AN ARCHAEOLOGICAL WATCHING BRIEF AT STOWFIELD QUARRY COLEFORD GLOUCESTERSHIRE

FINAL REPORT PHASES 1-4 (2012-2016)







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An archaeological watching brief at Stowfield Quarry, Coleford, Gloucestershire: Final Report Phases 1 – 4 (2012-2016)

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With a contribution by Rob Hedge

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Summary

A series of archaeological watching briefs were undertaken at Stowfield Quarry, Coleford, Gloucestershire (NGR SO 5550 1179) in four phases between 2012 and 2016. Phase 1 was undertaken by Cotswold Archaeology with subsequent phases undertaken by Worcestershire Archaeology. This report concludes work undertaken across the areas affected and will inform future phases of investigation at the site.

The work was commissioned by Tarmac Limited in response to an archaeological condition placed upon planning permission for an extension to their existing quarry (Gloucestershire County Council ref no. 09/0013/FDMAJM). The extension area was considered to have the potential to include heritage assets which would be affected by the proposed quarrying.

Archaeological potential at the site focussed around a number of earthwork features within the quarrying area and on the presence of three Scheduled Monuments to the immediate east. These monuments cover an area of scowles; natural rocky outcrops which are thought to have been widely exploited in the past for extraction of iron ore.

No evidence of the scowles extending into excavation area was identified by an Archaeological Resource Management Plan (ARMP) produced in advance of the quarrying, however, during fieldwork a preserved scowle was recorded in the final phase of work reported here. Evidence from the scowle suggested that iron ore had been extracted in the past from this feature, but unfortunately no firm dating material was recovered. Three further possible scowles were recorded to the south side of the site, but although these contained iron ore these did not appear to have been exploited.

A number of earthworks were also identified in the Archaeological Resource Management Plan and these were further recorded as the watching brief progressed. They included what is understood to be a medieval hollow-way and historic field boundary banks which can be correlated with boundaries shown on historic maps of the area and features recorded by a recent LiDAR survey.

Report

1 Background

1.1 Reasons for the project

A series of archaeological watching briefs (Phases 1-4) were undertaken at Stowfield Quarry, Coleford, Gloucestershire between 2012-2016 (NGR SO 5550 1179; Figure 1). These were commissioned by Tarmac Limited in response to an archaeological condition placed upon planning permission for an extension to their existing quarry at Stowfield (Gloucestershire County Council ref no. 09/0013/FDMAJM). The extension area is located adjacent to three Scheduled Monuments and may include heritage assets and potential heritage assets which would be affected by quarrying activity.

Phase 1 was undertaken during 2012-13 by Cotswold Archaeology. Phase 2 in 2014 and subsequent phases of fieldwork in 2015 (Phase 3) and 2016 (Phase 4) were undertaken by Worcestershire Archaeology (WA). This report presents the results of the Phase 4 fieldwork and integrates them with those from the previous three phases which had previously been subject to interim reporting (Walsh 2015a; Walsh 2015b); thus providing a final report for the period of work through to 2016 which will inform future phases of investigation.

The project archive from the project will be placed at the Dean Heritage Centre. Later phases (Phase 5 onwards) due to start in 2018 will be reported and archived separately.

The project conforms to a brief prepared by Charles Parry, Gloucestershire County Council Planning Advisor (GCC no date) and for which a Written Scheme of Investigation was produced by WA (WA 2015) and subsequently updated (WA 2016). The project also conforms to the *Standard and guidance for an archaeological watching brief* (CIfA 2014a). The WA reference for this project is P4286.

2 Aims and Objectives

The aims of the archaeological mitigation undertaken were to:

- record the nature of the main stratigraphic units encountered;
- assess the overall presence, survival and potential of structural and industrial remains; and
- assess the overall presence, survival, condition, and potential of artefactual and ecofactual remains.

More specifically the project work had the following objectives:

- to record any evidence of past settlement or other land use;
- to recover artefactual evidence to date any evidence of past settlement that may be identified; and
- to sample and analyse environmental remains to create a better understanding of past land use and economy.

3 Methods

3.1 Personnel

The fieldwork was undertaken by Andrew Walsh (BSc MSc FSA Scot ACIfA), Graham Arnold (BA MSc) and James Spry, (BA). The report preparation was led by Graham Arnold and the project manager responsible for the quality of the project was Robin Jackson (BA ACIfA). Previous

interims on the works were reported on by Andrew Walsh. The illustrations were prepared by Laura Templeton (BA; PG Cert; MCIfA). Robert Hedge (MA Cantab) contributed the finds report.

