

Archaeological Investigations
at Ball Mill Quarry
Grimley, Worcestershire:
Church Farm South



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Archaeological Investigations at Ball Mill Quarry, Grimley, Worcestershire: Church Farm South

Tim Cornah, Robin Jackson and Jonathan Webster with a contribution by Dennis Williams

Summary

A programme of archaeological investigation has been completed at the Church Farm South extension to Ball Mill Quarry, Grimley, Worcestershire (NGR SO 38309 26056). The work was undertaken by Worcestershire Archaeology (WA) on behalf of Lafarge Tarmac Limited in advance of mineral extraction.

Cropmarks have previously been widely mapped in this area including within the Church Farm South extension where these can be interpreted as representing the ditches of a former field system associated with fragmentary stock penning and settlement enclosures. Clusters of pits and a ring-ditch were also plotted and together these form part of an extensive cropmark landscape in the area surrounding the villages of Holt and Grimley. Many areas of this landscape have been investigated in advance of earlier phases of quarrying and these previous investigations have revealed a palimpsest of funerary monuments, settlement enclosures and stock pens along with related tracks and field systems dating from the Beaker/Bronze Age through to the early medieval period.

The Church Farm South investigations revealed that only very limited elements of the cropmark landscape had survived in this area due to truncation by ploughing. Surviving remains included a number of small and poorly dated prehistoric pits. These may provide further examples of features such as this which have been found scattered across the wider area. These may be of Iron Age date but more probably relate to short-lived periods of residence during the earlier Bronze Age; the selection of this location perhaps having been influenced by the presence of several funerary monuments of comparable date in the vicinity which may have provided a focal point in the local landscape. Several ditches were also recorded and can be suggested to form part of the Romano-British field system associated with one of a number of farmstead enclosures known to the north. Areas of former quarrying were also recorded dating from the 1970s or potentially earlier and these had affected the west and east sides of the investigation area.

Lastly, this most recent phase of archaeological investigation at Ball Mill Quarry is also of note since there are no further mineral reserves available within the area and thus quarrying operations will cease when the Church Farm South extension has been worked out. This will bring to an end an association between gravel working and archaeological discovery at Ball Mill which extends back to the documented discovery in 1835 of an 'ancient British stone celt' by a workman digging a gravel bed near Ball Mill.

Report

1 Background

1.1 Reasons for the project

A staged programme of archaeological investigation has been completed at the Church Farm South extension of Ball Mill Quarry, Grimley, Worcestershire (NGR SO 38309 26056; Figure 1). The work was undertaken by Worcestershire Archaeology (WA) on behalf of Lafarge Tarmac Limited in advance of mineral extraction of both sand and gravel and is fulfilling condition 27 of the planning permission (reference number APP/E1855/A/09/2105051).

No desk-based assessment was required for this extension area due to previous archaeological investigations which have been completed across a considerable extent of the surrounding landscape. These provided an appropriate level of background information to inform this programme of investigation which focussed on fieldwork undertaken during three phases of quarrying operation (Phases 1-3; Figure 2).

This report incorporates the already documented results of the Phase 1 of the programme of archaeological investigation (Cornah and Webster 2012) which was completed intermittently between the 12th September and 10th October 2011 and adds the results of the Phase 2 and 3 works which were completed intermittently between November 2012 and September 2013.

The project conforms to the Standard and guidance for archaeological field evaluation (IfA 2008a), Standard and guidance for archaeological excavation (IfA 2008b), Standard and guidance for an archaeological watching brief (IfA 2008c) and the Standards and guidelines for archaeological projects in Worcestershire (HEAS 2010).

The project also conforms to a brief prepared by the service (HEAS 2006) and for which project proposals (including detailed specifications) have been produced (HEAS 2011; WA 2012).

The event reference for this project, given by the HER is WSM 46039.

1.2 Topography, geology and archaeological context

The investigation area lay to either side of a conveyor belt and was bounded to the west by the A443, to the south-west and south by St David's Drive and to the east by agricultural land (Figure 2).

The area lies at c 20-30m AOD (Above Ordnance Datum), on the western river terrace of the Severn and to the immediate west of the village of Grimley. This area largely occupies a small plateau from which the ground slopes down to the east and south, the slopes to the east being exaggerated by a large area which was quarried in the 1980s.

The soils are typical brown earths of the Hall and Wick series (Beard *et al* 1986). Brown earths of this subgroup (541) are permeable, well drained, non-calcareous loams or clays. The underlying geology consists of Pleistocene and recent drift deposits of glacial origin forming the third terrace of the River Severn, overlying Upper/Middle Triassic Mercia Mudstone (formerly Keuper Marl; BGS 1976 and 1990).

The site was formerly in agricultural use and on completion of quarrying will be reinstated as such.

The study area lies within a larger archaeological landscape that contains an extensive series of cropmarks extending along the river terraces on west bank of the Severn. These were first observed in the 1950s, initially mapped between 1969 and 1970 (Bond 1973) and most recently assessed in 2003 (Cox 2003). These include cropmarks concentrated in the Phase 2 and 3 areas which are understood to represent a Bronze Age burial mound (ring-ditch), numerous pits and fragmented evidence for settlement and stock enclosures set within a field system of probable Iron Age and/or Romano-British date (WSM 04503; Cox 2003, site G).

Archaeological discoveries associated with sand and gravel quarrying in this heavily cropmarked area have a long tradition; the earliest documented find being dated to 1835 when an 'ancient British stone celt' (a battle axe?) by a workman digging a gravel bed near Ball Mill (Allies 1852, 150). Within the modern era, formal programmes of archaeological work have been conducted in advance of quarrying based at Ball Mill since the 1960s. These have revealed extensive evidence for early prehistoric, Iron Age, Romano-British and early medieval activity including occupation sites, funerary monuments, and associated stock enclosure and field systems (Peltenburg 1967; Hunt *et al* 1986; Jackson 1991; Fagan 1992; Hurst 1995; Webster 2013). These include a programme of salvage recording undertaken during the construction of the conveyor belt running from a working area at Retreat Farm to the south, across the Church Farm South extension area and to the quarry plant site at Ball Bill (Figure 2). This revealed a number of pits, postholes and ditches that were tentatively dated to the Bronze Age as well as a Romano-British field boundary ditch (Jackson 1991). The extensive quarrying in the area that followed these investigations has removed most of the cropmark sites in the immediate area (WSM 01182, WSM 04501 and WSM 04502). Damage caused by ploughing has been widely noted in association with these investigations, a specific study of which resulted in permission being granted for the excavation in advance of quarrying of a badly truncated scheduled site to the north (SAM WT 209; Bretherton 2004; Webster 2013).

