

ROMAN AND MEDIEVAL KILNS
AT FARM LANE, KINSLEY,
WEST YORKSHIRE

by
Tim Cobbold,
Jane Richardson
& Matt Wells



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with contributions from

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Summary

An open-area excavation, covering approximately 0.73 hectares across seven areas and centred on grid reference SE 412 151, was undertaken on scrubland west of Wakefield Road and to the north of Farm Lane, Kinsley. The excavation encountered evidence for a regionally-significant Roman pottery kiln of 1st-century date and a later enclosure of mid-3rd-century date. Medieval ditched boundaries, enclosures and a number of kilns of 11th and 13th-century date were also investigated. Some of the medieval kilns were used for drying crops, but industrial processes may also have been undertaken. Finally, a series of stone agricultural buildings and structures were constructed, probably in the early 19th century, including a horse engine.



CHAPTER 1: SITE DESCRIPTION

An open-area excavation, covering approximately 0.73 hectares across seven areas and centred on grid reference SE 412 151, was undertaken on scrubland west of Wakefield Road and to the north of Farm Lane, Kinsley (Figure 1). Residential development enclosed the 3.2ha site on three sides (north, east and south), with farmland to the west (Figure 2).

The site lies around 60m above Ordnance Datum, with the land rising gently to the north and falling gently to the south-west. The underlying geology of the site comprises Newstead Rock – Sandstone, a sedimentary bedrock formed approximately 310 to 315 million years ago in the Carboniferous Period. No superficial deposits are recorded

(BGS 2021) but the overlying soils are described as freely draining silty acid loamy soils (Landis 2021).

Archaeological Background

The presence of archaeological remains was first identified by geophysical (gradiometer) surveys (Schmidt 2019), which revealed interconnected linear and rectilinear anomalies in the western half of the site. These anomalies were confirmed as field and enclosure ditches of likely Roman date during evaluation trenching (Tuck 2020), when a Roman pottery kiln and stone foundations of post-medieval or modern date were also investigated. Given the findings of these preliminary archaeological investigations, open-area excavation was requested by West Yorkshire Archaeology Advisory Service

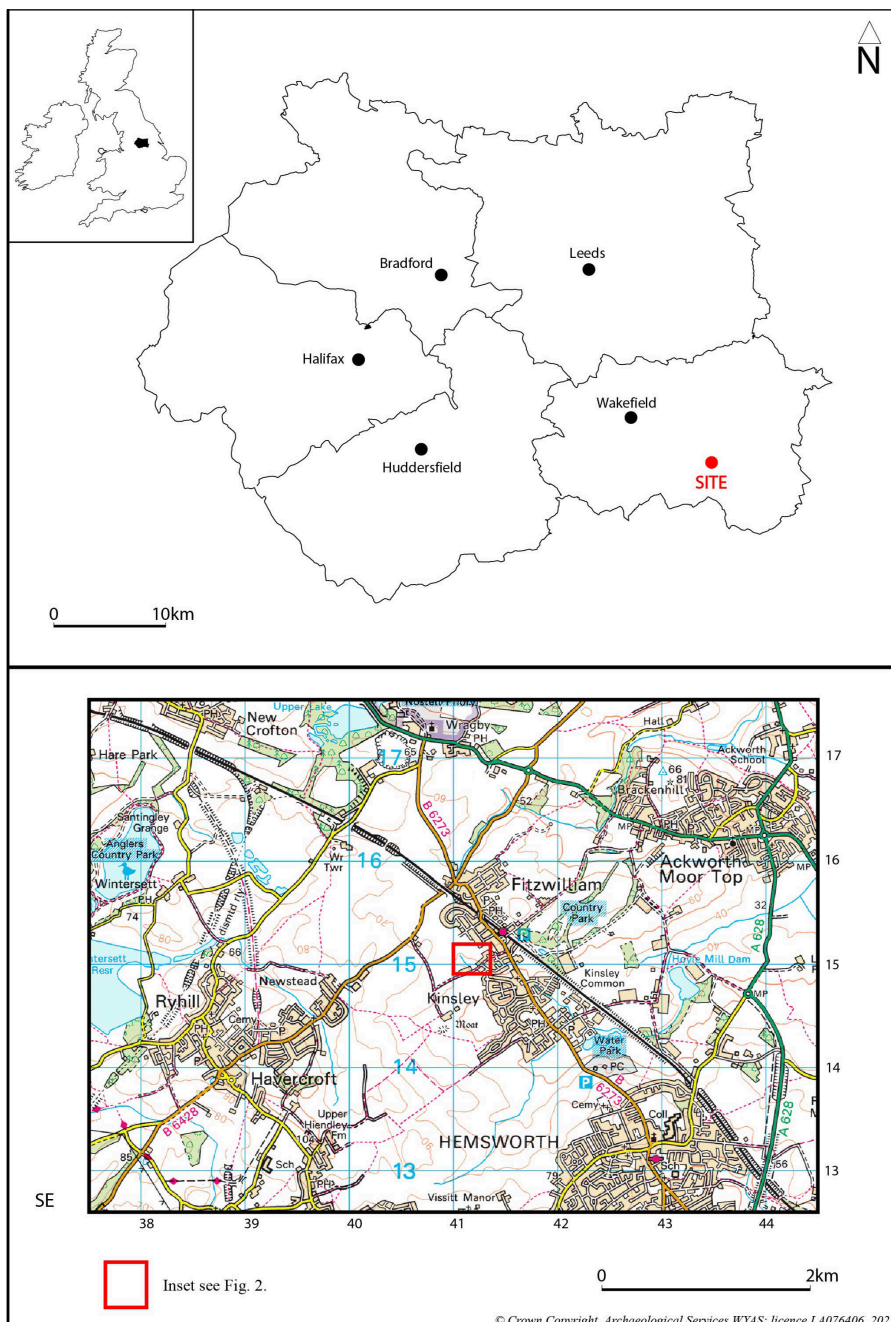


Figure 1: Site location

WYAAS), on behalf of Wakefield Council, in advance of a housing development. In addition to the Roman kiln and post-medieval/modern foundations observed during the evaluation stage, substantial stone-built kilns of medieval date were exposed during the excavations. The three main phases of activity (Roman, 11th-13th century and 19th century) were subsequently confirmed by finds analysis and radiocarbon dating.

Prior to evaluation by geophysical survey and trial trenching, the archaeological potential of the site was unknown. Medieval features were considered possible as Kinsley was a separate village in the 11th century and only later was incorporated into Hemsworth. West Yorkshire's Historic Environment Record also holds reference to a 16th-century mansion and associated deer park at Kinsley (WYHER PRN 5787), as well as 19th-century farm buildings shown on mid-19th-century Ordnance Survey (OS) mapping. The possibility that the 19th-century farm buildings subsumed some or all of the earlier 16th-century mansion was mooted.

Following the geophysical survey and trial trenching, the archaeological significance of the site was realised with the identification of field systems and enclosures (considered to be Iron Age/Roman), a regionally significant Roman pottery kiln used to produce grey ware and pale-firing oxidised ware flagons, and an undated stretch of stone wall.

The likelihood of further kilns being present off site was a significant driver for the subsequent on-site excavations. These excavations confirmed the presence of a regionally-significant Roman pottery kiln of 1st-century date and a later enclosure of probable 2nd and 3rd-century date, but somewhat unexpectedly, medieval ditched boundaries, enclosures and a number of kilns, probably of 11th and 13th-century date were also encountered. Finally, a series of stone agricultural buildings and structures were constructed,

probably in the 19th century, including a horse engine. The buildings are probably those shown on historic mapping rather than earlier 16th-century structures. These findings were initially assessed (Cobbold and Wells 2022) before specialist recommendations were addressed in a final archive report (Richardson 2024).

Excavation Methodology

The seven excavation areas (A-G, covering 6600m²) targeted geophysical survey 'spikes' which might have indicated further kilns, as well as larger areas likely to incorporate the core of settlement activity. Following the initial strip, further contingency areas were targeted at the request of WYAAS measuring a 750m² (representing extensions to Areas E, F and G). The areas were mechanically stripped under direct archaeological supervision and then cleaned by hand. A mid-grey-brown topsoil (1000, 2000), measuring on average 0.30m in depth, was found on the surface across the site. Beneath this, a 0.15m-deep light grey-brown sandy-silt subsoil (1001, 2001) was encountered. Machine excavation halted at natural geology (1003, 2002) or archaeological deposits, whichever was encountered first. Across the site, the exposed geology consisted of a sandstone, occasionally rocky but often weathered. Archaeological features cut the natural geology and were sealed by the subsoil. The on-site investigations in late Spring and Summer 2021 were carried out in favourable conditions.

An excavation strategy agreed with WYAAS required that a minimum 20% sample of each linear feature and at least 50% of each discrete feature were investigated. Specific features (typically kilns and pits) were excavated in their entirety following site visits from WYAAS. Bulk soil samples were routinely taken to provide a representative sample across the site as a whole. All processed samples were checked for artefacts and scanned for the presence of hammerscale.

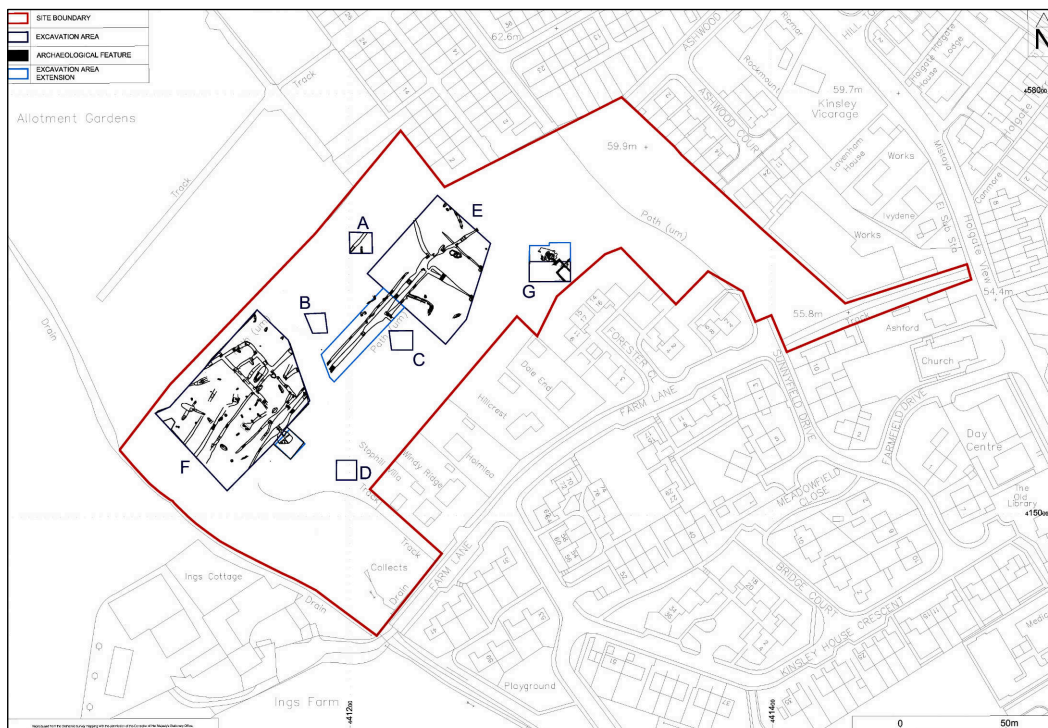


Figure 2: Excavation area, detail

Excavation Results

Three main phases of activity have been identified based on stratigraphic relationships, radiocarbon dates and datable artefacts, with the Roman phase sub-divided into 1st and 3rd-century activity:

- 1st-century Roman pottery kiln (Area F), followed by 3rd-century enclosure, further kilns and other ditched boundaries (also Area F although a Roman kiln was also encountered in the extension to Area E).
- Medieval features related to fields or enclosures typically located in Area E, although some ditches extended into Area F. Medieval kilns were encountered in Area E.
- Post-medieval buildings including a horse-powered engine of 19th-century date or earlier, encountered only in Area G.

Features with several interventions are discussed by assigned group numbers (e.g. Ditch 1, Kiln 1). Ungrouped features are described by cut number(s). A full site plan can be seen in Figure 2 and more detailed plans of each area are presented in Figures 3, 4 and 10, with sections shown in Figures 5-9. Some of the discrete features containing dateable material are not described below if they do not contribute to the site narrative but they are reported in the archive report (Richardson 2024) and are still shown in the plans provided. Unphased features have been excluded from this report. Typically, features were filled with mid-grey-brown and dark-brown sandy silts with occasional small sub-angular sandstone.

Phase 1: Roman (Figures 3-6)

The Roman-period features are described below by feature type, although the pottery analysis has clearly identified two phases of activity: a 1st-century pottery kiln (Kiln 9) most likely supplying the military fort at Castleford and a 3rd-century rural assemblage associated with ditches and later Roman-period kilns.

Ditches

Roman activity was concentrated in Area F where the majority of ditches formed an enclosure and sub-enclosures. Three sides of one enclosure were exposed (defined by Ditches 7 and 12), although its south-western limits were not identified within the excavation limits.

Ditch 7 (Figure 5, S.145 and S.167), on a south-west to north-east orientation, turned north-west at its north-eastern end, forming an L-shape in plan. It measured 0.50m-1.50m wide and 0.12m-0.30m deep. The feature contained a small amount of Roman pottery. Fill 2035 contained pottery dating to at least the mid-2nd century and fill 2060 produced pottery of the late 3rd century or later. The clearly-defined terminus recorded as cut 2263 may indicate a north-east-facing entrance on this side of the enclosure. The narrow terminus to the south of Ditch 7 is more likely to indicate later truncation.

Ditch 12 (Figure 5, S.48 and S.339) formed a second L-shape mirroring Ditch 7 and defining the other side of the enclosure. Its relationship with Ditch 11 was unclear but it cut Ditch 13 and was cut by the later medieval Ditch 17. It seems likely that Ditches 11, 13, 14 and 8 formed sub-divisions within the

large enclosure. Ditch 12 measured 0.90m-2.00m wide and 0.22m-0.43m deep. It contained Roman pottery, including mid-3rd-century pottery in fills 2004 and 2144 and mid-2nd century or later pottery in fill 2039.

Ditch 11, orientated north-west to south-east, represented a sub-division within the enclosure. It may have turned to the south-west and continued as Ditch 8, but this could not be determined due to the location of a former trial trench, in which the ditches were not identified (Tuck 2020). Its relationships with Ditches 9, 12, 13 and 17 were unclear, but it was observed cutting Ditches 14, 2091 and 2133. It varied along its length from 0.29m to 1.70m wide and from 0.10m to 0.60m deep. It contained Roman CBM (2094, 2121, 2140) and Roman pottery of the late 1st to early 2nd century (2104) and mid-3rd-century date (2121).

Ditch 11 was disturbed by the cutting of pit 2122 at its intersection with Ditch 13. This broad U-shaped pit contained a single fill (2123) with mid-3rd-century or later pottery, as well as some earlier Roman sherds, lead sheet and Roman CBM. Immediately to the north-west of Ditch 11, ditch 2214, which extended beyond the limit of excavation, was investigated. As this aligned with Ditch 11 and appeared to respect Ditch 12, it is also assumed to be Roman in date.

Ditch 8 was a poorly defined ditch with a south-west to north-east orientation, that may have represented the continuation of Ditch 11 to the south-west. With Ditch 7, these ditches may have helped funnel traffic, perhaps including livestock, around the enclosure. At its south-western end, its relationship with Kiln 11 (2200) and pit 2202 was unclear though it was seen to disturb pits 2083 and 2087. Ditch 8 measured 0.20m-0.60m wide and up to 0.19m deep. A Roman *tegula* was recovered from single fill 2086.

Ditches 13 and 14 both sub-divided areas between Ditches 11 and 12. They were similarly wide and shallow, measuring no more than 0.94m wide and 0.34m deep, though usually much shallower. Ditch 13 (fills 2125 and 2165), and pit 2168 (fill 2169) which it cut, produced pottery of at least 3rd-century date along with some earlier Roman material (Figure 5, S.261). Ditch 14 was especially ephemeral but it was observed to be cut by Ditch 11. While Ditch 14 may represent an earlier feature, it is more likely that the stratigraphic relationship was established when the more substantial Ditch 11 was redefined.

A number of features, whether short sections of ditches (2091/2237, 2089/2133, 2141) or elongated pits (2087, 2166 and 2168) were apparently appended to the enclosure ditch or its sub-dividing features. With the exception of pit 2168, none of these contained dateable artefacts but they are assumed to be Roman in date. A large pit (2277), which appeared to respect Ditches 11, 12 and 14, is assumed to be Roman in date based purely on this spatial relationship. The pit contained two fills (2278 and 2279; Figure 6, S.347) but no dateable finds.

Ditch 10 (Plate 1) entered the area from the north-east it measured up to 1.80m wide and on average 0.40m deep



Plate 1: Ditch 10 (cut 2019), looking north-east

(Figure 5, S.102). It contained pottery of mid-2nd to early 3rd-century date, recovered from a primary fill (2020).

Ditches 15 and 16 were probably the same feature, on the same south-west to north-east alignment. The feature intersected with enclosure Ditch 7 on a slightly different alignment though the relationship between the features was unclear. Both features varied in size along their lengths. Ditch 15 measured 0.28m-0.80m wide and 0.04m-0.14m deep (Figure 5, S.175) and Ditch 16 measured 0.50m-0.60m wide and 0.12m-0.36m deep. Neither feature produced any finds, but given that Ditch 16 did not extend beyond the enclosure to the north (Ditch 7), both ditches have been tentatively assigned a Roman date.



Figure 3: Phased plans of Areas A, B, C and E

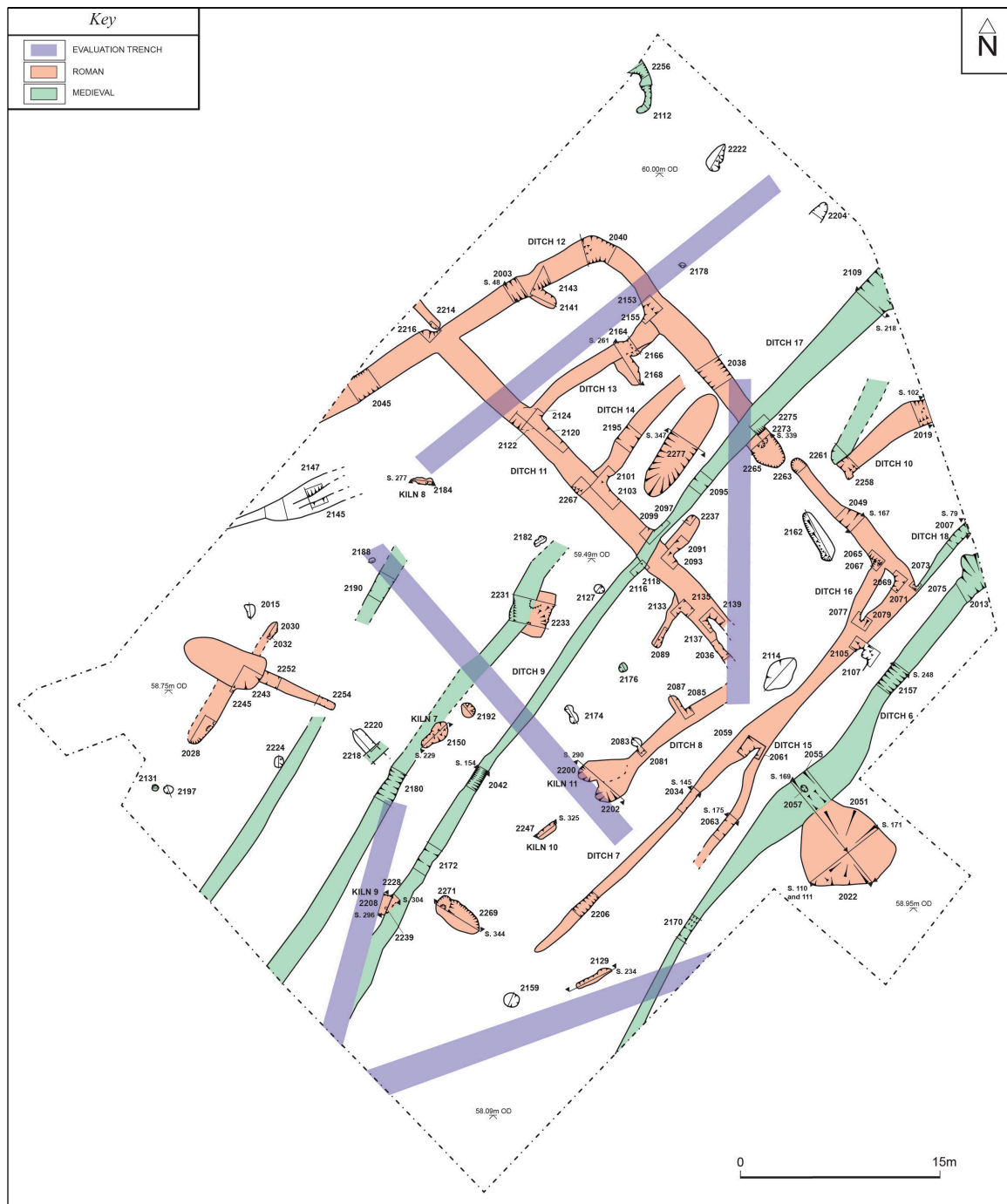


Figure 4: Phased plan of Area F

To the south-west of the Roman enclosure, a possible T-shaped ditch was observed (2028/2245/2030/2252/2254) albeit disturbed by pit 2243. The single fill (2029) contained a sherd of mid-2nd to mid-3rd-century pottery.