3.2 Documentary research

Documentary research and field survey was undertaken by Andrew Josephs Ltd as part of an Environmental Impact Assessment produced for the extension area (WYG 2009), which has been supplemented by an Archaeological Resource Management Plan (ARMP; AJA 2011).

3.3 List of sources consulted

Cartographic sources

- 1608 Map
- 1792 Map of the Manor of Bycknor
- 1st edition OS Map : surveyed 1879-80
- 2nd edition OS Map: revised 1900;
- 3rd edition OS Map: published 1925.

Aerial photographs

- LiDAR data from GCC.
- Aerial Photograph of quarry extension area dated 1990

Documentary sources

Published and grey literature sources are listed in the bibliography.

3.4 Fieldwork strategy

A detailed Written Scheme of Investigation was prepared by Cotswold Archaeology prior to the Phase 1 (CA 2012) with a further Written Scheme of Investigation prepared by WA for Phases 2-4 (WA 2014; 2015; 2016). The WA site code is P4286.

Phases completed between 2012 and 2016, covered 5 hectares in total with the most recent fieldwork in Phase 4 undertaken during May 2016 covering a further area of *c*.1.75 hectares. The quarry extension will eventually cover 8.2 hectares in total.

The areas investigated in each phase were determined by Tarmac and are illustrated in Figure 1.

Within each area/phase, a detailed earthwork survey was carried on the visible features prior to mechanical stripping of the soils. Once the earthwork survey was complete, deposits were removed using a 360° tracked excavator, employing a toothless bucket and operating 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. Special attention was paid during the excavation of the earthwork features for finds and/or structural remains. Deposits were recorded according to standard industry and Worcestershire Archaeology practice (WA 2012).

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, by Robert Hedge

The finds work reported here conforms to the following guidance: for finds work by CIfA (2014b), for archive creation by AAF (2011) and for museum deposition by SMA (1993).

3.6.1 Recovery policy

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

3.6.2 Method of analysis

All hand-retrieved finds were examined. They 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 a *Microsoft Access* database. Quantification was undertaken by Nina O'Hare.

The pottery and ceramic building material was examined under x20 magnification and referenced as appropriate by fabric type and form according to the fabric reference series maintained by Worcestershire Archaeology (Hurst and Rees 1992 and <u>www.worcestershireceramics.org</u>).

3.6.3 Discard policy

The following categories/types of material will be discarded after a period of 6 months following the submission of this report, unless there is a specific request to retain them (and subject to the collection policy of the relevant depository):

- where unstratified
- post-medieval material, and;
- generally where material has been specifically assessed by an appropriate specialist as having no obvious grounds for retention.

See the environmental section for other discard where appropriate.

3.7 Environmental archaeology methodology

3.7.1 Sampling policy

The sampling policy conformed to standard WA practice (2012). In the event, no deposits were revealed which were considered to be suitable for environmental analysis.

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 The application site

4.1 Topography, geology and archaeological context

The total quarry extension area comprises of 8.2 hectares of predominantly coniferous woodland, interspersed with forest rides, and a number of small compartments of broad leaved and mixed woodland. The western boundary is defined by an existing forest track, which runs generally north-south between Staunton and Newland, and which incorporates a public footpath. The northern boundary is currently undefined on the ground. The north-eastern boundary is defined by an existing low bank, which forms the western limit of a series of depressions, cavities and deep fissures, known as 'scowles'. These features are associated with historic mining activities and are discussed below.

The extension area slopes from north-west to south-east from an elevation of some 240m above Ordnance Datum (aOD) in the north-west to some 194m aOD in the south-east. The general geological succession is as follows:

Lower Carboniferous	Whitehead Limestone
Limestone Series	Crease Limestone
	Lower Dolomite
	Lower Limestone Shales
Upper Devonian	Upper Old Red Sandstone

The strata dip to the east-north-east, and consequently the overlying Crease limestone and Whitehead limestone are encountered successively depending upon the location and extent of working. It is no coincidence that the limits of the Crease limestone readily accessible from the surface coincide with the main groups of scowles.

4.2 Archaeological context

A detailed archaeological background is presented within the already completed ARMP (AJA 2011) and summarised here.

The remains of a series of scowles dominate archaeological interest within, and in the vicinity of, the extension area. Scowles are the surface expression of an eroding underground cave system located in the Forest of Dean which was rich in iron ore deposits. The ore was extracted by early miners, processed and smelted in small bloomeries. The majority of the scowles are probably of medieval and post-medieval date, but some may have originated in the Iron Age and Roman periods (GCC 2004).