2 Aims

The aims of the programme of archaeological investigation undertaken at Church Farm South were:

- To identify all archaeological remains present within the site and secure an accurate survey of them thus recording the scale and extent of archaeological remains present.
- To undertake carefully targeted investigation and recording of any landscape features (field boundaries, fence lines, etc) revealed to recover evidence for dating in order to support understanding of their chronological sequence and development.
- To undertake a sufficient level of investigation and recording of any occupation or funerary deposits revealed to establish their dating and character.

More specifically an initial stage of trial trenching was completed in order to inform the scope of the subsequent mitigation work, for which a watching brief was determined as sufficient following discussions held with Mike Glyde (Historic Environment Planning Advisor, Worcestershire County Council) upon completion of trial trenching across the Phase 1 area.

3 Methods

3.1 Desk-based assessment

No formal desk-based assessment was undertaken since the area had been subject to a number of previous programmes of investigation which provided detailed background information. These included an aerial photographic assessment (Cox 2003) which covered cropmarks within the Church Farm South extension as well as much of the surrounding area (Figure 3).

3.2 Fieldwork strategy

The Brief identified two main elements of fieldwork, an initial phase of evaluation by trial trenching followed by further mitigation to an appropriate level (either watching brief or salvage excavation) as informed by the trial trenching.

Trial trenching within the Phase 1 operational area was undertaken between 12th September and 26th September 2011. Due to the limited results and evidence of high levels of truncation by cultivation (Plate 1), it was agreed with the Curator that trial trenching was not required of any subsequent areas. It was also determined that a watching brief with contingency provision would

provide an appropriate level of mitigation for any archaeological remains present across all three extraction phases within the permitted extension.

The watching brief within Phase 1 followed immediately on from the trenching and was conducted intermittently between 20th September and 10th October 2011. A small area affected by a power cable was completed during June 2012 following removal of the overhead cables. A further watching brief was undertaken between the 12th November and the 4th December 2012 covering the north part of Phase 2. The remainder of Phase 2 and Phase 3 were completed during the period from the 8th May to 21 June 2013. Two final areas where badger setts were present left until 3rd and 23rd September 2013.

As anticipated the area had indeed been severely truncated by former cultivation and only very limited archaeological remains survived, consequently the contingency provision was not used.

3.3 Trial trenching

For the purposes of evaluating the Phase 1 area, a total of 18 trial trenches were excavated covering an area of c. 1200m² over the 5.7ha affected. This represented a c. 4% sample of Phase 1. No cropmarks or other forms of evidence for the likely location of archaeological deposits had been identified within this area so trenches were located on a systematic grid array (Figures 2 and 3). Due to the presence of crop across much of the southern half of the Phase 1 area, the evaluation was undertaken in two stages (roughly separated by the line of an overhead power cable).

Deposits considered not to be significant were removed in each trench using a 360° tracked excavator, employing a toothless bucket and under archaeological supervision. Subsequent excavation was undertaken by hand. Clean surfaces were inspected and selected deposits were excavated to retrieve artefactual material and environmental samples, as well as to determine their nature. Deposits were recorded according to standard WA practice (CAS 1995; WA 2012). On completion of excavation, trenches were reinstated by replacing the excavated material.

3.4 Watching brief

Watching brief works comprised stripping of topsoil and subsoil within all three phases under archaeological supervision with any subsequent excavation of archaeological deposits revealed undertaken by hand.

The topsoil/subsoil strip was undertaken using 360° tracked excavators employing a toothless bucket with spoil removed by 30 tonne dumpers working in succession (Plates 2-4). Clean surfaces were inspected and selected deposits were excavated to retrieve artefactual material and environmental samples, as well as to determine their nature. Deposits were recorded according to standard WA practice (CAS 1995; WA 2012).

Communication and good working relationship between the archaeological team, staff of Lafarge Tarmac and the machine operator were crucial to the success of this fieldwork.

3.5 Structural analysis

All fieldwork records were checked and cross-referenced. Analysis was effected through a combination of structural, artefactual and ecofactual evidence, allied to the information derived from other sources.

3.6 Artefact methodology

3.6.1 Artefact recovery policy

The artefact recovery policy conformed to standard WA practice (WA 2012; appendix 2).

3.6.2 Method of analysis

All hand retrieved finds were examined and a primary record was made on a project database (Microsoft Access 2000).

Finds were identified, quantified and dated to period. A *terminus post quem* date was produced for each stratified context. The date was used for determining the broad date of phases defined for the site. All information was recorded on *pro forma* sheets.

The pottery and ceramic building was examined under x20 magnification and recorded by fabric type and form according to the fabric reference series maintained by the service (Hurst and Rees 1992; Hurst 1994; and www.worcestershireceramics.org).

Pottery fabrics are referenced to the fabric reference series maintained by the Service (Hurst 1994).

3.7 Environmental archaeology methodology

Samples were intended to be taken according to standard Worcestershire Archaeology practice (2012), however, in the event no deposits were identified which warranted sampling.

3.8 Statement of confidence in the methods and results

The methods adopted allow a high degree of confidence that the aims of the project have been achieved.

4 Structural analysis

Four archaeological phases were identified. The trenches and features recorded are shown in Figures 3-6.

4.1 Phase 1: Natural deposits

Natural substrate was observed at varying depths from ground surface of 0.30-0.50m. This natural substrate comprised of compact mid red sands and gravels across Phase 1 giving way to compact, light yellow, sandy silt with frequent rounded stones on the lower lying areas of Phases 2 and 3.

4.2 Phase 2: Prehistoric deposits

A scatter of eight, small, sub-circular pits was revealed running along the crest of the ridge of higher ground forming the northern part of Phase 1 (Figure 4). These pits had shallow bowl-shaped profiles and averaged 0.40m in diameter by 0.30m in depth. All had single fills of sandy loam deposits incorporating large hand-sized rounded cobbles. The pits were undated with the exception of one [Pit 2005] which produced a single sherd of probable earlier Bronze Age pottery (fill 2004). This was one of a small cluster of three closely spaced pits but the other five were isolated examples.

A second isolated pit [3018] was identified on the lower lying ground to the south end of Phase 2 (Figures 5 and 6). This sub-circular feature was also shallow and bowl-shaped and contained a single silty sand fill (3018) which produced a small quantity (9 sherds) of rather undiagnostic prehistoric pottery which could date to any point between the earlier Bronze Age and Middle Iron Age.

4.3 Phase 3: Roman deposits

Several ditches were recorded which can be dated to the Roman period (Figures 5 and 6). The principal one of these was orientated north-north-west to south-south-east, commencing in the south-east corner of the Phase 1 area and running south for almost 300m across the Phase 2 area and continuing beyond the conveyor belt to the southern limit of Phase 3. A number of sections were excavated [2020, 3005, 3009, 3012 and 3029; Figure 6] and these revealed a shallow U-shaped profile. The ditch had been heavily and variably truncated by later cultivation along its length; the surviving width varying between 0.38m and 2.38m and depth from 0.08m to 0.76m.

