TIRLEY

PRESSURE REDUCTION INSTALLATION

Archaeological Analysis Archive Report

Prepared by

NETWORK ARCHAEOLOGY LTD

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NON-TECHNICAL SUMMARY

This archive report presents the analysis of the results of archaeological investigations undertaken at the Tirley Pressure Reduction Installation (PRI) site, close to the village of Tirley, in Gloucestershire (NGR 381876 229520).

Between 2010 and 2011 a suite of archaeological works was undertaken in advance of construction of a Pressure Reduction Installation, as part of the Felindre to Tirley natural gas pipeline scheme. These works included geophysical survey, evaluation trenching, watching brief and excavation which identified and recorded archaeological remains ranging in date from the prehistoric through to the post-medieval period with an apparent focus of activity centred around the Roman period.

Flint tools indicated that there had been either low density or transient activity taking place within the proposed development area from the middle Neolithic period through to the early Bronze Age. No further prehistoric features or finds were positively identified and it was not until the early Roman period that human activity resumed within the Tirley site.

Whilst there was some evidence of early Roman agriculture, it was sometime during the 2nd/3rd century AD that activity within the Tirley site intensified when a rectilinear enclosure and a more extensive rectilinear field system was installed. The enclosure probably represented a boundary surrounding a small domestic dwelling. From the pottery evidence, it appeared that the dwelling was probably occupied from around the 2nd century through to the early 3rd century AD.

The evidence uncovered indicated a low status farmstead operating at a level just above subsistence. At first glance, the settlement appeared to be remote and isolated – but there is some evidence that there may be associated settlements nearby – making it part of an 'aggregate' village. Regardless of this, the settlement was rural and existed towards the very edge of the wider Empire.

Sometime between the early and mid 3rd century AD the site was abandoned, likely due to combination of factors, possibly including local

flooding as well as larger socio-economic changes associated with the decline of the Roman Empire, both affecting the economic viability of the settlement. This period of abandonment continued through to at least the medieval period when a plough furrow, probably part of a more extensive area of ridge and furrow, indicated renewed arable activity. From this time, right through to the present day, the Tirley site appears to have been used as agricultural land.

1 INTRODUCTION

1.1 About the Project

This report presents an analysis of the results obtained during archaeological works undertaken in advance of the construction of a Pressure Reduction Installation (PRI) close to the village of Tirley, Gloucestershire (Figure 1).

The function of the PRI was to filter, meter and reduce the pressure of in-coming gas before relaying it into the existing National Transmission System (NTS) pipeline and was a part of the larger South Wales Gas Pipeline project. The work was commissioned by Murphy Pipeline Ltd on behalf of National Grid. The archaeological contractor was Network Archaeology Ltd.

The PRI was situated approximately 1km east of the villages of Corse and Staunton, *c.*1.5km north west of the village of Tirley, and south of the Newhall Brook at the edge of the historic floodplain of the River Severn which lay 3km to the south east (Figure 1). The PRI was located within open arable farm land over two soils associations (Worcester and Whimple 3), both of which were slowly permeable, clayey soils (SSEW 1983), derived over Mercia Mudstone Group with no drift deposits (BGS 2008). Local hydrogeology resulted in low rates of ground infiltration and rapid surface run-off into field ditches which drained east into the River Severn via the Newhall Brook.

The site of the PRI had been chosen as the result of a lengthy selection and planning process, and comprised an area totalling 16.1 ha across two fields, including not just the footprint for the PRI, but also access tracks, car parking, the construction compound, working areas and bunding (Figure 2).

Monitoring of all groundworks associated with the construction of the PRI was undertaken between March and August 2011 by a team of between one and fifteen people as the demands of the project varied over time.

1.2 Archaeological Background to the Tirley Site

Prior to the fieldwork taking place, an Environmental Statement presented the results of two key phases of archaeological work (Mouchel Parkman 2008). This included:

- Desk-based assessment and site visit (Network Archaeology 2008iii);
- Geophysical survey (Bartlett-Clarke Consultancy 2008ii and 2010).

The only sites identified within the study area (by the Desk Based Assessment) were post-medieval historic boundaries on either side of Lime Street and the B4211, together with a post-medieval grade II listed milepost and extant modern orchards at Flat Farm and near Newlands, that had a Post- Medieval origin.

Also of particular significance was the boundary that ran between the parishes of Corse and Tirley. Likely to be at least Medieval in origin, parish boundaries such as this can often date back even further into the preceding Saxon period. Beyond that, evaluation during works associated with the original Corse PRI identified a ditch and possible watercourse (SMR 29036) both of undetermined date (Network Archaeology Ltd 2007).

The field reconnaissance identified only a 19th century stone culvert and confirmed the presence of a field boundary, initially identified on a 1798 enclosure map.

The results of the geophysical survey appeared to largely indicate only natural or non-archaeological anomalies, with a few weak, possibly archaeological, features and faint cultivation marks.

As a result of the Environmental Statement, a programme of evaluation trenching was undertaken to assess the potential of the site prior to construction. This comprised a series of 19 trenches across the two fields of the PRI development. Some trenches were targeted on the results of the geophysical survey where appropriate, whilst others were randomly positioned to evenly investigate the apparently blank areas (Network Archaeology 2011i).

The trenches produced a total of 47 features, though these were predominantly of apparently natural origin. The few archaeological features and finds that were noted were concentrated in three locations, these consisted of a layer of dark greyish silts in the north west of the western field which produced a Neolithic polished axe; a series of Romano-British features just south east of the centre of the western field; and further Romano-British features in the south east corner of the eastern field.

Given the wide-spread nature of these features across both fields, and the apparent similarity in date between the Romano-British finds from the western field and the eastern field, the decision was made by Gloucestershire County Council Environment Department (GCCED) to place a condition upon the planning consent requiring that a controlled strip of the entirety of both fields be undertaken. The results of this work are the focus of this report.

2 METHODOLOGY

2.1 Overview

2.1.1 Non-Intrusive Survey

The Desk Based Assessment (DBA) collected data, from a wide variety of sources, including Gloucestershire tithe and historic maps, Gloucestershire SMR, English Heritage National Monuments Register, Scheduled Ancient Monuments and Listed Buildings registers. This information was collected for an area with a 1km diameter, focused upon the Tirley site.

The field reconnaissance took place within the two plots (fields) within which the Tirley site was located. This reconnaissance involved the visual examination of the plot, with the purpose of recording extant earthworks, vegetative anomalies, soil discolourations, structures, finds concentrations, land use, visible geology, general topographical variations, plot boundaries and health & safety issues. Observations were recorded on pro-forma Plot Record Sheets.

The information collected by the DBA and the field reconnaissance was then examined and synthesised into the final report.

The geophysical survey consisted of both magnetometer survey and background magnetic susceptibility testing. The magnetometer readings were collected along a number of transects placed across the plot, at 1m intervals using Bartington fluxgate gradiometers. Magnetic susceptibility readings were taken at 30m intervals using a Bartington MS2 meter and field sensor loop. Both surveys were located by reference to a temporary site grid, located by means of a sub-1m accuracy GPS system. The results of the survey were then digitally processed and interpreted and presented in a standalone report.

2.1.2 Evaluation and Controlled Strip

In both these phases of work the mechanical removal of the overburden (topsoil and subsoil) was carried out under the continuous direct supervision

and control of suitably experienced archaeologists. All mechanical excavation was undertaken with a 360^{o} mechanical excavator fitted with a 2m wide toothless ditching bucket.

The mechanical removal of the overburden proceeded until the top of the first significant archaeological horizon was reached, or the natural substrate, whichever was encountered first.

During the evaluation phase the removal of the overburden (and subsequent exposure of the underlying archaeological layer / natural substrate) was undertaken at 19 targeted locations across the Tirley site – creating 19 evaluation trenches, each 50m long and 2m wide.

During the controlled strip phase, overburden was mechanically removed from all areas proposed for construction of the PRI. This included the footprint of the proposed PRI, access tracks, site bunding areas, site compound, car parking areas and other lay down areas, as required.

Following the stripping of overburden, the archaeological features exposed were located on the ground using a Total Station Theodolite (TST), Global Positioning System (GPS). These features were then cleaned by hand and a sample of each excavated – this sample sufficient to understand the nature and character of the feature, and its stratigraphic relationships with associated features and deposits.

Further details of the methodologies applied during these phases of work can be found in the Written Schemes of Investigation, Outline Methodologies and Method Statements produced for these works (Network Archaeology 2011ii, 2008iv and Bartlett - Clarke Consultancy 2008iv respectively).

2.2 Efficacy of Evaluation Methodologies

Both the geophysical survey and the trial trench evaluation appeared to be unsuccessful in identifying the extensive archaeological remains that were eventually uncovered by the Controlled Strip. It is worth assessing why this may have been in order that the suitability of the methodologies of archaeological evaluation (both intrusive and non intrusive) in this region can

be examined and amended in order to make them more successful in the future.

