Reference	1118
Material	Charcoal : Quercus sp. sapwood
$\delta^{13}C$ relative to VPDB	-24.7 ‰
Radiocarbon Age BP	3149 ± 29

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

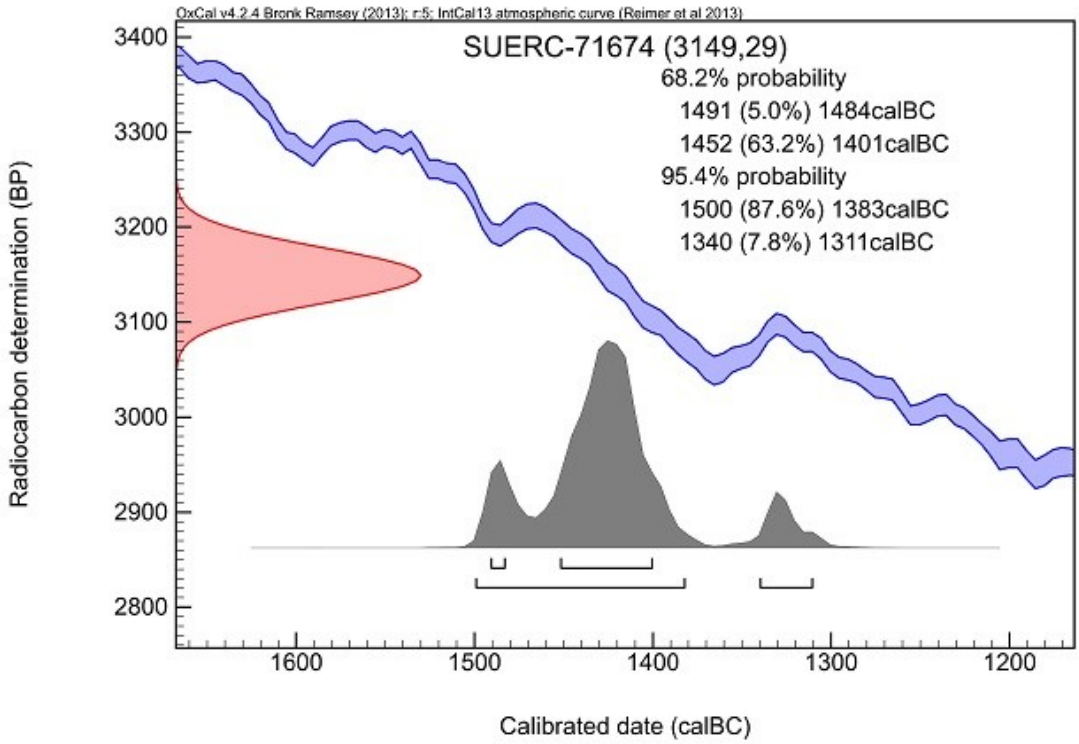
The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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

Conventional age and calibration age ranges calculated by :- Date :- 17/02/2017

Checked and signed off by :- Date :- 17/02/2017

Calibration Plot



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RADIOCARBON DATING CERTIFICATE
24 October 2017

Laboratory Code	GU45235
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139696
Context Reference	21809
Sample Reference	1115
Material	Charred plant remains : Poaceae
Result	Failed due to insufficient carbon.

N.B. Any questions directed to the laboratory should quote the GU coding given above.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk .

Checked and signed off by : P. Naysmith

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RADIOCARBON DATING CERTIFICATE
24 October 2017

Laboratory Code	SUERC-75487 (GU45238)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139696
Context Reference	21885
Sample Reference	1124
Material	Charcoal : Indeterminate twig fragment
$\delta^{13}C$ relative to VPDB	-26.9 ‰
Radiocarbon Age BP	320 ± 30

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

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

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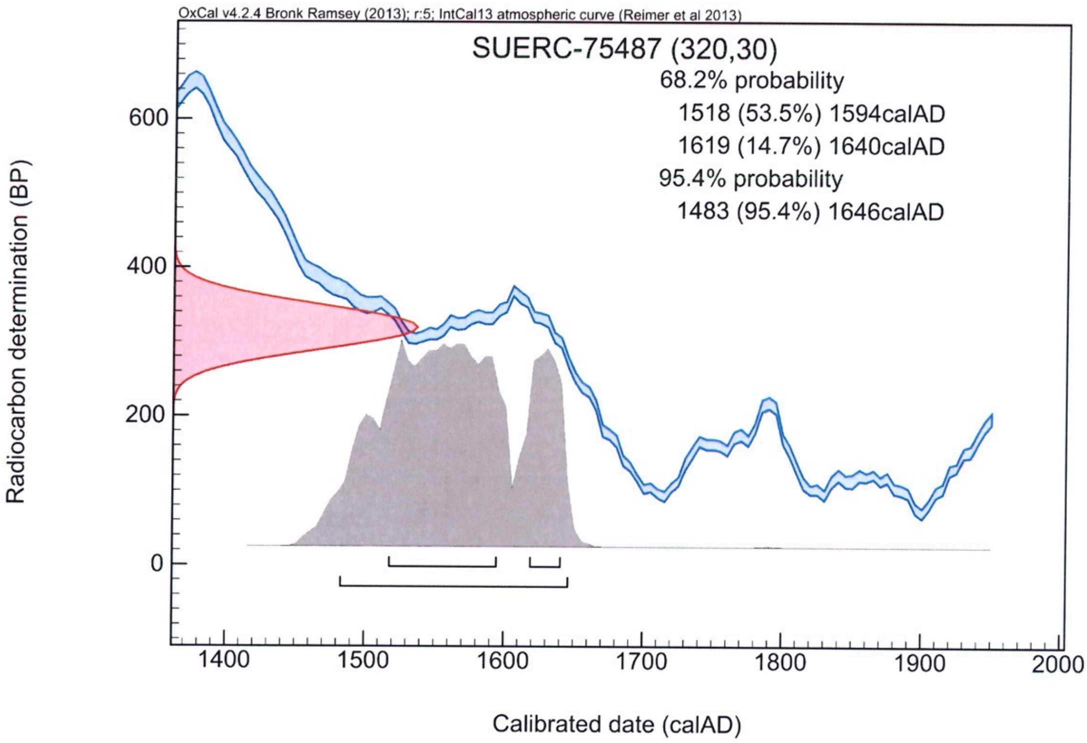
Conventional age and calibration age ranges calculated by : E Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve.†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE

07 November 2016

Laboratory Code	SUERC-69923 (GU42121)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ENF139696
Context Reference	21987
Sample Reference	1116
Material	Charcoal : unid
δ ^{13}C relative to VPDB	-27.4 ‰
Radiocarbon Age BP	4561 ± 28