Preservation was very poor on the higher ground to the north where the feature petered out to nothing but was better towards the south where it extended beyond the site boundary. The ditch contained only a single fill along its entire length (fills 2019, 3008, 3011 and 3028) except for in one location [2005] where two fills (3003 and 3004) were identified (Plate 5). All observed fills were naturally derived deposits suggestive of gradual silting through erosion of surrounding deposits. Several sections had also been excavated across this ditch during construction of the quarry conveyor belt in 1991 and one of these produced a small quantity of Severn Valley ware indicating that the ditch is of Roman date (Jackson 1991, context 236). This dating was supported by small quantities of pottery recovered during the watching brief (from 3003 and 3028). The observed alignment and length of the ditch corresponds with one of the cropmarks and it appears that this formed a significant axis within the Romano-British field systems associated with known settlements to the north and east.

Several east-west ditches or gullies were also recorded and for the most part these also correlated with cropmark features. The first was a small gully [3014] which although truncated by the ditch described above, met the axis ditch at almost 90°, suggesting that they are likely to be broadly contemporary elements of the same field system. This gully had a shallow U-shaped profile and survived to a width of 0.60m and a depth of 0.07m. It seems consistent with a drainage gully or heavily truncated ditch. A shallow deposit (3010) was also recorded at this location but neither the gully nor the deposit produced any dating evidence. The deposits (3010) occupied a 0.12m deep depression, 6.00m long and 2.20m wide, and this appears to result from silting within a shallow hollow. To the south, two further ditches were recorded on the west side of the axis ditch but running on alignments which again suggested contemporaneity. Three sections excavated across the more northerly ditch revealed a shallow U-shaped profile with one [3021] being 1.07 wide and 0.30m deep (Figure 6; Plate 6), another [3023] being 0.90m wide and 0.21m deep (Figure 6) and the last [3025] being considerably larger at 2.18m wide and 0.50m deep (Figure 6). Roman dated pottery and a residual Neolithic arrowhead were recovered from the fill (3022) of the second of these ditch sections [3023]. A single section across the more southerly ditch [3027] revealed this to have a comparable fill but this was a smaller feature (0.53m wide and 0.20m deep) with a more steep-sided, U-shaped profile (Figure 6).

4.4 Phase 4: Post-Roman to modern deposits

Areas of considerable disturbance were identified along the west side of Phase 1 and 2. These were visible as depressions within the current land surface and correlated with a small gravel pit marked on the Ordnance Survey map of 1904, as well as a considerably larger gravel pit shown on the 1954-1963 OS map. This area was largely not stripped as part of the current operations, however, Trial Trenches 15, 10, 11, 15 and 16 (Figure 3) all revealed heavy disturbance with Trench 15 indicating that sand and gravel had been entirely extracted to the underlying clay marl. Within Trench 16 the majority of the trench was filled with modern demolition and deliberately dumped material used to raise the ground level back to that of a pre-quarrying date. This backfill included modern waste including glass, ceramics, metals and plastics along with a large number of plastic wrapped hay bales. Due to the relatively loose nature of this backfill the depth of former quarrying could not be established for health and safety considerations; although it is logical to think that the depth would be comparable to the depth of truncation seen in Trench 15 and thus that any archaeological deposits which might have been present had been entirely removed.

Other modern disturbance included a pipe trench observed in Trench 15 heading towards a derelict brick structure to the north and a small pit within Trench 11 (1.05m by 0.80m in plan and 0.20m deep) which is believed to be related to modern quarrying as observed in Trench 15 and on the OS map of 1904. Trench 6 contained a feature that was observed across the extent of the trench and to a width of 7.10m. It was excavated to a depth of 0.19m and contained modern brick and tile. As with the features described above this is thought to relate to quarrying undertaken in the last 100 years.

Finally, the areas immediately adjacent to the conveyor belt in Phases 2 and 3 were observed to have been heavily disturbed with mixed and heavily compacted deposits underlying a thin and poorly defined topsoil horizon. This is understood to have resulted from the presence of an unmade haul road running down each side of the conveyor and used during quarrying operations in the 1990s.

Across the remaining extent of the quarried area, topsoil was observed at a varying depth of 0.10m to 0.28m with subsoil below at a varying depth of 0.06m to 0.25m, depths being greater to the south and east on lower lying ground possibly as a result of some limited downslope erosion (compare depths of topsoil/subsoil on Plates 1 and 3). Heavy plough scarring was observed at the base of the topsoil at the interface with subsoil (Plate 1) and this allied to the observation of increasing depths of subsoil towards the base of the slope, is indicative of heavy plough truncation and erosion across the area.

5 Artefact analysis

The artefactual assemblage recovered is summarised below.

Period	Material class	Material subtype	Object specific type	Count	Weight (g)
Neolithic	stone	flint	arrowhead (leaf-shaped)	1	1
prehistoric	ceramic	earthenware	pot	11	39
Roman	pottery	earthenware	-	4	150
post-med/modern	ceramic	-	brick	3	1300
post-med/modern	metal	iron	ploughshare	1	2930
modern	glass	-	bottle	1	132
totals:				17	4402

5.1.1 Prehistoric pottery and flint, by Robin Jackson

Prehistoric pottery derived from two pits but in the absence of decorated or form sherds close dating of the assemblage was not possible. The two fabrics present could not be closely matched with any specific fabric in the county series and thus are assigned to fabric 122: indeterminate prehistoric (Hurst and Rees 1992; Hurst 1994; and www.worcestershireceramics.org). The following observations are, however, made.

Two plain body sherds were recovered from a small pit within a scatter of small pits located the Phase 1 area (Pit 2004). The fabric is hand made and well-fired with an orange buff exterior surface and black core and interior surface. The texture is slightly rough and occasional inclusions of quartz sand and sparse inclusions of mica and grog/clay pellet were present.

The other nine sherds were plain body sherds recovered from an isolated pit in the Phase 2 area (Pit 3019). The fabric was hand-made, vesicular and slightly soapy in texture. Sherds were well-fired with an orange buff exterior surface and black core and interior surface. The fabric contained sparse quartz and mica and the numerous vesicles may result from the leaching out mudstone inclusions.

These fabrics are reminiscent of some Beaker/Early Bronze Age fabrics in the area (eg Holt, Fabric 3; Hunt *et al* 1986) but would also not be inconsistent within an Early or Middle Iron Age assemblage (eg WCC Fabric 9, Mudstone tempered ware; www.worcestershireceramics.org) so dating remains uncertain.