Kilns and Associated Features

Kiln 7 (2150; Figure 6, S.229) in Area F was a shallow, keyhole-shaped feature, measuring 2.64m long, no more than 0.40m wide and 0.25m deep with an irregular, elongated shape. Traces of a possible sandstone lining were found on the edges of the feature. It contained three fills, producing 12 sherds of mid-3rd to mid-4th-century date from the primary fill (2152) and 13 sherds of pottery of mid-2nd-century or later date from a subsequent fill (2151). The feature also produced oak and birch charcoal, presumably selected for

fuel. Birch charcoal from the secondary fill (2126) has been radiocarbon dated in the range 250-403 cal. AD.

Just to the north of Kiln 7, pit 2192 was initially identified as a possible kiln but is more likely to have been a hearth. It contained two fills, both of which were rich in burnt material. The lower fill (2194) contained no finds apart from indeterminate cereal grains, whilst the upper fill (2193) contained late 1st-century pottery along with some mid-2nd-century or later pottery. Fill 2193 also contained Roman ceramic building material (CBM).

Kiln 8 (2184; Figure 6, S.277), c.19m to the north of Kiln 7, had an irregular elongated shape, 1.58m long, 0.50m wide and 0.09m deep. Three fills were present, but its shallow form meant that no stratigraphic relationship was noted between

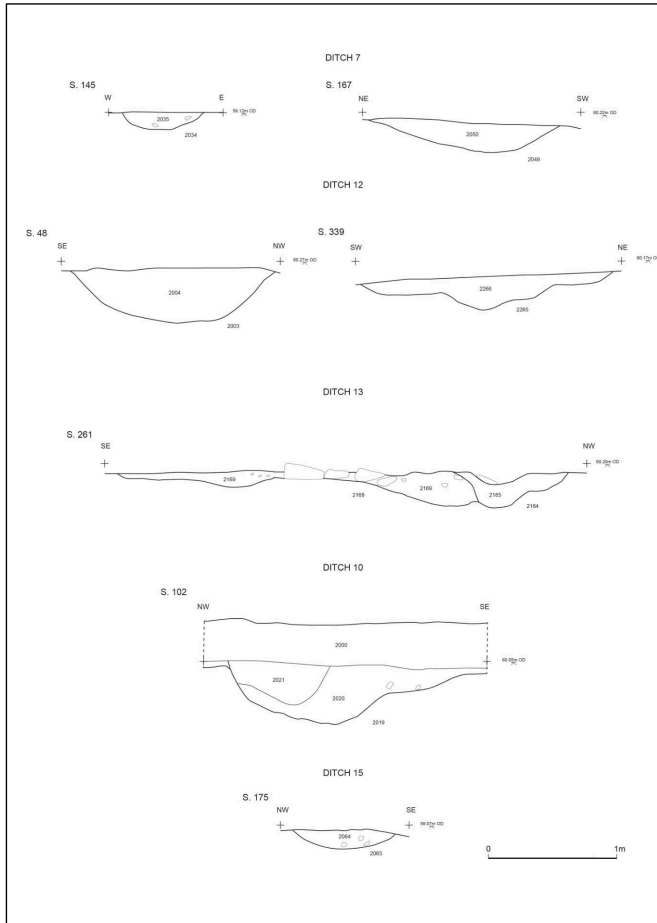


Figure 5: Roman ditches sections

them. Fill 2187, at the east end of the feature, produced slag and a possible medieval crucible, and slag was also produced from fill 2185 at the western end. The slag strongly suggesting the feature was related to iron smelting, and unlike many of the other kilns, Kiln 8 was largely devoid of charred remains. Kiln 8 is only tentatively assigned to the Roman phase of occupation based on its location.

Kiln 9 (2208; Plates 2 and 3; Figure 6, S.296 and S.304), towards the southern limits of Area F, was the largest of all the kilns in this part of the site, measuring 3.80m and up to 1.22m wide and 0.76m. The western end of the kiln was identified during the evaluation as kiln 2104 where it was



Plate 2: Kiln 9, looking south-west



Plate 3: Section of Kiln 9, looking south-west

interpreted as the firing chamber of a pottery kiln (Tuck 2020). On wider excavation, it contained a series of fills within dome-shaped clay walls (2211), a heat-affected stone floor (2209) and solid clay base (2230). From a primary charcoal-rich fill (2227), late 1st-century pottery and oak charcoal was recovered. Fills 2210, 2212 and 2213 may represent collapse of the kiln structure as well as final infilling. Deposits 2210 and 2213 produced further sherds of late 1st-century pottery, while fill 2212 contained structural clay elements. The kiln was clearly used in the production of pottery as much of the pottery recovered from its fill was of a distinctive type. This pottery type is described in detail below. Kiln 9 sealed posthole 2239 (likely part of its construction) and was cut by medieval Ditch 9.

Kiln 10 (2247; Figure 6, S.325) was a small feature filled with burnt materials, measuring 1.20m long, 0.30m wide and 0.22m deep. It contained four fills (2248-2251) including a clay lining (2250) but only one fill produced finds in the form of animal bone (2248). Kiln 10 is only tentatively assigned to the Roman phase of occupation based on its location.



Plate 4: Kiln 10, looking south-west

Kiln 11 (2200; Figure 6, S.290) was poorly defined and its length was unclear due to disturbance by earlier trial trenching, but it had a width of 0.90m and depth of 0.20m. It cut pit 2202 and its single fill (2201) contained pottery of 2nd-century date or later, an iron nail, Roman CBM, burnt clay

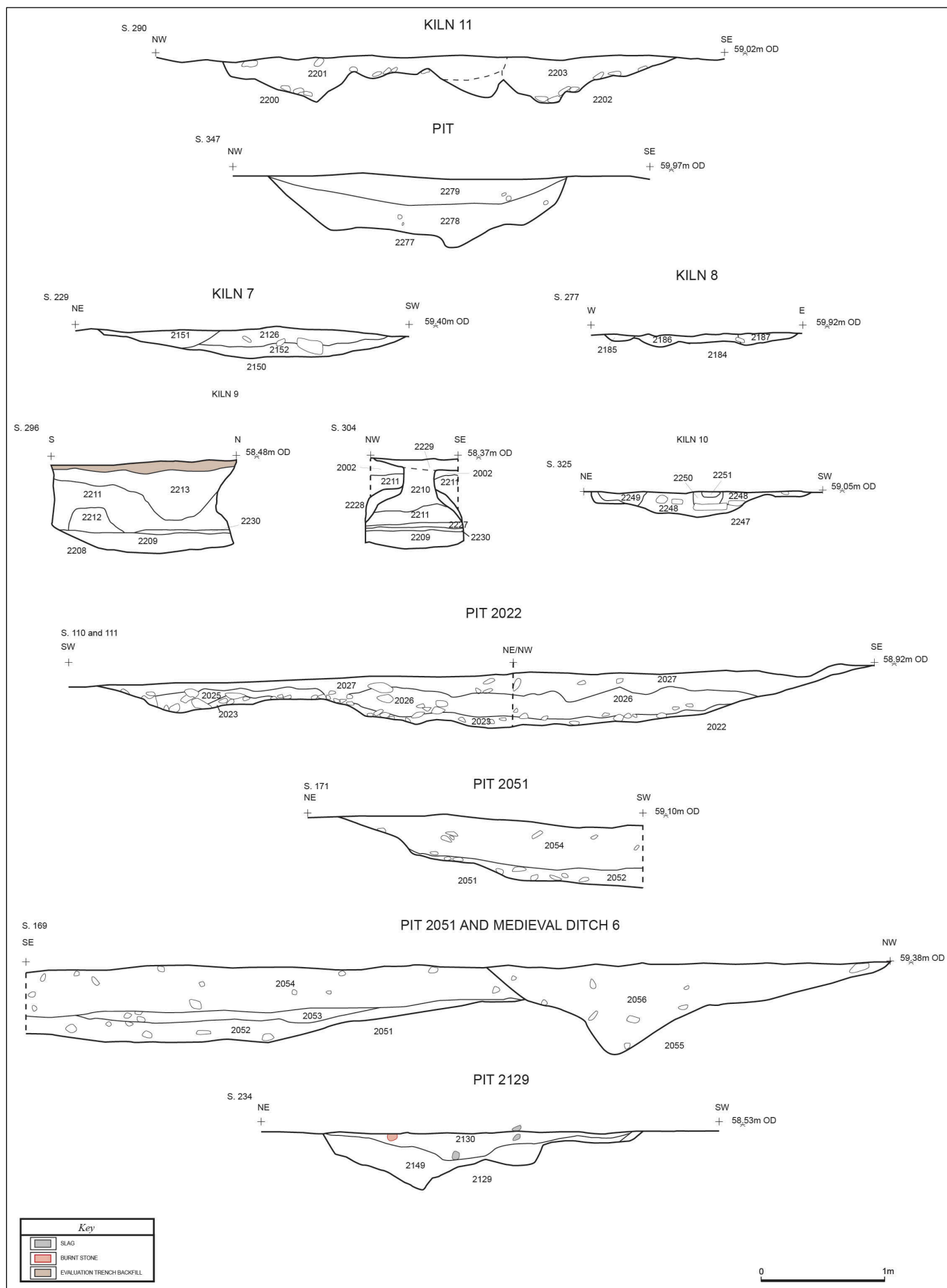


Figure 6: Roman kilns and pit sections

(perhaps relating to the kiln structure) and a small amount of oak charcoal. Like Kiln 10, its function remains unclear.

Pit 2202 was also poorly defined and while it was cut by Kiln 11, its relationship with Ditch 8 was unclear. Its length was not clear but it measured 2.30m wide and 0.20m deep. Its single fill (2203) produced pottery of mid-2nd-century or later date along with late 1st-century material and a fragment of Roman *tegula*.

Kiln 4 (1208; Plate 5; Figure 3) was the only Roman-period kiln encountered in Area E. It had a roughly keyhole-shape plan, measuring 2.44m long, 1.18m wide and 0.32m deep, broadly similar to Kiln 1. It had a complex series of fills including the clay base and sides (1214 – including daub with wattle impressions), a fill of the construction cut (1216), burnt layers (1274, 1275 and 1276) and final backfill (1215). It contained Roman CBM in fill 1274. The similarity of form of Roman Kiln 4 and medieval Kiln 1 is acknowledged (compare Plates 4 and 7), so the possibility that the CBM is residual, and Kiln 4 is in fact medieval, is recognised. Unfortunately, its stratigraphic relationship with medieval Ditch 4 was unclear.



Plate 5: Kiln 4, looking north-west

Pits

Pit 2022/2051 was a very large feature located on the south-eastern limits of Area F. It was excavated in two quadrants and measured 6.90m long, 6.10m wide and 0.42m deep and was cut by medieval Ditch 6 (Figure 6, S.110, S.111, S.169 and S.171). It contained up to four fills with heat-affected stones noted in the primary fill (2023). Pottery of likely 3rd-century or later date was recovered (2025) along with some earlier, presumably residual, 1st-century material (2025, 2026, 2027 and 2054) It also contained Roman CBM (2025), worked flint (2026) and an iron nail (2027).

Pit 2233 was poorly defined and partially truncated by furrow 2231. It measured at least 1.93m long, 1.45m wide and 0.26m deep. It contained two fills (2234 and 2235), the second of which (2235) contained pottery of mid-3rd-century or later date and slag.

Pit 2269, close to the terminus of Ditch 7, measured 2.64m long, 1.84m wide and 0.30m deep. It contained a single fill (2270) which produced late 1st/early 2nd-century pottery, Roman CBM and oak charcoal. It was disturbed by pit 2271 (Figure 9, S.344). Pit 2271 measured 1.6m long, 1.48m wide

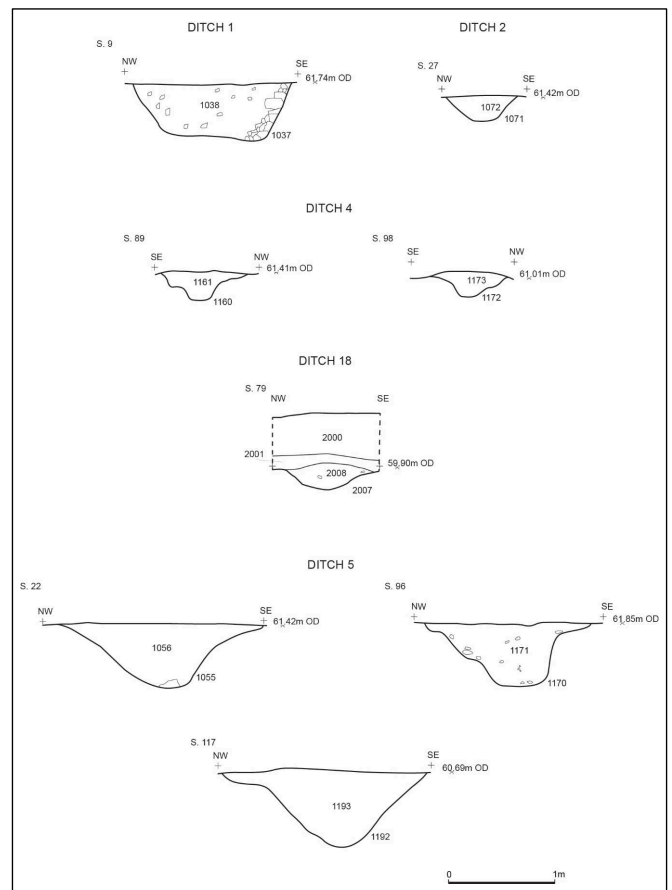


Figure 7: Medieval ditches sections

and 0.1m deep. Its single fill (2272) produced slag, Roman pottery for late 1st to mid-2nd-century date, Roman CBM and a few intrusive medieval pottery sherds.

Pit 2129, c. 11m to the east, measured 2.54m long, 0.40m wide and 0.44m deep (Figure 6, S.234). It contained two fills (2149 and 2130) with burnt stone noted in 2149 and burnt stone, tap slag and Roman CBM recovered from 2130.

Medieval (Figures 3-4 and 7-9)

Ditches and Gullies

Recorded ditches formed boundaries of at least three enclosures or fields. Three of these ditches were orientated north-east to south-west and continued in parallel through Area E and on towards Area F. Ditch 1035 in Area A (see below) also ran parallel with these ditches. Relatively few stratigraphic relationships were established, but phases of activity across the major land divisions are indicated by the cutting of Ditch 2 by Ditch 3, and the disturbance of Ditch 3 by Ditch 5 (Figure 3; Area E).

Ditch 1 (Figure 7, S.9) was located towards the north-eastern end of Area E, running on a north-east to south-west alignment with a width of 0.38m-1.20m and a depth of 0.36m-0.70m. The north-east end of the ditch continued beyond the limit of excavation and the south-west end was truncated by Kiln 6. It also cut Gully 1 and had a wide, deeper profile towards the north-east, becoming more shallow and narrower towards the south-west. Pottery dating from the 11th to 13th centuries was recovered from its fills. Ditch 1 contained large amounts of charred cereal grains including

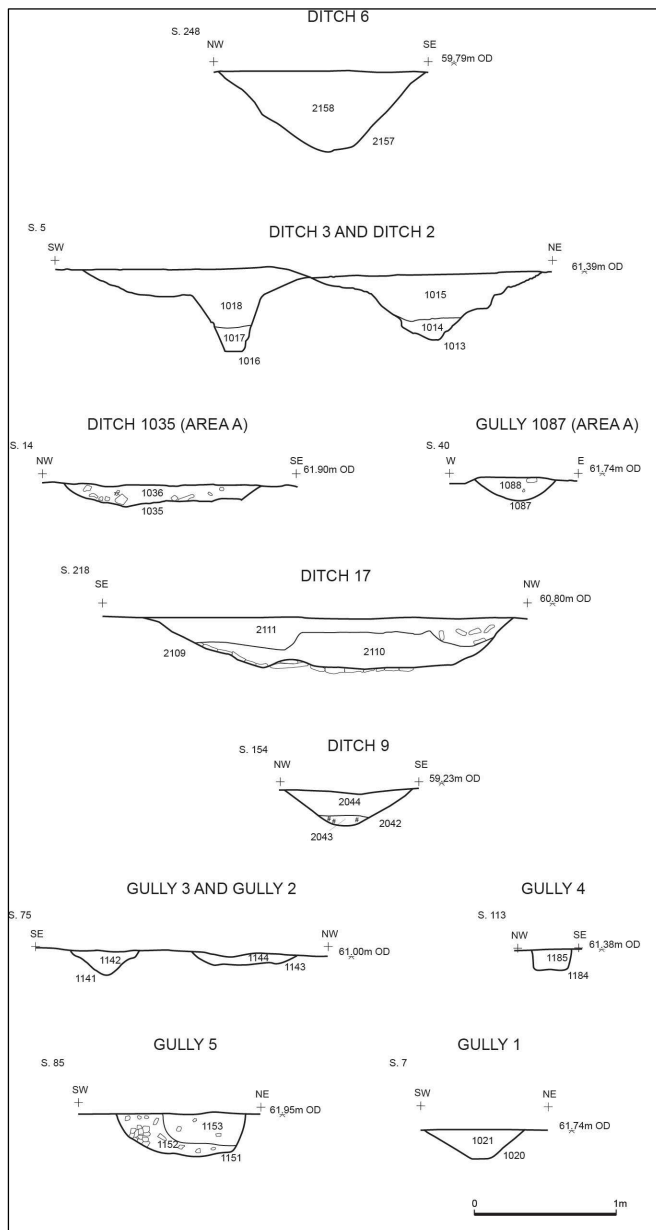


Figure 8: Medieval ditches and gullies sections

oat, wheat, bread wheat and barley, possibly discarded from the nearby kilns.

Ditches 2, 4 and 5 (Plate 6) were the three ditches found extending beyond the south-west limits of Area E, each characterised by south-west to north-east parallel alignments. At its north-western end, Ditch 2 turned to the south-east where it was cut by Ditch 3. Ditch 2 contained pottery of late 11th to mid or late 13th-century date and measured between 0.70m and 1.70m wide and 0.22m and 0.70m deep (Figure 7, S.27).

Ditch 4 was typically narrower and shallower, measuring between 0.25m and 1.80m wide and 0.15m and 0.33m deep (Figure 7, S.89 and S.98). It contained no finds but has been assigned to this medieval phase based on its common alignment with Ditches 2 and 5. Ditch 4 likely continued into Area F where it was recorded as Ditch 18 (Figure 7, S.79). Unfortunately, no clear relationship was established between Ditch 18 and Ditch 7 of the Roman enclosure. It was also not



Plate 6: Ditch 2 (cut 1071), Ditch 4 (cut 1069) and Ditch 5 (cut 1055), looking north-east

established if Ditch 18 continued further to the south-west, perhaps as Ditch 15, due to a dearth of dateable material.

Ditch 5 was the central of the three parallel ditches in Area E. It measured 1.51m-1.94m wide and 0.15m-0.80m deep (Figure 7, S.22, S.96 and S.117) and contained animal bone (1056, 1082, 1171), pottery of late 11th to mid or late 13th-century date (1082) and of late medieval date (at least 14th century, 1193), slag (2242) and an intrusive sherd of a modern glass jar or bottle (1082). Ditch 5 also produced charred cereal grains including oat and six row hulled barley, possibly from the nearby kilns. Ditch 5 continued into Area F as Ditch 6 where it became narrower and shallower to the south-west, measuring 0.70m wide and 0.25m at the north-eastern end of the area and 3.70m wide and 0.71m deep to the far south-west (Figure 8, S.248). One fill (2014) contained a small amount of animal bone. Ditch 6 cut pit 2022/2051 and was cut by pit 2057.