In terms of the geophysical survey, the main reasons for the failure of this evaluation method to identify buried archaeological remains would seem to have been;

1. Interference from high voltage overhead electric cables, which ran (west to east) across the site in the vicinity of what would eventually be identified as the Roman 'settlement core' of the site.

2. Extensive ground disturbance, again running west to east across the site, at two locations. One on the northern edge of this core, the other *c.* 30m to the north of this. This disturbance was due to the presence of two existing gas pipelines (Numbers 2 and 28 feeder connections), the installations of which had disturbed an area of ground approximately 10m wide (in each instance) running across the width of the site.

3. The fills of many of the features (particularly the smaller field enclosure features) was later shown to be similar in nature to the natural substrate, thus the geophysical survey equipment found it difficult to differentiate between the two.

In terms of the trial trench evaluation the main problem factors were;

1. Placement of the trenches. With little useful information to guide the layout (from the DBA or geophysical survey) many of the trenches were simply positioned to test apparently blank areas.

2. Many of the smaller field boundary gulleys were initially dismissed as modern field drains, as it was very difficult to visually distinguish between the two; the modern field drains were similar in size, alignment and general appearance to the field boundaries. This was compounded by the fact that the first few which were sample excavated proved to be land drains thereby adding to the belief that all features of this type were the same, which later proved not to be the case.

3. As many of the feature fills were very similar in nature and appearance to the natural substrate it meant that it was very difficult to recognise man-made features, at least at first. It became apparent during the controlled strip and subsequent excavation that as the features dried out they started to become more differentially visible. However this took time, time which was not always available during the evaluation, and hence some features were certainly missed at this stage.

4. Only a relatively small percentage (1.6%) of the total proposed development area was examined as part of the trial trench investigations.

Thus, it can be seen that a combination of external factors (power lines, previous ground disturbance) and geological factors combined to drastically reduce the effectiveness of the evaluation techniques. In addition, the fact that the desk-based assessment DBA had indicated that there was likely to be little of archaeological interest at the site, meant that the apparent negative results of the evaluations were not questioned.

There are useful lessons to be learnt from the above, specifically:

1. The commissioning of a geophysical viability report which considers the geology and soils, external factors such as over head lines and buried cables, and any other factors which might adversely affect the results of geophysical survey. Particular attention should also be given to the success of geophysical survey on the same or similar local geologies and geomorphologies, by comparing the results of intrusive work (such as evaluation and excavation) to the results of previous geophysical survey at the same site. In the event that geophysical survey takes place in adverse conditions, careful consideration should be given as to how much confidence there is in any negative results.

2. In conditions where the use of geophysical survey is considered unviable, consideration should be given to alternatives evaluation methods, such as field walking or intensive trenching.

3. Where non-intrusive surveys and evaluations (such as desk-based assessments, fieldwalking and geophysical survey) have returned inconclusive results, it may be appropriate to consider expanding the scope and intensity of intrusive trial trench evaluation. This may best be achieved by increasing the evaluation percentage of the PDA. Typical percentages are in the range 2% – 5%; in such circumstances it may be worth considering ensuring that the upper range of this is evaluated, or, in exceptional cases, even going beyond this.

4. Undertake preliminary targeted investigations of feature types/groups and any unusual features, where possible, prior to finalising the overall strategy. Do not assume, for instance, that all similar feature types are the same (e.g. in this case, a large number of assumed drains turned out to be part of the Roman agricultural field systems).

5. Where time permits, apparently “blank”, or archaeologically uncertain trenches, or such portions of trenches which otherwise contain archaeology, should be left open for as long as possible (rather than promptly backfilled) to see if hitherto unseen features weather out. Trenches which contain archaeology tend to be left open longer as a matter of course, whilst the visible archaeology is dealt with. This provides an opportunity for the content of these trenches to be periodically re-evaluated.

The implementation of these adjustments to evaluation methodology may increase the likelihood of the evaluation meeting its stated objectives.

3 OVERVIEW OF ARCHAEOLOGICAL FINDINGS

3.1 Results of the Archaeological work

The archaeological remains discovered by the fieldwork had two major components. Much of the Tirley site, particularly the area to the north of the existing pipelines, comprised of a grid-like pattern of intersecting, loosely N-S and W-E aligned gulleys and ditches, elements of which appeared to continue to the south of the pipeline. These ditches formed an extensive long lived, field system. On the southern edge of this field system was a large, rectangular shaped ditched enclosure, with a number of associated internal and immediately external features, probably representing the remains of a small settlement, such as a single farmstead (figure 3).

Six broad phases of activity have been identified. Phases 1, 2-5 and 6 have been identified on ceramic grounds, whilst phases 2-5 (2^{nd}/3^{rd} century A.D.) have been differentiated on the basis of the recorded stratigraphy:

- Phase 1: Prehistoric - Neolithic/Early Bronze Age
- Phase 2: Earliest Roman Activity
- Phase 3: Roman Enclosure & Field System
- Phase 4: Roman Extended Field System
- Phase 5: Roman Decline & Disuse
- Phase 6: Post-Medieval

Those features which have not been attributed to one of the above phases have been discussed under the heading ‘Unphased Features’ in section 3.1.7.

3.1.1 Phase 1: Prehistoric - Neolithic/Early Bronze Age

During the evaluation stage of the project, a small quantity (20 pieces) of prehistoric material was recovered, including a middle Neolithic polished flint axe and some later Neolithic flint tools. Of these, only the flint axe was from a sealed context: found beneath what was to be identified during later excavation as layer 10051, a possible former marshland deposit in the north west corner of the western plot (Network Archaeology 2011i). The rest of the material was found from within the topsoil and subsoil. During the excavation work, layer 10051 was further exposed, and its extents defined. However, as this area of the site would not be affected by construction work, the layer was not removed, thus preserving any further archaeological remains below it *in situ.*

During the excavation a further 15 flints of prehistoric nature (seven of which were definably late Neolithic or early Bronze Age) were recovered – consisting of knives, scrapers, piercers as well as cores and debitage. Four of these worked flints were residual material present in later features (pit **10307**, **10030** and enclosure ditch **10708**), whilst all but one of the remainder were topsoil and subsoil finds (as with the evaluation), predominantly from the eastern field and likely dispersed by later agricultural activity. The only prehistoric artefact from a *secure* context recovered during the excavation was a Neolithic flake from pit **10018**, though clearly this too could be residual in a later feature. However, given that the pit lies away from the main focus of Roman activity and predated the medieval activity, it was felt that a prehistoric origin for this particular feature was reasonable.

Pit **10018** itself was located near the southern edge of the eastern field (figure 7), and was a steep sided, sub circular pit about 0.47m in diameter, with a single fill, which produced a flint flake with a faceted butt, dated as Neolithic or early Bronze Age.

One further feature, allocated to this phase on stratigraphic grounds, was pit **10614**, though no finds were recovered from any of its three fills. The pit was located within the later phase 3 enclosure, and was truncated by phase 2 ditch **10600** (Figure 6)**.** The pit measured 1.37m x 0.34 x 0.26m deep, and was probably intended for waste disposal.

This activity, whilst very limited in scope, appeared to point toward local small-scale or transient activity during the late Neolithic/early Bronze Age period. No opportunity arose to further investigate the deposits beneath layer 10051 and therefore the events relating to the Neolithic axe and any related activities of this period remain uncertain.

3.1.2 Phase 2: Earliest Roman Activity

It is during the early Roman period that human activity at the Tirley site changed from an apparently sparse prehistoric exploitation of the landscape, to a more settled, agrarian economy. This phase of use did not appear to include any obvious settlement, which is assumed to have existed outside the area of investigation. Instead, it was characterised by a number of small to moderately sized pits (seven in total; **10306**, **10497, 10657, 10741, 10776**, **10778** and **10842**), two gulley type features (**10848** and **10791/10600**) and a single more substantial ditch (**10492**) (figure 8).

In terms of finds from these features, very little was found. The vast majority of the feature fills appeared to be naturally derived and deposited silts which were archaeologically sterile. There were a few notable exceptions to this. The second fill (primary use deposit) of ditch **10492** produced small quantities of Severn Valley ware pottery, a single sherd of Black Burnished ware and a fragment of iron slag. Sub-circular pit **10741** (located roughly in the centre of the area which was to become delineated by the main occupation enclosure in phase 3) contained a single fill which produced a fragment of burnt bone from a medium sized mammal, and a sherd of Roman Severn Valley ware.