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

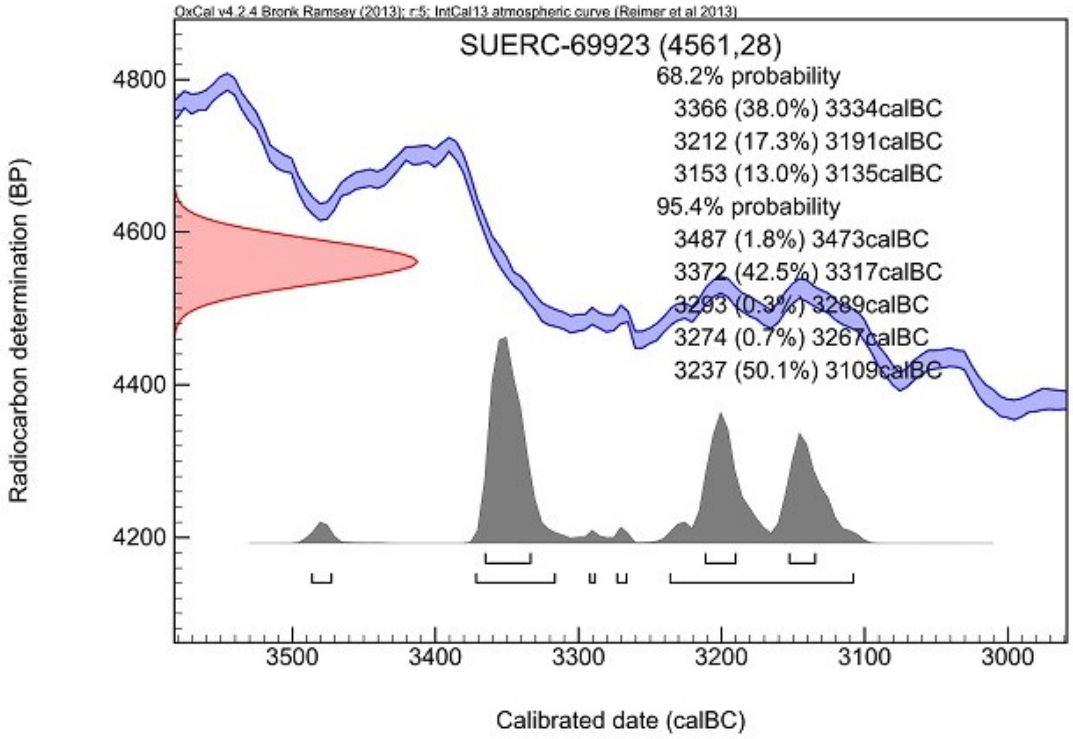
The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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

Conventional age and calibration age ranges calculated by :- E. Dunbar Date :- 07/11/2016

Checked and signed off by :- P. Naysmith Date :- 07/11/2016

Calibration Plot



Appendix E. Volume II Bibliography

Albarella, U. and Davis, S.J. 1996. Mammals and birds from Launceston Castle, Cornwall: decline in status and the rise of agriculture, Circaea 12 (1), 1-156.

Alcock, N.W., and Hall, L., 1994. *Fixtures and Fittings in Dated Houses 1567-1763*, CBA Practical Handbook in Archaeology, 11, York

Ames, J., & Sillwood, R., 2012 *Archaeological Trial Trench Evaluation of the Norwich Northern Distributor Route*. NPS unpublished report 2073

Anderson, S., 2004, 'The Pottery', in Wallis, H., *Excavations at Mill Lane, Thetford*, East Anglian Archaeology Report No. 108, pp. 67-86.

Anderson, S., 2005, 'The pottery', in Shelley, A., *Dragon Hall, King Street, Norwich: Excavation and Survey of a Late Medieval Merchant's Trading Complex*, E. Anglian Archaeol. 112, 129-52.

Anderson, S., 2009, *Bacton to Kings Lynn pipeline (BKL02): post-Roman pottery*. Archive report for Network Archaeology. Available http://www.spoilheap.co.uk/pdfs/BKL02pot.pdf

Anderson, S., 2015a, *Norwich Northern Distributor Route (ENF137058): post-Roman pottery assessment*. Archive report for OAE.

Anderson, S., 2015b, *Hare Road, Plumstead (ENF133970): post-Roman pottery (archive report)*. Archive report for OAE.

Anderson, S., 2016, *Land adj Church, Little Melton (ENF135278): pottery*. Archive report for OAE.

Ashwin, T. 1996 Neolithic and Bronze Age Norfolk. *Proceedings of the Prehistoric Society* 62, 41-62.

Ashwin, T. 2001 Exploring Bronze Age Norfolk: Longham and Bittering. In: J. Brück (Ed.) *Bronze Age Landscapes: tradition and transformation*, 23 – 32. Oxbow Books. Oxford.

Ashwin, T. and Bates, S., 2000. *Excavations on the Norwich Southern By-pass, 1989-91 Part I: Excavations at Bixley, Caistor St Edmund and Trowse*. East Anglian Archaeology 91, Part I

Ashwin, T. and Flitcroft, M., 1999. The Launditch and its Setting' *Norfolk Archaeology*. 43 Part II, 217-257

Atkin, M, Carter, A, and Evans, DH, 1985 *Excavations in Norwich 1971–1978 Part II*, East Anglian Archaeology 26

Baggs, T., 1963. The Location of Northwic, *Norfolk Research Committee Bulletin* 15, 3

Ballin, T.B. 2002 Later Bronze Age Flint Technology: a presentation and discussion of post-barrow debitage from monuments in the Raunds Area, Northamptonshire. *Lithics* 23, 3-28.

Ballantyne R.M., 2004. A cross-disciplinary investigation of Iron-Age pit deposition in French, C. 2004, Evaluation survey and excavation at Wandlebury Ringwork, Cambridgeshire, 1994. *Proceedings of the Cambridge Antiquarian Society XCIII 53-57*

Bamford, H.M., 1982. *Beaker Domestic Sites in the Fen Edge and East Anglia*, East Anglian Archaeology 16.

Bamford, H., 2000. 'Cremation urn and accessory vessels' in Ashwin, T. and Bates, S., *Excavations on the Norwich Southern Bypass, 1989-91. Part I: Excavations at Bixley, Caistor St Edmund and Trowse*. East. Anglian Archaeology 91, Part I., 92-94.

Barber, M., Field, D. and Topping, P. 1999 *The Neolithic Flint Mines of England*. English Heritage.

Bayley, J., Dungworth, D., and Paynter, S., 2001. *Archaeometallurgy*. English Heritage: London

Birch, T., 2011. Living on the Edge: Making and moving iron from the outside in Anglo-Saxon England, *Landscape History*, 5-23

Bishop, B.J. (forthcoming a) The Lithic Assemblage from the Middle/Late Bronze Age Enclosure 900. In: R. Clarke and N. Gilmour, *Linton in Context: investigations of five millennia of human interaction with the landscape of the Granta Valley*. East Anglian Archaeology.

Bishop, B.J. (forthcoming b) Bronze Age Struck Flint. In: L. Bush, The Archaeology of the Covenham Water Treatment Works to Boston Transfer, Lincolnshire. Oxford Archaeology Monograph.

Bishop, B.J. 2008 A Late Mesolithic Site at Woodthorpe Road, Guildford. *Surrey Archaeological Collections* 94, 125–157.

Bishop, B.J. 2012 The Grime's Graves Environs Survey: exploring the social landscapes of a flint source. Unpublished PhD Thesis, University of York.