Ditch 3 (Plate 7) was located towards the north-eastern end of Area E. It entered the area from the south-east before turning north-eastwards towards Ditch 1. Its terminus was unclear. It cut Ditch 2 and was cut by Ditch 5. It was 0.46m-1.80m wide and 0.30m-0.60m deep (Figure 8, S.5) and contained pottery of late 11th to mid or late 13th-century date (1009, 1018 and 1109) and residual Roman pottery of 1st-century date (1096).



Plate 7: Ditch 3 (cut 1108), looking west



Figure 9: Medieval kilns and pits sections

Ditches 1 and 3 were linked by a narrow gully (1057). Their relationship with this gully was unclear due to the shallow depth of the gully (0.2m deep), though it is possible that Ditches 1 and 3 were in fact one continuous feature.

A possible trackway extended roughly northwards from the end of Ditch 3 for 18.5m and beyond the edge of the excavation area. It was broad, up to 2.5m wide, and no more than 0.20m deep. Its base was irregular with probable wheel ruts observed, including wheel rut 1075 immediately to the east. The trackway contained no finds aside from one primary fill (1132) which produced a residual flint flake and pottery of late 11th to mid or late 13th-century date. While the pottery suggests it was contemporary with Ditch 3, its stratigraphic relationship with the ditch was not clear.

Gullies 2 and 3 were two parallel curving features which were appended to the south-east side of Ditch 2. The gullies were cut by Ditch 2, but presumably this represents the continued maintenance of the more substantial ditch as neither gully extended beyond it. Both gullies were small, measuring no more than 0.19m wide and 0.17m deep (Figure 8, S.75). Gully 2 was devoid of finds, while Gully 3 contained pottery of late 11th to mid or late 13th-century date (1127, 1136 and 1142). The two gullies may represent a small double-ditched sub-enclosure, or two phases of sub-enclosure with one gully replacing the other. The two termini investigated may indicate an access point into the sub-enclosure, although no opposing features were observed within the area of excavation.

Gully 4 was a small gully that extended into Area E from the north-west. Within the excavation area it formed an L-shape

in plan. The feature itself was small, measuring up to 0.30m wide and 0.15m deep (Figure 8, S.113). It contained medieval pottery dating from the late 11th to mid or late 13th century (1185). Too little of this feature was exposed within the excavation area to determine its function. Only one possible internal feature was noted - a small pit or posthole (1178) that was devoid of finds.

Gully 5 extended southwards for c. 8.50m into the north-eastern corner of the excavation area. It measured on average 0.90m wide and 0.30m deep (Figure 8, S.85). It contained a large amount of late 11th to mid or late 13th-century pottery from one fill (1159).

Gully 1 extended c. 20m into the excavation area, measuring 0.37m-0.90m wide and 0.08m-0.26m deep (Figure 8, S.7). It was cut by Ditch 1, indicating an earlier phase of land division, but contained no finds. Its relationship with pit 1110 and spread 1114 on the limit of excavation was undetermined, with no finds recovered from these features either. Based on the plethora of medieval features in this part of the site, these features are assumed to be medieval, but in the absence of dateable material, this has not been confirmed. One possibility is that Gully 1 is of comparable date to Ditch 2 due to their common alignment.

Within Area A two linear features were exposed. Ditch 1035 crossed the area on a south-west to north-east orientation, reflecting the alignment of other medieval ditches to the immediate south-east. It was 1.35m wide and 0.13m deep (Figure 8, S.14). Its single fill (1036) contained pottery of late 11th to mid or late 13th-century date. Gully 1087/1089

entered Area A from the south, terminating south of ditch 1035, and on that basis, was possibly contemporary. It measured 3.40m long and up to 0.83m wide and 0.17m deep (Figure 8, S.40), but its fill (1088/1090) contained no finds.

Within Area F, Ditch 17, and its likely continuation as Ditch 9, has been assigned to the medieval period based on its common alignment with other medieval ditches (e.g. Ditches 2 and 5) and its stratigraphic relationship with enclosure Ditch 12 and Kiln 9 (both considered to be Roman in date and both cut by this later ditch). Ditch 17 generally measured no more than 1.20m wide and 0.22m deep, though in one slot it was recorded as 3.00m wide and 0.40m deep (Figure 8, S.218). Ditch 9 (Plate 8) was also wide and shallow (Figure 8, S.154) and contained burnt clay (2043), Roman CBM (2044) and pottery of Roman (late 1st century) and medieval date (mid or late 13th century, 2229). The Roman material is assumed to be residual from the earlier features that this ditch disturbed.



Plate 8: Ditch 9 (cut 2042), looking north-east

Kilns and other Discrete Features

Kiln 1 (1203; Plate 9; Figure 4; Figure 9, S.143) was formed by an irregular, roughly keyhole shaped, elongated cut, measuring 3.06m long, 1.20m wide and 0.50m deep. Two postholes were cut on each side of the kiln around the centre (1284, 1286), possibly supporting the kiln's stokehole. The kiln was filled with a complex series of deposits. Fill 1289 may represent a fired clay lining at the south-western end of the feature. Fills 1207, 1259 and 1290 are likely to be primary use deposits. The feature was then filled with a number of



Plate 9: Kiln 1, looking west

layers, consisting of secondary burnt deposits (1206, 1257, 1258, 1296), possibly the collapsed clay structure of the kiln (1204), followed with further burnt secondary deposits (1205, 1291). Fired clay was recovered from fill 1289 and slag from fill 1257. Kiln 1 produced a large cache of charred remains, dominated by cereals, in particular *Avena sativa* (common oat), but also six row hulled barley and bread wheat. Hazel wood charcoal probably indicated the type of wood used for fuel. Slag finds may indicate the kiln was used in the smelting of iron but the large quantities of charred cereals more convincingly suggest its primary function was cereal processing. Cereal from basal fill 1259 has been radiocarbon dated in the range 991-1148 cal. AD.

Kiln 2 (Plate 10; Figure 3; Figure 9, S.120) was relatively large and the best-preserved of the kilns excavated on the site. It was constructed in a keyhole-shaped cut (1187) which measured 3.90m, 2.60m wide and 1.24m deep. Its north-western end formed the main body of the kiln with a stokehole/entrance at its south-eastern end. The main body of the kiln was lined with a wall of unbonded, medium-grain, sandstone blocks (1196) surviving up to eight courses in height. The entrance was defined by large sandstone blocks (1197). The base of the main part of the kiln was formed by a layer of fired clay (1186), probably burnt *in situ*. The feature was filled with a complex series of deposits, formed by the collapsed remains of the kiln structure and gradual filling of burnt deposits. Primary fills in the base include deposits 1183 and 1200 which were then sealed by a complex of secondary deposits (1154, 1155, 1156, 1194, 1195, 1209, 1210, 1211 and 1283). Finds include pottery of late 11th to mid or late 13th-century date (1154, 1155, 1156, 1157 and 1195), including residual Roman pottery from 1157, and a flint blade (1156). Kiln 2 also produced large quantities of cereals dominated by rye, with oat, barley and bread wheat also present. Wood charcoal was dominated by oak with much



Plate 10: Kiln 2, looking north-west

lesser quantities of hazel and Maloideae type. This suggests oak was used as a main fuel with others present as kindling.

Kiln 2 was cut by pit 1097 which could represent either a later feature or a re-cut of the kiln opening. This pit also contained pottery of late 11th to mid or late 13th-century date and significant amounts of charred rye and some oak fragments from two fills (1098 and 1099), perhaps redeposited from the kiln. Close to Kiln 2 was a second pit (1048) which produced a single sherd of late 11th to mid or late 13th-century pottery (1049) and may be of comparable date.

Kiln 3 (Figure 3; Figure 9, S. 214) was found close towards the north-eastern end of Area E. It was smaller than the other examples, measuring *c.* 0.95 in diameter and 0.18m in depth, and of simple construction. Its size and shape suggest it may represent an oven rather than a kiln. The primary fill (1295) produced significant quantities of barley and a little oat suggesting crop drying. The same cereals were also recovered from the secondary fill (1294) along with daub with wattle impressions. Kiln 3's cereal cache contrasted with the oat and rye rich kilns, and instead was dominated by six row hulled barley. Charcoal included oak and hazel and some broad bean and pea were also present. Cereal from primary fill 1259 has been radiocarbon dated in the range 1042-1215 cal. AD. To the south of Kiln 3, a discrete deposit of coal was noted (1305/1308) which included late 12th to 13th-century pottery.

Kiln 5 (Figure 3) was cut by Ditch 4. The cut (1247) was rounded in shape, measuring 2.04m long, 1.24m wide and 0.19m deep. The lowest fill was a burnt deposit beneath the base of the kiln (1256), followed by the clay base of the kiln (1248) and lastly the final backfill of the feature (1249). The kiln contained no dateable finds, and only a few oat grains and hazel charcoal. A possible posthole was found in the base of the feature (1254), perhaps representing part of the structure. Given its stratigraphic relationship with Ditch 4, it is acknowledged that this feature may pre-date the medieval period, but due to the absence of finds, this could not be confirmed.

Kiln 6 (Plate 11; Figure 3; Figure 9, S.11) was identified cutting Ditch 1, towards the north-eastern end of Area E, on a north-west to south-east orientation. It was constructed in a keyhole-shaped cut (1203), 4.30m long, 1.90m wide and 0.94m deep, broadly similar in size, shape and construction to Kiln 2. A narrower entrance/stokehole area was present at the south-eastern end and the wider main body was found to the north-west. The sides of the main body of the kiln were lined with a wall of unbonded sandstone blocks (1198) surviving up to three courses in height. Larger stones (1199) probably formed part of an entrance/stokehole into the narrow area. The kiln was filled by a series of deposits. Burnt deposits were found in the base of the kiln (1039 and 1042). Collapsed masonry (1040) was found above, associated with a large cake of tap slag thought to be Roman in date, and a final deposit (1041) containing a small amount of animal bone and pottery dating from the late 11th to mid or late 13th century. The slag is likely to represent the re-use of earlier material, used to block the opening to the kiln. The fills of the kiln produced small amounts of oat, some bread wheat, rye barley, mixed weeds and a single broad bean.



Plate 11: Kiln 6, looking south-west

Plough Furrows

Four furrows were identified across the area each with broadly south-west to north-east alignments (2190, 2218, 2180/2231 and 2261). They were shallow, measuring no more than 0.26m in depth and had an average width of 0.20m. They are likely to be of medieval or later date but have been assigned to this medieval phase based on their common alignment with Ditches 6 and 9, and the presence of medieval pottery from furrow 2180 (fill 2181). The Roman pottery from furrow 2231 (fill 2236) is likely residual from pit 2233.

Post-Medieval and Later (Figure 10)

Structural remains encountered in Area G included the sandstone foundations of a large building, the remains of a horse powered engine and a brick wall. Finds were recovered from a number of deposits (1227-1230, 1261, 1263) overlying the structures including pottery, CBM, glass and iron of 18th or 19th-century date, as well as 20th-century material and small quantities of animal bone. These finds indicate the buildings are 19th century or earlier in date.

Structure 1 (Plate 12)

Structure 1 was located within the southern limits of the excavation area. It was formed by three linear sandstone footings (1025, 1026, 1027), representing three sides of a building, possibly a farmhouse or barn. The walls themselves measured approximately 0.70m wide and were constructed in large sandstone blocks, bonded with lime mortar. No clear floor surfaces survived.

Structure 2 (Plates 13 and 14)

Structure 2 consisted of two elements. The first was a circular structure representing a horse-powered engine and the

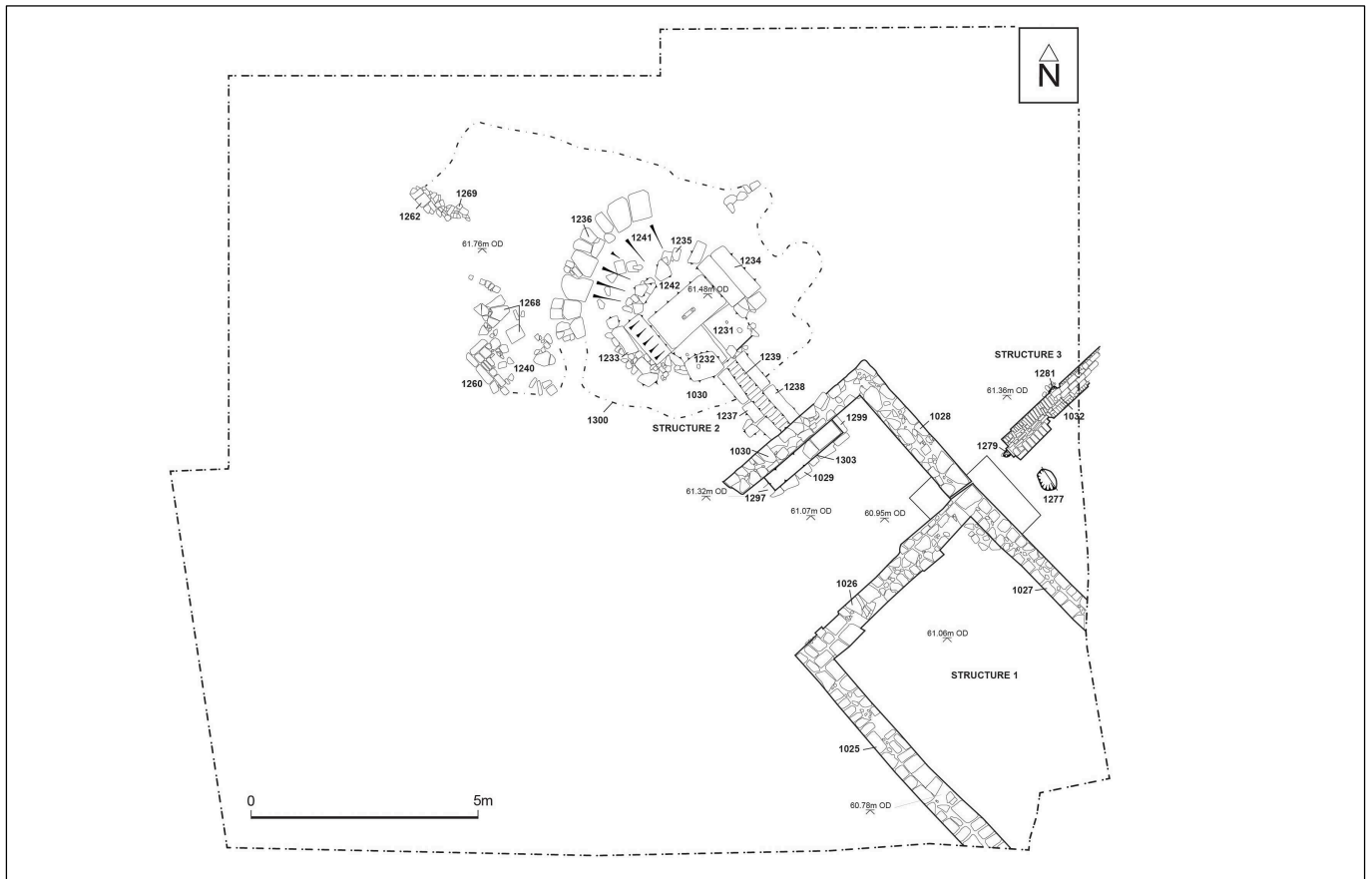


Figure 10: Plan of post-medieval structures in Area G



Plate 12: Structure 1, looking north-west

second, a rectangular building on the south-eastern side of the engine. Its walls butted those of Structure 1 and it clearly represented a later addition. The horse engine was housed at the north-western end of the building(s). This part of the structure was built within a shallow cut (1300), backfilled with a deposit (1301) containing 18th to 19th-century clay pipe fragments, possible 19th-century glass, iron nails and other iron fragments, CBM and animal bones. The remains of a circular sandstone block structure (1236) were encountered, most likely defining the surface trod by the horse, rather than an external wall. Whether the engine was covered at all is uncertain.

The base of horse engine was formed by a number of large sandstone blocks (1231, 1232, 1233 and 1234, Plate 14)

found in the centre of the circular structure. These were surrounded by layers of cobbles, forming the floor of the structure (1235, 1240, 1241 and 1242). A narrow channel extended south-eastwards from this area. This was constructed with a sandstone foundation (1302, not shown in plan), a base of small, square sandstone pieces (1239) and two sandstone walls lining each side (1237 and 1238). This channel presumably housed the drive shaft from the horse engine to the pit wheel (cf. the plan and elevation of a horse-powered pump engine at Weevil, dated 1779, which demonstrates the principle, if not the exact design; Major 1978, 66). This engine is an example of one where the animal



Plate 13: Structure 2, looking north-west

moved in a circle about a point in the horizontal plane (Major 1978, 15).

To the south-east of the engine, a rectangular building housing the wheel pit was defined by two contemporary sandstone wall foundations (1028, 1030) forming an L-shape in plan (presumably with the western wall truncated away). The walls measured approximately 0.60m wide and were constructed in large sandstone blocks, bonded with lime mortar. Inside the wall, directly opposite the channel, a large rectangular pit was identified. It consisted of a cut (1303)



Plate 14: Structure 2, horse engine base, looking north-west

measuring 2.13m long, 0.52m wide and 0.48m deep which was lined with sandstone walls (1029, 1297, 1298 and 1299) and a sterile dark-brown sandy-silt backfill (1304). Wall 1298 (not seen in plan) was located beneath 1030 and, like the other wheel-pit walls, was constructed from well-dressed stone. This stone-built pit has been interpreted as a wheel pit, related to the machinery of the horse engine, and linked by the channel that contained the drive shaft. The wheel pit contained a basal fill (1044) from which undiagnostic iron bars and strips were recovered. This was overlain by deposit 1031 containing 19th-century or later stoneware pottery, a possible 19th-century iron drop handle from a chest or trunk and slag, and two clinker-rich deposits (1288 and 1292), with the former also including fragments of modern glass.

To the west of Structure 2 some poorly preserved structural elements were recorded. These included traces of a sandstone wall (1260) and flagstone surface (1268). A later concrete foundation (1269) and brick wall (1262) were also found.

Structure 3 (Plate 15)

On the north-eastern side of Structures 1 and 2, a small area of brick surface (1032) was found, covering an area measuring 2.96m long and 0.65m wide. Many of the bricks were dated as broadly post-medieval date or at least from the 16th century. One better preserved example was of clear 18th-century date or later which gives a likely date for the structure. Two drains (1279 and 1281) were found beneath the surface. The fill of one (1282) contained a pan tile of 18th-century date or later, while the fill (1280) of the second was sterile. The brick surface is assumed to be contemporary with

Structures 1 and 2 given their physical relationship and similar alignment.



Plate 15: Structure 3, looking north-east

CHAPTER 2: ARTEFACTS

Roman Pottery

by Ruth Leary (with Mortarium and Samian identifications by Jo Mills and Kay Hartley respectively)

All the pottery, including material from the evaluation, was examined in context groups following the Standard for Pottery Studies in Archaeology (Barclay et al. 2016). The sherds are recorded grouped by fabric, ware group and vessel form. Quantification is by sherd weight, count and estimated vessel equivalences (EVES). The ware group, vessel form, vessel type, condition, decoration and any obvious joins are recorded and an archive dating list is given by context.

In total, 983 sherds are identifiable Romano-British wares. The Roman sherds come principally from pottery Kiln 9. This large group includes both underfired and overfired sherds, with much evidence of distortion and wasting, and date to within the late 1st to early 2nd century, most probably limited to the late in the Flavian period or early in the Trajanic period. Overall, the site assemblage includes two chronological groups, one dating to the late 1st-early 2nd century and a later phase, most likely to dating to the mid-3rd century AD. The assemblage includes wares from pottery kilns in South Yorkshire, north Lincolnshire, the lower Nene Valley near Peterborough and Mancetter-Hartshill near Coventry, an imported mortarium from the Rhineland and fine tablewares from Gaul.

The pottery: provenance, condition and spot dating

The quantities of Romano-British pottery sherds recovered are shown in [Tables 1](#) and [Table 2](#). Detailed lists are provided in [Appendix 1](#). Apart from the pottery kiln, the context assemblages were very small and had a low average sherd weight of 11g, when the rather larger sherds from Kiln 9 (average sherd weight 16g) are excluded. In terms of brokenness, the kiln group has larger sherds and more complete vessels than other context groups. The level of ceramic deposition is very low in the Roman period apart from the pottery kiln assemblage suggesting a site on the periphery of domestic occupation.