Evidence of the nature of the surrounding environment, and agricultural economy was limited to material recovered from gulley **10600**. This contained low volumes of cereal grains, including barley and spelt wheat, as well as legume, grass and dock seeds, fragments of the stone of an unidentifiable fruit, unidentifiable charred plant remains, thorns and a small volume of an unidentifiable black, porous, tarry, material

Many of these features were heavily truncated by later activity. The linear features (gulleys and ditch) appeared to represent the initial establishment of

an, albeit limited, agricultural field boundary / drainage system. The functional nature of the pits was unclear. The lack of artefactual material from within them suggested that they were *not* being used for the disposal of domestic (or other) waste, whilst the lack of environmental (or faunal) remains seemed to indicate that they were also *not* being used for the storage of agricultural produce. Pit **10306** was considered to be a tree throw - and may, along with a number of the other 'pit'-like features, have been evidence of tree clearance in advance of agricultural landuse in the Roman period.

Roman pottery also recovered from the fill of gulley **10600** was of a similar date to that of the later enclosure, indicating that the material was either intrusive or that there was only a very short time span between the phases. The latter theory would appear to be backed up by the single fills present within each of the pits, suggesting that they were short-lived and possibly of single phase use.

The environmental evidence recovered suggests that agricultural use of the land in this phase was non-intensive and involved the growing of at least barley and wheat. The site was probably not occupied at this time – at least not on an intensive or permanent basis.

3.1.3 Phase 3: Roman Enclosure & Field System

This phase saw the most intensive development of the Tirley site, characterised by the establishment of a small settlement and an attendant rectilinear agricultural field system.

The Enclosure (figure 6)

Enclosure ditch

The enclosure was formed by a seemingly continuous ditch (**10708**); excavation revealed the feature to have steep concave sides with a concave base (average of 1.3m wide by 0.7m deep). Roughly square in plan, this feature enclosed an area of *c*.40m east to west and *c*.34m north to south (1360m^2). The enclosure ditch was truncated by the existing No.2 Feeder

gas pipeline at its north-west corner and again towards the north end of its eastern side, but otherwise the circuit of the enclosure ditch was continuous.

This enclosure ditch contained a series of four silty fills. The lower two contained no artefacts. However, the upper two contained Roman pottery and animal bone. The pottery recovered totalled a little more than 650 sherds, and dated from the 2nd century AD through to the first half of the 3rd century AD. The animal bone was representative of domestic waste, including cow and horse teeth as well as the bones of other large and medium-sized, unidentifiable, mammals. Diet and economy was represented by legume seeds, the seeds from an unidentifiable fruit, small fragments of unidentifiable animal bone, a low volume of unidentifiable charred plant remains and a small amount of black porous and tarry material.

Protruding southwards from the south west corner of the main ditch enclosure was a short (at least 2.5m long - as seen) stub of a ditch. This feature (**10489**) contained two fills; identical to the lower two fills of the main enclosure ditch. The basal fill contained two sherds of Severn Valley ware and a piece of Romano-British tile. Based on the finds, this ditch was likely to be contemporary with and related to the enclosure, the lack of any discernable difference in fills supporting this hypothesis. It may be that it formed part of an annexe to the main enclosure, or was part of a larger, associated field system. This ditch continued under a broad spread of later, post medieval, colluvial material (10002) to the south of the enclosure, and as such was not further exposed in plan, being determined that is should be preserved *in situ*.

Internal features

Within the bounds of the main enclosure feature there were a number of internal features seeming to represent aspects of the function of the enclosure.

In the western half of the enclosed area, an upside down L-shaped internal division was formed by ditch **10709**. Its northern arm was *c.* 18m long, with the northern end turning westward, and continuing on an E-W orientation for *c.*15m before petering out. This feature averaged about 1.1m wide and 0.3m deep, its sole fill producing a fragment of rotary quern stone and an iron nail.

This feature appeared to create and internal 'sub-pace' *c.* 21m x 22m in size (*c.*460m^2), which was disconnected from the main enclosure ditch **10709**. Possible 'gaps' towards the southern and western ends of the ditch may represent entrances for causeways into the 'sub-space', but might also represent areas of truncation.

Parallel with the E-W element of **10709**, and less than 0.5m to the north of it, was a further linear gulley, **10728**. This feature was short, roughly 10m long, and contained three fills, the middle of which produced eight sherds of Roman pottery dating to the 2nd and 3rd centuries AD. The functional nature of this ditch was not clear – it may have related to a maintenance (re)cutting of **10709** which was done slightly off alignment to the original ditch, meaning that whilst the top of the feature may have been roughly in line, the lower portion of it (identified in this work) was slightly off line.

A contemporary ditch feature, **10727** appeared to cross the northern (E-W aligned) arm of **10709** at a point 3m from the western end of this arm of the ditch. Ditch **10727** was *c.*16.50m, roughly linear in plan, and aligned N-S. The single fill of the ditch produced a small quantity of Roman pottery dated to the same period as the main enclosure, and a sheep or goat's tooth. In terms of diet and economy, this feature yielded cereal grains, including spelt, as well as a small quantity of unidentifiable plant seeds, charred plant remains, animal bone fragments and coal fragments.

At its southernmost point, ditch **10727** became increasingly indistinct and shallow and appeared to terminate, though it may have merely been interrupted or truncated and may have continued on to the south as curvilinear feature **10713**.

The northern end of ditch **10713** began at a point *c.* 0.60m south of the southern terminal of ditch **10727**. From this point it curved westward for *c.* 9m before terminating. The ditch averaged 0.35m wide and 0.10m deep, and its single fill produced a total of 19 sherds of Roman pottery dating from roughly the same period as the outer enclosure. It is possible ditches **10713** and **10727** were actually a single, truncated, roughly J shaped ditch, subdividing the postulated 'sub-space' created by **10709**, or it may be that **10713** was the southern surviving curve of a *c.*10m diameter ring gulley, and

that ditch **10727** either pre- or post-dated it. If the latter, then the inconsistent depth and nature of **10713** may be the result of it being a drip gulley for a roundhouse. Slightly off-centre of this "roundhouse" was an unphased pit **10808** which may have been a hearth; it contained possible cooking hearth waste but there was no evidence of *in-situ* burning.

Three postholes (together forming group **10790**) were located close to the centre of enclosure **10708**, in the eastern half of the sub-enclosure formed by **10709**.These appeared set at approximate right-angles to one another, and may have represented the remaining three corners of a four-post structure, with the south east corner truncated in antiquity. The surviving postholes were between 0.35 and 0.6m in diameter and no more than 0.15m deep; no finds were recovered from their single fills.

Two layers of material thought to represent occupation spreads (10645 and 10658) were located just west of the southern end of **10709** (i.e. toward the south eastern corner of the postulated 'sub-space' created by **10709**). These produced material that was clearly domestic waste, comprising a total of 126 pot sherds, mostly dated to the 2nd and early 3rd centuries AD, animal bone and a single iron nail, possibly a hobnail. These spreads were both roughly oval in plan, of similar thickness (between 0.13 and 0.19m), identical in nature and nearly conjoined, suggesting that they were likely part of the same deposition event, perhaps truncated by later activity to produce two separate spreads. This material may have been accumulated waste or heavy trample at an entranceway in and out of the postulated 'sub-space'.

These features (**10709**, **10727, 10713** and group **10790**) appear to represent an internally divided complex within the main enclosure defined by **10708**. The exact nature of this complex was not clear – but the presence of two associated, domestic 'dumps' (10645 and 10658) along with the quantity and nature of artefacts recovered from nearby feature fills, suggests domestic use during the 2nd – 3rd Century A.D. One possible interpretation is that irregular gulley **10713** represented an early roundhouse structure, which was later replaced by a larger, subdivided rectilinear structure formed by **10709** and **10727**, possibly representing a small, semi-permanent dwelling of some kind.

In the north east corner of the main enclosure were five circular or ovoid postholes (group **10654**) which together formed a rough "L" shape, possibly the remnants of a larger structure which once separated off the north east corner of the main enclosure. The existing No. 2 Feeder gas pipeline truncated the northern stem of this "L" and so it is impossible to say for certain whether the post alignment would have formed a sub-enclosure or not, but it seemed a reasonable possibility. If it had, it would have enclosed an area of about 60m^2.

The form and contents of the postholes provide no indication as to the function of this postulated sub-enclosure. All of the postholes were approximately 0.4m in diameter and 0.15m deep, their fills varying from pale grey clay to mid to red-grey clay. No finds were recovered from any of these features. Environmental samples taken from two of the postholes (**10787** and **10788**) did both yield small amounts of unidentified charred plant remains. The postulated enclosure may have been an animal stockade or corral of some sort.