Bishop, B.J. 2013 Excavations at Clay Farm, Cambridge, Site Code CAMCFT10: full report on the worked flint and burnt stone. Unpublished Report for Oxford Archaeology East.

Bishop, B.J. 2014 Excavations at Turner's Yard, Fordham, Cambridgeshire. Full Report on the Struck flint and Unworked Burnt Flint. Unpublished Report for Oxford Archaeology East.

Bishop, B.J. 2015 Archaeological Evaluation along the Norwich NDR, Norfolk. Lithic Assessment. Unpublished Report for Oxford Archaeology East.

Bishop, B.J. 2017a Excavations along the Route of the Norwich Northern Distributor Road, Norfolk: Lithic Assessment. Unpublished Report for Oxford Archaeology East.

Bishop. B. 2017b An Archaeological Evaluation at Brook Farm, Thorpe End, Norfolk. Site Code: ENF141589, Lithic Assessment. Unpublished PCA Report

Bishop, B. and Proctor, J., 2011. *Settlement, Ceremony and Industry on Mousehold Heath. Excavations at Laurel Farm (Phase II) Broadland Business Park, Thorpe St Andrew, Norfolk*. PCA Monograph 13

Blinkhorn, P., 1999, 'The trials of being a utensil: pottery function at the medieval hamlet of West Cotton, Northamptonshire', *Medieval Ceramics* 22–23, 37–46.

Boardman, S., Jones, G., 1990. Experiments on the effects of charring on cereal plant components. *Journal of Archaeological Science* 17. p 1-11

Bradley, R. 1978 *The Prehistoric Settlement of Britain.* Routledge and Kegan Paul. London.

Britannia, 1970. Excavations at Brampton Roman settlement, *Britannia* 1, 290

Brudenell, M. 2004 *Granta Park, Great Abington, Cambridgeshire: The Rickett Field Site: an archaeological evaluation*. Unpublished CAU Report

Brudenell, M., 2012. *Pots, practice and society: an investigation of pattern and variability in the post-Deverel Rimbury ceramic tradition of East Anglia*. Unpublished PhD thesis, York University

Butler, C. 2005 *Prehistoric Flintwork*. Tempus. Stroud

Cappers, R.T.J. Bekker, R.M. and Jans, J.E.A. 2006. Digital Seed Atlas of the Netherlands Groningen Archaeological Studies 4, Barkhuis Publishing, Eelde, The Netherlands. www.seedatlas.nl

Champion, T., 2011. 'Later Prehistory' in Booth, P, Champion, T., Foreman, S., Garwood, P., Glass, H., Munby, J. and Reynolds, A., *On Track: The Archaeology of High Speed 1 Section 1 in Kent.* Oxford Wessex Archaeology & High Speed, 151 -241

Clark, J, 1995. *The Medieval Horse and its Equipment* c *1150* – c *1450*. Medieval Finds from Excavations in London, 5, London

Clark, J.G.D., Higgs, E.S. and Longworth, I.H. 1960 Excavations at the Neolithic Site at Hurst Fen, Mildenhall, Suffolk (1954, 1957 and 1958). *Proceedings of the Prehistoric Society* 26, 202 - 245.

Clarke, D.L., 1970. *Beaker Pottery of Britain and Ireland.* Cambridge University Press

Clarke, W.G. and Halls, H.H. 1917. A "Cissbury Type" Station at Great Melton. Proceedings of the Prehistoric Society of East Anglia 2 (3),374-380.

Cleere, H., 1976. Some operating parameters for Roman ironworks, *Bulletin of the Institute of Archaeology* 13, 233-246

Cleere, H., 1981. *The Iron Industry of Roman Britain* (wealdeniron.org.uk)

Conneller, C., Little, A. and Birchenall, J. 2018. Making Space through Stone. In: Milner, N., Conneller, C. and Taylor, B. (eds.) *Star Carr Volume 1: A Persistent Place in a Changing World*, pp. 157–221. York: White Rose University Press. DOI: https://doi.org/10.22599/book1.h. Licence: CC BY-NC 4.0

Cowgill, J., de Neergaard, M., and, Griffiths, N., 1987. *Knives and Scabbards c1150-c1450*, Medieval Finds from Excavations in London, 1, London

Cox, N. and Brudenell, M. 2017. *Land North of Green Lane, Reydon, Suffolk: Archaeological Excavation Report*. Draft document. Oxford Archaeology East, Bar Hill, Cambridge.

Craddock, P.T., 1995. *Early Metal Mining and Production*, Edinburgh: Edinburgh University Press

Crawley, P., 2014. *Postwick Hub Archaeological Strip, Map and Sample Excavation at the Postwick Hub, Norwich Assessment Report and Updated Project Design.* NPS Report 2014/1264AUPD

Crew, P., 1991. The experimental production of prehistoric bar iron, *Historical Metallurgy* 25, 21-36

Crowson, A. and Bates, S. 1999. *Assessment Report and Updated Project Design for Archaeological Excavations and Watching Brief on the Bacton to Great Yarmouth Gas Pipeline, Norfolk, 1999.* Norfolk Archaeological Unit Report 924

Crummy, N. and Hind, J. Clay Tobacco Pipes in Crummy, N. 1988 *The post-Roman small finds from excavations in Colchester, 1971-85, p46-66.* Colchester Archaeological Report No 6 Colchester Archaeological Trust

Davis, S.J. 1992. A rapid method for recording information about mammal bones from archaeological site (AML report 19/92), London: English Heritage.

Dallas, C., 1984, 'The pottery', in Rogerson, A. and Dallas, C., *Excavations in Thetford 1948-59 and 1973-80*. E. Anglian Archaeol. 22, 117–66.

Dufraisse, A, Coubray, S, Girardclos, O, Dupin, A, and Lemoine, M, in press, Contribution of tyloses quantification in earlywood oak vessels to archaeological charcoal analyses: Estimation of a minimum age and influences of physiological and environmental factors, *Quaternary International* (2017)

Edlin, H.L., 1949. *Woodland crafts in Britain*, London

Edmonds 1995 *Stone Tools and Society*. Batsford. London.

Egan, G., And Pritchard, F., 1991. *Dress Accessories* c *1150* – c *1450*, Medieval Finds from Excavations in London, 3, London

Emery, G., 2008. 'An Archaeological Evaluation at the former David Rice Hospital, Drayton, Norfolk' Unpublished Report NAU Archaeology (Accessible on ADS: http://archaeologydataservice.ac.uk/library/browse/issue.xhtml?recordId=1100639&recordType=GreyLitSeries)

Evans C. Pollard J.; Knight M., 1999. Life in the Woods: 'Tree-throws, 'Settlement' and Forest Cognition' *Oxford Journal of Archaeology* 18, 3, 241-254.

Evans, C., and Patten R. 2011. An Inland Bronze Age: Excavations at Striplands Farm, West Longstanton. *Proceedings of the Cambridge Antiquarian Society* 100, 7-45

Fitzpatrick, A, 2017 'The famous volcanic rock of the Eifel', was it imported to Britain in Prehistory, in R Shaffrey (Ed) *Written in Stone: Papers on the Function, Form, and Provenancing of Prehistoric Stone Objects in Memory of Fiona Roe*, Highfield Press, St Andrews, 195–214

Ford, S., Bradley, R., Hawkes, J. and Fisher, P. 1984 Flint-Working in the Metal Age. *Oxford Journal of Archaeology* 3, 157-173.