Chronology

The assemblage is made up of 11 ware groups: Dorset black burnished ware BB1, Central Gaulish black slip ware CGBS, Dales ware CTA2, South Yorkshire grey wares GRB SY, an imported white ware mortarium, most likely to be from somewhere like Soller, Kreis Duren in the Rhineland, in the first half of the 3rd century (identified by Kay Hartley, Haupt 1984, figs 172 and 183), Mancetter-Hartshill white ware MH2, oxidised mortarium ware MOAB, probably a South Yorkshire product, Nene Valley colour-coated ware NV2, oxidised ware OAB1, samian ware and the locally produced ware from kiln 2208 ([Table 2](#)). The fabric and form types fall into two chronological groups, late 1st and 3rd century AD, and less well dated sherds can be assigned to one or other of these groups despite the lack of diagnostic features.

Late 1st Century

The large group of sherds from pottery Kiln 9 is almost entirely in a fairly fine quartz-tempered fabric with moderate amounts of fine quartz and clay pellets. This includes both reduced and oxidised wares firing to grey and cream through to pinkish cream respectively. A single, abraded grey ware bodysherd from Kiln 9 in a rather sandier fabric similar to South Yorkshire grey ware, is likely to either belong to the earliest production around Doncaster, or be late and intrusive. Two samian sherds from later features are of Flavian date and belong to this phase of activity.

The assemblage from Kiln 9 clearly includes debris from more than one firing - at least one firing producing hard fired grey wares and another, or maybe more, producing softer cream, pinkish cream oxidised and partially oxidised wares. Essentially the fabric used in both cases has the same inclusions and texture and is the same clay. There is, in addition, evidence on some of the oxidised sherds of slip or self-slip (formed on the wheel as the potter splashed water on the pot while turning) which has fired to a darker orange colour. On some vessels this takes the form of drips running down the inside of the sherd. On reduced vessels, this surface treatment may be seen in a small number of sherds where the core is a whitish grey colour and the surfaces darker. One sherd had well-preserved gold mica gilt outside and inside the vessel, a platter or dish. Decorative techniques include rustication in a web-like pattern, one sherd bearing stabbed marks, shoulder grooves on the jars and bowls and en barbotine dots and circles on some jars/beakers.

The kiln assemblage includes many examples of bubbled, distorted and wasted sherds as well as some possibly underfired examples. The range of vessels being made is jars, small jars or beakers, flagons, lids, bowls and perhaps platters or dishes. The three versions of this single fabric suggest flagons were principally produced in the oxidised and white/pinkish cream wares (FLA1 and OAA1) and small jars in the reduced ware GRA1 ([Chart 1](#)), but there are some handle sherds and sherds from large ring-necked flagons in the hard grey ware which are not represented in the chart (which is quantified by EVES). There are also more FLA1 than GRA1 bowls.

The forms being made are typical of the late 1st to early 2nd century (see catalogue for more details): neckless jars with short everted rims, necked jars with everted rims, jars with surface rustication in a webbed pattern, an early rustication form at Lincoln (Darling and Precious 2014, 101 and 127), carinated bowls with plain flat rims, flat rims with a single groove, a flanged bowl with straight flange and bead rim and a carinated bowl with double beaded rim, ring-necked flagons with even sized rims and slightly flaring necks, large ring-necked flagons, blunt rim lids and one bifurcated rim lid, ring and dot beakers and a possible platter. The mica-gilt basal sherd is from a flat based open vessel such as a platter and two other sherds, a kicked base and a base with internal concentric

cordon may also come for early platter forms of Flavian type. Overall, the forms are of Flavian-Trajanic type and readily paralleled at Castleford in Flavian phases (see illustrated catalogue below). Some characteristics - the even sized, rings of the flagons, the ring and dot jars/beakers and the very straight flange of the flanged bowl, similar to samian flanged bowl forms Ritterling 12 and early Curle 11 of Flavian date - point to a date early in this date range, Flavian or very early Trajanic. One of the ring and dot beakers has a very unusual form with marked shoulder paralleled at Alcester in the Neronian-early Flavian period (see no. 22).

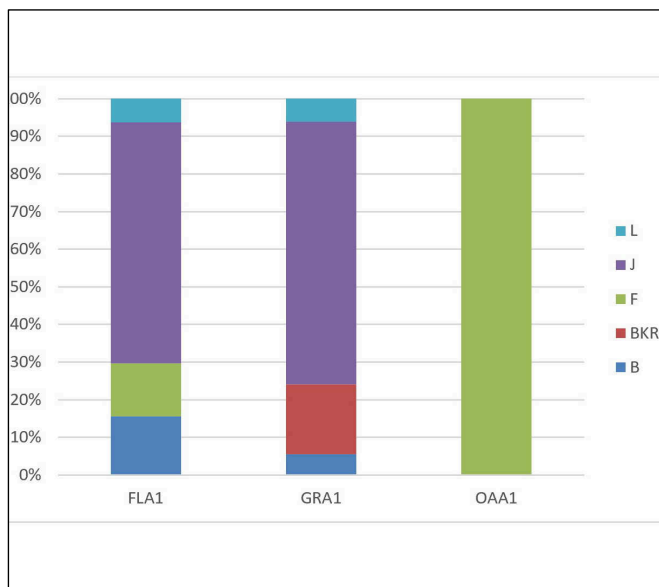


Chart 1: Vessels by ware from Kiln 9, using EVES

Part of the kiln was previously excavated by Wessex Archaeology (Tuck 2020) and this material is included here. The Wessex assemblage is of the same type as that excavated by ASWYAS. The pottery assemblages from pit 2269 and Ditch 11 are of the same type and date as that from the pottery kiln but sherds of the kiln ware occurring in other contexts are associated with later sherds (pits 2022/2051, 2122, 2168, 2192, 2202, 2271 and Ditches 9 and 13). These may be redeposited sherds in the features of the later settlement of early to mid-3rd century date. A tiny scrap of white kiln ware FLA1 from Ditch 3 in Area E also dates to this early period.

Only two small samian sherds come from the site, a scrap from a South Gaulish DR 27 cup from fill 2025 of pit 2022 and a scrap from a South Gaulish vessel, perhaps a DR18 dish from fill 2125 of Ditch 13. Both are from La Graufesenque and are of Flavian date, probably c. AD 70-90. They are both in later contexts containing 3rd-century pottery but clearly must belong to the Flavian-Trajanic phase of activity and should be used to narrow that phase to the Flavian period despite their redeposited character since there does not seem to be any ceramic discard in between the two phases.

The range of types and the fabric being used compares closely with that found in a waster group at Nostell Priory (Leary 2013). Like the Kinsley group, many of the types being made at Nostell span the late 1st to early 2nd century but the mortarium forms, a possible Gauloise 3 amphora form, the upright rim ring-necked flagons and the ring and dot beakers

and jars forms all suggest a late 1st-century date and this is supported by the 1st-century samian from the site, as at Kinsley. The pottery from both kiln sites is easily paralleled on Flavian military sites and kilns associated with the ceramic supply of such sites. Given the scarcity of pottery of any kind on pre-Roman Iron Age native sites in this region, and certainly the absence of evidence for the early adoption of a wheel-thrown technology, taken together with the Continental ancestry of the forms being made and techniques being used and the Roman vessel types such as flagons, bowls, platters and beakers, it is clear that the workshop is primarily for military pottery production and is likely to have been operated by potters working to supply a military site. The nearest likely destination known is Castleford and, although it seems quite distant, the attraction of white firing clay, preferred for table wares such as flagons and for mortaria and obtainable in the area around Pontefract, goes a long way to explain this.

Illustrated Forms (Figure 11):

1. Kiln ware pinkish cream fabric, rim sherd of ring-necked flagon with upright, slightly splayed neck. This class dates from the late 1st to mid-2nd and the rim gets progressively more splayed with time. The top ring tends to get larger and has a slight internal cupping by the 2nd century. Although difficult to date precisely on this typological development, the examples from Kinsley come early in the sequence fitting well into a Flavian context and certainly not beyond the first decade of the 2nd century. Area F, Kiln 9 (2208)
2. Kiln ware oxidised fabric, rim sherd of ring-necked flagon with upright neck and evenly sized rings. The dating of this vessel is as no. 1. Area F, Kiln 9 (2208)
3. Kiln ware white fabric, flagon handle with three ribs. Partially fired grey. Area F, Kiln 9 (2208)
4. Kiln ware white fabric, incomplete rim section from a ring-necked flagon. The top ring sheared off and comes from a larger vessel than nos 1-2. Late 1st to -mid 2nd century. Area F, Kiln 9 (2208)
5. Kiln ware white fabric, large footing base from a large flagon or amphora vessel type in the Gauloise wine amphora tradition. A similar base was found at Nostell Priory as well as a fragment of rim similar to a Gauloise 3 amphora of 1st century date (Leary 2013, 41-2). Area F, Kiln 9 (2208)
6. Kiln ware hard grey fabric, incomplete rim, neck and body of large ring-necked flagon. This can only be date late 1st to mid-2nd on account of its incomplete condition. Area F, Kiln 9 (2208)
7. Kiln ware hard grey fabric, incomplete rim, neck and body ring-necked flagon, second vessel as no. 6. Area F, Kiln 9 (2208)
8. Kiln ware hard grey fabric neck sherd of a flagon bubbled. Area F, Kiln 9 (2208)
9. Kiln ware white fabric rim and bodysherds from a carinated bowl with double beaded rim with double grooving outside the carination. A significant number of fine white ware bowls are also present at Nostell. These included similar bowls with a bead rim and cordon defining a plain upper zone and can also be found at Castleford (Rush et al. 2000 fig. 49 no.123 in the Flavian phase). However, at Nostell these were hemi-spherical whereas at Kinsley these are carinated, perhaps related to copies of the 1st-century samian bowl form 29. Similar copies are present at Castleford (Rush et al. 2000, fig. 49 nos 116-21 in a Flavian phase). Area F, Kiln 9 (2208)
10. Kiln ware pinkish white fabric rim and bodysherds from a flat-rim carinated bowl with double grooving outside the carination. This form is present at Castleford (Rush et al. 2000, 130) but there and at Castleford reeded-rim bowls were more common. Area F, Kiln 9 (2208)
11. Kiln ware white fabric rim and bodysherds from a flat-rim carinated bowl grooved on the inner edge. Fired with a greyish tinge. Area F, Kiln 9 (2208)
12. Kiln ware grey fabric, rim sherd from bead and flanged bowl with rather flat flange bowl, partially oxidised. This vessel is also found at Nostell and is perhaps copying the earlier samian forms as Ritterling 12 (pre-AD80) and the earlier Curle 11s (Flavian). Area F, pit or hearth 2192, secondary fill 2193
13. Kiln ware white fabric rim sherd from squared rim flat lid. The lids at

Nostell have rounded rather than blunt rims but one is illustrated at Castleford (Rush et al. 2000, no. 183). The diameter of these lids compares with that of the flat- and reeded-rim bowls and they are likely to have been used with them. Area F, Kiln 9 (2208)

14. Kiln ware mica-coated cream ware, basal sherd from open vessel with plain, flat base, probably a platter. The full form of this vessel is unknown but platters with mica-gilt are well known in the London series of fine wares including mica-dusted platters (Marsh type 24) and here it is dated Flavian to Trajanic but more common in the early 2nd century. There is no record of mica-dusted platters at Castleford but there is a similar vessel from the Flavian phase in fabric 41, a fabric which Rush notes as sometimes being mica-dusted (Rush et al. 2000 fig. 53 no. 179). Platters are known from other Flavian-Trajanic production sites in the region (Swan 2002, Templeborough and York). Area F, Kiln 9 (2208)

15. Kiln ware white fabric, rim and shoulder sherd from a rusticated jar with everted rim jar with traces of rustication outside the shoulder, as no. 14. A well-known Flavian-Trajanic form Gillam 1970 nos 97-8 and 101-2), rusticated or undecorated Late 1st to early 2nd century. Area F, Kiln 9 (2208)

16. Kiln ware pinkish white fabric, rim sherd necked jar with smoothly curving everted rim jar. These jars are all similar to a group of jars illustrated in Gillam 1970 (nos 107-8) and are common on Flavian-Trajanic sites alongside the neckless jars with short everted rims and shoulder grooves and rustication (as no. 15). These all date broadly to the late 1st to early 2nd century but, at Middlewich, Leary found this group (as nos 16-20) more common in the Flavian period (2008, 72). Area F, Kiln 9 (2208)

17. Kiln ware hard grey fabric, rim sherd from necked jar with smoothly curving everted rim and single shoulder groove, as no. 16. Area F, Kiln 9 (2208)

18. Kiln ware pinkish cream fabric with darker slip, rim sherd of necked jar with smoothly curving everted rim and double groove outside shoulder, as

no. 16. Fired greyish. Area F, Kiln 9 (2208)

19. Kiln ware pinkish cream fabric with darker slip, rim sherd of necked jar with smoothly curving everted rim jar, as no. 16. Area F, Kiln 9 (2208)

20. Kiln ware pinkish cream fabric, rim sherd of necked jar with hooked rim jar, as no. 16. Fired greyish. Late 1st to early 2nd century. Area F, Kiln 9 (2208)

21. Kiln ware hard grey fabric, rim and neck of everted rim jar with tall neck and groove double outside the shoulder. Uncertain type, perhaps as Gillam 1970 no. 104 dated Flavian-Trajanic. Late 1st to early 2nd century. Area F, Kiln 9 (2208)

22. Kiln ware soft fired grey ware, rim sherd from ring and dot beaker with everted rim and carinated shoulder. There is a single cordon outside carination and an applied ring outside the upper body. Late 1st century. Ring and dot beakers (Green 1978) are found at Nostell both in grey ware with applied ring and dots and in white ware with orange brown painted rings and dots. A very similar beaker form from Alcester is dated Neronian-early Flavian (Cracknell and Mahany 1994, 35 fig. 11, R224 with panels of barbotine decoration). Area F, Kiln 9 (2208)

23. Kiln ware, soft fired grey fabric, bodysherds with ring and dot decoration. Area F, Kiln 9 (2208)

24. Kiln ware white cored, soft fired grey fabric, rim sherd of everted rim of beaker with a single groove outside the shoulder. Late 1st to early 2nd century. Area F, Kiln 9 (2208)

25. SOL WH incomplete rim and body of mortarium. The fabric and the large scar, where the flange was attached, is most likely to be from somewhere like Soller, Kreis Duren in the Rhineland, in the first half of the 3rd century (Haupt 1984, figs 172 and 183. Area F, pit 2022, secondary fill 2026

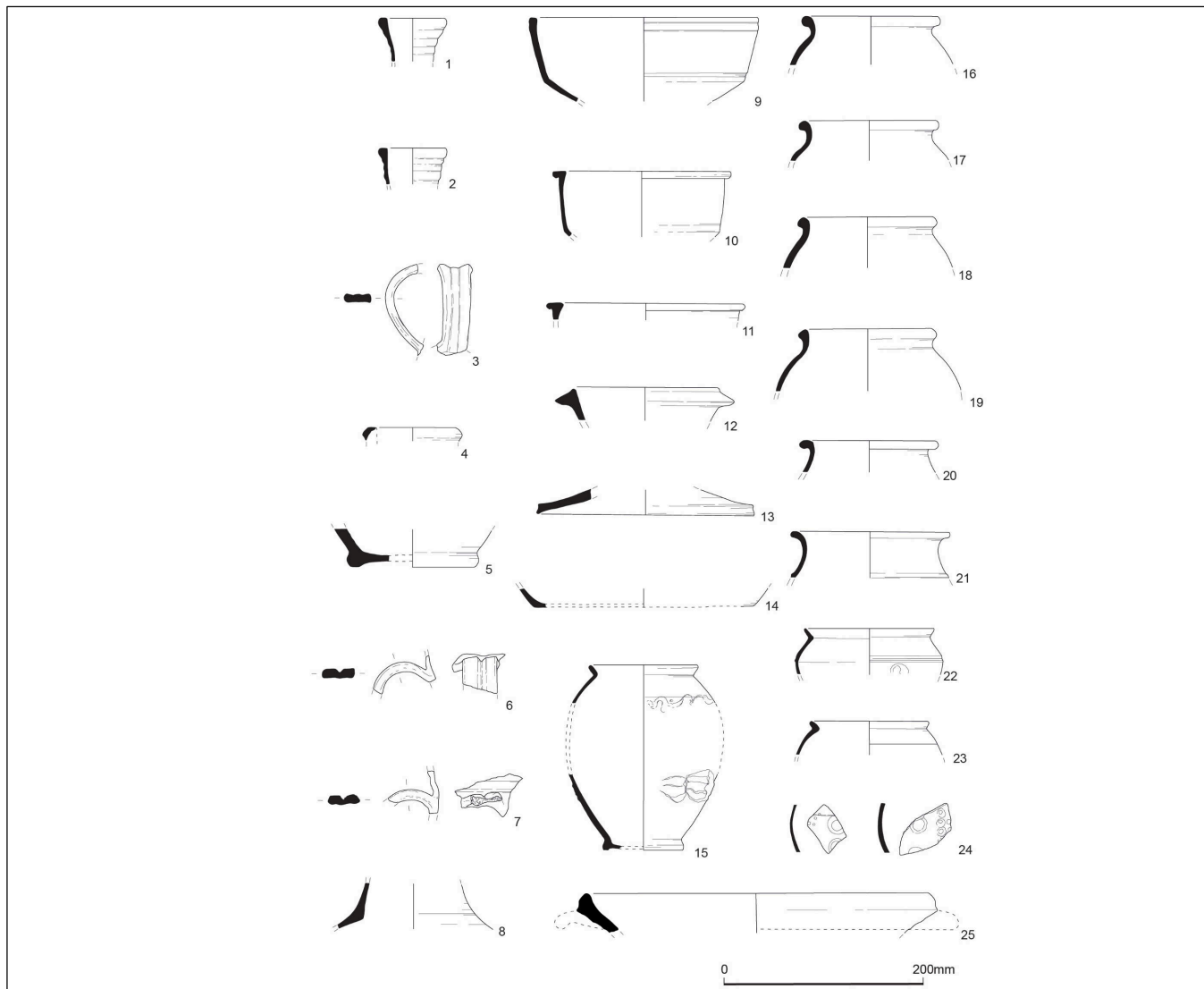


Figure 11: Roman pottery, numbers 1-25

3rd Century

An assemblage of 103 sherds were of later date and came from the pits, ovens and ditches in Area F with just one in Area E. The more closely datable types from the remaining pottery groups suggest ceramic deposition in the mid-3rd century when mid to late 3rd-century type Dorset BB1 was still being supplied to Castleford and Dales ware just starting to appear (Rush et al. 2000, 158). The BB1 jars present are of mid to late 3rd-century types (Gillam 1976 nos 8-10). Other datable types include a sherd from a CGBS beaker dated (c .AD 150-210 (Tomber and Dore 1998 CNG BS, Brulet et al. 2010, 347-8) and a mid-3rd-century NV2 indented scale beaker, a grey ware bowl with flat, grooved rim of the late 2nd to mid-3rd century, two reeded hammerhead mortaria, one of the 3rd century and one of mid-3rd to mid-4th century and an incomplete rim sherd of a Soller mortarium of the early to mid-3rd century. There are no wares or types which need imply the occupation persisted far into the 4th century, or even beyond the mid-3rd century. The SYGRB lugged jar, flat-rim deep bowls (Buckland et al. 1980 types F, Hc-d and J) are not narrowly dated but fit happily into this period of activity in the 3rd century. How early this phase began is uncertain, but the CGBS beaker could indicate some activity at least in the early 3rd century.

This later phase of occupation seems to be characterised by a rural vessel profile with relatively large numbers of jars and deep bowls and fewer table wares (Table 3 and Chart 2). The beakers and perhaps the cups, although they may date to the earlier phase, indicate the acquisition of some imported and traded finewares and the range of traded wares from Dorset, the Nene Valley, north Lincolnshire as well as the nearer sources around Doncaster indicate a site benefiting from the network supplying ceramics to the major centres at Doncaster and Castleford (Chart 3).