A finely worked earlier Neolithic leaf-shaped arrowhead was also recovered from a Roman ditch. This was manufactured from a rather translucent grey brown flint. The form was small and conformed to Green's type 4A(c), a class of small leaf-shaped arrowheads whose distribution is concentrated in Wales and the Marches and across, south-west and northern England (Green 1980).

5.1.2 Roman and later finds, by Dennis Williams

A base sherd from a Severn Valley ware jar, recovered from ditch fill 3028, was datable by its organically-tempered fabric (12.2) to the 1st-2nd century AD. Small, undiagnostic sherds of 2nd-4th century AD Black-burnished ware (fabric 22) were found in ditch fills 3003 and 3022.

The remaining finds were either late post-medieval or modern. They comprised three fragments of 3 inch thick brick, a ploughshare, and a clear, two-piece moulded glass bottle bearing the legend 'CARTERS FOR QUALITY PRODUCTS'.

6 Discussion

The earlier Neolithic arrowhead found as residual material in a Roman ditch provides some of the earliest evidence of activity found to date in the area. Along with a couple of Mesolithic flints recorded during excavations at Church Farm West (Webster 2013), this provides an indicator of the occasional presence of the early hunter-gatherer populations that would have exploited the rich resources available within the river valley.

Of later date were nine pits, eight of which were revealed on the north side of the investigated area and running along the edge of the plateau overlooking the river. The ninth pit was an isolated feature located immediately west of the conveyor belt in the south part of the site. Only two of these features contained datable evidence in the form of pottery indicative of a broadly prehistoric (Beaker/Early Bronze Age to Middle Iron Age) date. Although the remaining seven pits had sterile fills, it seems likely on balance that they are also of prehistoric date. These pits provide scattered evidence of activity along the crest line of the plateau and on the lower ground to the south and east. Further evidence for prehistoric activity was recovered on the lower ground to the south during the salvage recording undertaken in advance of construction of the conveyor belt. Here, a probable Bronze Age ditch or gully was identified along with a scatter of other potentially Bronze Age features and residual earlier Bronze Age artefacts (both pottery and single flint; Jackson 1991). The pottery included a diagnostic rim form with thumb/fingernail impressions and a decorated (whipped cord impressed) body sherd in a comparable fabric to the sherds recovered from Pit 2004 (Jackson 1991). In the light of the dating of the features within the conveyor belt corridor it seems most likely therefore that the scatter of prehistoric features across the site are of earlier Bronze Age date. These features are consistent with the sort of ephemeral evidence that typifies short-term occupation events. Although the evidence base for the earlier Bronze Age period remains extremely limited, such short-term occupation sites may characterise earlier Bronze Age settlement in the region as well as across much of lowland Britain (Garwood 2011). Comparable evidence was identified during excavations at the Church Farm West site which lies north of the current quarry extension. Here, a number of Beaker and Bronze Age pits were interpreted as representing short-lived periods of domestic occupation possibly associated with the communities responsible for the construction of a number of Bronze Age funerary monuments (barrows) located to the north (Webster 2013). A similar situation can be suggested at Church Farm South since cropmark evidence includes an apparently ploughed out example of a barrow (a ring-ditch) located on the east side of the Phase 3 area (Figure 3). The impression therefore emerging from the accumulated evidence from these investigations is one of separate parts of the local landscape being utilised by Bronze Age communities for both funerary and domestic activities; the former characterised by the construction of highly visible and permanent monuments (barrows) and the latter by the insubstantial remains of what may have been short-lived periods of occupation associated with still largely mobile residence patterns.

In contrast, the roughly north to south orientated ditch running across much of the site can be interpreted as a major field boundary forming one element of a settled and widely farmed Roman landscape. This ditch appears to have provided the principal axis of a wider field system in which the ditches and gullies running at right-angles represented further elements. Dating from several excavated sections across these features indicate that these were of at least Roman origin. Since the orientation of these features matches that of the majority of the ditches known from cropmarks within the vicinity (Cox 2003, site G), it seems apparent that these formed part of a field system of at least Romano-British and potentially earlier origin which was laid out on an axis running approximately parallel to the river and associated terrace edges. Enclosed settlement areas of comparable date are known to the north (Webster 2013) and north-west (Hurst 1995; Lockett and Jones 2001) and it seems most probable that the field boundaries recorded at Church Farm West formed part of the field systems surrounding these settlements.

More generally, the paucity of features revealed during these investigations is of note given the location of the site on a well-drained river terrace within in a spread of cropmarks extending to both the north and south and including complexes of enclosures, field systems, occupation sites and burial features. In part this absence may be explained by the depth and density of plough scars which are indicative of heavy truncation of much of the investigated area, while some areas of previous quarrying may further account for the paucity of archaeological remains recorded. However, it seems unlikely that these factors could entirely account for the very low levels of activity identified in comparison to those present in other investigated areas which have also suffered severe plough damage yet still included considerable extents (of the albeit truncated remains) of both prehistoric and Roman activity (Webster 2013). It therefore seems likely that the rather limited evidence recorded may provide an accurate reflection of comparatively low levels of former activity in this part of the former landscape, perhaps indicating that this area has never provided a focus for anything other than agriculture or at the most sporadic and transitory activities.

Lastly, this most recent phase of archaeological investigation at Ball Mill Quarry is also of note since there are no further mineral reserves available within the area and thus quarrying operations will cease when the Church Farm South extension has been worked out. This will bring to an end an association between gravel working and archaeological discovery at Ball Mill which extends back to the documented discovery in 1835 of an 'ancient British stone celt' (a battle axe?) by a workman digging a gravel bed near Ball Mill (Allies 1852, 150).

7 Publication summary

Worcestershire Archaeology has a professional obligation to publish the results of archaeological projects within a reasonable period of time. To this end, Worcestershire Archaeology intends to use this summary as the basis for publication through local or regional journals. The client is requested to consider the content of this section as being acceptable for such publication.

A programme of archaeological investigation has been completed at the Church Farm South extension to Ball Mill Quarry, Grimley, Worcestershire (NGR SO 38309 26056; HER ref 46309). The work was undertaken by Worcestershire Archaeology (WA) on behalf of Lafarge Tarmac Limited in advance of mineral extraction.

Cropmarks have previously been widely mapped in this area including within the Church Farm South extension where these were interpreted as representing the ditches of a former field system associated with fragmentary stock penning and settlement enclosures. Clusters of pits and a ring-ditch were also plotted and together these form part of an extensive cropmark landscape in the area surrounding the villages of Holt and Grimley. Many areas of this landscape have been investigated in advance of earlier phases of quarrying and these previous investigations have revealed a palimpsest of funerary monuments, settlement enclosures and stock pens along with related tracks and field systems dating from the Bronze Age through to the early medieval period.