Interpretation

The overall size, depth and width of the ditch (**10708**) which formed the main enclosure indicated that it was unlikely to have had a defensive purpose, more likely it was the remnant boundary /demarcation feature of a small, domestic plot. The quantities of pottery recovered indicated that occupation of the enclosure site was concentrated around the 2nd to early 3rd centuries AD. The pottery assemblage recovered from within the ditch seemed to suggest a largely continuous occupation throughout the estimated *c.*100 year period. This appeared to be backed up by the pottery from possible occupation surfaces 10645 and 10658. As there was no evidence of maintenance of the ditch during its lifespan, and given that the pottery was generally of fairly low status (Timby 2012) it is reasonable to presume that the enclosure site was a focus of relatively poor, small-scale rural occupation. This was backed up by the other remains associated with the ditch indicating generally low level, domestic use of people leading an agrarian lifestyle.

The lack of an obvious break in the circuit of the ditch was noteworthy, suggesting that the ditch was bridged to allow access rather than any causeway being present. This suggested that the enclosure suffered from regular flooding and that the ditch performed a predominantly water management function. The above assumes that no such entranceway had existed at either of the two locations where the ditch was truncated by the existing No. 2 Feeder gas pipeline.

The purpose of the small rectilinear sub-enclosure (**10709)** and associated subdivisions (**10727** and **10713**) was uncertain. Environmental preservation across the site was poor generally, thus the *relative* abundance of organic remains from the fills of **10709** are of interest, and this, along with the presence of layers 10645 and 10658, suggested that this sub-enclosure was the primary focus of human or animal activity within the main enclosure. The presence of a fragment of rotary quern stone in the neighbouring gulley **10728**, along with contemporary pottery, suggested that the enclosure was occupied domestically during this period.

Beyond the Enclosure (figures 4, 5 and 6)

Outside, and immediately north (and in one case east) of the ditch **10708** were three parallel linear gulleys (groups **10697** (western most), **10698** and **10699** (eastern most)) all of which were oriented roughly north to south, spaced approximately 21m apart, and were truncated by the existing No.2 Feeder gas pipelines towards their southern ends. These gulleys typically had shallow (0.25m deep) U-shaped profiles, with single pale, silty clay fills that contained small quantities of 2nd century Roman pottery. Gulleys **10697** and **10698** were each *c.* 35m long and were 'attached' to ditch enclosure **10708** at their southern ends. Gulley **10699** ran along the eastern edge of **10708** (petering out and becoming lost at its southern end) and so was roughly twice as long as the other two gulleys.

At their northern extents, these three gulleys all intersected with the southern face of E-W oriented ditch, **10098.** This feature was similar, in size, profile and fill, to the intersecting N-S aligned gulleys and, like them, contained a small quantity of Roman pottery of a date comparable to enclosure **10708**. This arrangement of gulleys created a corner (with **10697**

and **10098**) at its western end, whilst at its eastern end, **10098** extended onward beyond **10699** for *c.* 62m before apparently petering out – however it is likely that gulley **10098** continued to the east, noted as intermittent gulley features **10145** and **10417**. These were both short stretches of E-W gulley, averaging 0.4m wide and 0.2m deep containing similar fills to that seen in **10098** and no finds.

Operating together, these features appeared to form a sub-divided enclosure system, with the two rectangular sub-enclosures thus defined each being *c.* 672m^2 in size. The fill of **10098** produced Roman pottery of a date comparable with that from enclosure ditch **10708**.

Contemporary with gulley **10697**, and protruding from its western edge about 3m south of its northern intersect with **10098**, was another east-west oriented gulley **10443** (similar in nature to the other gulleys). No finds were recovered from this gulley and its westernmost end was truncated by the course of the existing No. 2 Feeder gas pipeline, so both its course and function were unclear.

To the south of the main enclosure, a series of three east – west aligned gulleys (**10702, 10705** and **10426**) along with two N-S aligned gulleys (**10729** and **10751**) appeared to form what may have been some sort of drainage system (the spaces created by the features were far too small and narrow to have been fields). These gulleys were similar in nature to those mentioned above, and all contained pale, grey yellow clay that was devoid of finds.

These five features were all interconnected, and one of the north – south elements of the groups (**10751**) connected to the main enclosure feature **10708**, in the vicinity of its south east corner. The slope of the land would appear to indicate that these features drained into the main enclosure, which may then have drained into the attached northern gulleys and beyond to the river.

Pit **10307,** in the eastern field, had been used for the disposal of domestic waste. It was sub-circular, measuring 1.25m in diameter and 0.36m deep, and had four fills, suggesting several periods of deposition. The earliest of these fills produced seven pieces of daub, one imprinted with wattle, and 13

sherds of Roman pottery, probably 2nd century in date. Despite these finds, the soil samples taken from this feature were relatively uninformative, as they yielded small volumes of unidentifiable charcoal, charred root, animal bone and coal fragments.

In the very north west corner of the site, a sondage through undated layer 10052 revealed a short stretch of irregular gulley 1.35m wide and 0.23m deep (**10339**). It was visible for around 9m before appearing to peter out. The gulley had a single fill which produced eight sherds of Severn Valley ware, dated to the same period as the enclosure.

The gulleys identified to the north and west of the main enclosure probably represented the remnants of former drainage and boundary ditches / gulleys defining a wider field system. The possible continuation of gulley **10098** to the east of gulley **10699** may have indicated a continuation of the field division system to the east.

Interpretation

The evidence from features of this phase would appear to point to more intensive occupation of the land than that seen in phase 2, with more intensive agricultural practices emerging. The same food crops appear to being grown – though there is now more of a focus on spelt, and domestic animals appear in the record, including cow, sheep, goat and horse.

Whilst the site would appear to be geared to the movement of water around, and from, the site there is little evidence for this in terms of environmental evidence. A major component of this was the generally very poor level of preservation of organic / environmental remains from across the site.

3.1.4 Phase 4: Roman Extended Field System (figures 4, 5 and 6)

The key change in this phase was the extension of the existing field system to the north up to the watercourse. This was characterised, in the archaeological record, by the creation of a roughly north-south/east-west aligned rectilinear field system comprising a series of squarish plots each approximately 1400m^2, which appeared to connect onto the north side of the

phase 3 field system, and which is assumed to have continued to function throughout this phase.

Ditches & Gulleys

The plots were formed by an arrangement of nine new gulley features. Five (**10030, 10065, 10442, 10601** and **10710**) were oriented roughly east to west, with four (**10693, 10707, 10711** and **10753**) oriented roughly north to south.

The gulleys themselves averaged 0.3m wide and 0.1m deep. No finds were recovered from any of them except for **10693** which contained a small quantity of un-diagnostic fired clay and **10030**, one small section of which produced a prehistoric flint flake, a clay pipe stem dated to the third quarter of the 18th century, and two sherds of Pearlware, dating from the late 18th to early 19th century. It is highly likely that the flint is residual and the post-medieval finds intrusive from later agricultural activity, although no land drains were seen to cut the gulley at this point. Environmental sampling of **10601** yielded low volumes of spelt wheat grains, grass seeds and unidentifiable charred plant remains.

The new agricultural arrangement followed a similar orientation to the phase 3 field boundary system and most likely represented a re-modelling and extension of this earlier system.

Beyond this new cohesive complex, to the north, were a further three gulley features which did not appear to be part of the same system. This included curvilinear ditch **10061**, a much longer and more sinuous curvilinear ditch **10382** and “kinked” linear **10383**.

Gulley **10382** protruded from the northern boundary of the plot, ran *c.*8m southwards, and then turned 90° to run westward. Gu lley **10693** fed into it at a point roughly 25m west of this corner. From here **10382** followed a long, sinuous, curvilinear course for 200m to the west, continuing beyond the scope of excavation and appearing to define the land occupied by layer 10052, though in one small area this patchy layer was visible to the east of **10382**. The gulley was wider than the others of the network, averaging over 0.6m wide, though it was also shallow, rarely more than 0.25m deep. The

ditch contained only a single fragment of ceramic building material. The environmental remains recovered included small volumes of unidentifiable charred macrofossils as well as small volumes of unidentifiable tarry material, burnt clay, coal fragments and mineralised concretions.

Five metres to the east of where **10382** protruded from the northern boundary of the plot, gulley **10061** also emerged from the baulk and described an arc curving from a south easterly direction through to a north easterly one, petering out at its north eastern extent. Less than 5m east of where **10061** petered out was the western extent of "kinked" gulley **10383**. As this also appeared to peter out at this point, it may have been that the two gulleys had at some point been connected – forming a single boundary feature - damaged, truncated and made discontinuous by later agricultural activity. However, this could not be verified. Gulley **10383** ran roughly 20m from this point on a east-north east, orientation before "kinking" slightly southwards to run more generally east-west into the boundary of the field. Neither of these gulleys contained any archaeological finds.

These three gulleys appeared to represent a boundary system different from, and largely separate to, that created by **10030** *et al*. By defining the southern edge of the stream course and an area of marshy land, the three gulleys were possibly an attempt to drain surrounding wet land associated with these and prevent / limit flooding of the agricultural land to the south, as well a creating a physical barrier to prevent livestock from wandering into these wet areas.