Garrow, D., 2006. *Pits, Settlement and Deposition during the Neolithic and Early Bronze Age in East Anglia*. BAR British Series 414.

Garrow, D., Beadsmoore, E. and Knight, M., 2005. 'Pit clusters and the temporality of occupation: and earlier Neolithic site at Kilverstone, Norfolk'. *Proceedings of the Prehistoric Society* 71.

Garrow, D., Lucy, S. & Gibson, D., 2006. *Excavations at Kilverstone, Norfolk: Neolithic pits, later prehistoric, Romano British and Anglo Saxon occupation and later activity*. East Anglian Archaeology 113.

Garwood, P., 1999 'Grooved Ware in Southern Britain; Chronology and Interpretation'. In R. Cleal and A. MacSween (ed.s) *Grooved Ware in Britain and Ireland*. Neolithic Studies Group Seminar Papers 3. 145-176. Oxford, Oxbow

Gibson, A.M., 1982. *Beaker Domestic Sites, a study of the Domestic Pottery of the Late Third and Early Second Millennium BC in the British Isles*, British Archaeological Report 107 (Oxford).

Gilmour, N 2017 *A Prehistoric Landscape at Middleton Aggregates Blackborough End, Norfolk* unpublished OAE Report No. 1750

Gilmour, N., Horlock, S., Mortimer, R. and Tremlett, S., 2014 'Middle Bronze Age Enclosures in the Norfolk Broads: A Case Study at Ormesby St Michael, England' *Proceedings of the Prehistoric Society* Volume 80 141-157

Green, M., and Haskins, A. 2015 *Targeted Excavation and watching brief on a ring gully at Postwick WTW, Low Brundall Lane, Postwick.* OA East Report No: 1614

Hansen, P.V. and Madsen, B. 1983 Flint Axe Manufacture in the Neolithic. *Journal of Danish Archaeology* 2, 43-59.

Hather, JG, 2000 *The identification of the Northern European Woods*, London

Hawkin, F. A. 1977. *Neutron activation analysis of Thetford-type wares*. Unpublished masters dissertation, University of Bradford.

Hazell, Z, Crosby, V, Oakey, M, and Marshall, P, 2017 Archaeological investigation and charcoal analysis of charcoal burning platforms, Barbon, Cumbria, UK*, Quaternary International*, 458, 178-199

Healy, F. 1984 Farming and Field Monuments: the Neolithic of Norfolk. In: C. Barringer (Ed.) *Aspects of East Anglian Prehistory,* 77-140. Geo Books. Norwich.

Healy, F., 2013. Introduction and background, in Hills, C. & Lucy, S. *Spong Hill, part IX: Chronology and Synthesis*. McDonald Institute Monographs. Cambridge: McDonald Institute for Archaeological Research, 1–26.

Healy, F.,2012. 'Chronology, Corpses Ceramics, Copper and Lithics' in Allen, M.J., Gardiner, J. and Sheridan, A., Is there a British Chalcolithic? People, place and polity in the late 3rd millennium. Prehistoric Society research Paper 4, 144-164.

Healy, F., 1996. *The Fenland Project, Number 11: The Wissey Embayment: Evidence for pre-Iron Age Occupation*. East Anglian Archaeology 78.

Healy, F., 1995. 'Pots, Pits and Peat'. In I. Kinnes and G. Varndell (ed.s) '*Unbaked Urns of Rudely Shape' Essays on British and Irish Pottery for Ian Longworth*. 101-112. Oxbow Monograph 55. Oxford.

Healy, F., 1988 *The Anglo-Saxon Cemetery at Spong Hill, North Elmham, part VI: Occupation During the Seventh to Second Millennium BC*, East Anglian Archaeology 39.

Herne, A. 1991 The Flint Assemblage. In: I. Longworth, A. Herne, G. Varndell and S. Needham, *Excavations at Grimes Graves Norfolk 1972 - 1976. Fascicule 3. Shaft X: Bronze Age flint, chalk and metal working*, 21 - 93. British Museum Press. Dorchester.

Heslop, D H, 2008 *Patterns of quern production, acquisition and deposition. A Corpus of Beehive Querns from Northern Yorkshire and Southern Durham*, Yorkshire Archaeological Society Occasional paper 5

Higham, C.F.W. 1967. Stockrearing as a cultural factor in prehistoric Europe, proceedings of the prehistoric society 33, 84-106.

Hillson, S. 1992. Mammal bones and teeth: An introductory guide to methods and identification. London Institute of Archaeology: University College London.

Holck, P 2008 *Cremated bones* Anatomical Institute, University of Oslo

Huntley, J, 2010 *A review of wood and charcoal recovered from archaeological excavations in northern England*, English Heritage Research Department Report Series no 68-2010, Portsmouth

Jacomet, S. 2006. Identification of cereal remains from archaeological sites. (2nd edition, 2006) IPNA, Universität Basel / Published by the IPAS, Basel University.

Jacques, D., Phillips, T. and Lyons, T. 2018 *Blick Mead; exploring the 'First Place' in the Stomehenge landscape*. Peter Lang. Oxford.

Jennings, S., 1981, *Eighteen Centuries of Pottery from Norwich*. E. Anglian Archaeol. 13, Norwich Survey/NMS.

Keys, J., 2011. 8.3 Ironworking slag and industrial residues IN Bishop & Proctor, p.98-99

Kinnes, I., Gibson, A., Ambers, J., Bowman, S., Leese, M., and Boast, R., 1991 'Radiocarbon dating and British Beakers: the British Museum programme' *Scottish Archaeological Review* 8, 35-78.

Lane, T. and Morris, E., 2001. A Millennium of Saltmaking: Prehistoric and Romano-British Salt Production in the Fenland. Lincolnshire Archaeology and Heritage Reports Series No 4.

Langdon J, 2004 *Mills in the Medieval Economy. England 1300–1540*, Oxford University Press, Oxford

Lawson, A., 1983 *The Archaeology of Witton near North Walsham, Norfolk,* East Anglian Archaeology 18.

Longworth, I., 1960 'Pottery' in Clark, J.G.D., Excavations at the Neolithic site at Hurst Fen, Mildenhall, Suffolk. *Proceedings of the Prehistoric Society* 26, 228-240.

Longworth, I. 1971 'The Neolithic Pottery' in Wainwright G.J. and Longworth I.H. *Durrington Walls Excavations 1966 to 1968.* 48-155. Society of Antiquaries, London.

Longworth, I.,Ellison, A. and Rigby, V., 1988 *Excavations at Grimes Graves, Norfolk 1972-1976. Fascicle 2. The Neolithic, Bronze Age and Later Pottery'.* British Museum Publications Limited.

Lyons, A. 'Kiln Furniture' in Nicholls, K., 2016. *Prehistoric enclosure, Roman pottery kilns and a post-medieval trackway at RAF Brampton.* OAE unpublished report 1914.