Illustrated forms (Figure 12)

- 26. SYGRB hard fired grey ware, body and lug of a large lugged jar, Buckland et al. 1980 type F. Mid-2nd to 4th century. Overfired, stone hard mortice and tenon type handle joint. Area F, Ditch 7 (2034), fill 2035
- 27. SYGRB, rim sherd from deep, wide-mouthed bowl with flat rim and double groove outside the upper body. Buckland et al. 1980 type Hc-d. Mid-2nd to 4th century. Area F, pit 2022, secondary fill 2025
- 28. SYGRB rim sherd of deep, wide-mouthed bowl with flat rim and double groove outside the upper body. As no. 27. Area F, Kiln 11 (2200), fill 2201
- 29. SYGRB, rim sherd of grooved flat rim bowl/dish with grooved chevron decoration outside the upper body. Late 2nd to mid-3rd century. Area F, pit 2022, secondary fill 2025
- 30. CTA2 rim sherd of Dales jar. Mid-3rd to mid-4th but predominantly 4th century at Castleford (Rush et al. 2000). Sooted outside body. Area F, Kiln 7 (2150), primary fill 2152
- 31. SYGRB cheese-press basal fragment. Buckland et al. 1980 type J. Mid-2nd to 4th century. Area F, Ditch 13 (2164), fill 2165

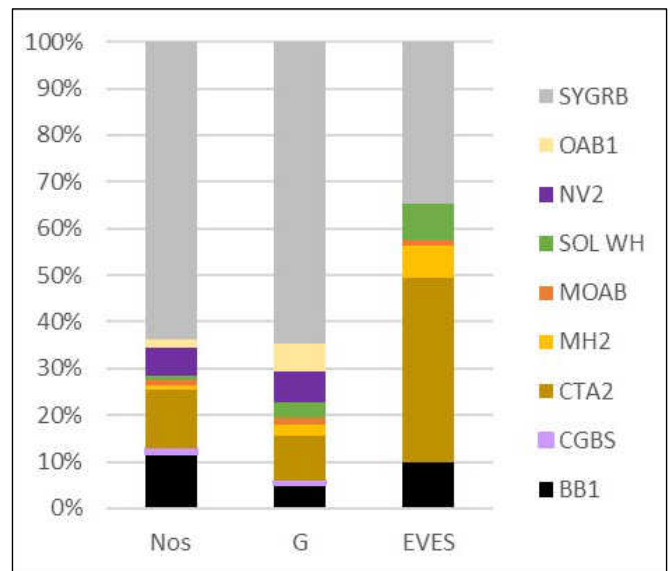


Chart 2: Relative quantities of ware groups from later phases, excluding residual kiln wares, by sherd count, weight and EVES

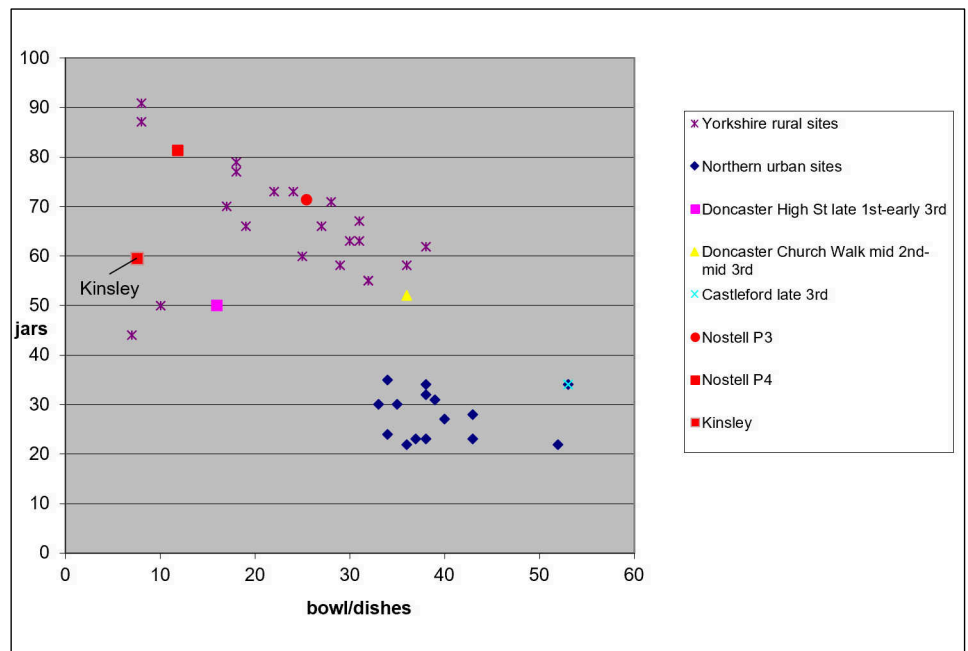


Chart 3: Relative proportions of jars to bowls/dishes on Yorkshire rural sites, northern military sites, urban sites and Nostell Priory Phases 3 and 4

- 32. NV2 base and lower body of indented scale beaker. Mid-3rd century (Perrin 1999, 94). Area F, Ditch 12 (2143), fill 2144
- 33. MH2 rim sherd of 4-reeded hammer head mortarium, AD 230-300 (Hartley 2002 type 97). Area F, pit 2022, secondary fill 2025
- 34. MOAB rim sherd of 5-reeded hammerhead mortarium, partially reduced and rather battered. Perhaps mid/late 3rd to early/mid-4th century, from the South Yorkshire kilns (Buckland and Magilton 2005, type 9 from Goodison Avenue dated late 3rd-early 4th century and Buckland et al. 2022). Area F, furrow 2231, secondary fill 2236.

Discussion

The late 1st-century kiln assemblage adds significantly to evidence for the supply of pottery, most likely to Castleford, during this period and, together with the kiln waste from Nostell Priory, suggests supply from a dispersed 'industry',

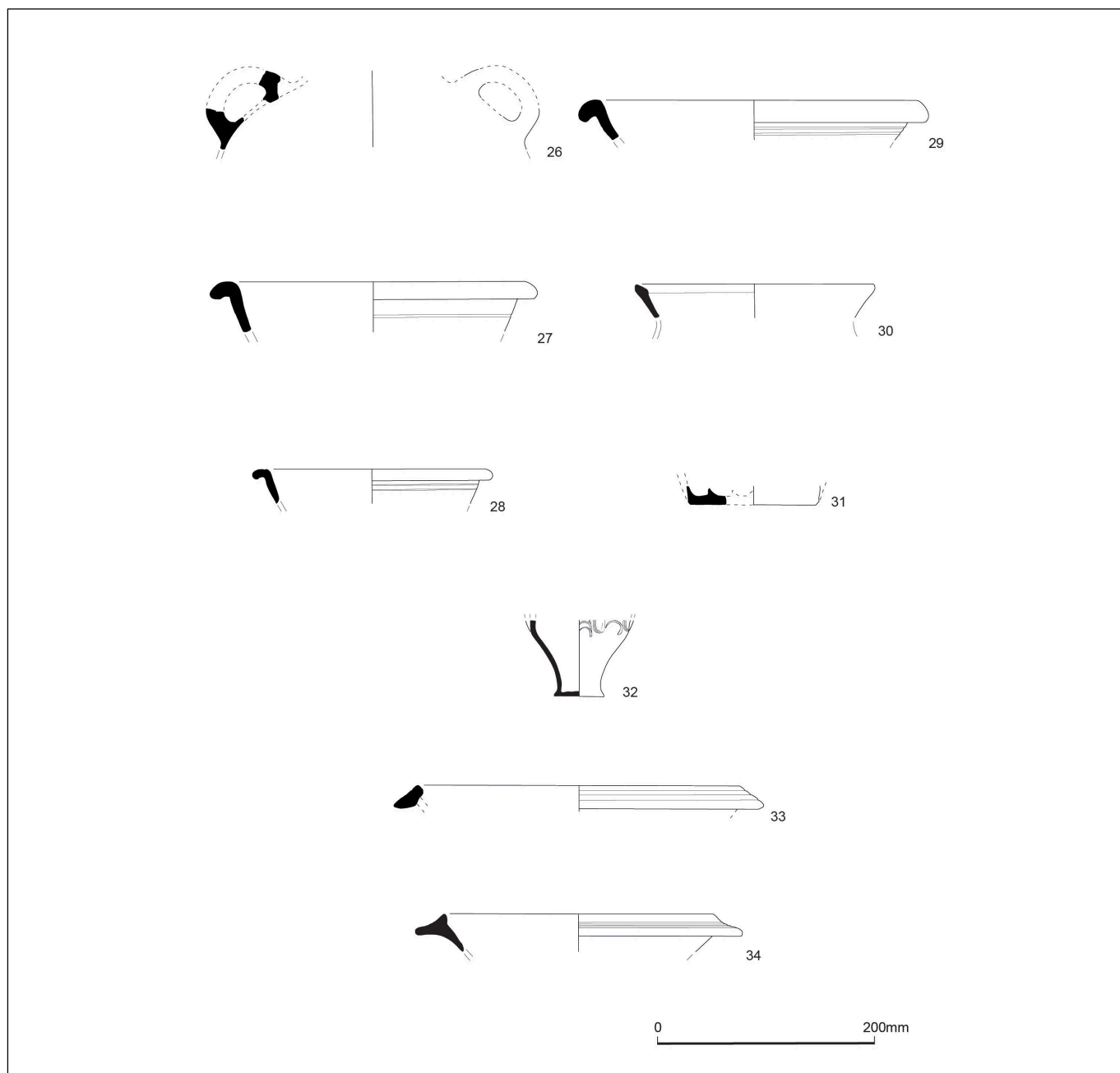


Figure 12: Roman pottery, numbers 26-34

perhaps centred on the fine, white-firing clay available around Pontefract. During the Flavian-Trajanic period, relatively local production of pottery for the forts in this region is common, often just outside the fort itself. This can be illustrated at Derby Little Chester where an industrial complex, producing a range of forms broadly comparable to those from the Kinsley and Nostell Priory groups, grew up outside the fort in the Derby Racecourse area. Similarly, at Melandra (Webster 1971) and at Templeborough (May 1922), local manufacture of coarse wares of this date are evidenced by wasters from the excavations there, and also further away at York, Malton, Aldborough, and Slack, similar workshops have been identified (Swan 2002, figs 1-4). Of particular relevance to our more distant workshops are the kilns in North Lincolnshire at Dragonby and Roxby which, in the case of Dragonby kiln 4, contributed to military supplies in the Flavian period (Swan 2002, 4 and Swan 1996, 576). As

at Kinsley and Nostell Priory, the kiln products have not been noted in any quantities on rural sites in the region although they compare very well with contemporary material from Castleford, but not Doncaster where the local wares are somewhat coarser. It is uncommon in this region in the Flavian-Trajanic period for kilns supplying the army to be located a distance from the protected zone around fort, although this did occur in the later, more settled Hadrianic-Antonine period, for example around Doncaster. It may be that the good quality clay in the vicinity was a compelling reason to do so even at this early period of conquest. On the other hand, Hartley thought the mortarium types being made at Nostell Priory certainly implied an as yet undiscovered fort nearby and this is still a possible explanation for these kilns.

The forms produced at both Kinsley and Nostell Priory are types unknown to the local population, who were near

aceramic at this period and certainly producing no ceramics the Roman army could draw on. The range of vessels, style of vessels, decorative techniques and mode of production are all 'imported' and imply the presence of potters trained in military pottery production. In style and craftsmanship, they contrast somewhat with later pottery production in the 2nd century onward in the area, best seen in the kilns around Doncaster, which uses much coarser wares producing heavy utilitarian vessels with very limited decoration, displaying little fine craftsmanship. The vessel forms from the kilns are duplicated at both the legionary and auxiliary forts in the Midlands and the North in this period and their ancestry can be traced to military workshops in southern Britain and on the Continent (see Swan 2002, 39-40). At York, for example, in the Flavian period, perhaps, potters may have come from the Rhineland (Swan *ibid.*) while those working at Malton may have had links with the Verulamium industry (Bidwell and Croom 1997, 100-101).

The distribution of the pottery from these two workshops seems to be restricted largely to military sites such as Castleford. Flavian-Trajanic types are found on rural settlements, such as the Lincolnshire shell-tempered and grit-tempered ware jars found at Ferrybridge, Cudworth and at Misson Quarry (Evans 2005, Leary 2010 and 2022), but these are not accompanied by the types of rather fine table wares made at the Kinsley kiln, although some South Yorkshire grey ware jars at Ferrybridge are dated to this period. Flavian Roman wares of any type are rare on rural settlement sites in this region.

By contrast with these early ceramics, the 3rd-century assemblage aligns much more closely with the common patterns of ceramic exchange identified on rural sites in this region and has limited integration with the military supply network with only a few high-status ceramics such as the imported fine wares and the imported mortarium. The jar to bowl/dish ratio is consistent with other rural settlements in Yorkshire and the North with little in the way of tablewares (Chart 3). Like the settlement at Nostell Priory, the site appears to have lost its link with military supply and its late history is unremarkable.

Medieval Pottery

by Chris Cumberpatch

The pottery assemblage consists of 113 sherds of pottery, weighing 1391.5g, representing a maximum of 89 vessels. The data are held with the site archive.

The pottery assemblage is a remarkably homogeneous one, being dominated by local Gritty and Sandy wares of various types (as summarised in [Table 4](#), Appendix II) with only a small number of sherds of other types, as discussed below. The distinctions between the broader Sandy and Gritty groups are largely those of inclusion size and density rather than of variation in the types of inclusions, suggesting the purposeful manipulation of vessel fabrics by the potters. One exception to this may be the distinction between fabrics with and without white mudstone, exemplified by the distinction between Yorkshire Gritty ware 3 (with mudstone) and

Yorkshire Gritty ware 4 (without mudstone), as originally proposed by Young and Vince (*nd.*). This distinction may be interpreted as representing production in different potteries, drawing on different clay sources. In other cases, the limited range of inclusions would seem to indicate largely local production although these issues will remain unresolved until it becomes possible to initiate a programme of petrological and chemical analysis on the lines suggested elsewhere (Cumberpatch 2020).

The two types of Yorkshire Gritty ware both share a distinctive quality in terms of their general appearance; in contrast to other types, they have very hard, dense fabrics which lack the granularity of otherwise similar Gritty wares. This may be a function of firing temperature although variation in the quality of individual clay bodies may also play a part. The distinctions based on colour, used to classify the majority of sherds, relate to the interaction between the composition of the clay and the firing atmosphere with iron-rich clays tending towards orange and red bodies while iron-poor clays result in buff to white bodies when fired in oxidising conditions. The scale at which such variations in the iron content occur within clay deposits and the impact of other factors on the final outcome are uncertain. In view of this, it cannot be assumed that the orange fabrics necessarily originated in different potteries to those which produced the buff and buff-white wares, particularly as we know little of the ways in which clay procurement was organised. While it has been demonstrated that phenomenological distinctions between ware types were significant in the structuring of pottery assemblages (Cumberpatch 1997), these seem to operate at a different scale to the more subtle distinctions within the ware type discussed here.

One sherd (fill 1098 of Kiln 2) was identified as being hand-made (as distinct from wheel thrown) and as such was the only representative of what appears to be a short-lived phase of hand-made production, probably dating to the mid-11th to early 12th centuries. The significance of this phase of production and its wider implications will be discussed in a forthcoming reconsideration of early medieval pottery production and distribution in South and West Yorkshire (Cumberpatch, *in prep.* 1, *in prep.* 2).

A small number of sherds were of particular note. Fill 2177 of pit 2176 contained two sherds of pottery one of which, the rim of a jar or cooking pot, is in a Yorkshire Gritty ware 4 type fabric but with an unusual form; a heavy rounded rim rather than the more usual angular form which may indicate a slightly later date and certainly indicates that the vessel was at the larger end of the size range for gritty wares. A similar rounded rim was identified in fill 2229 of Ditch 9 (Figure 13, no. 1). This belonged to a much larger jar, as indicated by the curvature of the rim. The rim sherd from fill 2177 was accompanied by an unusual body sherd in a very fine sandy fabric. This has been recorded as 'Fine Sandy ware type' as it lacks known parallels. It is much finer than the sandy wares in the assemblage and bears no relation to known local and regional sandy wares (Doncaster, Beverley, Brandsby, York Glazed ware etc) being much finer and harder in texture. It is

possible that it is a European import although such wares are generally very rare outside coastal and inland ports.

Deposit 1305 (close to Kiln 3) produced only one sherd and this appears to be of Coal Measures Whiteware (CMW) type, described and discussed elsewhere (Cumberpatch 2004). In this case the sherd is not entirely typical of CMW wares and also bears splashed as opposed to suspension glaze. The date range typically ascribed to the Coal Measures ware is generally believed to post-date that of the use of splash glaze although ongoing work at one of the potteries producing these wares (Firsby Hall Farm) has suggested that splashed glaze was in use there. This raises the possibility that either splash glazing continued into the later 13th and 14th centuries or that the production of Coal Measures wares began somewhat earlier than presently supposed. A small number of other sherds also bear splash glaze (fill 1109 from Ditch 3 and possibly deposit 1305) but these cases present less of a problem as both sherds are of an earlier medieval date.

A single sherd from fill 1154 of Kiln 2 was also unidentified. Provisionally classified as 'Coarse Sandy ware', this sherd is distinguished by its bright green glaze and a fine white clay strip, the latter presumably forming part of a more complex applied decoration of the type seen on York Glazed ware. While the sherd cannot be attributed to any specific known industry, its general characteristics suggest that it may have originated in North Yorkshire.

The range of vessel forms is not unusual. While jugs in Buff Sandy wares and related types are not unknown, there is no evidence of such vessels in the form of handles, jug rims or spouts and those rims which are present indicate that both sandy and gritty fabrics were used for jars and cooking pots, generally with elaborate square or rectangular rims, sometimes with profiles that suggest the use of lids, probably of wood, given the extreme scarcity of ceramic lids. Although the sizes of such vessels varied considerably, the small, partially complete vessel from fill 1098 of Kiln 2 (Figure 13, no. 2) exemplifies the characteristics of the products of the local Gritty ware industry with its typical thin walls and base, rilled profile, gritty fabric and extensive external sooting.

Two sherds show signs of secondary use (fill 1049 of pit 1048 and fill 1125 of Ditch 2). These are pot discs and both are in Buff Sandy fabrics. Pot discs are generally assumed to have been counters for games but they occur very widely in both space and time. While other ceramic artefacts related to games were purpose-made (fired clay marbles, knurr balls, cubes for five-stones etc), pot discs were invariably made from broken sherds chipped or ground into a roughly circular shape despite the fact that such a process was certainly more time-consuming than making them from clay and firing them alongside conventional pots. Provisional analysis (Cumberpatch, in prep. 3) suggests that there was no standardisation in either size or weight even within specific spatially and chronologically circumscribed assemblages.

Despite its small size, this is an interesting assemblage which dates to the earlier medieval period and includes a range of high quality, locally manufactured wares. Such wares

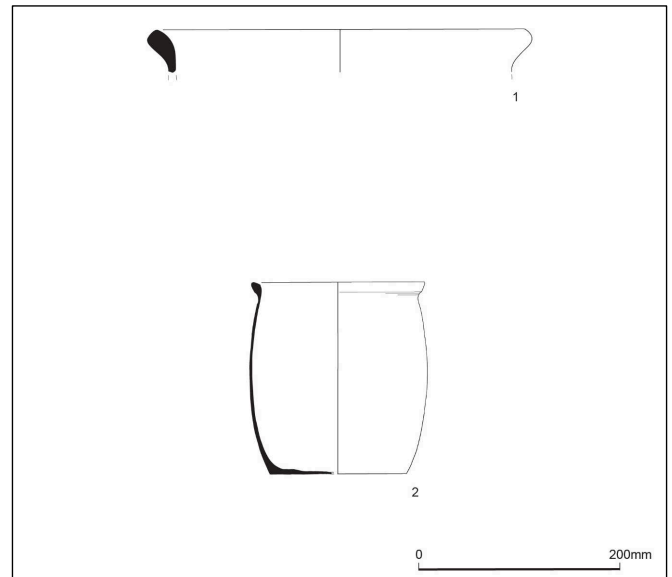


Figure 13: A rounded rim from a large jar (no. 1) and a local Gritty ware small jar (no. 2)

appeared quite rapidly after the Norman Conquest and were soon being manufactured in large quantities and used across West Yorkshire and neighbouring areas. The use of light-firing clays to manufacture a consistent range of domestic and utilitarian wares seems to have been significant at more than the regional level. Buff and white-firing wares occur across Yorkshire and into north-east England and may also be related to the Scottish Whiteware industry of the east coast. In a few cases, notably with the later Tees Valley wares, buff slip was used to mask orange-firing clays, a technique sometimes linked to potters from northern France and the Low Countries. In passing, it may be noted that this tradition does not extend into eastern Yorkshire where a range of very distinctive coarse brown sandy wares seem to have been preferred for utilitarian purposes. These wares (which include Staxton/Potter-Brompton wares, Coarse Sandy wares and a range of unattributed Chalk-tempered Sandy wares) were finer in texture than the Yorkshire Gritty and related wares but shared some of their characteristics, notably the high degree of care and skill expended in their manufacture and particularly in the finishing of the square-sectioned rims.