Pits

In addition to these gulleys, a further eight pits from the vicinity of enclosure **10708** were assigned to this phase (**10469**, **10602**, **10591**, **10638**, **10766, 10764, 10853** and **10855**).

Between them, these pits produced modest quantities of fired clay (much of which was un-diagnostic), loom weights (pit **10591**), late 2nd and 3rd century Roman pottery, animal remains (specifically the tooth of a sheep or goat) and an off-cut of an iron bar (**10764**). Environmental evidence recovered from pit **10853** consisted of small volumes of spelt wheat grain and Brome

seeds, along with a moderate quantity of charcoal (unidentified charred plant remains). From **10855** was recovered a small amount of charcoal.

The function of these pits was largely unclear, but the nature of the material found within those that contained finds (**10591**, **10469**, **10764** and **10766**) suggested that they were, in their final stages of life at least, being used to dispose of domestic waste.

Enclosure 10708

It appeared that the earlier (phase 3) rectilinear enclosure (**10708**) and its associated internal features had largely fallen into disuse by this time, indicating a possible change in land-use sometime in the 2nd/3rd century.

The presence of domestic waste such as possible loom weights in pit **10591** along with the modest amount of pottery recovered from other phase 4 pits, indicated some level of continued habitation in the area. Indeed this may have been represented by gulley **10750**, a short (10m long), shallow feature located within the area previously delineated by enclosure ditch **10708**. This gulley (**10750**) may have formed part of a structure or wind-break designed to provide temporary shelter.

Interpretation

Thus, whilst there is a continuation of land management and agricultural practice throughout phase 4, evidence of occupation of the site appears reduced – indicating less intense or ephemeral presence in terms of occupation, with agricultural exploitation of the land being the primary focus of the use of the Tirley site at this time.

3.1.5 Phase 5: Roman Decline & Disuse

The only man-made features attributed to this phase were four ditches (**10712, 10037** and group **10703**), all of which were located within the southern half of the excavation area. In addition, a possible flood event was also recorded.

Ditches

Ditch **10712** (figure 6) was oriented broadly north-south and located close to the eastern face of the western arm of enclosure **10708**, the southern end **10712** partially truncating that earlier feature along its southern boundary. It measured about 20m long by nearly a metre wide at its widest and was 0.52m deep. The ditch had two fills, the lower fill contained an iron object and 387 sherds of Roman pottery, the date of which exactly matched that of the phase 3 enclosure. Environmental sampling of this fill produced spelt wheat grain and dock seeds as well as a small amount of unidentified charred plant remains, unidentified seeds, buds and animal bone fragments.

Ditch **10703**, located to the south of the main enclosure **10708**, was oriented roughly east -north east to west –south west (figure 6). An access point, established across the existing field boundary to the east during construction, revealed a ditch which may be the eastern continuation of ditch **10703** into the adjacent field, giving it a minimum projected length of over 100m.

The ditch contained two fills, the lower of which contained ten sherds of Roman pottery. The initial fill of **10703** indicated that this ditch was active during phase 4, and was either reused or survived through into phase 5, before being backfilled with material similar to that in **10712**. The high quantity of Roman pottery recovered from a small volume of its fill suggested that a large amount of residual phase 3 material was used to backfill the feature.

These two ditches (**10703** and **10712**) were aligned so that, should they have connected, they would have formed an “L” shape. If this were, originally, the case, as seems likely it, they may have represented the remnants of a rectangular enclosure, the northern and eastern portions possibly removed by later agricultural activities such as ploughing. A gap, visible at the south west corner of this postulated enclosure, may have been an entrance into the enclosure.

Linear ditch group **10037** was located in the south east corner of the excavation area (figure 7), and was oriented roughly east-north east to west-south west. This group consisted of two roughly parallel ditches, spaced about 10m apart. Their sole fills were similar in nature and contained a small

assemblage of Roman pottery and a horseshoe dated to the 13th century. Where investigated these features proved to have a pair of parallel intermittent gulleys at the base, suggestive of wheel rutting or plough scars.

Palaeo-channel & flood event

The remaining feature allocated to this phase was a substantial palae-channel (*c*.3.5m wide) (**10368**) which extended from the northern boundary of the east plot, slowly widening as it made its way south west-ward into the west plot where it became a broad shallow depression.

In the east field, the palaeo-channel contained three fills, the upper of which was similar in nature to the predominant fill of all the phase 4 gulleys and contained a horse tooth. Both the phase 3 and phase 4 field system ditches were truncated by the depression in the east field.

Interpretation

The palaeo-channel appears to represent the southward migration of the former stream which predated the creation of Newhall Brook as a canalised water course. The depression in the west field appears to mark the westernmost extent of the palaeo-channel. The silty soil recorded in the depression in the east field probably represents overbank spill resulting from successive short-term floods. Events of this kind may help explain the demise of the Roman field system in this area.

3.1.6 Phase 6: Post-Medieval

The only features attributed to this phase were ditch **10318** and branching gulleys **10695** and **10360** (figure 3).

Gulley **10695** was wide, comparatively long (160m) and oriented west-north west to east-south east. Although discontinuous, or more likely truncated, towards its east end, it clearly cut across the enclosure (10708). To the west of the enclosure, the ditch appeared to fork, where a smaller “feeder” gulley (**10360**) diverged to the west-north-west. Unfortunately, the relationship of the two gulleys could not be established and it is possible, therefore, that the two are not contemporary.

Ditch **10318** truncated the western boundary of the phase 4 field system (**10693**), running roughly NNE-SSW with its southern end terminating at **10360**. It contained two fills which produced no finds, but was heavily truncated by two field drains which had later been laid along its course, suggesting that the ditch was still visible on the ground surface in some way, either as an earthwork or vegetation mark, in the 19th century,

In combination, the ditch and gulleys discussed above may have represented the truncated remnant of an additional field boundary system.

3.1.7 Unphased Features

The features detailed in this portion of the text are those for which their stratigraphic placement and / or date are uncertain and which, therefore, cannot be placed into any single phase. Some of the features can be broadly seen to be earlier, or later, than other features or phases but they cannot themselves be definitively placed. Where such broad placement is possible this is discussed along with the description of the feature.

A total of 13 gulleys, one ditch, 15 discrete features and four layers remained non-phased following assessment of the archive. These comprised east-west gulleys (**10205**, **10456**, **10701**, **10704**, and **10752**), north-south gulleys (**10096**, **10158**, **10444**, **10694**, **10700** and **10706**), north east-south west gulleys (**10141** and **10743**), ditch (**10025**) possible pits (**10016, 10662,10808** and **10847**) and six possible pits or postholes (**10005, 10498**, **10548**, **10810** and group **10817**) cannot at this time be dated, either stratigraphically or absolutely via artefacts (due to lack of identifiable material). In addition, an area of marsh (10051, 10052) was identified.

Gulleys

The gulleys were similar in nature to those making up the phase 3 and 4 field systems, and it likely that they were related in some way to these systems.

Ditch

Ditch **10025** had a single, mixed, loose fill and had the appearance of a recently removed hedge-ditch, though no evidence of such had been recorded by the map regression studies.

Pits

Of the discrete features, only pit **10847** produced any finds. It had scorched sides evidencing *in situ* heating, although its backfill contained only a small amount of charcoal – suggesting that it was regularly cleared out. Finds from this upper fill comprised three fragments of undiagnostic fired clay.

Soil samples taken from some of the pits were productive. Pit **10498** yielded a low volume of cereal grain (including spelt), unidentifiable charred plant remains, coal fragments and mineralised concretions. Pit **10548** yielded a low volume of unidentifiable charred plant remains. Pit **10808** yielded a large amount of charcoal (charred, unidentified, plant remains) as well as low quantities of spelt wheat grain and a porous, black, tarry material. The volume of charcoal recovered from this context suggested that it was hearth waste, whilst the lack of *in situ* burning of the pit indicated that the charcoal had been generated elsewhere and then dumped within this pit.

Marsh

In the very north west of the excavation area was a large expanse of dark brown black clay and proto-peat (10051). This was overlain on its southern side by a more patchy, layer of dark red brown silty clay (10052). Investigation of these layers revealed a possible phase 3 boundary ditch (**10339**), containing Roman pottery, beneath layer 10052 but truncating layer 10051. An additional intermittent layer, 10363, was recorded above the upper fill of **10339** and below 10052. This layer (10363) also produced Roman pottery.

Layer 10051 is notable, as during the evaluation work, this layer produced a middle Neolithic polished stone axe from approximately one metre below the ground surface. The significance of this find is unknown, as no other features or finds of this period were recorded during the work.