The most recent investigations revealed that only very limited elements of the cropmark landscape had survived in this area due to truncation by ploughing. Surviving remains included a number of

small and poorly dated prehistoric pits. These may provide further examples of features such as this which have been found scattered across the wider area. These may be of Iron Age date but more probably relate to short-lived periods of residence during the earlier Bronze Age; the selection of this location perhaps having been influenced by the presence of several funerary monuments of comparable date in the vicinity which may have provided a focal point in the local landscape. Several ditches were also recorded and can be suggested to form part of the Romano-British field system associated with one of a number of farmstead enclosures known to the north.

Lastly, this most recent phase of archaeological investigation at Ball Mill Quarry is also of note since there are no further mineral reserves available within the area and thus quarrying operations will cease when the Church Farm South extension has been worked out. This will bring to an end an association between gravel working and archaeological discovery at Ball Mill which extends back to the documented discovery in 1835 of an 'ancient British stone celt' by a workman digging a gravel bed near Ball Mill.

8 Acknowledgements

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From Top Barn Farm, the landowners; David and John Harper.

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From Worcestershire County Council; Mike Glyde (WCC Historic Environment Planning Advisor).

9 Personnel

The fieldwork was led by Jonathan Webster and Timothy Cornah. The project manager responsible for the quality of the project was Robin Jackson.

Fieldwork was undertaken by Jonathan Webster, Timothy Cornah, Graham Arnold, Robin Jackson, Mike Nicholson and Christopher Gibbs.

The report was produced by Tim Cornah, Robin Jackson and Jon Webster with illustrations produced by Carolyn Hunt. Finds reporting was by Robin Jackson (flint and prehistoric pottery) and Dennis Williams (Roman and later artefacts).

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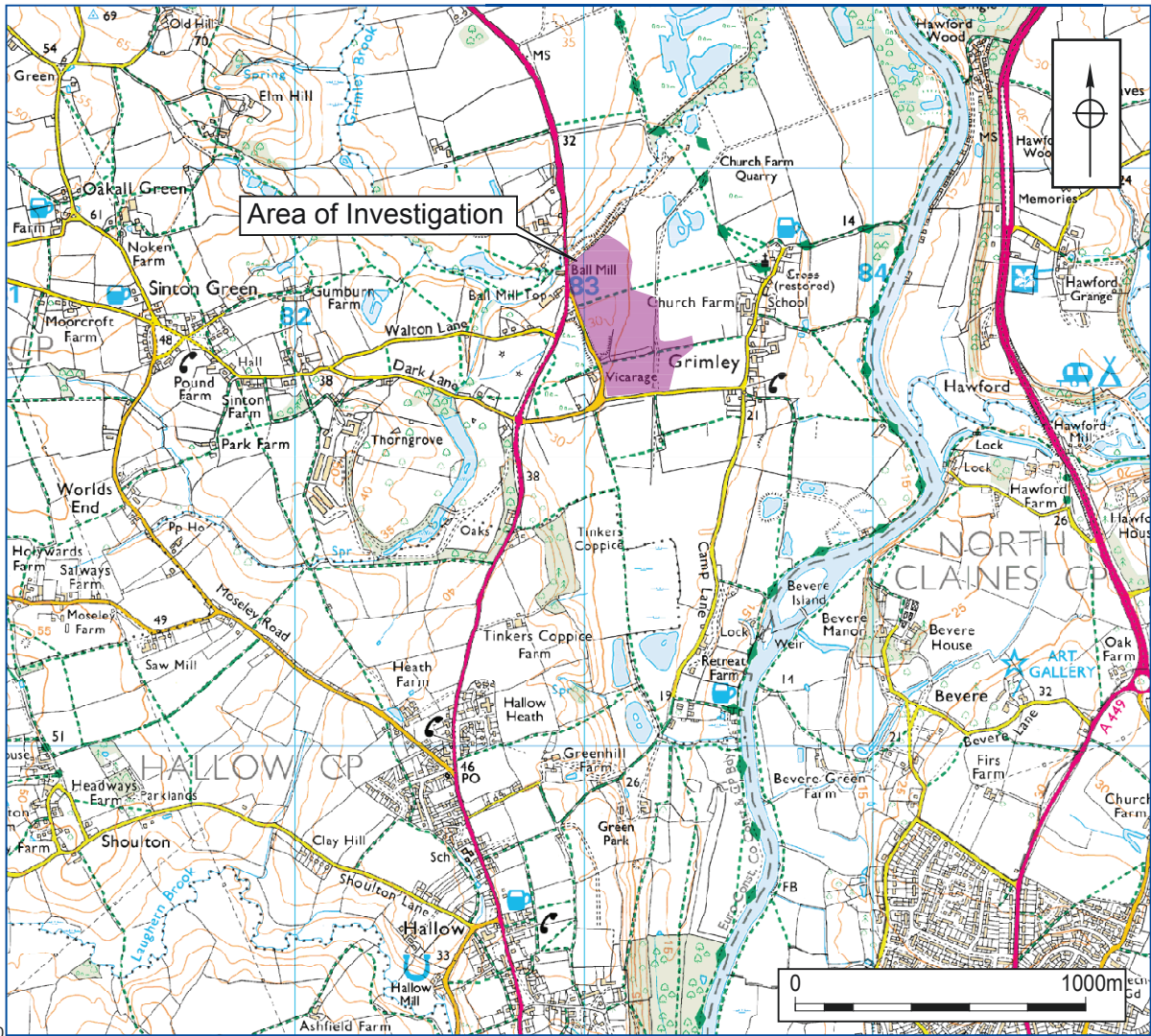
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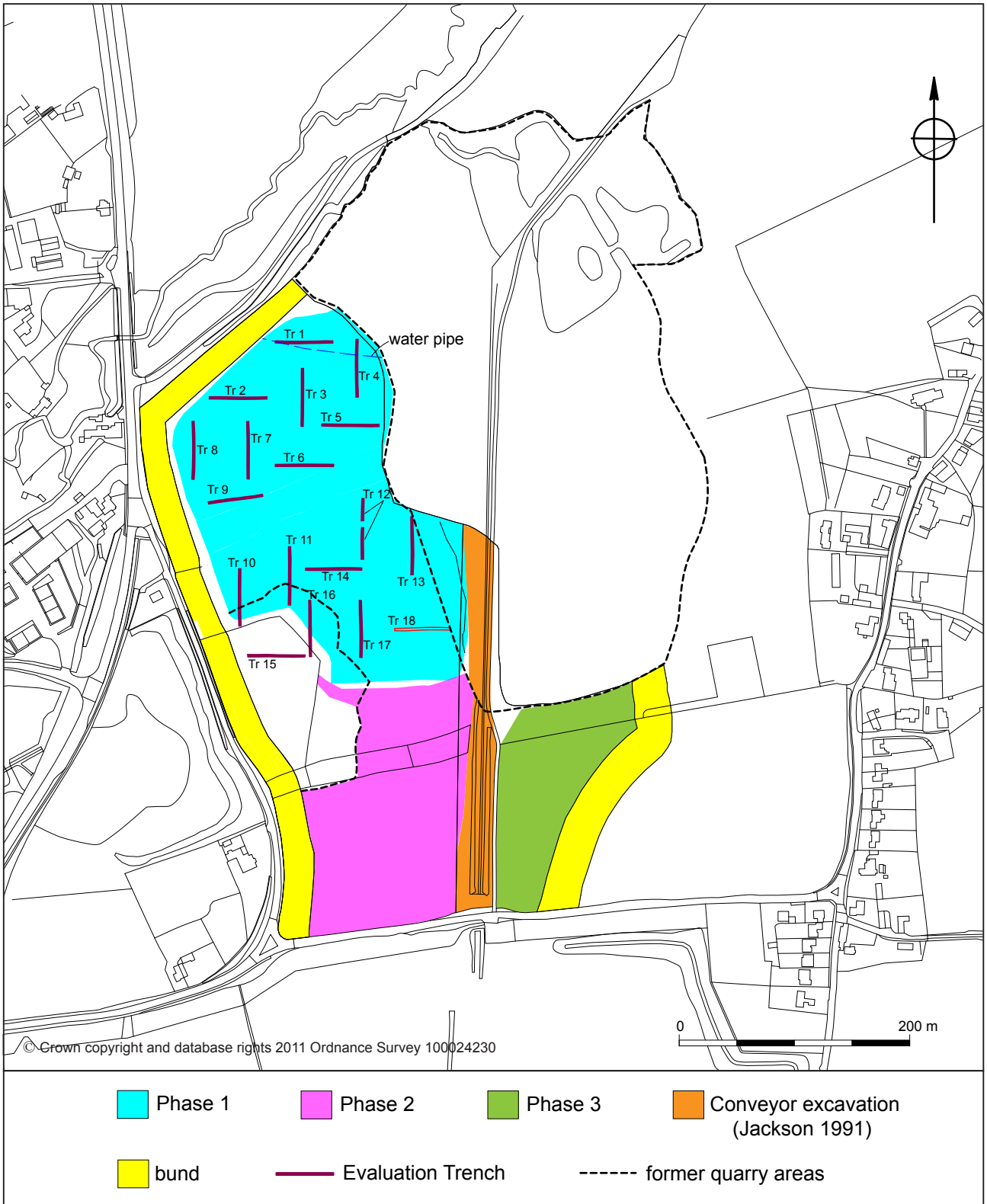
Figures