Three Scheduled Monuments (National Heritage List no's 1016899, 1016900 and 1016901) abut the eastern boundary of the extension area and protect a series of undated scowles. They are the only scowles known to be scheduled in their own right, although the field survey (AJA 2011) demonstrated that the visible extent of the scowles extended beyond the scheduled areas for two of these sites (1016899 and 1016900). These areas were subsequently excluded from the planning application area.

Occasional finds of a non-industrial nature have been made in the existing quarry, including three Neolithic flints retrieved during soil stripping associated with the originally permitted quarry area. Relict field boundaries were observed within the extension area during the field survey (AJA 2011) and along with a hollow-way are likely to date from the late medieval and/or post-medieval periods. Some of these features appear on plans and maps of the site dating to 1608, 1792 and 1884.

The area under investigation was previously open fields, which were forested at some time in the 19th Century through establishment of a number of tree plantations. Evidence of the previous use of the land as open fields is provided by a series of field boundary banks, and a number of areas where terracing may have occurred. The field in the far north of the survey is marked as *Windmille Field* on both the 1608 and 1792 maps, but no windmill is marked, suggesting the wind mill had gone out of use by 1608. The maps also show that the area was open fields, up until the 1st edition OS map, surveyed in 1879-80 and subsequent 2nd and 3rd editions, which all show the area was heavily planted with deciduous and coniferous woodland from this time on.

4.3 Current land-use

The woodland covering the area had been felled and cleared prior to each phase of the excavations commencing. Modern forest tracks also ran through the area.

5 Results

5.1 Structural analysis

The areas involved at each phase and the features recorded are shown in Figures 2 to 8 and Plates 1-22. Further details of results of the fieldwork and analysis are presented in Appendix 1.

Dating evidence from the site was very restricted and phasing below is based largely on the limited stratigraphy present or morphology.

5.1.1 Phase 1: Natural deposits

Natural deposits comprised a limestone brash (recorded in consecutive phases as contexts 1002, 2002, 3002 and 4002) which featured occasional patches of solid limestone bedrock (as quarried at the site) visible especially toward the east. Iron ore was visible associated with deposits of quartz in the natural limestone towards the east of the Phase 3 quarry area.

5.1.2 Phase 2: Subsoil(s)

The limestone natural was overlaid in places by a patchy and irregular silty clay (1001, 3001 and 4001) which varied in colour from brownish yellow to brownish red and through to a deep purple. This was up to 0.7m in depth in Quarry Phase 1 but only up to 0.3m in Quarry Phases 3 and 4.

Pieces of iron ore were identified in this subsoil. In the central part of the excavation area at the base of a natural slope, deposit (3001) was overlaid by a reddish-brown silty clay subsoil (3008) measuring up to 0.75m in depth.

5.1.3 Phase 3

Scowles

Four possible scowles were identified. With the exception of one, identified in the Quarry Phase 4 area, these were not visible as earthwork features prior to topsoil stripping.

The first (Scowle 1004/1007) measured approximately 10m in length, 3.10m in width and at least 1.20m in depth. It had water eroded edges through the natural limestone brash and was filled by a series of deposits (Figures 2 and 3: S.101 and 102; Plates 1 and 2). The lower deposit (1006/1009) comprised of limestone rubble in a reddish clay matrix, which was very similar to the natural deposit (1002). The upper fill (1005/1008) was a light grey brown silty clay deposit similar to the subsoil in the vicinity. It measured a maximum of 1.20m in depth and yielded a small piece of Roman pottery as well as a quantity of iron ore and occasional to moderate charcoal flecking.

The second (Scowle 2006) measured approximately 12m in length, 1.20m in width and at least 0.35m in depth (Figures 2 and 4: S.201; Plate 3). It was largely filled by a brownish red silty clay (2005) which was very similar to natural deposits. Towards the western end it was also filled by a reddish brown clayey silt (2004) which was very similar to the subsoil in the vicinity. This deposit yielded one piece of Roman pottery and a small amount of possible iron ore. It is not clear if this was the result of natural subsidence in deposit 2005 being filled with subsoil, or an attempt to develop the feature.

Scowle 2003, the third of these features identified, measured approximately 5.60m in width, 1.50m in depth and was exposed for approximately 13m at the southernmost extent of the Phase 2 excavation area (Plate 4). It was formed in solid bedrock and filled with reddish silty clay. There was no evidence of any disturbed deposits and it does not appear to have been exploited.