Manning, WH, 1985. Catalogue of the Romano-British iron tools, fittings and weapons in the British Museum, London

Major, H, 2012 Worked Stone in Wilson, T, Cater D, Clay C and Moore R 2012 *Bacton to Kings Lynn Gas Pipeline Volume 1: Prehistoric, Roman and Medieval Archaeology,* EAA 145, 145–147

McCarthy, M. and Brooks, C., 1988, *Medieval Pottery in Britain AD900-1600*, Leicester Univ. Press.

McCarthy, R. 2010. Human Remains in Bush, L *Archaeological Watching Brief at Titchwell Marsh RSPB Reserve, Norfolk* Report No 1132 27-38

McCormick, F. and Murray E. 2007. Knowth and the zooarchaeology of early Christian Ireland. Dublin: Royal Irish Academy.

McComish, J.M. 2015. *A Guide to Ceramic Building Materials*. York Archaeological Trust. Report Number 2015/36. Web Based Report.

McKinley, J.I 2004 'Compiling a skeletal inventory: disarticulated and commingled remains in Brickley, M. and McKinley (eds) *Guidelines to the Standards for Recording Human Remains* IFA Paper No. 7 British Association for Biological Anthropology and Osteoarchaeology and Institute for Archaeologists: Reading 5, 9-13

McLaren, A.P. 2009 A Social Life for Later Lithics: A Technological and Contextual Analysis of Later Bronze and Earliest Iron Age Flintworking in East Anglia, England. Doctoral Thesis, University of Cambridge.

Mitchell, P. and Brickley, M. (eds.) Updated Guidelines to the Standards for Recording Human Remains IFA Paper No. 7 British Association for Biological Anthropology and Osteoarchaeology and the Chatered Institute for Archaeologists. Access online: https://www.archaeologists.net/sites/default/files/14_Updated%20Guidelines%20to%20the%20Standards%20for%20Recording%20Human%20Remains%20digital.pdf

Moan, P., 2017. *Norwich Northern Distributor Road Post-Excavation Assessment and Updated Project Design, Volume 1: Summary of Results, Finds and Environmental Reports*, OAE Report No.1984

Moore, S., 1999. *Cutlery for the Table. A History of British Table and Pocket Cutlery*, Sheffield

MPRG, 1998, *A Guide to the Classification of Medieval Ceramic Forms*. Medieval Pottery Research Group Occasional Paper 1.

Murphy, P, 2001 *Review of Wood and Macroscopic Wood Charcoal from Archaeological Sites in the West & East Midlands Regions and the East of England*, English Heritage Centre for Archaeology Report 23/2001, Portsmouth

Needham, S., 2005 Transforming Beaker Culture in North-West Europe: processes of fusion and fission, *Proceedings of the Prehistoric Society* **71**, 171-217

Newcomer, M.H. 1971 Some Quantitative Experiments in Handaxe Manufacture. *World Archaeology* 3, 83-90.

Oswald, A. 1975 *Clay Pipes for the Archaeologist* British Archaeological Reports No. 14 British Archaeological Reports, Oxford.

Payne, S. 1973. Kill off patterns in sheep and goats: the mandible from Asvan Kale, Anatolian Studies 23, 281-303.

Pelcin, A. 1997 The Effect of Indentor Type on Flake Attributes: evidence from a controlled experiment. *Journal of Archaeological Science* 24, 613-621.

Percival, S., 2006 *Prehistoric Pottery from Harford Park and Ride*. Unpublished Draft Report for NAU Archaeology

Percival, S., 2004 'The Prehistoric pottery' in Whitmore, D., 'Excavations at a Neolithic Site at the John Innes Centre, Colney 2000' *Norfolk Archaeology*. Vol XLIV Pt III, 422-426.

Percival, S., 2011. 'Neolithic Pottery' In Bishop, B. and Proctor, J., *Settlement, Ceremony and Industry on Mousehold Heath. Excavations at Laurel Farm (Phase II) Broadland Business Park, Thorpe St Andrew, Norfolk.* PCA Monograph 13, 48-53.

Percival, S., 2012. 'Prehistoric Pottery' in Wilson, T, Cater, D., Clay, C. and Moore, D., *Bacton to Kings Lynn Gas Pipeline. Volume 1: Prehistoric, Roman and Medieval Archaeolo*gy. East Anglian Archaeology 147. Lincoln.

Percival 1999. 'Prehistoric Pottery' in Crowson, A. and Bates, S. *Assessment Report and Updated Project Design for Archaeological Excavations and Watching Brief on the Bacton to Great Yarmouth Gas Pipeline, Norfolk, 1999*. Norfolk Archaeological Unit Report 924

Percival, S., 2011. 'Neolithic Pottery' In Bishop, B. and Proctor, J., Settlement, Ceremony and Industry on Mousehold Heath. Excavations at Laurel Farm (Phase II) Broadland Business Park, Thorpe St Andrew, Norfolk. PCA Monograph 13, 48-53.

Percival, S., 2014. Artefact of Burnt Clay, in T Fletcher, *Bronze Age Settlement and Burial on land North of Newmarket Road, Burwell, Cambridgeshire. Archaeological Evaluation Report*, 1704, Oxford Archaeology East, 30

Piggott, S. 1954 *Neolithic Cultures of the British Isles*: a study of the stone-using agricultural communities of the British Isles in the second millennium BC. Cambridge University Press. Cambridge.

Pitts, M. 1996 The Stone Axe in Neolithic Britain. *Proceedings of the Prehistoric Society* 61, 311-371.

Pitts, M.W. 1978 Towards an Understanding of Flint Industries in Post-Glacial England. *Bulletin of the Institute of Archaeology* 15, 179-197.

Pollard, J. 2002 The Ring-Ditch and the Hollow: excavation of a Bronze Age 'shrine' and associated features at Pampisford, Cambridgeshire. *Proceedings of the Cambridge Antiquarian Society* 91, 5-21.

Poole, C., 1984. 'Objects of Baked Clay', in Cunliffe, B., *Danebury: an Iron Age hillfort in Hampshire. Volume 2, the excavations, 1969 – 1978: the finds*, CBA Res Rep, 52, London, 398-401

Pooley, A., 2015. *Norwich Northern Distributor Road (NNDR) and Heath Farm: Archaeological Evaluation*. OA East unpublished report 1779

Prehistoric Ceramic Research Group, 2010. *The Study of Later Prehistoric Pottery: General Policies and Guidelines for Analysis and Publication*. PCRG Occasional Papers 1 and 2. 3rd edition

Pryor, F.M.M. 1998 Welland Bank Quarry, South Lincolnshire. *Current Archaeology* 160, 139-45.

Quinn, P. S. 2018. *Petrographic Analysis of Medieval Pottery from Green Lane, Reydon, Suffolk, UK*. Unpublished report. www.ceramicpetrology.co.uk. 2018/130.

Quinn, P. S. 2015. *Petrographic Analysis of Late Medieval LMT Pottery from Plumstead, Norwich, UK*. Unpublished report. www.ceramicpetrology.co.uk. 2015/105.

Quinn, P. S. 2013.*Ceramic Petrography: The Interpretation of Archaeological Pottery & Related Artefacts in Thin Section*. Archaeopress, Oxford.