Layers 10051 and 10052 were interpreted as marshland deposits. If lost in antiquity, the discovered axe indicates an early origin to these marshy deposits. The presence of a possible Roman boundary **10339 '**in-between' these layers indicates that there visual differences were not merely post-depositional change resulting from drying and oxidising, but distinct events. The ditch's spatial relationship to the layers suggests that its purpose was one of land management.

More recent canalisation of the Newhall Brook and the introduction of modern field drainage systems appear to have helped overcome the alluvial challenges of this piece of land, which although remains boggy is no longer excluded from agricultural use.

A further layer of silty, colluvial, material was located on the south side of the excavation area against the south western corner of enclosure feature **10708**. This layer (10538) produced a moderate quantity of post medieval tile fragments as well as a substantial volume (223 sherds) of Roman pottery (primarily 2 – 3rd century, Severn Valley ware) and a small volume of 19th - 20th century glass. No obvious reason for the formation of this layer could be determined.

3.2 Discussion of Results

Prehistoric

Evidence of pre-Roman activity is limited to finds spots and a single, possibly prehistoric, pit. A total of 18 worked flints from across the project, together with the polished stone axe and other Neolithic material from the evaluation (Network Archaeology 2011i), indicates low level ephemeral, transient or short-term prehistoric activity. Prehistoric use of the landscape appears to have been focused to the north-west, near the river, and towards the south east edge of the site.

The finds were predominantly *late* Neolithic in nature, with a possibility that some of the material was early Bronze Age. A single blade of probable Mesolithic or early Neolithic date, recovered during the topsoil strip, suggests that human activity spanned the post-glacial prehistoric period.

The prehistoric material was primarily recovered from the southern edge of the eastern field, though further evidence may have been concealed beneath the preserving layer of subsoil retained at the southern edge of the western field, or beneath the “marshy” layer 10051.

Roman: Summary

The focus of Roman activity was a modest-sized enclosure (**10708**) containing a number of possible structures and internally divided spaces. The enclosure, which appears to have been in use from the 2nd century AD into the early part of the 3rd century AD, may have served a dual role of domestic settlement and stock management.

To the north of the enclosure was a network of drainage / boundary gulleys, defining small fields, representing two substantial and clearly identifiable phases of agricultural field system, as well as a smaller, less well defined, third phase.

Roman: Enclosure

The enclosure appears to have been formed by a continuous ditched circuit with no causeways. A range of internal features, comprising ditches, gulleys, trenches, pits and postholes were identified. Some of the postholes were configured in groups, and whilst they formed some kind of post-fast structure, none could be interpreted as buildings and were more likely fence-lines providing internal division to the enclosure. At least one ditch/trench and a curvilinear gulley might have had structural functions but, as with the postholes, neither could be positively identified as a domestic structure.

The vast majority of internal features were located on the west and central parts of the enclosure, leaving what appeared to be open space over the east half of the enclosure. This apparent ‘blank’ is thought to be genuine rather than the result of later agricultural truncation. This ‘blank’ area could be where stock was kept secure, or alternatively it could be the location of occupants living quarters had these been built on pad stones.

Roman: Finds and settlement status

A substantial amount of Roman pottery, totalling nearly 3000 sherds, was recovered, with most coming from excavated features within the enclosure. The pottery was considered typical of small-scale agricultural sites for the period and area, with a noted dominance of locally made Severn Valley ware, along with regionally imported Dorset black burnished ware. Comparative to similar sites in the region, the pottery assemblage contained fairly small quantities of continental imports (just 13 sherds). Overall, this assemblage was suggestive of domestic settlement of fairly low status.

Other Roman finds, including ceramic building material, quernstones and possible loom-weights were further indicators of domestic occupation of the enclosure during its brief lifespan. The limited quantity of metalwork from the site may be indicative of its low status, or of the poor ground conditions for the preservation of metal.

Roman: Field system and drainage

To the north (downhill) of the settlement enclosure, the land seemed to have been given over to agricultural activity with gulleys defining individual field plots. It is likely that these fields were positioned to take advantage of the resources generated by the nearby water course, including both the water and the fertile soils that may have been deposited during periodic, seasonal, flooding. It is notable that the ditches of these field systems connected into the enclosure boundary ditch, and it is possible that as well as defining the agricultural fields the ditches also drained the land, emptying the water from the fields, and the enclosure ditch into the river. The enclosure ditch may have flooded periodically due to the occasional / seasonal flooding of the nearby water course and / or run off from land further uphill to the south. The periodic flooding of this enclosure feature may account for the lack of an entrance way to the enclosure. If it was permanently, or temporarily flooded, a bridge over the ditch may have been preferable to a ‘ground level’ gap in the ditch.

Unfortunately this theory of seasonal flooding remains, at this stage, largely conjecture. The preservation of plant macrofossils was so poor, with only a

small number of plant remains being identifiable, that little could be gleaned as to the type of plants present and the nature of the past environment.

Roman: Economy

The agricultural practices of phases 2, 3 and 4 appeared to revolve around low level (domestic / subsistence level) arable and pastoral farming during the 2nd - 3rd centuries A.D. The faunal remains indicated that cattle were the most abundant species identified within the assemblage, followed by *Equid* (horse family), sheep/goat and pig. The majority of the assemblage, beyond large mammal size, was however unidentifiable. No evidence of pathology, butchery or gnawing was noted on any of the remains. There is no evidence that the horses present on the site were being eaten or used as anything other than draught animals.

Plant remains were exceedingly scarce, and those recorded are mostly very poorly preserved. Although the density of charcoal may indicate that some assemblages (for examples from features **10307**, **10808** and **10853**) were derived from small, deliberate deposits of material within various of the feature fills, it is considered most likely that the majority of the macrofossils and the other plant remains recorded from this site are derived from scattered or wind-dispersed detritus. Both barley (Hordeum sp.) and wheat (Triticum sp.) grains were recovered, although most of the cereals were too poorly preserved for close identification.

Roman: Intra-site patterns and change in intensity of use through time

The focus and intensity of human use of the site appears to have varied considerably throughout the Roman period.

It is notable that there are large, empty areas across the area of investigation with activity appearing to focus almost entirely within the eastern half of the western field. Why this is so is not clear, however; thorough examination and investigation of the area during fieldwork demonstrated that this lack of archaeological presence was genuine.

The area of use, however, changed through time. Initially, the emphasis was in the south and central parts and thus excluded the area adjacent to the

watercourse, until the extension of the field system in phase 4. Decline in phase 5 was evident in the contraction and re-organisation of the field system and partial abandonment of the enclosure.

The reasons for some of these changes are no doubt the result of the economic fortunes of the site's occupants and workers. They may also be related to natural events, in this case, the possibility that repeated overbank spill from the watercourse meant that the adjacent land became agriculturally unviable – and therefore use of the site contracted and eventually the site's occupants moved away.

Roman: relationship to other local sites

The Roman farmstead enclosure reported herein is one of several discovered recently locally, and which together indicate Roman exploitation of this valley through a network of small-scale farmsteads.

This pattern is evident in recent discoveries on the Tirley Feeder Connector scheme (Network Archaeology forthcoming), which include Roman enclosures in plot 2 (just 650m to the north-west), and surface finds in plot 7 (285m to the west-north-west).

A concentration of Roman material located during the evaluation phase of the PRI site (Network Archaeology 2011i) indicates that this pattern continues to the south east of the PRI site.

Post-Roman

Evidence of activity post-dating the Roman enclosure is also limited.

This less intensive agricultural use of the land observed in the final Roman phase (5) appears to be the pattern going forward for the west field, based on the later post-Medieval ditches assigned to phase 6, whilst the east field appears to have been laid to ridge and furrow by the medieval period.

Other than the removal of boundaries **10360** and **10318,** very little appeared to change in the field between the post-medieval and modern periods. The installation of a large number of field drains across both fields may have accounted for the drying up of the marshy area indicated by 10051 and

10052, though even during evaluation in 2011 this area of the field was notably more water logged after heavy rain than the remainder of the plot.

4 THEMATIC DISCUSSIONS

4.1 Prehistoric Activity

The investigative field work produced some evidence of prehistoric activity within the Tirley PRI site. This evidence was confined to a moderate flint scatter of tools (including an axe), lithic debitage and a single pit feature. This evidence appeared to be indicative of small-scale use of an area close to a river during the Neolithic period (indeed the modern Newham Brook lies immediately adjacent to the north). There was no evidence of occupation on the site or locally, seemingly indicating an ephemeral (at most seasonal) prehistoric utilisation of the site and its immediate setting.