Lastly, in the northeast corner of Phase 4, a scowle (Scowle 4009) and an apparently associated series of banks enclosing it were identified (Figures 2 and 5; Plates 5 and 6). The scowle had been

noted by the ARMP (ref: F13) and measured approximately 35m in length and 1.5m in depth. A bank (4003) is visible to the west of the scowle and a second possible bank (4008 recorded as F12 by the ARMP) was also recorded to the south of the scowle during the watching brief, whilst five hand dug test pits were excavated within the scowle area. Three test pits (A, B and C) produced iron slag and haematite within topsoil infilling the upper parts of the depression (4010, 4012 and 4014), however, unfortunately no dating evidence was recovered.

Earthwork features

Hollow-way

Running across the quarry was a hollow-way (Plates 7-14). This hollow-way had been identified in 1992 (GHER 13932), and recorded in the ARMP (F7; AJA 2011). During fieldwork, this was recorded in Phase 1 in 2012 (1003/1013; Figure 6: S.104), in Phase 3 (3007; Figure 7: S.203) and in Phase 4 (4007; Figure 8: S.301, S.302 and Profile). The feature was north-west to south-east aligned and was of variable width and depth. It did not appear to be a deliberately 'cut' feature and had probably formed as a result of erosion during regular use a route way as is typically the case for such features. In both the Phase 3 and 4 areas the surface of the limestone brash appeared to have been worn smooth and where the hollow-way crossed areas of softer clay, stone had been laid to consolidate the base of the feature (3006; Figure 7: S.203; Plate 11; 4006; Figure 8: S.301; Plates 12 and 13). Slight banks were visible on both sides, with that to the east being slightly more pronounced. No finds were recovered from the hollow-way in sections recorded in Phases 1 or 3, but in Phase 4 the patches of stone cobbling noted in the centre of the hollow-way (4006) included some pieces of iron slag.

Earthwork Banks

Crossing the line of the hollow-way in the central part of the watching brief area (at the north of Phase 3/south of Phase 4) was a bank that ran east to west across much of the Phase 4 area and beyond. To the west about 20m beyond the hollow-way this bank turned a corner and ran south across the Phase 3 area. This was not, however, recorded in plan running any further south than the southern limit of Phase 3. This bank was recorded in the ARMP (Figure 2: F9 and F12) and then at several locations during the watching brief (contexts 1010, 3004, 3005 and 4008; Figure 6: S.103 and Figure 7: S.203; Plates 15-19). This measured approximately 4.50m in width and 0.40m in height, although it was heavily truncated by tree planting in the eastern part of Phase 4. A second bank (F8; 3003; Figure 2 and 7: S.202; Plate 20) intersected the corner of F9 and F12 and ran west from it. This measured up to 0.5m in height and 4m in width. Lastly, in the north-east corner of Phase 4, a further bank (4003) ran north from F12 thus enclosing the area occupied by Scowle 4009 (Figure 2 and 8: S.300; Plates 21 and 22). All observed sections of these banks revealed them to be formed of brownish red silty clay with no evidence of structural remains (e.g. walls), although irregular dumps of stone were present, especially around the scowle.

5.1.4 Phase 4: Modern deposits

The site was overlaid by topsoil (1000/2000/3000/4000), which was very variable in depth measuring between 0 and 0.45m in depth. Occasionally the limestone bedrock was visible penetrating through the topsoil. The historic earthwork banks were occasionally truncated by the modern forest tracks.

5.2 Artefactual analysis, by Robert Hedge

5.2.1 Quantification

The artefactual assemblage recovered is summarised in Tables 1 and 2. The majority of the assemblage comprised slags and other residues from ore extraction and iron smelting. A very small quantity of Roman and medieval pottery was also recovered. The group came from 16 stratified contexts and could be dated from the Roman period onwards (see Table 1). Using pottery as an index of artefact condition, this was generally poor: all three sherds were abraded.

period	material class	material subtype	object specific type	count	weight (g)
Roman	ceramic	earthenware	pot	2	21
Roman to medieval	organic	charcoal		1	1
Roman to medieval	slag	slag(Fe)	internal flow/furnace bottom	5	558
Roman to medieval	slag	slag(Fe)	smelting slag	290	11050
Roman to medieval	stone	?ore	?roasted ore	10	689
Roman to medieval	stone	?ore	unident	2	785
Roman to medieval	stone	ore	haematite	9	3761
late medieval	ceramic		pot	1	1
			Totals	320	16866

Table 1: Quantification of the assemblage

5.2.2 Analysis

Roman

Two undiagnostic body sherds of Black-burnished ware (BB1: Worcs. fabric 22) were recovered from fills (1005) and (2004) of scowles [1004] and [2006].