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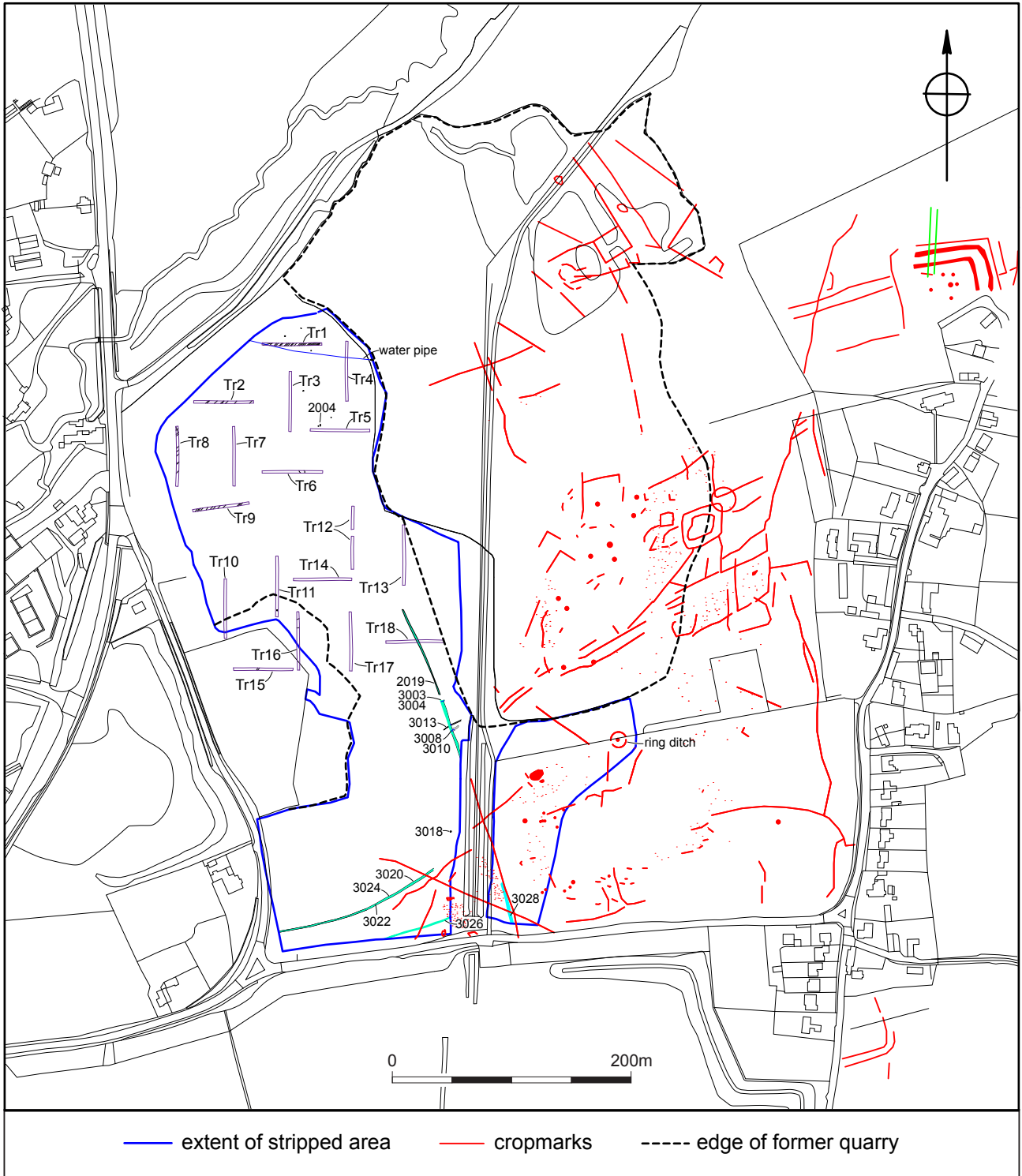
Location of the site