Rackham, O., 1994. *The Illustrated History of the Countryside*, Orion, London.

Reitz, E.J. and Wing, E.S., 1999. Zooarchaeology. (Cambridge Manuals in Archaeology). Cambridge: Cambridge University Press.

Reynolds, P J, 1974 Experimental Iron Age storage pits: an interim report, PPS 40, 118-31

Richards, C. and Thomas, 3. 1984 Ritual Activity and Structured Deposition in Late Neolithic Wessex. In: R. Bradley and J. Gardiner (Eds.) *Neolithic Studies, a Review of Some Current Research*, 189-218. British Archaeology Report 133.

Riddler, I, And Vince, A., 2005. Late Iron Age Small Finds in B. Bishop and M. Bagwell, *Iwade, Occupation of a North Kent Village from the Mesolithic to the medieval period*, PCA Monograph 3, London, 80–81

Robinson, I. 2007. ' Middle Bronze Age Cremation practice in East Anglia: Continuity and Change in Cemetery form' unpublished MPhil thesis, University of Cambridge

Schmid, E., 1972. Atlas of animal bones for prehistorians, archaeologists and quaternary geologists. Amsterdam-London-New York: Elsevier publishing company.

Schmid, C.H and Symes S.A 2008 *The Analysis of Burned Human Remains* Elsevier

Shepherd Popescu, E., 2009. *'Norwich Castle: Excavations and Historical Survey 1987–98 (in four parts).Parts I Anglo-Saxon to c.1345 and II c.1345 to Modern',* East Anglian Archaeology 132

Smith, T. 2001. On ‘small yellow bricks … from Holland’. *Construction History*, Volume 17

Smith, W, 2002 *A review of archaeological wood analyses in southern England*, English Heritage Centre for Archaeology Report 75/2002, Portsmouth

Silver, I.A. 1970. The ageing of domestic animals. In D.R. Brothwell and E.S Higgs (eds), Science in archaeology: A survey of progress and research, pp.283-302. New York: Prager publishing.

Thomas, J. 1999 *Understanding the Neolithic: a revised second edition of rethinking the Neolithic*. Routledge. London.

Trimble, G. and Watkins, P., 2008 *Norwich Northern Distributor Route: Archaeological Evaluation by Trial Trenching*. NAU Report 1363

Trump, D.H. 1956 The Bronze Age Barrow and Iron Age Settlement at Thriplow. *Proceedings of the Cambridge Antiquarian Society* 49, 1-12.

Tylecote, R.F., 1967. A Roman iron smelting at Ashwicken, Norfolk, *Norfolk Archaeology* 34, 187-214

Tylecote, R.F., 1986. *The Prehistory of Metallurgy in the British Isles*, The Institute of Metals, London

Tylecote,R.F., 1987. *The early history of metallurgy in Europe*, Longman, London and New York

Van den Bossche, W. 2001 *Antique Glass Bottles Their History and Evolution (1500-1850)* Antique Collectors Club Woodbridge Suffolk

Van der Veen, M. 1995 The identification of maslin crops. In H. Kroll and R. Pasternak (eds.) *Res Archaeobotanicae*, *Kiel*, pp. 335-343.

Vince, A., 2007. *Coastally-Traded Handmade Early Medieval Wares in Eastern England*. AVAC Unpublished Report 2007/073

von den Driesch, A., 1976. A guide to the measurement of animal bones from archaeological sites. Cambridge, Massachusetts: Peabody Museum of Archaeology and Ethnology, Harvard University.

von den Driesch, A. and Boessneck, J., 1974. 'Kritische Anmerkungen zur Widerristhohenberechnung aus Langenmassen vor- und fruhgeschichtlicher Tierknochen', Saugetierkundliche Mitteilungen 22, 325-348.

Waddington, K. and Sharples, N. 2011 *The Excavations at Whitchurch 2006-2009. An Interim Report*. Cardiff Studies in Archaeology 31.

Waddington, K.E. 2009 Reassembling the Bronze Age: exploring the southern British midden sites. Unpublished Ph. D thesis. Cardiff University.

Wade, K., 1976. 'Excavations at Langhale, Kirstead', *Norfolk*. E. Anglian Archaeol. 2, 101–30.

Wainwright, G. 1972. The Excavation of a Neolithic Settlement on Broome Heath, Ditchingham, Norfolk. *Proceedings of the Prehistoric Society*. Vol 38 pp 1-97.

Wainwright, G. 1973. The Excavation of Prehistoric and Romano-British Settlements on Eaton Heath, Norwich. *Archaeological Journal.* Vol CXXX pp 1-43

Whittacker, J.C. 1994 *Flintknapping: making and understanding stone tools*. University of Texas Press. Austin.

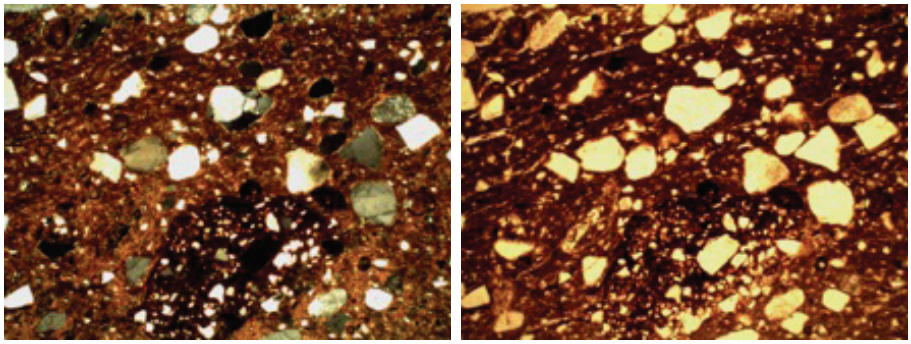
Whittle, A, Healy, F. and Bayliss A., 2011 *Gathering Time. Dating the Early Neolithic Enclosures of Southern Britain and Ireland.* Oxbow, Oxford.

Wilson, T, Cater, D., Clay, C. and Moore, D., 2012. *Bacton to Kings Lynn Gas Pipeline. Volume 1: Prehistoric, Roman and Medieval Archaeology.* East Anglian Archaeology 147. Lincoln.

Woodforde, J. 1976. *Bricks: To Build a House*. Routledge and Kegan Paul.

Young, R. and Humphrey, J. 1999 Flint Use in England after the Bronze Age: time for a re-evaluation? *Proceedings of the Prehistoric Society* 65, 231-242.

Zohary, D., Hopf, M. and Weiss, E. (2012) *Domestication of plants in the Old World*. Oxford University Press, Oxford.