Roman to medieval

The majority of the assemblage comprised material associated with the extraction and smelting of iron ore; smelting slags exhibiting characteristics such as high residual iron content, and large accumulations of dense slag likely to be the remnants of furnace bottoms, are finds usually associated with 'bloomery' smelting in small slag-tapping furnaces (Crew 1995, 2-3),. This method is typical of both Roman and medieval ironworking in this region.

The presence of blocks of material thought to be roasted ore may indicate that ore preparation was taking place in the near vicinity. Several unusual ores were noted, including a particularly dense haematite bearing some similarity to Swedish ores (K Andrew, *pers. comm.*). Given the density and variety of the local resources, however, all the material assessed is thought to be local in origin.

Late medieval

A single sherd of late-15th/16th century Cistercian-type ware (Worcs. fabric 78) was recovered from subsoil deposit (4001).

5.2.3 Site dating

Unfortunately, as much of the ironworking residue is not easily dateable through macroscopic inspection, much of the assemblage cannot currently contribute anything more than a broad date of Roman to medieval, based on the known date-range of bloomery smelting.

Fills (1005) and (2004) of Scowles [1004] and [2006] contained Roman pottery and may therefore have been open during this period, though the potential for residual material being deposited within the scowle at a later date remains, particularly in the light of the abraded condition of the sherds.

5.2.4 Discussion

The assemblage is consistent with small-scale iron ore extraction, processing and smelting activity. Although Roman activity in the vicinity of the site is attested by the presence of pottery, the bloomery-type smelting activity is not closely dateable and can currently only be ascribed a broad Roman-medieval date on the basis of artefacts.

context	material class	material subtype	object specific type	count	weight(g)	start date	end date	TPQ date range	
1005	stone	?ore	?roasted ore	10	689	unda	ited	120 /10	
1005	ceramic	earthenware	pot	1	1	120	410	120 - 410	
	slag	slag(Fe)	smelting slag	1	68	43	1600		
2001	slag	slag(Fe)	smelting slag	1	173	43	1600	43 - 1600	
	slag	slag(Fe)	smelting slag	5	561	43	1600		
2002	stone	ore	haematite	1	509	unda	ited	undated	
2004	stone	?ore	unident	2	785	unda	ited	120 410	
2004	ceramic	earthenware	pot	1	20	120	410	120 - 410	
2002	stone	ore	haematite	2	34	unda	ited	undeted	
3002	stone	ore	haematite	2	2524	unda	ited	undated	
4001	ceramic		pot	1	1	1475	1600	43 - 1600	
4002	slag	slag(Fe)	smelting slag	1	75	43	1600	43 - 1600	
4003	slag	slag(Fe)	internal flow/furnace bottom	3	404	43	1600	43 - 1600	
	stone	ore	haematite	2	221	unda	ited		
	slag	slag(Fe)	smelting slag	33	989	43	1600		
4006	slag	slag(Fe)	smelting slag	20	763	43	1600	43 - 1600	
4009	slag	slag(Fe)	internal flow/furnace bottom	2	154	43	1600	43 - 1600	
	slag	slag(Fe)	smelting slag	3	94	43	1600		
	stone	ore	haematite	1	440	unda	ited		
4010	slag	slag(Fe)	smelting slag	2	46	43	1600	43 - 1600	
4012	slag	slag(Fe)	smelting slag	1	18	43	1600	43 - 1600	
4015	slag	slag(Fe)	smelting slag	27	1276	43	1600	43 - 1600	
4016	organic	charcoal		1	1	unda	ited		
	slag	slag(Fe)	smelting slag	16	884	43	1600	43 - 1600	
	stone	ore	haematite	1	33	unda	ited		
4018	slag	slag(Fe)	smelting slag	49	3141	43	1600	43 - 1600	
4020	slag	slag(Fe)	smelting slag	131	2962	43	1600	43 - 1600	

Table 2 Summary of context dating based on artefacts

A more detailed assessment of slag types and quantities, and microscopic analysis by a specialist in bloomery slags, may help to refine our understanding of the dating and character of Roman and medieval ironworking in the Forest of Dean. In the light of this, although the slag assemblage is unlikely to be of long-term value for retention, the material will be retained pending subsequent phases of work at Stowfield Quarry, following which it may be desirable for further specialist analysis to be undertaken.

6 Discussion and synthesis

6.1 Scowles, banks and hollow-way

The hollow-way and associated banks recorded during the period 2012-16 are understood to represent part of a former field system pre-dating afforestation of this area. Historic maps dating from 1608 and 1792 show the majority of the banks and the hollow-way with all showing on both the earlier and later dated maps, with the exception of one (Bank 1010; F9) which is apparently a later addition as it only appears on the 1792 map. The hollow-way and field systems for the large part are considered liable to have their origins in the medieval period with the hollow-way most probably running north towards Staunton where it would join the Monmouth Road.