From the wider region there exist a number of other flint scatter sites (figure 9). Somewhat comparable sites have been found at Salters hill, Winchcombe (GHER14623) *c.* 25km to the east, and near Syde, 23km to the south east (GHER6979). This latter site appeared to be a lithic working site. A substantial flint scatter was also noted just north of Dowdeswell (20km to the SE of the Tirley site), this scatter (GHER41307) appeared to be associated with a Neolithic settlement site – located just 225m to its east. This scatter, and its associated settlement site, was located near to the Dowdeswell reservoir (1500m to the west). However, historic map regression showed that the extant river (the Chelt) feeding this reservoir once continued on to the east, passing just 250m to the west of the scatter site, with a tributary of the Chelt once running only 200m to its south.

Indeed, water sources appear to be magnets to Neolithic activity in this region. Archaeological work conducted during the Oldbury redevelopment (near Staverton (GHER9907) 12 km to the SE of the Tirley site) revealed what seemed to be a substantial Neolithic settlement (which eventually became a significant Roman centre) located close to water source (a, now minor, river *c.* 200m to the south of this site). This pattern was repeated at the Sabrin Cinema site (Tewkesbury (GHER7724) *c.*8km ENE of the Tirley site) where a further small, Neolithic, probable settlement site was seen – this site also being associated with a Neolithic grave. Again this site continued in use through the Iron Age and Roman periods, and again a

water source (the River Avon) lay only 200m to the east of the site. Three similar small, possible settlement sites of this date are known, scattered around the Gloucester and Cheltenham areas. Two (GHER9712 & 10093) were located on the SE edge of Gloucester (14km to the south, and 12km SSE, of the Tirley site) and another (GHER9694) toward the south east edge of Cheltenham (19km to the SE of the Tirley site). All of these sites consisted of small scatters of flint, occasional pottery sherds and modest numbers of small pits, and all were located within 250m of a river.

This pattern of Neolithic activity is also seen, albeit vestigially, in the Neolithic evidence from the Tirley site, suggesting that there may be more to the Neolithic activity at this site than first thought. Significantly perhaps, the Tirley site was also used in the Roman period, a pattern repeated amongst the known, significant, Neolithic sites of the region (Staverton and Tewkesbury).

The alluvial deposit, sealing the Neolithic remains, was only partially removed by the investigative works under discussion (see phase 1 above). The evidence uncovered, when looked at in terms of the above pattern of the wider Neolithic use of the region, suggests that there may well be more associated Neolithic remains, as yet unrecorded, below this layer.

In addition to this Neolithic settlement evidence, the surrounding landscape of the Tirley site sits was peppered with ritual sites of Neolithic date (figure 9). Typically, this took the form of long barrows and late Neolithic or Bronze Age mounds. These monuments are, in fact, of far greater number than tool or settlement sites – likely because the latter are much harder to recognise in the landscape, and leave less of an impression in the archaeological record (figure 9).

What can be definitively said is that, during the Neolithic period, the surrounding region was being actively used. People were living and using its natural resources and, strongly, identified with it (demonstrated by the placement of the dead into the landscape and, later, by the erection of mounds to signify this). Whilst the Neolithic use of the Tirley site does not, therefore, appear hugely significant in isolation, it sits comfortably within our developing understanding of the broader Neolithic landscape.

4.2 Roman Activity

4.2.1 Settlement Development and the Wider Landscape

In the late Iron Age, prior to the arrival of the Romans into this region, the pattern of settlement (figure 9) we have is one of moderately-sized, scattered, hillfort 'centres', such as Cleve Hill Camp Hillfort (GHER 437) located 17km ESE of the Tirley site and more locally Gadbury Camp, just 3.3km to the south east of the Tirley site. These centres tended to be associated with smaller, ancillary, enclosed and non-enclosed 'farmstead' type settlements, relatively few of which have been thoroughly investigated. However, recent aerial photographic work suggests that from within the wider region there are many more of these smaller sites than initially suspected (Ray 2002). Examples of these, from within the region, which have a more positive identity (in terms of both data and site type) include rectilinear enclosure sites 10km to the north east and ENE of the Tirley site (WSM05499 and GHER13981 respectively) and 8km to the ENE (GHER 21904). An Iron Age ringwork enclosure ditch, containing a single, central, oval house platform (GHER435) is located 17km west of the Tirley site, whilst more locally an Iron Age palisaded ring gulley, with associated postholes, is known only 6.7km to the south of the Tirley site (GHER 20044).

With the arrival of the Romans, initially little changes – many of the hillforts (including all of the ones previously discussed) show at least some evidence of continuity into the early Roman period (Haselgrove 1997), as do some of the smaller farmstead type sites, for example the Iron Age palisaded site GHER 20044 precedes a wider landscape of Roman field systems, furrows and a hollow way.

There does appear to be a general increase in the population of this region with the Roman period – demonstrated through the increase in settlement sites in general and small agricultural sites in particular. However, recent work has begun to demonstrate that this pattern actually began much earlier, around 100 BC and that it simply continued, and increased in intensity into the Roman period. This appears to indicate that whilst the arrival of the Romans Empire provided a boost, further driving this developing settlement pattern, it did not initiate it. Why this occurred is not

clear, that so many of the hillfort sites continued in use during at least the early part of this period would suggest that fragmentation of larger sites into smaller, more scattered units was not occurring, as has been previously suggested (Ray 2002). It is more likely that a growing population, exacerbated by the arrival of the Romans, created increased pressure on resources, agricultural resources in particular. As the resources which can be gained from the agricultural hinterland of any one site are finite this would effectively place a population limit on each site, meaning that as the population grew new settlement sites would have to be established. That these would start as small farmsteads is unsurprising – pioneering families choosing to start out on their own. The success or failure of these sites determining how they grew and evolved over time.

Side by side with this, the Romans began to imprint their culture upon this region, and a settlement hierarchy begins to evolve. The establishment of new Roman urban centres, along with the Romanisation and urbanisation of existing population centres, is relatively speedy – many Roman urban centres being established as such by the 1st Century AD (e.g. Glevum, Dymock and Tewkesbury). However, the Romanisation of the countryside is slower to happen (Ray 2002), with many rural Roman sites – such as the one discovered within the Tirley site - not being established until the 2nd Century AD.

At the top of this hierarchy were the regional capitals, in this case Corinium Dobunnorum (Cirencester, *c.* 40km to the south east of the Tirley site) – major towns the like of which had never before been seen in Britain. Beyond these there became established significantly sized ‘district’ centres – slightly smaller, but still substantial, urban centres, Glevum (Gloucester) being the main district centre influencing the Tirley site (11km to the south). In the hinterland of these centres there were a number of smaller towns or large villages.

Examples of these types of site - local to the Tirley site - include the centres at Weston Under Penyard (Ariconium) and Bromash (25km to the WSW), these being located on the northern edge of the Forest of Dean, and being involved in the extraction and processing of the local iron ore. Other examples include the centres at Dymock (GHER 32792/32897/32722/29679

– 12km to the north west), a centre of settlement and industry, and Tewkesbury (GHER 14818/14814) located 8km to the north east and which had evidence for both Roman settlement, industry and burials (GHER 32854). Both of these were located on major Roman roads. In the case of Dymock, on the north-west aligned Gloucester to Dymock Road (GHER 7677), and in the case of Tewkesbury on the north-east aligned Gloucester to Birmingham road (GHER 8090). Cheltenham – another major local centre - was located 12km to the south east.

Indeed, it is notable that the vast majority of the major urban Roman centres (regional capitals, district centres and the large towns) were located within 3 – 4km of a Roman road. There were five major roads established in this region – all of which converged on Gloucester - spreading out from it like a spiders web. There were the two mentioned above, but also the south-west aligned Gloucester to Sea Mills road (GHER 7365), the south-east aligned Ermine Street (Gloucester to Silchester – GHER 7542) and the east – west aligned Gloucester to Mitcheldean Road (GHER 7123).

Large village sites are also often seen to cluster, almost as suburbs, around the main town sites – positioned to take advantage of the resources, particularly the trade market – that centres have to offer. For example a significant village site is seen 1km to the north east of Glevum (Gloucester) sitting just on the Birmingham to Gloucester Road (GHER 27039).

Of the smaller rural settlements, the most notable are the Roman villa sites - major rural centres, often consisting of a large complex of central buildings, with a number of outlying ancillary buildings and associated farmsteads, the main function of this type of building complex being the intensive agricultural exploitation of the surrounding landscape. Such centres, local to the Tirley PRI sites include those seen at Deerhurst (SAM28851, GHER 454) just over 5km east of the Tirley site, on the eastern side of the river Severn, and at Willington Court Farm, near Sandhurst (GHER 4341), again on the eastern side of the Severn. From the wider region it is notable that a series of villas run down the fertile Leadon Valley, from Donnington at one end and down into southern central Gloucestershire. This includes the sites of Putley, 25km to the WNW of the Tirley site, and Waltham Field (GHER9609) 20km to the north west.