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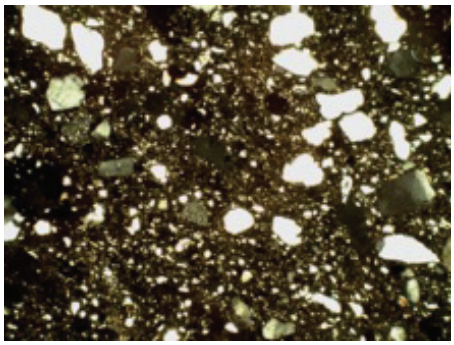

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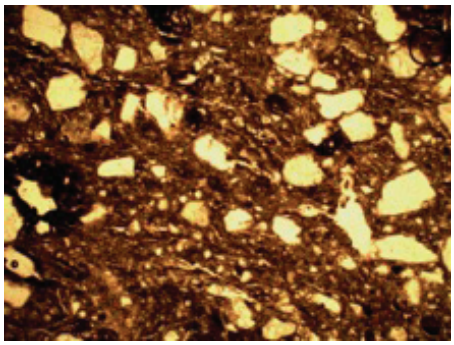

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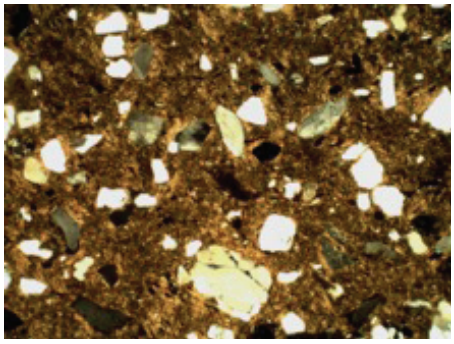

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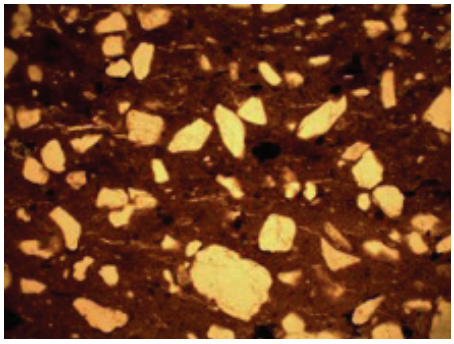

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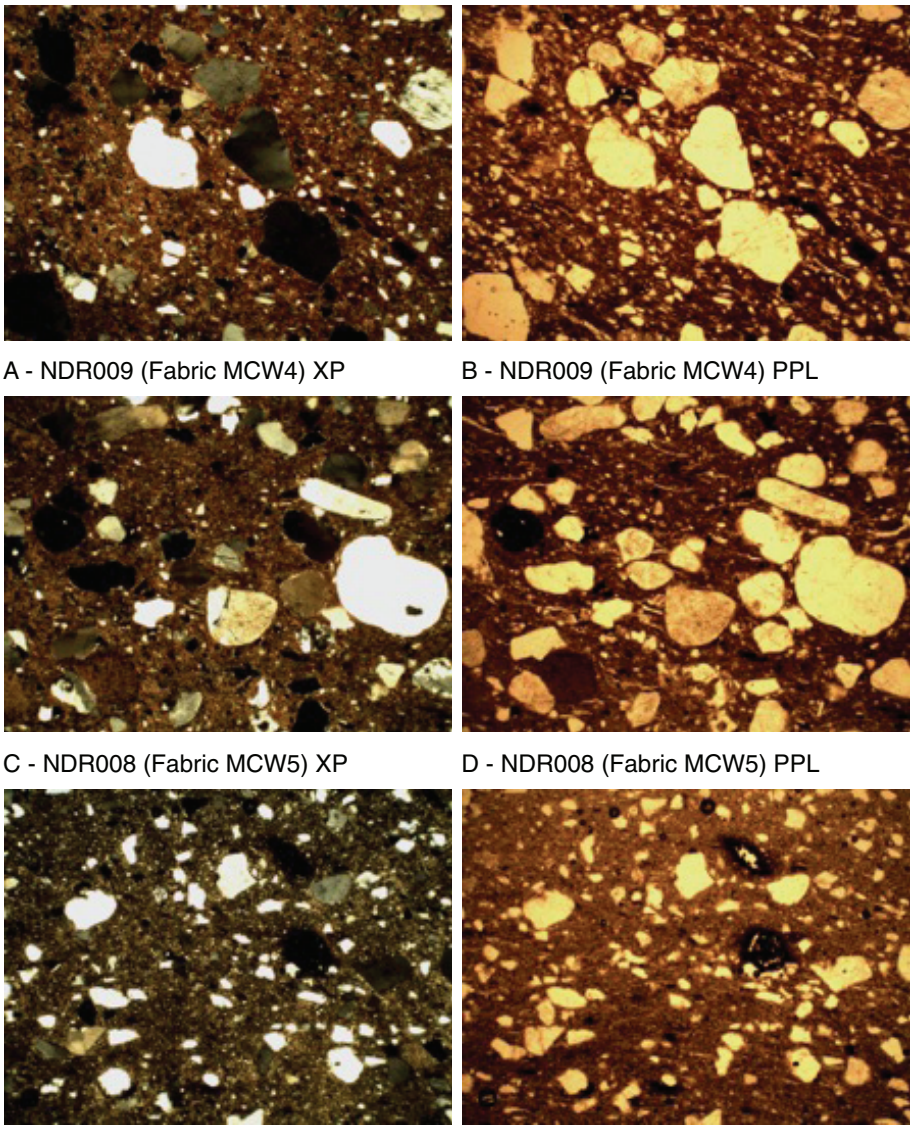
PPL = plane polarised light, XP = crossed polars. Field of view = 2.9mm

Figure 1: NDR Post-Roman Pottery Thin Sections



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B - NDR009 (Fabric MCW4) PPL

C - NDR008 (Fabric MCW5) XP

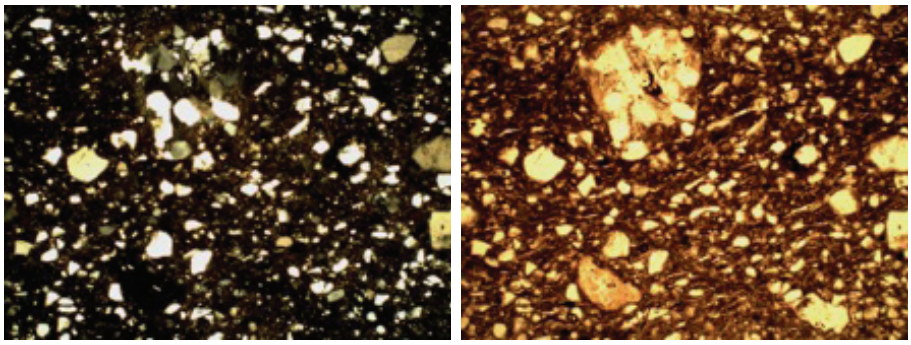
D - NDR008 (Fabric MCW5) PPL

E - NDR005 (Fabric MCW6) XP

F - NDR005 (Fabric MCW6) PPL

PPL = plane polarised light, XP = crossed polars. Field of view = 2.9mm

Figure 2: NDR Post-Roman Pottery Thin Sections



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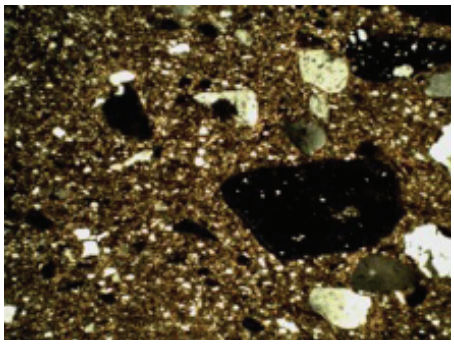