The early mapping also shows an irregular field boundary to the east of the hollow-way and this can probably be correlated with the banks enclosing the scowle in the north-east part of the watching brief area. LiDAR survey mapping being examined as part of an ongoing major survey of the Forest of Dean (the Forester's Forest) also records the hollow-way, banks and the largest of the scowles, all of which are clearly visible (Andy Walsh pers comm).

Dating of the scowles and determining whether these examples had been exploited for iron ore in the past is more problematic. Two of these features, including the largest and most extensively investigated (Scowle 4009) produced no dating evidence and although small amounts of Roman pottery were recovered from two (Scowles 1004 and 2006), these sherds were highly abraded and should not be taken as definitive dating evidence. Similarly, although the presence of iron waste and ore (possibly roasted) both within Scowle 1004/1007 and Scowle 4009 and in the matrix of surfacing located in some sections of the hollow-way may indicate that these features were contemporary, given the near ubiquity of historic deposition of iron working waste across the Forest of Dean caution must be exercised in drawing too heavily on this association. This point is emphasised by the recovery of ironworking waste from topsoil and subsoil deposits across the site. Lastly, although elements of the field system appear to enclose the scowle and thus also may indicate exploitation in the medieval period, it is also possible that the hard rocky outcrop and hollow of the scowle were demarcated within the late medieval/early post-medieval landscape simply because they were not suited to agricultural activity and posed a potential hazard to livestock. This suggestion was also made within the EIA (WYG 2009) which proposed that the boundaries demarcating the very clearly defined and substantial set of scheduled scowles immediately to the east of the guarry served to keep livestock away from them.

In conclusion, the hollow-way and banks recorded have been shown to have formed part of a late medieval to early post-medieval field system pre-dating use of the area for forestry. In contrast, the scowles recorded in the quarry extension remain of indeterminate date and it is not certain that these particular examples were ever exploited. This is, however, not unusual, the recently published research within the Forest of Dean noting the difficulties in understanding the formation and use of these features, the paucity of excavated examples and the limitations of the dating evidence available for their exploitation (Hoyle 2007, section 4.1.6.1, 4.1.6.2 and 4.1.6.3; Hoyle 2017, section 8.1.3) as well as highlighting the need for further research (Hoyle 2017, section 9.12.2).

6.2 Post-medieval / modern features

The earthwork bank running southwest to northeast (3003/4008) was truncated by two modern forestry commission tracks. The area had also been utilised as a tree plantation and there was heavy disturbance to some of the earthworks by tree roots, particularly of the earthwork bank (4008) in the northwest corner of the site. Modern footpaths also ran around the extremities of the site.

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 monitoring was undertaken between 2012 and 2016 on behalf of Tarmac Limited at Stowfield Quarry, Coleford, Gloucestershire (NGR ref SO 5550 1179). Phase 1 was undertaken by Cotswold Archaeology, with Phases 2-4 monitored by Worcestershire Archaeology. Surveys were undertaken of earthwork features prior to maintenance of a watching brief to monitor topsoil and subsoil stripping during ground preparation works for quarrying.

A hollow-way, several earthwork banks and four scowles were recorded. Although very little dating evidence was recovered, iron slag and ore (haematite) was found over much of the area in both

the investigated scowles and intermixed with cobbles laid in the base of parts of the hollow-way. A very small amount of abraded Roman pottery was also present in two of the scowles.

Historic mapping indicates that the hollow-way and banks recorded formed part of a field system that had been established by the early 17th century, but which have probable medieval origins. The presence of iron slag in both the scowles and the hollow-way surfacing allied to the demarcation of one of the scowles within the field system may indicate that the scowles were exploited at the same time as the field system was in use. This is, however, by no means certain as Roman pottery was also present in two of the scowles and both iron waste and Roman pottery are widely recovered across the forest and in neither case were sufficient quantities present to enable any firm conclusions to be drawn either about dating of the scowles or indeed whether they had been exploited in the past.

8 Acknowledgements

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Figures



Location of the site



Plan of earthwork feaures



Scowle 1007: section 101 and 102



Plan and section of 2004 and 2005



Plan of scowle 4009

Figure 5



Section 103 and 104



Sections of holloway 3004 and bank 3004

Figure 7



Plates



Plate 1: Scowle 1004/1007. South-east end. Photo looking north-west



Plate 2: Scowle 1004/1007. Central section. Photo looking south-east



Plate 3: Scowle 2006. Photo looking east



Plate 4: Scowle 2003. Photo looking west



Plate 5: Scowle 4009 in 2015 survey; pre-excavation; and during site strip in 2016. View west.