Discussions of regionality within the medieval pottery industry seem to have fallen from favour in recent years, perhaps as a result of the focus on individual assemblages under the commercial system and the lack of financial support available for broader research themes. Nonetheless, the evidence from Yorkshire and neighbouring areas indicates a high degree of such regionality, at least in the earlier part of the medieval period (mid/late 11th to early/mid-14th centuries). That this is broadly congruent with the distinction between the ceramic-using and aceramic zones which can be seen in both the pre-and post-Roman periods is of considerable interest although how far there is any connection between these phenomena is obscure and is likely to remain so until there is some commitment to moving ceramic studies on from their present moribund state.

While distinctive in character, the present assemblage is not without parallels. Sites including Castle Gate, Wetherby (Young and Vince, nd); Grange Farm, Mickfield (Cumberpatch 2022); Hemsworth (Cumberpatch and Young 2009); Mill Dam Lane, Pontefract (Cumberpatch, in prep 4) have all produced assemblages dominated by local Gritty wares. It has been suggested (Moorhouse nd.) that such sites were engaged in dairying and the production of milk and milk products, with large numbers of pots being used in the manufacture of cheese and other milk products, something that would be consistent with the rural nature of some, but not all, such sites.

In terms of the relationship between the pottery assemblage and the site it should be noted that a number of the features contained only one or two sherds of medieval pottery. More substantial assemblages of pottery were recovered from only a small number of features. These were Gully 5 (fill 1159), Kiln 2 (fills 1098, 1099, 1154, 1155, 1156, 1157, 1183, 1195 and 1200) and Kiln 6 (fill 1041). In all of these cases, the medieval pottery assemblages are chronologically homogeneous and there did not seem to be any significant distinctions between them in terms of the ratios of gritty to sandy ware. Other distinctions can be drawn; Kiln 2 contained Yorkshire Gritty wares (types 3 and 4), types which were absent from Gully 1158 and Kiln 6. Kiln 2 also contained the substantially complete small jar shown in Figure 13, no. 2, perhaps suggesting that the fill was undisturbed. The material from Kiln 2 is particularly diverse, but this may simply be a function of the larger size of the assemblage from this feature. How far such variations in quantity are significant in chronological terms is unclear as we lack the degree of chronological resolution within the mid/late 11th to mid/late 13th-century period needed to interpret the distinctions between the various sub-types within the broader Gritty and Sandy ware groups.

Post-Medieval Pottery

by Anne Jenner

A total of 423 sherds of mainly domestic pottery were retrieved from six contexts, including unstratified material. All the post-medieval material was retrieved from Area G and only one late medieval/early post-medieval sherd was found in Area E. All the wares appear to have been used in a domestic context.

Visual analysis involved separating fabric and form groups by date and type. The numbers of sherds of each type of pottery are recorded in tabular form (see [Appendix III, Table 5](#)). Decorative schemas, stamps and other significant features were also noted. Assemblages from each relevant period are outlined briefly under 'Discussion' below.

Spot dates are given for each context containing the most significant pottery fabric types. The method for calculating the SPOT date here is to take the latest date from the latest pottery type. Calculation of the date range is the earliest date from the earliest pottery type and the latest date from the

latest pottery type. Sherds that can be identified as intrusive or residual will be noted.

Sherd sizes are based on the following range of sizes and are measured across the widest dimension of the sherd. Small is anything less than 50mm, medium is anything above 50mm and below 100mm. Large is above 100mm. Sometimes very small (<10mm) and very large (>200mm) are used.

Discussion

The majority of the pottery comprises of wares that could have been in use from the late 18th through to the early 20th centuries. They are typical of the types found on excavations with contemporaneous material. Many may have been made in local factories, or come from the Staffordshire potteries that supplied the regions and countries abroad at this time. Wares would have been transported by train and canal during the 19th century and without stamps or any significant marks it is impossible to determine their provenance.

Wares include English Stoneware, White and Cream earthenwares, Transfer printed, Banded Slipware and post-medieval earthenwares with slipped interiors. The majority of sherds come from a moulded figurine with oval base, but there is not enough material to reconstruct the form. Wares of this type were made in Leeds, Yorkshire and Staffordshire.

Forms include cups, jugs, bottles, pancheons and a possible ointment pot. The few pieces that have any decoration do not suggest any particular affluence, though the assemblage is too small to be able to make any assumptions of this sort with confidence.

Ceramic Building Material

by Phil Mills

There were 193 fragments of ceramic building material (CBM) examined by context and period. Unidentified fragments were recorded as B/T (Brick/Tile) with 'Flat' being used to record Roman CBM that could be tegula or Roman bricks. The full catalogue is shown in [Appendix IV, Table 6 and Table 7](#).

The Roman material comprises *tegula* and flat fragments which are probably from *tegula*. The lack of *imbrex* suggest that this was not related to a roof, but the material may have been used for elements of the kilns or be associated with a rural scatter.

The later material includes brick fragments which are of 16th-century or later date, based on their thickness, but the majority of the material was likely of 18th-century or later date.

Burnt Clay

by Phil Mills

There were some 361 fragments of burnt clay examined by context and period. All of the material was from sample processing. Material from four of the samples (141, 142, 144 and 150) were in particular poor condition so were handled as little as possible so only approximate counts and weights are

given. The complete catalogue of burnt clay is given in [Appendix V, Table 8 and Table 9](#).

The majority of the material would appear to be from kiln lining recovered from Roman-period Kiln 9, which was c. 30-50mm thick. There is a possible plano-convex oven bottom, presumably formed by direct contact to burning fuel. There is a possible crude perforated oven base (cf Swan 1984, Plate 33) and a possible 20mm thick plain plate (Swan 1984, 64) which could have been used as dome capping for the kiln. There were also a number of pieces of daub – part of the kiln superstructure with deep wattle or lath impressions. The material is consistent with the lining and furniture from a Roman kiln.

Flint

by Ann Clarke

The flint assemblage is catalogued in [Appendix VII, Table 11](#). It comprises four pieces of worked flint and two pieces of worked black carboniferous chert. Perhaps unusually for such a small assemblage it includes two retouched tools: an end scraper (subsoil 1001); and a knife form (Ditch 1, cut 1010, fill 1011), as well as two clearly utilised blanks (trackway, cut 1130, fill 1132 and Kiln 2, cut 1187, fill 1156). These four pieces date to a later prehistoric period around the later Neolithic. A core trimming flake of black chert (gully 2261, fill 2262) is from a blade core and this, together with a patinated blade (pit 2022, fill 2026) are probably of an earlier prehistoric date such as Late Mesolithic/Early Neolithic.

The assemblage was formed over a long period and points to occupation in the area throughout prehistory. The lithics are residual and are found in contexts of later date representing a background of prehistoric occupation.

Slag

by Gerry McDonnell

The slags were visually examined, and the classification is based solely on morphology. Additional data to improve the interpretation was obtained from a programme of Hand-Held X-Ray Fluorescence (HH-XRF). The debris associated with metalworking, or submitted in the understanding that they are associated with metalworking, can be divided into two broad groups; residues diagnostic of a particular metallurgical process or non-diagnostic residues that may have derived from any pyrotechnological process (McDonnell 2001). The diagnostic ferrous debris can be attributed to a particular ironworking process; these comprise ores and the ironworking slags, i.e. the macro, hand recovered smelting and smithing slags and the micro-residues such as hammerscale and slag fragments recovered from sieving programmes. The second group are the diagnostic non-ferrous metalworking debris, e.g. crucibles and moulds. Thirdly, there are the non-diagnostic slags, which could have been generated by a number of different processes but show no diagnostic characteristic that can identify the process. In many cases the non-diagnostic residues, e.g. hearth or furnace

lining, may be ascribed to a particular process through archaeological association. The residue classifications used in the report are defined below.

Diagnostic Ferrous Slags and Residues

Smelting Tap Slag Cake - iron silicate slag generated by the smelting process, i.e. the extraction of the metal from the ore. Tap slag is one of the most characteristic forms and is distinguished by either a ropey morphology of the upper cooling surface or a fine crystalline fracture with spheroidal vesicles. A tap slag cake is a large mass of slag that has cooled in a pit or depression in front of the furnace.

Tap Slag (fragments) – iron smelting slag that is characterised by its ropey flowed morphology, indicating a free-flowing slag. The slag is normally black in colour. The upper surface is smooth, sometimes with ripples. Large gas bubbles may be present.

Smithing Slag - randomly shaped pieces of iron silicate slag generated by the smithing process. In general slag is described as smithing slag unless there is good evidence to indicate that it derived from the smelting process.

Smelting/Smithing Slag – fragments of slag in a predominantly smelting slag assemblage that lack the morphologies of the smelting slag.

Hammerscale - there are two forms of hammerscale, flake and spheroidal generated during the smithing process. The presence of hammerscale is therefore a strong indicator that smithing (primary or secondary) was carried out on the site. Their small size precludes their hand recovery, and they are usually recovered during soil sample sieving.

Metal – fragments of iron metal or possible bloom fragments.

Non-Diagnostic Slags and Residues

Fired Clay – normally red in colour the fired clay lacks vitrified surfaces, indicating a lower firing temperature. It may derive from a hearth or furnace structure but may also be domestic in origin, e.g. daub.

Results

The assemblage contains slags and residues generated by different processes, most importantly iron smelting. [Table 12](#) lists the count and weight of the slag types present on the site, based on the initial morphological examination. There were no magnetic residues, e.g. hammerscale, recovered from the bulk sampling. The assemblage is dominated by a single deposit of 19th-century smithing slag (17.2kg) and some tap smelting slag fragments (total weight 1.8kg) and a single large cake of tap slag (Kiln 6, fill 1040, weight 7kg, major diameter – 270mm; minor diameter 255mm; maximum thickness – 50mm, Plate 30). The slag cake had been placed in the mouth of Kiln 6, whether as part of the kiln structure or for blocking the kiln mouth is unclear. The large (17.2kg) deposit of smithing slag was recovered from the infill between two walls (1031), which also contained 19th-century or later pottery. It was very cindery, i.e. a probable high silica content, and heavily gassed. There were pieces of slag classified as smithing slag from Kiln 8 (fills 2185 and 2187) but both deposits contained one or more pieces of tap slag. There was

one reasonably sized piece of slag in the tap slag deposit from pit 2129 (fill 2130) that lacked the ropey flowed morphology of the other slags and was classified as a piece of smelting/smithing slag. In the fill (1288) of a wheel pit, twenty heavily corroded iron objects, bars or structural iron, were recovered. The fill (2201) of Kiln 11 produced 2.3kg of burnt clay, presumably part of the kiln structure.

A brief programme of HH-XRF was undertaken to assess the manganese level of the tap slag and any difference between the slag types. The analysis of the tap slag cake ([Chart 4](#)) showed a small but significant manganese peak, as does a sample of tap slag from pit 2129 (fill 2130). The spectrum from a possible smithing slag from Kiln 8 (fill 2187) displays a much smaller Mn peak ([Chart 5](#)). The spectrum from the very cindery smithing slag from deposit 1031 also displayed a minor Mn peak, as well as a large Ca (calcium) peak ([Chart 6](#)).

Discussion

The smithing slag mainly from deposit 1031 is dated to the 19th century. This slag was included with infilling between two walls. The source of the slag cannot be determined but could possibly be a forge associated with the Fitzwilliam Hemsworth Colliery on the northeast side of the railway line.

The presence of iron smelting tap slag is indicative of a smelting site close-by. The slag morphology would suggest a Romano-British or medieval date. Slag was recovered from three contexts dating to the Roman period. The phasing of the features containing Roman or medieval slag is presented in [Table 13](#) and the total quantity of slag in each phase is presented in [Table 14](#). The most important deposit dating to the Roman period is pit 2129 (fill 2130), which contains 1.6kg of slag, some (0.2kg), catalogued as smelt/smith, but it is the latest fill of pit 2129, and no slag was recovered from the primary fill 2149. The dating of pit 2129 relies on the presence of Roman CBM from the secondary fill. The secondary fill (2235) of another Roman-period pit (2234) contained tap slag (one fragment, 11g, associated with mid-3rd-century or later pottery. The third Roman context is the fill (2272) of pit 2271 which contained 99g of tap slag, Roman pottery for late 1st to mid-2nd-century date and Roman CBM. A few intrusive medieval pottery sherds, however, were also present, indicating that the slag could also be intrusive. As a result, there is no smelting slag in secure Roman contexts, and none in primary Roman contexts. The uncertainty of the dating means that the slag cannot be confirmed as evidence for a Roman smelting site.

The largest piece of slag came from the infilling of Kiln 6 which is 11th to 13th-century date based on the pottery recovered. In *The West Yorkshire Survey*, Faull and Moorhouse (1981, 776) make reference to 'cinderforlandis' (placename indicative of a slag heap) in Kinsley. In addition, a smelting site dated to the 12th to 14th century was excavated in 1971 approximately 3km to the east-south-east of the present site near Lanes Farm (Moorhouse 1972). These dates are significant as water power was being introduced to drive the bellows of the smelting furnaces. The slag contains a minor amount of manganese which is typical of slags from the Coal Measures.

Conclusions

The iron smelting slag is almost certainly medieval, but the lack of micro-residues suggests that the smelting site is some distance from the areas excavated. The geophysical survey of the site (Schmidt 2109) showed intense ferrous activity in some areas, e.g. the southwest corner of the survey area, which could be caused by disturbed slag heaps. The large deposit of smithing slag is significant as the changes in smithing debris in the 17th to 19th centuries is poorly understood.

Other Finds

by Gail Drinkall

An assemblage of 229 items ([Table 15](#)) was examined and quantified, and the details (including dating where possible) recorded into a catalogue provided in Appendix IX. Selected contexts are described in more detail below.

Context 1031: Wheel Pit Deposit (Structure 2)

The assemblage from this deposit comprises iron and glass objects. The metalwork includes a possible 19th-century drop handle; its substantial form suggests use on a large chest or weighty trunk. In total, 29 bottle sherds were recovered. At least two cylindrical wine bottles are present with the remainder being made up of beer bottle fragments, one of which is embossed. A small sherd from a proprietary medicine bottle was identified. The date range is falls between the late 19th to early 20th century, with eight olive green body sherds possibly of more recent manufacture.

Context 1227: Fill over Masonry 1231 (Structure 2)

A total of 95 items were found, covering a date range from the 18th to 20th century. Identifiable metalwork consists of an electroplated nickel silver spoon with an intact fiddle design handle and fragmentary bowl. The makers' stamp is of Ainsworth, Taylor and Co., Birmingham, using marks that were current between 1878 and 1895. Iron objects include a body sherd from a ribbed, three-legged pot of 18th/19th-century date, with four other fragments possibly from the same vessel identified, and a tanged implement, possibly a knife. Thirty-seven nails, mainly fragments, were also recovered. Among these, three 18th-19th-century hand-forged nails, early to mid-19th-century machine cut nails and a single, more recent round-headed machine made nail were identified. Two strips of lead waste and a curved lead strip, possibly part of a pipe cannot be dated.

A complete, translucent chemist/apothecary bottle with a stoppered closure dates to the mid-19th to early 20th century. A further seventeen fragments of bottle glass in white (clear), amber, olive green and bright green metal are modern, based on their condition, lack of impurities and with no evidence for mouth-blown manufacture.

A desiccated and fragmentary heel from a boot or substantial shoe has the remains of an iron heel plate. Its likely date for use being the 19th to early 20th century.

Context 1228: Fill over Cobbles 1241 (Structure 2)

Six sherds derived from aqua glass mineral water or beer bottles dating from the late 19th to early 20th century and two fragments of privacy glass of recent, 20th-century design, were recovered.

Context 1230: Fill over Brick Course 1239 (Structure 2)

Fourteen sherds of glass were retrieved, including aqua glass mineral water or beer bottle fragments of the late 19th to early 20th century.

This assemblage largely comprises material produced 100 to 150 years ago and includes items, for example glass bottles, which would have continued in use and have been recycled for many years. Although there are a few, hand-forged nails for example, which were made as early as the 18th century, their forms and method of production continued into the Victorian era. More recent, 20th-century, finds are also present.

Despite some dating evidence, the assemblage has limited potential to contribute to artefact studies. It mainly constitutes items which may be attributable to demolition, particularly the assemblage of structural ironwork and window glass. It is, however, important in terms of acknowledging the archaeological relevance of the early modern period and the requirement to assess and record these assemblages and sites (Roskams and Whyman 2005, 37).

Carbonised Plant Macrofossils and Charcoal

by Diane Alldritt

A total of 158 environmental sample flots taken from the site were assessed for carbonised plant macrofossils and charcoal. Material sorted from eleven of the sample retents was also examined for the presence of any identifiable charred remains, although the majority of this proved to be coal fragments. Following assessment, the results were reconsidered by phase (Roman and medieval only), with six unphased samples removed from this final analysis. The results are given in Appendix 5 and discussed below.

Samples were taken from Areas A, E, F and G. The medieval kiln features in Area E produced large concentrations of carbonised remains, mainly consisting of cereal grain, charcoal and finds of weed seeds, likely to have originated from medieval farming activity. The pit and ditches in Area E also contained similar remains and these were probably sweepings from the kilns.

The kiln features in Area F produced mainly charcoal fuel waste with some clinker and these possibly had an industrial purpose and represent Roman activity. Areas A and G were largely sterile of carbonised plant remains. Area G's post-medieval industrial features instead contained abundant finds of clinker and coal.

Methodology

The bulk environmental samples were processed by ASWYAS using a Siraf-style water flotation system (French 1971). The flots were dried before examination under a low power binocular microscope typically at x10 magnification.

Wood charcoal was examined using a high-powered Vickers M10 metallurgical microscope at magnifications up to x200. The reference photographs of Schweingruber (1990) were consulted for charcoal identification. Plant nomenclature utilised in the text follows Stace (1997) for all vascular plants apart from cereals, which follow Zohary and Hopf (2000).

Results

The environmental samples produced varied quantities of carbonised plant remains from <2.5ml up to 800ml in volume from some of the richer kiln features, although the majority of recovery was at the lower end. The remains consisted of charcoal fragments <5mm-40mm in size, abundant well-preserved cereal grain, and finds of weed seeds and rhizomes. Modern material was present <2.5ml to 1000ml, mainly root detritus and modern straw with occasional finds of modern seeds and earthworm egg capsules indicating bioturbation and widespread plough disturbance was taking place. Clinker and coal were recorded in large volumes from the post-medieval deposits in Area G and to a lesser extent elsewhere.

Area E

A series of medieval kilns excavated in Area E produced large volumes of well-preserved carbonised cereal grain, consisting primarily of *Avena sp.* (oat) and *Secale cereale* (rye) together with *Hordeum vulgare* var. *vulgare* (six row hulled barley) and lesser amounts of *Triticum aestivum* (bread wheat). These deposits indicated a number of crop driers were in use across Area E, involved in the processing and drying of cereal grain. Finds of charcoal fuel waste from the kilns showed that *Quercus* (oak), *Corylus* (hazel), *Betula* (birch) and Maloideae (apple/hawthorn/whitebeams) type wood was being for fuel, with the presence of some roundwood fragments of hazel suggesting possible woodland management practices taking place. Weeds of cultivated and waste ground found in the kilns were consistent throughout the features and included *Anthemis arvensis* (corn chamomile), *Chrysanthemum segetum* (corn marigold) and *Chrysanthemum coronarium* (crown daisy). The ditches and pits in Area E produced the same combinations of cereal grain, charcoal and weed seed types and were probably being used as domestic refuse areas for disposal of hearth and crop drier sweepings.

Kiln 1 (fills 1206, 1207, 1257, 1259, 1289 and 1296) samples were dominated by large volumes of oat cereal grain with many grains preserved with sufficient of the chaff intact to indicate that *Avena sativa* (common oat) type was being cultivated and processed. Fill 1258 and clay base 1204 also had oat grain but in smaller amounts. Six row hulled barley was also recorded from fill 1259 and bread wheat from fill 1289 along with a scatter of weeds of cultivated and disturbed ground in both. Fills 1206, 1207 and 1296 produced finds of hazel roundwood charcoal indicating possible woodland management with small branch wood being cut for fuel. The hazel from fill 1206 was 10mm in diameter with four growth rings, whilst fill 1207 contained hazel fragments 15mm diameter with seven growth rings and fill 1296 had hazel 18mm diameter with five growth rings. Hazel was also found in fills 1257 and 1259 with a small amount of birch present in 1257. Kiln 1 posthole 1284 (fill 1285) contained a

concentration of oat cereal grain, perhaps a spillage or swept waste material.