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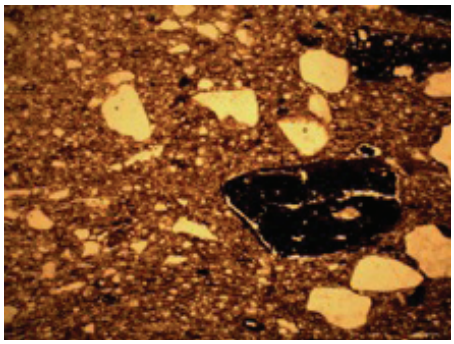
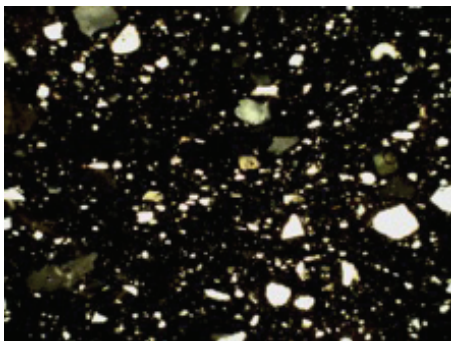
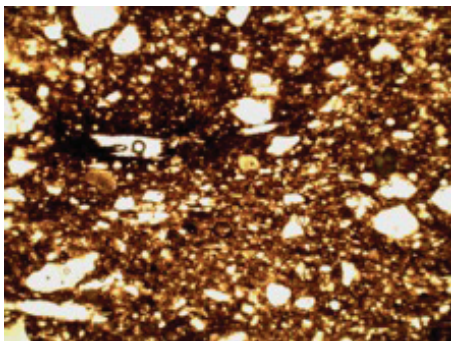


D - NDR006 (Fabric MCW8) PPL



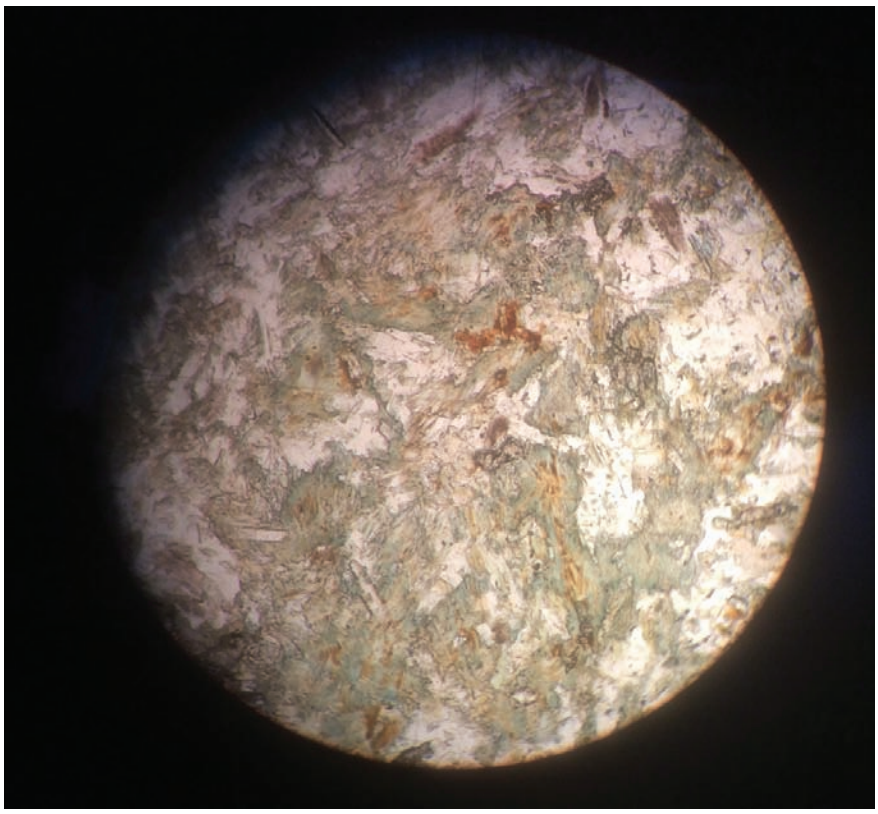
E - NDR007 (Fabric Thet Local) XP



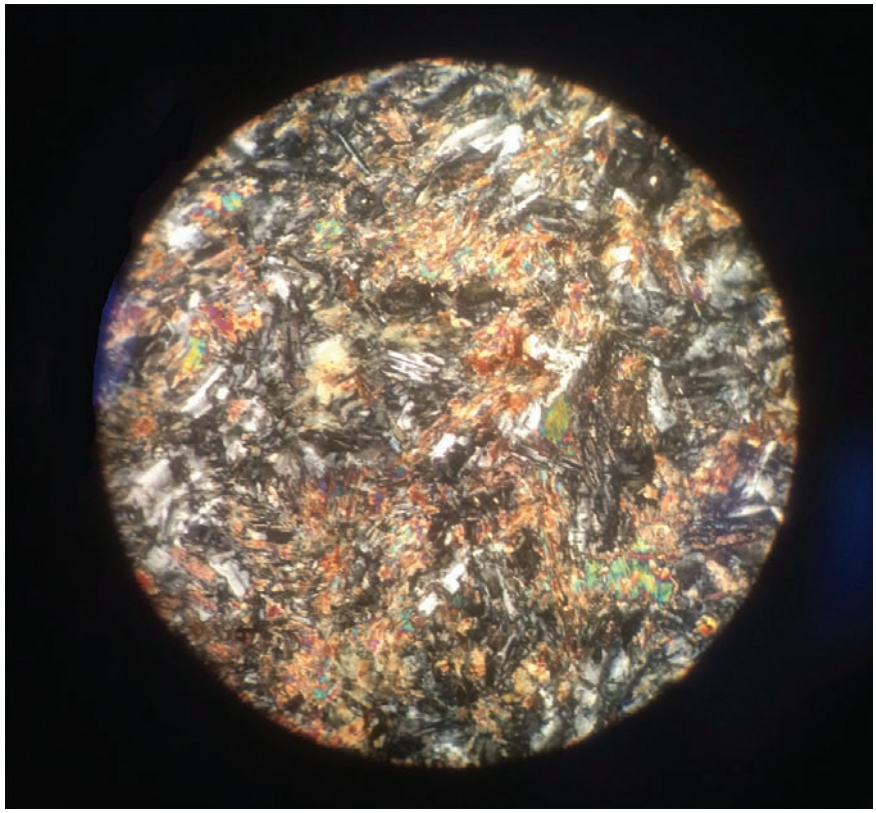
F - NDR007 (Fabric Thet Local) PPL

PPL = plane polarised light, XP = crossed polars. Field of view = 2.9mm

Figure 3: NDR Post-Roman Pottery Thin Sections



Polarised Light



Crossed Polars

Figure 4: NDR Greenstone battle-axe (SF1) Thin Section

Figure 5: Emmer grains and spikelet forks from Area 3 pit **3152**

Figure 6: Six-row barley with twisted lateral grains from Area 3 pit **3152**

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