Plate 6: Scowle 4009.Test pit B. Photo looking west



Plate 7: Hollow-way in Phase 1 (1003/1013). Photo looking north-west



Plate 8: The hollow-way in Phase 3 (3007), prior to stripping. Photo looking north-west



Plate 9: The hollow-way in Phase 4 (4007), prior to stipping. Photo looking north-west



Plate 10: Hollow-way 3009/4009 during stripping. View north-west.



Plate 11: In places in Phase 3 a worn surface (3006) was visible in the base of the hollow-way. Photo looking north-west



Plate 12: In places along Phase 4 there were areas of cobbling (4006) within the base of hollowway. View north-west.



Plate 13: Close up of cobbled surface within hollow-way. Occasional iron slag inclusions were present.



Plate 14: Section 303 of the hollow-way at northern extent of Phase 4. View north-west.



Plate 15: Bank 1010 prior to the stripping of the Phase 3 area. Photo looking south-west



Plate 16: Bank 1010 during the stripping of the Phase 3 area. Photo looking south-west



Plate 17: Bank 4008 prior to stripping. View west.



Plate 18: Bank 4008 heavily disturbed by trees. View east.



Plate 19: Bank 4008 showing machine slot and tree disturbance. View west.



Plate 20: Bank 3003 prior to stripping area. It had been truncated by a modern forestry track. Photo looking west



Plate 21: Bank 4003 prior to excavation. View north.



Plate 22: Bank 4003. Machine section (S.300). View north-east towards Scowle 4009

Appendix 1 Trench descriptions

Phase 1 (2012-2013 Cotswold Archaeology)

Area:0.88 hectares

Context	summary:				
Context	Feature	Context	Description	Height/ depth	Interpretation
1000	Layer	Layer	Firm dark brownish grey silty clay	0.20 - 0.45	Forest topsoil
1001	Layer	Layer	Firm mid reddish brown silty clay	0.05 - 0.30	Clay subsoil overlying limestone brash
1002	Natural	Layer	Compact mid reddish brown silty clay	1.00	Limestone Brash natural overlying Limestone bedrock
1003	Trackway	Structure			Number assigned to Hollow way running SE - NW
1004	Scowle	Cut		2.70	Cut of possible scowle. Irregular oval, partly geologically formed
1005	Fill	Fill	Firm light greyish brown silty clay		Silted up upper fill of scowle containing iron slag and ore. Natural?
1006	Fill	Fill	Moderately compact mid brownish red silty clay		Limestone rubble lower fill of scowle
1007	Scowle	Cut			Cut of possible scowle. Irregular oval, partly geologically formed
1008	Fill	Fill	Firm light greyish brown silty clay		Silted up upper fill of scowle containing iron slag and ore. Natural?
1009	Fill	Fill	Moderately compact mid brownish red silty clay		Limestone rubble lower fill of scowle
1010	Bank	Structure	mid reddish brown silty clay	0.48	Earthwork bank dated to 1608 - 1792 (F9)
1011	Natural	Layer	Compact		Limestone bedrock
1012	Bank	Structure			Bank along NE edge of Hollow way 1003
1013	Trackway	Cut			Cut number for Hollow way 1003

Phase 2 (Worcestershire Archaeology 2014)

Area: 1.28 hectares

Context	Context summary:						
Context	Feature	Context	Description	Height/ depth	Interpretation		
2000	Layer	Layer	Firm dark greyish brown silty clay	0.20 - 0.45	Forest topsoil		
2001	Layer	Layer	Firm light brown silty clay	0.10 - 0.50	Clayey Subsoil interface		
2002	Natural	Layer	Compact mid reddish brown silty clay	1.00	Limestone Brash natural overlying Limestone bedrock		
2003	Scowle	Cut		1.50	Linear fault in bedrock with natural fill. Unexploited scowle		
2004	Natural	Fill	Soft light reddish brown clayey silt	1.50	Subsoil natural fill of unexploited scowle		
2005	Natural	Fill	Firm mid brownish red silty clay		Natural fill of geological fissure in limestone bedrock		
2006	Natural	Cut			Natural fissure in Limestone bedrock filled by a natural clay deposit		

Phase 3 (Worcestershire Archaeology Service 2015)