Kiln 2 (fills 1154, 1155, 1156, 1157, 1183, 1186, 1194, 1195 and 1200) samples produced large caches of well-preserved grain mainly rye, with oat, barley and bread wheat also present. The first fill of the kiln (1156) contained a large quantity of oak charcoal consisting of crushed <5mm fragments up to 30mm in size, with fills 1154, 1155, 1157, 1183, 1186, 1195 also producing oak charcoal fuel waste. In addition, fill 1195 had a small amount of hazel charcoal whilst fill 1194 had Maloideae type suggesting probable kindling being used to ignite the oak. Pit 1097, perhaps a re-cut of kiln opening, produced two notably rich fills (1098 and 1099) containing a significant amount of rye grain along with some oak charcoal fragments, although the preservation was quite poor in this feature suggesting the material was likely re-worked from the kiln.

Kiln 3 was slightly different to the oat and rye-rich kilns, instead producing substantial amounts of six row hulled barley from both fills (1294 and 1295), although small amounts of oat and bread wheat were still recorded. A few specimens of broad bean and *Pisum/Lathyrus* spp. (peas) were also present. The charcoal was a mixture of oak and hazel fuel waste. This kiln may represent a different phase of farming activity, albeit still medieval based on the radiocarbon date for this feature in the range 1042-1215 AD (SUERC-109582).

Kiln 6 (fills 1039, 1040, 1041, 1042 and 1182) samples contained small concentrations of cereal grain consisting mainly of oat, with some bread wheat, rye and barley mixed with weeds of cultivated and disturbed ground. A single *Vicia faba* (broad bean) in fill 1040 was possibly another cultivar.

Ditch 1 (cut 1034, fill 1043; cut 1037, fill 1038), Ditch 5 (cut 1055, fill 1056) and pit 1061 (fill 1062) were possibly waste disposal areas associated with these kilns. Similarly pit 1190 (fill 1191) may have been the waste pit or rake out area from one of the cereal rich kilns.

Area F

The Roman-period kilns in Area F were notable for their lack of cereal grain producing largely trace evidence for fuel waste only. Kiln 7 samples (fills 2126, 2151, 2152) contained charcoal fuel waste with birch in fill 2126 and oak identified from fills 2151 and 2152. Kiln 9 (fills 2210 and 2227) also contained oak fuel waste and Kiln 11 (fill 2201) had a small amount of oak charcoal amongst abundant modern root detritus.

Pit 2022 (fills 2025, 2026, 2027 and 2054) contained crushed charcoal mixed with coal fragments with nothing identifiable apart from a single 10mm piece of rhizome in fill 2027 suggesting peat or heathy turves may have been used as fuel or for damping down the fire, and a trace scatter of indeterminate cereal grain from fill 2054.

Pits 2233 (fill 2235) and 2269 (fill 2270) and Ditch 13 (fill 2156) contained crushed and abraded oak charcoal probably fuel waste sweepings from the kilns or other burning activity

nearby. Pit/hearth 2192 (fill 2194) produced trace scatters of indeterminate cereal grain which were probably residual.

Conclusion

The environmental samples produced significant deposits of carbonised plant remains primarily from the medieval-period kilns in Area E, with fewer remains recovered from Areas F and G.

Kilns 1, 2 and 6 in Area E were probably used for processing and drying of substantial quantities of cereal grain, dominated by oat and rye (both cereals that can tolerate poor soils where wheat would not thrive), with lesser amounts of barley and bread wheat. Kiln 3 was notably different and contained large amounts of six row hulled barley (requiring better land and regular manuring than oats and rye) possibly suggesting this represented a different phase of agricultural activity, albeit still medieval in date.

In Area F, Roman-period Kilns 7, 9 and 11 contained charcoal fuel waste. These include oak, birch and hazel although the quantities were quite sparse, identifiable remains mostly coming from Kiln 7. These features probably had an industrial purpose and were from a different phase of activity to the cereal-rich kilns recorded in Area E, as confirmed by both radiocarbon dating and pottery analysis.

Animal bone

by Jane Richardson

A total of 97 animal bone fragments were recovered from hand-excavated contexts and subsequent soil sample processing. These are quantified in [Table 16, Appendix X](#). The assemblage is fragmented, often weathered, with occasional signs of butchery. Cattle, pig, sheep and sheep/goat bones are present, along with large and small mammal-sized fragments, likely cattle and sheep. Some of the cattle and sheep bones associated with Structure 1 are very large, and are likely to indicate post-medieval or early modern animals.

Radiocarbon Dating Results

Three samples were submitted to the Scottish Universities Environmental Research Centre (SUERC) for radiocarbon dating ([Table 17](#)). Full details of the radiocarbon measurement, including contextual information, material dated, the conventional age BP, the calibration program and the sample isotopic fractionation are presented in Table 17.

CHAPTER 3: DISCUSSION

The excavations at Kinsley have produced significant evidence relating to Roman, medieval and post-medieval industry and settlement. This includes the identification of kilns (although not every geophysical ‘spike’ resulted in a kiln), evidence of Roman pottery production, Roman and medieval enclosure, and a 19th-century farmstead, but no evidence for the possible 16th-century mansion that was thought to predate the farm.

Prehistoric

The small lithic assemblage was residual in deposits of later date, but nevertheless represents a background of prehistoric occupation in the area. No artefacts of Iron Age date were noted, suggesting that the putative Iron Age or Roman enclosures identified at the evaluation phase, were in fact Roman.

Roman

Roman activity was focussed around Area F. The pottery assemblage includes two chronological groups, one dating to the late 1st century and a later phase, most likely dating to the mid-3rd century AD. The only other dating evidence comes from a small Roman-period assemblage of CBM and a single radiocarbon date for Kiln 7, in the range 250-403 cal. AD.

The pottery assemblage includes wares from pottery kilns in South Yorkshire, north Lincolnshire, the lower Nene Valley near Peterborough and Mancetter-Hartshill near Coventry, an imported mortarium from the Rhineland and fine tablewares from Gaul.

Kilns

The most significant Roman-period kiln identified was Kiln 9. This was a domed-shaped structure with clay walls (probably of wattle construction based on recovered daub) and a stone floor. It was used for firing pots, as indicated by underfired and overfired sherds, evidence of distortion and wasting. The kiln was fired more than once producing hard fired grey wares, as well as softer cream, pinkish cream oxidised and partially oxidised wares. It produced a range of vessels from jars to bowls and possibly platters. This activity was most probably limited to the late 1st century AD, and compares closely with a waster group at Nostell Priory. The kiln was likely to have been operated by potters working to supply the military, but with no other pottery kilns identified at the site (based on date, purpose, size and form), Kiln 9 appears to be an isolated example. No evidence for clay extraction or drying sheds was noted in the excavated areas.

The late 1st-century kiln assemblage adds significantly to evidence for the supply of pottery, most likely to Castleford, during this period and, together with the kiln waste from Nostell Priory, suggests supply from a dispersed ‘industry’, perhaps centred on the fine, white-firing clay available around Pontefract. The range of vessels, style of vessels, decorative techniques and mode of production are all ‘imported’ and imply the presence of potters trained in military pottery production. Certainly, the rather fine table wares made at the

Kinsley kiln, are not making it onto rural sites of the region in any number.

Kilns 7, 8, 10 and 11 have also been assigned to the Roman period. They were all much smaller in size than Kiln 9 and were not associated with pottery production. Kiln 7 was later Roman in date based on the pottery and the radiocarbon date of birch charcoal in the range 250-403 cal. AD, while Kiln 11 contained 2nd-century or later pottery. Kiln 8 and Kiln 10 were assigned to the Roman period on spatial location alone. It is possible that these smaller kilns, along with other features such as pit/hearth 2192, are the truncated remains of structures involved in other industrial production or in agricultural processing such as smoking or drying. Unlike the medieval kilns (see below) though, the Roman kilns lacked cereal grains, typically producing trace evidence for fuel waste only. It also seems likely that, aside from the 1st-century pottery Kiln 9, the Roman kilns were contemporary with the later Roman enclosures described below.

Enclosure

Area F was the focus of an enclosure of mid-3rd century date. Ditches 7 and 12 formed the known extent of the enclosure, with Ditches 8, 11 and 13 forming sub-divisions. Pottery dates this activity to the mid-3rd century when mid to late 3rd-century type Dorset BB1 ware was still being supplied to Castleford and Dales ware was just starting to appear (Rush *et al.* 2000, 158). No wares or types were recovered to indicate that occupation persisted into the 4th century, or even beyond the mid-3rd century. Unlike the early ceramics, the 3rd-century assemblage is typical of a rural site in this region, with only a few high-status ceramics such as the imported fine wares and the mortarium.

The limits of the enclosure were not fully defined with the southwest boundary either truncated away or situated beyond the excavation limits. The enclosure’s function was also unclear. No structural remains were identified but a number of pits appear to be contemporary, along with the majority of the kilns. Though their purpose is unclear, the presence of iron smelting slag from pit 2129 and tap slag from pits 2234 and 2271 suggests iron smelting in and/or around the enclosure, with oak and birch likely fuel sources (although note McDonnell’s concerns above about the security of the dates for these features). The use of some of the ditches to funnel livestock into the enclosure has also been proposed, but with few identifiable animal bones (and no charred cereals for this period), the evidence for agricultural practices is severely limited.

Similar rectilinear enclosures with internal subdivisions are known from air photo mapping of land to the south of Hemsworth (Deegan 2003). Where tested by subsequent excavation, the majority of these ditches were noted as 2nd-century or later in date (Weston 2014).

Medieval

Medieval activity was focussed around Area E, with the majority of pottery finds suggesting activity between the

mid/late 11th to mid/late 13th-centuries. The pottery assemblage recovered is remarkably homogeneous, being dominated by local Gritty and Sandy wares of various types. There was no evidence that the medieval kilns were used for pottery production.

Kilns

A series of medieval kilns excavated in Area E produced large volumes of well-preserved carbonised cereal grain, consisting primarily of *Avena* sp. (oat) and *Secale cereale* (rye) together with *Hordeum vulgare* var. *vulgare* (six row hulled barley) and lesser amounts of *Triticum aestivum* (bread wheat). These deposits indicated a number of crop driers were in use across Area E, involved in the processing and drying of cereal grain. Finds of charcoal fuel waste from the kilns showed that *Quercus* (oak), *Corylus* (hazel), *Betula* (birch) and *Maloideae* (apple/hawthorn/whitebeams) type wood was being for fuel, with the presence of some roundwood fragments of hazel suggesting possible woodland management practices taking place.

Kilns 1, 2, 5 and 6 in Area E were probably used for processing and drying of substantial quantities of cereal grain, dominated by oat and rye. Kiln 3 was notably different and contained large amounts of six row hulled barley possibly suggesting this represented a different phase of agricultural activity, albeit still medieval in date. Kiln 3 also contained daub with wattle impressions, likely from the kiln's superstructure. Of course, other commodities may have been dried in these kilns and not survived, or the kilns may have been used for other purposes prior to the final firing when cereals were preserved. Kiln 8, for example, was associated with a possible medieval crucible fragment (albeit unconfirmed) and a large cake of tap slag and may indicate the feature was associated with iron smelting.

Kilns 2 and 6 stand out as substantial stone-built key-holed shaped structures. Similar stone-built kilns, also identified as crop driers/malting kilns and of comparable date, have been excavated at Walkergate, Pontefract (Bell and Walker 2016) and Sandal Castle (K13, Rickett 2021, 74).

Kilns 2 and 6 have been dated by late 11th to mid or late 13th-century pottery recovered from their backfill, while Kilns 1 and 3 have been radiocarbon dated in the range 991-1148 cal. AD and 1042-1215 cal. AD respectively confirming medieval activity over a relatively tight timeframe.

Enclosure

The main axis of the medieval boundaries was on a south-west to north-east orientation (Ditches 1, 2, 5 and 9). North-west to south-east boundaries extended away from the main axis (Ditches 2 and 3 and Gully 5). A possible medieval trackway also extended from the main axis but on a slightly more northerly orientation.

Gullies 3 and 4 were dated to the medieval period and form small sub-divisions on each side of the main axis and may represent small stock enclosures or other working areas. Gully 2 mirrors the alignment of Gully 3, indicating the presence of a double-ditched sub-enclosure, or two phases of sub-enclosure with one gully replacing the other. Based on

the recovered pottery, the kilns appear to be contemporary with this set of ditches and enclosures. The cereal caches recovered including rye, oat, wheat, and barley, give a clear indication of the range of crops grown in this period and attest to the agricultural processes being undertaken locally. Timber selected for fuel included oak, hazel and *Maloideae* type. Again, few identifiable animal bones of medieval date were present so little can be said about animal husbandry practices.

It is likely that the boundaries and kilns are closely associated with the medieval vill of Kinsley (see Open Domesday 2024) and/or a possible medieval hall close to the site. The form of this settlement is unknown but the main axis of ditches may represent a boundary between two properties extending south-west from the main road. The north-west to south-east ditches and trackway may mark the rear of toft plots. The kilns were to the north-east of this alignment with furrows to the south-west perhaps marking a boundary between domestic and industrial land use and open fields. It is possible that the settlement was in decline by the 14th century as it was subsumed into Hemsworth, which would account for the relative lack of later medieval pottery types recovered on the site. Abandonment of the area as a result of the Black Death is also possible.

No evidence of a medieval hall close to the site was identified, although a medieval moated site is known, albeit c. 750m to the south-southeast. Unfortunately, timbers dredged up from the moat in 1995 were not dateable by dendrochronology but 21 sherds of pottery found at the same time broadly date between the 13th to 14th centuries and 17th century (Wrathmell with Groves 1998). The lack of evidence for a hall or manor at Kinsley can be contrasted with recent excavations at Micklefield where a regionally significant 12th-century manorial-style residence was identified, perhaps associated with specialist crop processing and/or the production of woollen cloth (Wrathmell 2023). Whether a similar 'manor' was located at Kinsley but beyond the immediate limits of excavation, or whether the kilns relate to the known vill is unclear.

Industry and economy

Whilst iron smelting slags were present in medieval contexts they were also found in smaller quantities than in the Roman features. It is unclear the degree to which the slags were residual or whether iron smelting was present on the site in both periods. It is possible that access to iron ore on the site meant smelting took place in both periods, although direct evidence these activities is admittedly scant.

Post-Medieval Structures

The site produced evidence of a series of post-medieval structures in Area G. These clearly correlate with a structure depicted from the earliest Ordnance Survey mapping of the 1850s, to the rear of Kinsley House (labelled as such on OS map of 1906). On the 1938 and later OS mapping the structure is no longer depicted and it is likely to have been demolished by this time. Clearly the structures encountered are part of a 19th-century farm, rather than the earlier 16th-century mansion recorded in the HER. This is supported by the pottery, metal and glass finds recovered from this part of the

site, largely comprising material produced 100 to 150 years ago. Much of the structural ironwork and glass probably came from the demolished buildings themselves.

The remains of the horse engine, indicating a powered machine, included a circular base for the gearing, channel for a drive shaft and wheel pit. Assuming that the sandstone blocks (1236) do represent the surface trod by the horse, then this circular path had a radius of c. 2.5m. It may have been used for threshing cereal crops, and/or for chopping and crushing fodder, although any farm equipment that could be driven by a belt or gear drive could have been coupled to the horse wheel (Historic England 2013, 28; Major 1978, 47). The horse engine was invented in 1786, and these were often housed in round or polygonal buildings, usually attached to existing barns (Historic England 2013, 28). No evidence for such a building was noted at Kinsley, although an insubstantial annex could easily have been lost from the archaeological record. Alternatively, the evidence for a central tie down bolt and below-floor drive shaft may indicate a later machine, probably of cast iron construction, and capable of being left in the open.

Conclusions

The excavations at Kinsley have revealed a regionally important Roman pottery kiln of 1st-century date. Few other examples have been recorded in the region, although comparative pottery wasters from Nostell Priory are noted. It does appear to be the only example on the site, and it is not clearly contemporary with the other excavated features, although further activity beyond the limits of excavation to the southwest is possible. The kiln produced vessel types that

indicate production to supply a military site, most likely Castleford, by potters trained in military pottery production.

Around the mid-3rd century, an enclosure, pits and other possible kilns were in use with the ceramic assemblage now indicating a more typical rural site that had lost any connection to the military, which was much reduced or withdrawn from Castleford during the early 100s. The enclosure in Area F may have been a focus for iron smelting, rather than for settlement. Certainly, no evidence for domestic structures was identified and cereals and animal bones were extremely scarce. This later Roman activity was short-lived, with no evidence for 4th-century occupation.

To the northeast of the known Roman activity, medieval boundaries, small enclosures and kilns were established sometime around the mid-11th century onwards (Area E). Some of the north-east to southwest ditches may have marked toft plots, and they ran far enough to the south to disturb the earlier Roman features in Area F. The medieval kilns, at least two of which were substantial stone-built examples, were probably used for processing cereals and potentially other crops. This phase of activity may be related to the medieval settlement of Kinsley, but an associated hall or manor cannot be entirely ruled out. It is possible that a second phase of iron smelting took place during the medieval period.

The final phase of activity identified was represented by a series of stone agricultural buildings, including a horse engine. This probably dates to the 19th century and was demolished in the early 20th century and was related to Kinsley House as shown on the OS map of 1906. No evidence of a putative 16th-century mansion was identified.

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Appendix I

Table 1: Roman Pottery: Coarse Pottery Contexts and Spot Dating

Area	Context	Feature	Date range	Count	Weight	RimP
E	1096	Ditch 3	L1	1	1.3	
	1157	Kiln 2	Med and residual Roman, c mid-2nd century+	1	1.2	
E Total				2	2.5	
F	2004	Ditch 12	M3	9	50.6	
	2020	Ditch 10	M2-E3	1	10.3	
	2025	Pit 2022	Latest sherd M3+ with some residual L1st century sherds	9	201.1	30
	2026	Pit 2022	Early to mid-3	1	44.7	8
	2027	Pit 2022	L1, possibly into E2	9	51.4	2
	2029	Ditch terminus 2028	M2-M3	1	6.4	5
	2035	Ditch 7	M2+	2	43.3	
	2039	Ditch 12	OPT M2+	1	39.1	
	2054	Pit 2022	M2+ with redeposited L1 sherds	13	96.3	1
	2060	Ditch 7	L3+	1	4.4	2
	2104	Ditch 11	L1-E2	3	22.9	29
	2121	Ditch 11	M3	5	16.3	8
	2123	Pit 2122	M3+ with L1 sherds present	4	6.4	
	2125	Ditch 13	M3+ with L1 sherds present	9	37.1	15
	2144	Ditch 12	M3	6	87.8	
	2151	Kiln 7	OPT M2+	13	153	
	2152	Kiln 7	M3+	12	106.2	23
	2165	Ditch 13	M2+	1	16.2	
	2169	Pit 2168	3rd with L1 sherds	3	9.9	
	2193	Pit or hearth 2192	L1 with some possibly M2+	11	193.1	3
	2194	Pit or hearth 2192	?3-4	5	80.7	
	2201	Kiln 11	M2+	1	41.8	4
	2203	Pit 2202	M2+ with L1 sherds	5	75.5	
	2208	Kiln 9	L1	783	11124.8	936
	2210	Kiln 9	L1	1	2.8	
	2213	Kiln 9	L1	1	6.7	
	2227	Kiln 9	L1	2	8.8	1
	2229	Ditch 9	L1 and Med	1	10.7	5
	2235	Pit 2233	M3+	6	92.3	2
	2236	Furrow 2231	3, opt M3-M4	1	19.1	1
	2270	Pit 2269	L1	2	17.8	19
	2272	Pit 2271	Med with M2 and L1	6	52.2	15
F Total				928	12729.7	1109
Wessex	2106	Kiln 9	L1	53	755.8	41
Wessex Total				53	755.8	41
Total				983	13488	1150