Figure 1



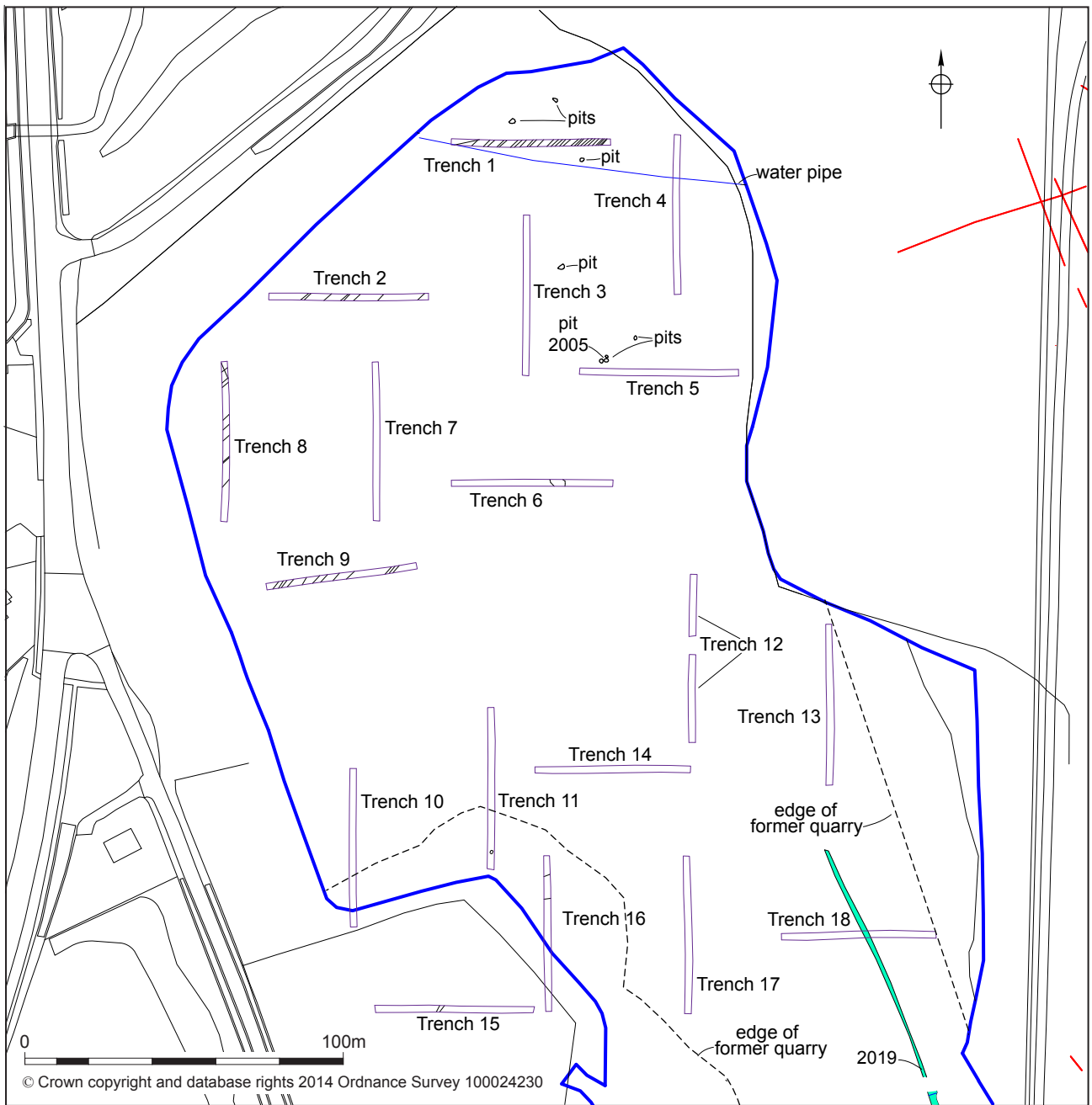
Site phasing/extent and evaluation trench location