Area: 1.08 hectares

Context	Context summary:						
Context	Feature	Context	Description	Height/ depth	Interpretation		
3000	Layer	Layer	Firm dark greyish brown silty clay	0.20 - 0.45	Forest topsoil		
3001	Layer	Layer	Firm light brown silty clay	0 - 0.80	Clayey Subsoil interface		
3002	Natural	Layer	Compact mid reddish brown silty clay	1.00	Limestone Brash natural overlying Limestone bedrock		
3003	Bank	Structure	Firm mid brownish red silty clay	0.36	Earthwork bank running E- W (F8). Frequent dumped stones, Unclear relationship with 3004.		
3004	Bank	Structure	Firm mid reddish brown silty clay	0.48	Bank along W side of Holloway 3007		
3005	Bank	Structure	Firm dark purpleish brown silty clay		Bank on East side of hollow way 3007		
3006	Surface	Structure	Compact blueish grey		Worn stone surface in the base of Hollow way 3007		
3007	Trackway	Cut			Cut number for Hollow way F7		
3008	Layer	Layer	Firm mid reddish brown silty clay	0.00 - 0.50	Clay subsoil overlying limestone brash		

Phase 4 (Worcestershire Archaeology Service 2016)

Area: 1.75 Hectares

Context	t summarv:				
Context	Feature	Context	Description	Height/ depth	Interpretation
4000	Layer	Layer	Firm dark greyish brown silty clay	0.20- 0.45	Forest topsoil
4001	Layer	Layer	Firm light brown silty clay	0.10 - 0.50	Clayey Subsoil interface
4002	Natural	Layer	Compact dark reddish brown silty clay	1.00	Limestone Brash natural overlying Limestone bedrock
4003	Bank	Structure	Moderately compact mid reddish brown clayey sand	0.65	Rare slag, Steep Bank running N-S enclosing Scowle 4009 to the east. Medieval field boundary and terracing.
4004	Bank	Structure	Firm mid yellowish red silty clay	1.30	Bank along W side of hollow way 4007
4005	Bank	Structure	Firm dark purpleish brown silty clay	0.70	Bank on East side of hollow way 4007
4006	Surface	Structure	Compact blueish grey		Worn cobbled surface in the base of Hollow way 4007. 20m long, 1.00m wide and 0.10m deep. Contains occasional iron slag pieces.
4007	Trackway	Cut			Feature number for Hollow way F7 from Staunton to river Wye.
4008	Bank	Structure	Firm mid brownish red silty clay	0.36	Earthwork bank running E- W (F12). Joins up with 3003 (F8). Ephemeral at Eastern end. Damaged by later tree plantations.
4009	Scowle	Cut			Natural stone outcrop scowle found in 2015 survey and F13 on Management Plan.
4010	Topsoil	Fill	Firm dark greyish brown silty clay	0.28	Forest topsoil within Scowle test pit A. Iron slag inclusions.
4011	Natural	Fill	Compact dark reddish brown silty clay		Weathered natural overlying Limestone brash with frequent rooting. Within Scowle test pit A.
4012	Topsoil	Fill	Firm dark greyish brown silty clay	0.28	Forest topsoil within Scowle test pit B. Iron slag inclusions.

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4013	Natural	Fill	Compact dark reddish brown silty clay		Weathered natural overlying Limestone brash with frequent rooting. Within Scowle test pit B.
4014	Topsoil	Fill	Firm dark greyish brown silty clay	0.07	Forest topsoil within Scowle test pit C. Iron slag inclusions.
4015	Natural	Fill	Compact dark reddish brown silty clay		Weathered natural overlying Limestone brash with frequent rooting. Within Scowle test pit C.
4016	Layer	Layer	Compact brownish red clay	0.05	Red clay underlying cobbling 4006 within Hollow way.
4017	Bank	Structure			High bank on Lower forestry track. Creates terracing.
4018	Natural	Layer	Compact dark reddish brown silty clay	1.00	Limestone Brash natural overlying Limestone bedrock
4019	Deposit	Fill			Patch of iron slag and charcoal on west bank of hollow way 4007
4020	Deposit	Fill		0.20	Patch of cobbles and slag on On west side of hollow way

Appendix 2 Technical information The archive (site code: P4286)

The archive consists of:

- 46 Context records AS1
- 10 Field progress reports AS2
- 6 Photographic records AS3
- 428 Digital photographs
- 2 Drawing number catalogues AS4
- 12 Scale drawings
- 3 Context number catalogues AS5
- 2 Trench record sheets AS41
- 1 Box of finds
- 1 Copy of this report (bound hard copy)

The project archive is intended to be placed at:

Dean Heritage Centre Camp Mill, Soudley, Forest of Dean, Gloucestershire GL14 2UB

Tel: 01594 822170