Table 2: Roman Pottery Fabrics

Fabrics	Common name	Source	National Fabric Code (Tomber and Dore 1998)	Lincoln fabric series (Darling and Precious 2014)
BB1	Black burnished ware 1. The 3rd century date of the forms and the presence of shale inclusions in some sherds points to an origin in Dorset BB1 rather than Rossington Bridge	Dorset	DOR BB1	BB1
CGBS	Fine orange cored fabric with a black slip ware containing large mica flakes	Central Gaul, Lezoux	CGBS	CGBL
CTA2	Dales shell-tempered ware	North Lincolnshire	DAL SH	DWSH
GRB SY	Medium, quartz-tempered grey ware, South Yorkshire	South Yorkshire potteries around Doncaster	RE	GREY
Kiln fabric	Ware produced in kiln. A fairly fine, quartz tempered ware with some fine, argillaceous inclusions, firing orange or grey depending on kiln conditions. These are clay pellets rather than grog. The colours of this ware vary from grey (GRA1), white cored grey (GRA1W) to white (FLA1), pink (FLA1P) and oxidised (OBA buff and OAA1 orange). Some of the white and pink wares are evidently slipped and the slip has fired to a darker orange brown colour. These are indicated as FLA1 slipped etc. Some of the assemblage is underfired (SOFT) and some hard fired (HARD). These subgroups appear to be all made of the same basic clay. One sherd has a clear gold mica coating	On site	RE	GRFF
MH2	Mancetter-Hartshill white ware mortarium (typically with re-fired pottery trituration grits, dating after c. AD130/40).	Mancetter-Hartshill near Coventry	MAH WH	MOMH
MOAB	Oxidised mortarium ware, in similar fabric to the South Yorkshire grey wares. No trituration grits survived.	? South Yorkshire kilns		
SOL WH	Soller imported mortarium	Soller in the Rhineland	SOL WH	MORH
NV2	Nene Valley colour-coated ware (oxidised fabric).	Lower Nene Valley near Peterborough, or possibly Lincoln	LVN CC	NVCC
OAB1	Medium-fine, quartz-tempered oxidised ware, similar to SYGRB1	Unknown, probably local or South Yorkshire	OX	OX
SAM	Samian	La Graufesenque	LGF SA	SAM

Table 3. Relative Quantities of Roman Pottery Vessels in Later Features, Using EVES

Vessels/wares	BB1	CTA2	MH2	MOAB	SYGRB	SOL WH	Total
B/D					7.92%		7.92%
J	9.90%	39.60%			12.87%		62.38%
M			6.93%			7.92%	14.85%
M?				0.99%			0.99%
WMB					13.86%		13.86%
Total	9.90%	39.60%	6.93%	0.99%	34.65%	7.92%	100.00%

Appendix II

Table 4: Estimated Number of Medieval Vessels by Wear Type

Type	Estimated (maximum) number of vessels (ENV)
Buff Coarse Sandy ware	1
Buff Gritty ware	23
Buff Gritty ware type	1
Buff Sandy ware	18
Buff-Orange Gritty ware	4
Buff-Orange Sandy ware	5
Buff-White Sandy ware	1
Coal Measures Whiteware type	1
Coarse Sandy ware	6
Fine Sandy ware	1
Hand-made Buff Sandy ware	1
Orange Coarse Sandy ware	2
Orange Gritty ware	2
Orange Sandy ware	3
Oxidised Gritty ware	1
Oxidised Sandy ware	1
Reduced Gritty ware	4
Reduced Sandy ware	1
Splash-glazed Oxidised Sandy ware	1
Yorkshire Gritty ware 3	4
Yorkshire Gritty ware 4	7
Yorkshire Gritty ware 4 type	1
Total	89

Appendix III

Table 5. Post-Medieval Pottery Quantification

Context	Quantity	Date	Description	Location
1031	3	19C+	1 White stone ware 1 Pearlware cup rim with 3 silver fine horizontal bands, small 1 Sponged ware, small	Area G, Structure 2 wheel pit deposit
1193	1	L14C+	1 Humber type jug with ribbed strap handle with coarse fabric and greenish purple glaze, large	Area E, Ditch 5
1227	10	19C+	2 English Brown stoneware 8 White stoneware, small	Area G, Structure 2 fill over masonry 1231
1227	7		1 Terracotta pland pot rim 6 moulded Creamware, small	Area G, Structure 2 fill over masonry 1231
1227	276	19C+	1 Banded Slipware flanged bowl rim, plain, small 1 Transfer Printed oval dish rim 1 White earthenware base with blue painted berries 6 English Brown stoneware, small 12 White earthenware including handle with angled maroon and white green stripes 26 White earthenware jug with dripped brown glaze including rim and strap handle, small to medium 7 White Porcelain plate, * profile, large 2 White earthenware jar including base 135 moulded Creamware including oval base, mainly small 85 White ware, mainly small	Area G, Structure 2 fill over masonry 1231
1227	95	19C+	4 highly fired Purple Glazed, small to medium 43 Terracotta plant pot including base and rim, small to medium 10 English stoneware base, small to medium 38 Nottingham type English Brown stoneware bowl including base and rolled rim, joins, some with rouletting, small to large	Area G, Structure 2 fill over masonry 1231
1228	2		2 White ware cup with maroon stripe, small,	Area G, Structure 2 fill over cobbles 1241
1229	14	19C+	1 lightly oxidised, Northern Gritty type, small 1 coarsely gritted scrap 1 post medieval finely gritted oxidised earthenware pancheon base with white slipped interior 9 post medieval finely gritted, oxidised earthenware pancheon with white slipped interior and brown stripe along the rim, joins, large 2 post medieval flanged bowl with dark brown glaze, small and large	Area G, Structure 2 fill over cobbles 1240
1230	1		1 English Brown stoneware, small	Area G, Structure 2 fill over brick course 1239
1261	4	19C+	3 post medieval fine gritted oxidised earthenware with white slipped internal surface, flaked, large, possibly same vessel as in context 1229 1 post medieval earthenware jug with metallic purple glaze, large	Area G fill over/ around wall 1260
U/S	10	19C+	3 Transfer Printed including 2 joining rim sherds, small 1 Sponged Ware, small 1 English Brown stoneware flanged bowl rim, medium 1 Black Glazed pancheon base, large 4 Black Glazed closed form, small	Area G

Appendix IV

Table 6: Roman CBM Catalogue

Context	Feature	Sample	Fab	Form	No	Wt	Cnr	L	W	Th	Date	Comments
1274	Kiln 4	87	T00	B/T	13	65					Roman	
2025	Pit 2022		T00	Flat	7	355				25	Roman	
2025	Pit 2022		T00	B/T	7	78					Roman	
2044	Ditch 12	85	T00	B/T	3	5					Roman	
2086	Ditch 8		T00	Tegula	2	192					Roman	
2094	Ditch 11		T00	B/T	7	126					Roman	
2094	Ditch 11		T00	Flat	2	167				25	Roman	
2094	Ditch 11		T00	Flat	1	379				30	Roman	
2121	Ditch 11	112	T00	B/T	2	49					Roman	
2123	Pit 2122		T00	Flat	2	400				20	Roman	
2130	Pit 1229	117	T00	B/T	5	137					Roman	poss. Burnt clay
2140	Ditch 11		T00	B/T	8	75					Roman	
2152	Kiln 7	118	T00	B/T	10	69					Roman	
2152	Kiln 7	118	T00	B/T	31	320					Roman	
2193	Pit/hearth 2192	134	T00	B/T	8	16					Roman	
2193	Pit/hearth 2192	134	T00	B/T	5	82					Roman	
2203	Pit 2202		T00	Tegula	3	725				20	Roman	
2270	Pit 2269		T00	Flat	1	91				25	Roman	
2272	Pit 2271		t00	B/T	11	66					Roman	
2272	Pit 2271		t00	B/T	1	102					Roman	

Table 7: Post-Medieval CBM Catalogue

Context	Feature	Sample	Fab	Form	No	Wt	Cnr	L	W	Th	Date	Comments
1032	Brick surface		TZ00	Brick	1	2524		230	120	80	C18+	white mortar
1032	Brick surface		TZ00	Brick	1	2413					post med	white mortar
1032	Brick surface		TZ00	Brick	1	1161			110	60	C16+	
1032	Brick surface		TZ00	Brick	2	4500		240			C16+	white mortar
1032	Brick surface		TZ00	Brick	1	1476			110	60	C16+	
1227	Structure 2 fill	73	z30	Pot?	1	53					Post Med	or drain wall
1227	Structure 2 fill		TZ00	Drain	31	1450					C18+	
1227	Structure 2 fill		TZ00	Drain	1	12					C18+	
1227	Structure 2 fill		TZ00	Brick	2	117					Post Med	
1227	Structure 2 fill		TZ60	Drain	1	239					C18+	
1228	Structure 2 fill		tz65	Drain?	1	246				40	C18+	glazed both sides
1239	Brick channel		TZ00	Brick	1	3225					C18+	
1239	Brick channel		TZ00	Brick	1	3204	8	225	105	75	C18+	
1282	Structure 3 drain		TZ00	pan tile	1	88					C18+	
1301	Structure 2 cut		TZ00	B/T	5	141					LC13+	
1301	Structure 2 cut		TZ00	Tile	1	78				20	LC13+	
1301	Structure 2 cut		TZ00	Brick	1	847	4		110	50	C16+	
U/S Area G	-		TZ00	Pan tile	3	1833					C18+	
U/S Area G	-		TZ00	Pan tile	8	1727					C18+	

Appendix V

Table 8: Roman Burnt Clay Catalogue

Context	Feature	Sample	Form	No	Wt	Thickness	Comments
1214	Kiln 4	86	Daub	4	99		wattle imp
1276	Kiln 4	93	Unidentified	2	15		
2151	Kiln 7	119	Unidentified	5	25		
2201	Kiln 11	138	B/T	9	99		
2201	Kiln 11	138	Unidentified	7	45		
2210	Kiln 9	141	Unidentified	3	33		
2211	Kiln 9	142	Lining	c.100	>5000	50	
2211	Kiln 9	142	Plate	1	250	20	
2211	Kiln 9	142	Daub	1	350		wattle impression 2 x 10mm 90mm long
2211	Kiln 9	142	Oven bottom	1	500		Possible plano-convex oven bottom
2212	Kiln 9	144	Lining	c.100	>5000	50	
2212	Kiln 9	144	Oven base	1	500		possible perforated oven base
2230	Kiln 9	150	Lining		>5000	30	high fired

Table 9: Medieval Burnt Clay Catalogue

Context	Feature	Sample	Form	No	Wt	Thickness	Comments
1289	Kiln 1	101	Unidentified	3	56		
1294	Kiln 3	126	Daub	7	306		wattle imp
2043	Ditch 9	84	Unidentified	16	115		

Appendix VITable 10: Stone Catalogue

Context	Form	No	Wt	Thickness	Comments
1196	Block	1	3362	70	
1196	Block	1	1770		taper 80 to 50 mm over 100mm
1196	Block	1	1107	50	
1196	Block	1	1732	90	
1196	Block	1	2951	90	
1196	Block	1	4560	120	
1196	Flat	1	1470	40	
1196	Flat	1	1089	30	
1196	Unidentified	1	1672	72	
1196	Unidentified	1	1739	50	curved
1196	Unidentified	1	1314	70	

Appendix VIITable 11: Flint Catalogue

Context	Count	Artefact type	Material	Weight (g)	Spot date
1001	1	End scraper	Translucent grey flint	4	Late Prehistoric
1011	1	Knife form	Mottled grey flint	4	Late Prehistoric
1132	1	Utilised flake	Translucent grey flint	3	Late Prehistoric
1156	1	Notched and Utilised blade	Black chert?	6	Prehistoric
2026	1	Blade	Patinated flint	2	Early Prehistoric
2262	1	Core trimming flake	Black carboniferous chert	5	Prehistoric

Appendix VIII

Table 12: Catalogue of the Slags, Based on the Initial Examination (Weight in Grams)

Context	Tap Slag Cake Weight	Smith Slag Count	Smith Weight	Tap Slag Count	Tap Slag weight	Smelt/smith Slag count	Smelt/smith Slag weight	Fired clay Count	Fired clay weight	Fe metal Count	Fe metal Weight
1031		38	17243								
1040	7000										
1257				3	132						
1288										20	2098
2130				50	1483	1	172				
2179				1	4						
2185		2	68	1	55						
2187		2	112	3	31						
2201								80	2300		
2235				1	11						
2236				1	7						
2242				1	33						
2272				1	99						
Totals	7000	42	17423	62	1855	1	172	80	2300	20	2098

Table 13: Feature Details and Phasing of the Slag Deposits (Weight in Grams)

Area	Context	Feature Number	Feature	Period	Tap Slag Cake Weight	Tap Slag weight	Smithing Slag Weight	Smelt/Smith Slag weight	Fired Clay Weight
E	1040	1033	Kiln 6	Medieval	7000				
E	1257	1203	Kiln 1	Medieval		132			
F	2242	2241	Ditch 5	Medieval		33			
F	2130	2129	Pit 2129	Roman		1483		172	
F	2235	2233	Pit 2233	Roman		11			
F	2187	2184	Kiln 8	Roman		31	112		
F	2185	2184	Kiln 8	Roman		55	68		
F	2201	2200	Kiln 11	Roman					2300
F	2272	2271	Pi 2271t	Roman		99			
	Totals				7000	1844	180	172	2300

Table 14: Phase Summary of the Slags (Weight in Grams)

	Tap Slag Cake Weight	Tap Slag Weight	Smithing Slag Weight	Smelt/smith Slag weight	Fired clay weight
Roman	0	1679	1800	172	2300
Medieval	7000	165	0	0	0

Appendix VIII Slag Charts

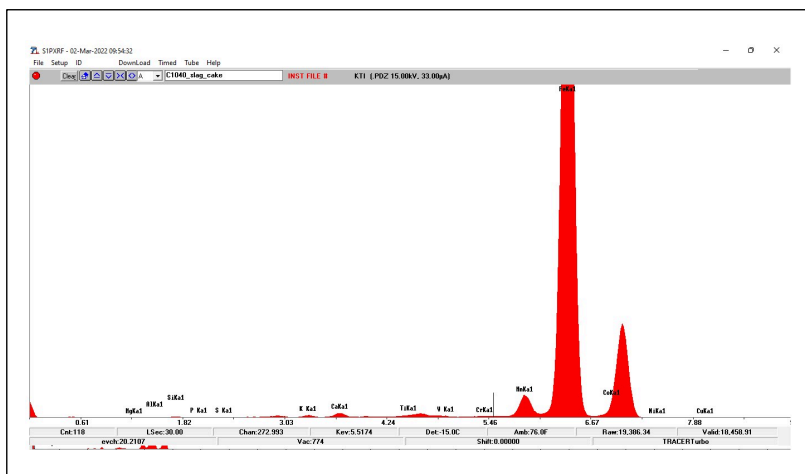


Chart 4: HH-XRF spectrum from the slag cake from Kiln 6 (fill 1040)

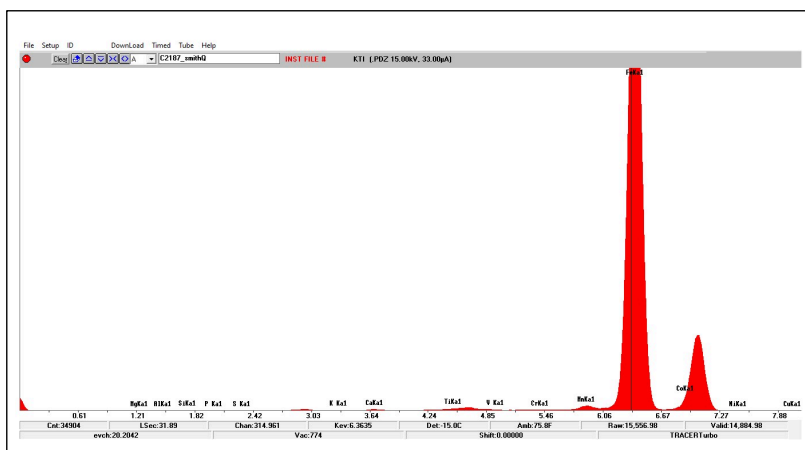


Chart 5: HH-XRF spectrum from possible smithing slag sample from Kiln 8 (fill 2187). Note small Mn peak

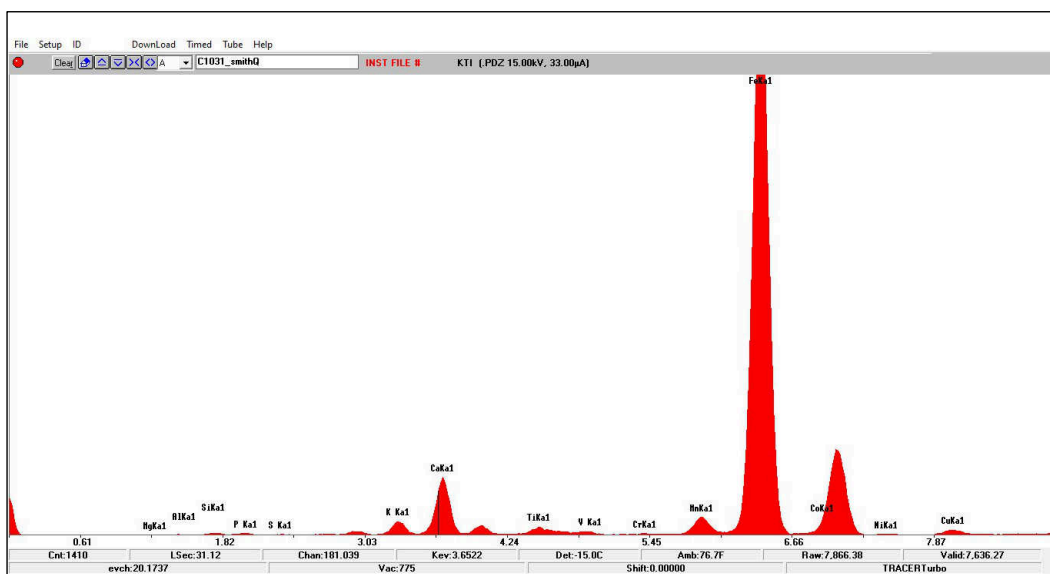


Chart 6: Spectrum derived from a slag sample from Structure 2 (deposit 1031). Note small Mn peak and large Ca peak

Appendix IX

Table 15: Summary of Items by Material and Object Type

Material	ID	Quantity	Weight (g)
EPNS	Spoon	1	32
Steel/iron	Handle	1	
Lead	Scrap	5	166
Iron	Bar	4	
Iron	Bolt	3	
Iron	Coach bolt	1	
Iron	Drop handle	1	
Iron	Knife?	1	
Iron	Vessel	5	
Iron	Nails	57	
Iron	Fittings	2	
Iron	Strips	12	
Iron	Lumps/corrosion	3	
Glass	Bottles	68	1020
Glass	Vessel	1	1
Glass	Window	38	120
Glass	Flat	4	5
Leather and iron	Shoe	1	

Appendix X

Table 16: Catalogue of the Animal Bone and Shell by Context

Context	Sample	Feature	Description	Quantity
1041	-	Kiln 6	Large mammal long bone fragment (weathered)	8
1056	-	Ditch 5	Large mammal long bone fragments	16
1082	-	Ditch 5	Large mammal long bone fragment (weathered)	1
1109	-	Ditch 3	Large mammal long bone fragment (weathered)	12
1157	-	Kiln 2	Large mammal long bone fragments (weathered)	6
1171	-	Ditch 5	Cattle humerus barrel (weathered)	1
1227	-	Structure 2	Cattle proximal radius (fused)	1
			Cattle femur shaft fragment	1
			Cattle second phalanx (fused)	1
			Female pig tusk (maxillary)	1
			Large mammal long bone fragments	6
			Large mammal rib fragments	2
			Small mammal long bone fragments	2
1227	73	Structure 2	Butchered sheep/goat pelvis (sawn)	1
1228		Structure 2	Cattle tibia shaft fragment	1
			Sheep distal tibia (fused)	1
			Large mammal long bone fragments	2
			Small mammal long bone fragments	1
1301		Structure 2	Cattle distal humerus fragment (fused)	1
			Cattle proximal femurs (one fused, one not fused, one butchered)	2
			Cattle tooth (maxillary)	1
			Large mammal long bone fragments	14
1301	110	Structure 2	Large mammal long bone fragment (likely butchered)	1
2014	-	Ditch 6	Cattle distal femur fragments (not fused, weathered)	6
2249	156	Kiln 10	Small mammal long bone fragments (cremated)	5
			Sheep/goat astragulas fragments (cremated)	2
			Sheep/goat distal tibia fragment (fused, cremated)	1

Table 17: Radiocarbon Dating Results

Lab. Code	Context	Feature	Material	Radiocarbon Age BP	Calibrated Age Range $\delta 1$	Calibrated Age Range $\delta 2$	Delta 13C rel. to VPBD (‰)
SUERC-109581 (GU63596)	1259	Kiln 1	Charred cereal grain	1003 ± 21	994-1040 AD	991-1148 AD	-23.0
SUERC-109582 (GU63597)	1295	Kiln 3	Charred cereal grain	908 ± 24	1047-1205 AD	1042-1215 AD	-24.1
SUERC-109583 (GU63598)	2126	Kiln 7	Birch charcoal	1732 ± 21	255-375 AD	250-403 AD	-26.4

The dates used in this report have been cited as calibrated age ranges at the two-sigma level of confidence (i.e. 95.4%).