Figure 2



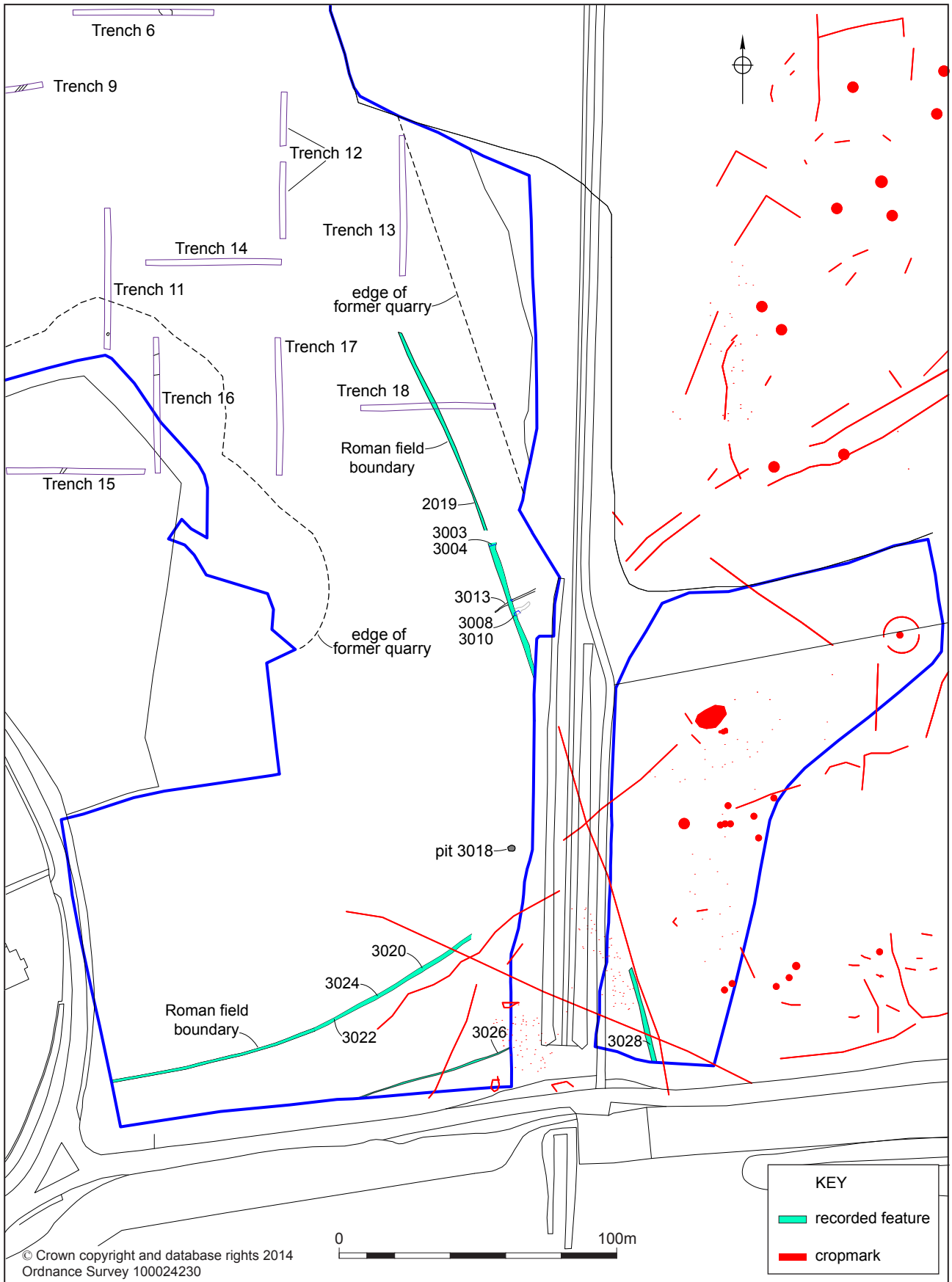
Summary of results and cropmarks

Figure 3



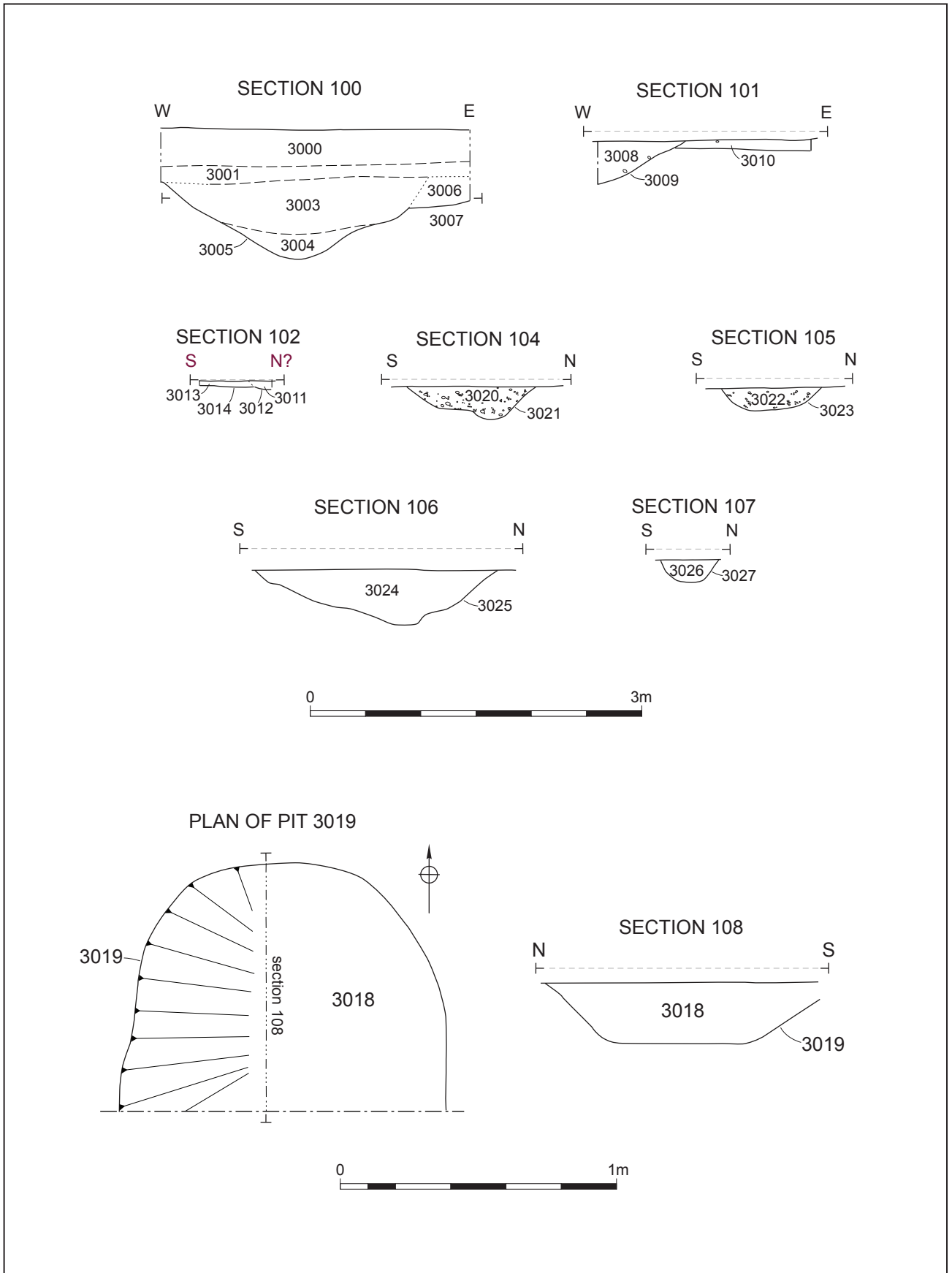
Location of pits in north part of site

Figure 4



Pit and field system in south part of site

Figure 5



Ditch sections and plan and section of Pit 3019

Figure 6



Flint arrowhead

Figure 7

Plates



Plate 1: Trench 1 showing plough scars (facing west)



Plate 2: Phase 1 during excavation strip (facing south-west)



Plate 3: Stripping in Phase 2 (facing west)



Plate 4: Stripping in Phase 3 (facing west)



Plate 5: South facing section across Roman field boundary (Ditch 3005)



Plate 6: Roman field boundary (Ditch 3021; facing south-west)

Appendix: Technical information

The archive (site code: WSM 46039)

The archive consists of:

21	Context records AS1
25	Field progress reports AS2
4	Photographic records AS3
211	Digital photographs
2	Drawing number catalogues AS4
6	Scale drawings
2	Context number catalogues AS5
18	Trench record sheets AS41
1	Box of finds
1	CD-Rom/DVDs
1	Copy of this report (bound hard copy)

The project archive is intended to be placed at:

Worcestershire County Museum
Museums Worcestershire
Hartlebury Castle
Hartlebury
Near Kidderminster
Worcestershire DY11 7XZ
Tel Hartlebury (01299) 250416

Summary of data for Worcestershire HER

Period	Material class	Material subtype	Object specific type	Count	Weight (g)
Neolithic	stone	flint	arrowhead (leaf-shaped)	1	1
prehistoric	ceramic	earthenware	pot	11	39
Roman	pottery	earthenware	-	4	150
post-med/modern	ceramic	-	brick	3	1300
post-med/modern	metal	iron	ploughshare	1	2930
modern	glass	-	bottle	1	132
totals:				17	4402