The smallest, and often hardest to identify, of the Roman rural settlements are the more isolated farmsteads. The settlement discovered within the Tirley site appeared to be just such an example of a small farmstead site. Sites such as this would probably have consisted of single main building and possibly a couple of ancillary out buildings or stock pens. The primary function of these site types would have been the agricultural exploitation of the surrounding land, but at a far less intensive level than at the villa sites; these farmsteads likely operating at not much above subsistence level.

The enclosure discovered at the Tirley PRI site was not, of course, an isolated habitation with no connection to the wider world around it. Indeed, the evaluations at the PRI site themselves hinted at a further locus of Roman activity of a similar date to the south and east of the site (Network Archaeology 2011i), whilst concurrent excavations on the Tirley Feeder Connector (TFC) gas pipeline revealed two further Roman enclosures (plot 2) within 1km to the north west of the site (Network Archaeology forthcoming). Additionally, during the Brecon to Tirley pipeline project in 2007 a ditch terminus containing a substantial amount of Roman pottery was located 4.3km west of the PRI site, just south west of Staunton, near Sladbrook Farm (Plot, 562, NGR 377662 228815). The pottery assemblage comprised 85 sherds of Severn valley ware and a single Samian piece, all dated to the 2nd century AD, making the feature broadly contemporary with phase 3 of the Tirley PRI site. It was likely that such a large amount of pottery indicated habitation in the near vicinity that was not located during the pipeline project (Network Archaeology 2010).

Though none of this other evidence gave as clear a picture of a Romano-British farmstead as the one seen at the main Tirley PRI site, they do help place the site within a context of a fairly densely occupied landscape during the later part of the 2nd century AD. This may help to explain the relatively small area encompassed by the field system attached to the Tirley farmstead (4.2.2).

Examples of comparable sites from the region include a small enclosure site 7km to the WSW (GHER 30027) and another (GHER 5346) 7.5km to the south-west. A similar, small, Romano British farmstead (WSM36368) was discovered 7.5km to the north of the Tirley site (at Longdon Marsh) during

works in advance of establishing a wetland nature reserve at Hill Court Farm. Evaluations and excavations there revealed a marsh-edge Middle Iron Age to late Roman settlement, including an occupation enclosure and boundary ditches (Thacker 2004). In her assessment of the Roman pottery from the Tirley site, Jane Timby noted that it shared many similarities with the assemblage recovered from Longdon, and another farmstead at Childswickham (26km to the north east), though the Tirley site lacked the native wares indicative of substantial pre-Roman occupation at both these other sites (Timby 2012).

Further afield, particularly within the Severn valley itself, the number of known small Roman farmsteads and occupation sites increases (figure 10). This may reflect more modern development in this area bringing more of these sites to light, or it may be that the fertile ground surrounding the Severn, and the trade opportunities afforded by the river itself, were more attractive to the Roman farmers in the growing market economy.

Many of the sites in the vicinity of the Tirley site are known only from cropmarks visible on aerial photographs or conjectured from surface finds. Numerous small Roman farms and enclosures had previously been identified within a 25km radius of the site, particularly in the hinterlands of the major Roman centres, indicating that the Tirley site sat in the midst of an established and thriving Roman landscape. By the 2nd century AD, when the Tirley site appeared to be at its peak, the Romanised countryside appeared to be stable and prosperous. The legions had moved on to Wales and Scotland, suggesting that the area was relatively peaceful, though enhancements to the original legionary defences of the *colonia* at Glevum throughout the 2nd and 3rd centuries might suggest that such stability was not entirely certain (Wacher 1995).

The potential presence of further, similar, sites in very close proximity to the Tirley PRI site (i.e. those hinted at in the evaluation of this site, and those seen as part of the TFC work) is of particular interest when defining the exact nature of the settlement identified at the Tirley site. So far it has been assumed, from the evidence, that the site was an isolated farmstead – the possibility that it lay in close proximity to other sites may mean that it was in fact part of an ‘aggregate village’. This was a loose collection, or cluster, of

dwellings involved in exploiting the resources of the local region (agricultural, mineral etc), with access to a centrally located 'hub' where would be located a number of communal used structures; kilns, corn dryers, storage bins etc. Such aggregate villages are known from the Carrant Valley, east of Tewkesbury. Here, two large areas of rectilinear field system were identified in cropmarks near Aston Mill, Kemerton (WSM05143/44/), which appeared to be associated with hut circles and multiple enclosure, indicating that that several smaller farmsteads, similar to those at the Tirley site, were cooperating together to work a large area of agricultural land. The two field systems identified in the crop marks enclosed areas of *c.*59,430m^2 (*c.* three times the size of the Tirley field system) and 45,0500m^2 (*c.* 25 times the area of the Tirley field system).

A more significant aggregate village was also noted near Beckford (also within the Carrant Valley). This consisted of a centrally located area of substantial Romano-British settlement, including stone-built dwellings and corn drying ovens (WSM05449). This site (Elmont Field) appeared to be the central "hub" farm around which smaller farms operated. These smaller farms probably included the Iron Age and Romano British enclosures excavated in 1964-7 (WSM05099), the multi-period enclosures excavated between 1975-77 (WSM00497), and two further Romano British enclosures identified but not excavated as part of the same work (WSM10272), the 3rd or 4th century AD field systems and trackways (WSM10273), the 2nd century double ditched enclosure (WSM10271) and possibly the Romano British cemetery (WSM10864), all of which were within 1km of the Elmont Field site.

The occupation dates of 2nd-3rd century suggested by the pottery assemblage from the Tirley site would be entirely consistent with a farm which was tied economically to Gloucester. The town of Glevum was originally established (49AD) as a fort site overlooking a crossing point on the River Severn, this fort was re-built *c* 75AD, but by *c* 96AD the need for a strong military presence in the area had wained and the fort was converted into a colonia – a residence for retried legionaries at the order of Emperor Nerva, who reigned for sixteen months between AD96-98. Gloucester thrived throughout the second century AD, expanding well beyond its military origins and developing densely occupied suburbs. This expansion and

redevelopment continued through the 3rd century and into the early part of the fourth century (Wacher 1995). Gloucester appeared to fall into decline by the end of the fourth century, with evidence from several sites showing that the city suffered heavily from flooding, probably as a result of a marked rise in global sea levels at the very end of the 4th century AD (Morhange *et al* 2005).

This suggested that if Gloucester were the primary market for produce from the Tirley site, then the 2nd and 3rd centuries AD were the most lucrative periods in which to operate. A possible Roman road identified at Maisemore (HER 7187), running north from Gloucester toward the Tirley site suggested that the site could have sat near to a north-south road which would have facilitated transport of produce to the city. If the Tirley site was part of a larger estate, it was likely that the "hub" of this estate sat on or near that road, though Timby noted that the pottery assemblage for many of the sites in the vicinity of Tewkesbury was similar, but that Tewkesbury itself produced significantly more high status wares such as Samian (Timby 2012). She postulated that Tewkesbury was the most likely market for these rural sites.

4.2.2 Agricultural Activity

The Field System

The phase 3 field system appeared to comprise three or four fields. Two of these were oriented N-S and conjoined to the north of the settlement enclosure in a similar manner to a pair of medieval burgage plots. The other two potential fields were set to the sides of the enclosure, one on the west and one on the east. Each of these fields was approximately 670m^2, or a little larger than the size of a Roman *quadrans.* It may be probable, therefore, that a fourth quadrans was concealed by the phase 4 field system, which would have meant the original farmstead utilised an area of roughly one Roman *jugerum*. The phase 4 fields were roughly twice as big as the phase 3 fields, encompassing an area equivalent to the Roman *septunx*. There were probably at least fourteen of these fields, based on the surviving gulleys, indicating that the phase 4 farm worked an area of at least eight *jugera*.

A small Roman farm might be expected to work an area of 8-18 jugera (White 1970), which would make this a very small farmstead, particularly during phase 3. As such it may have functioned as a low status subsistence farm, or as part of a larger estate or similar (see section 4.2.1 above).

The phase 4 field system saw the introduction of a new field layout, possibly indicating a change in ownership of the farmstead, or a change in agricultural practices in the area, though the basic north-south alignment was retained.

This later field system appeared to be laid out as a series of conjoined rectilinear fields, arrayed largely north-south. The field pattern is similar to that of a Roman ladder-type system, though these typically extend from spinal trackways, which are notably absent from the Tirley system. This may be due to a degree of erosion at this part of the site, as evidenced by the later palaeochannel **10368** – assuming the gulleys that demarcate the field boundaries were originally somewhat deeper, then shallow farm tracks may well have also been fully truncated by modern activity.

There was also a marked inconsistency in field width seen across the site, with individual phase 4 fields varying between anywhere from *c*.30m to *c*.60m east to west. At other known ladder-type field systems, such as at the Berryfields site in Aylesbury (OA 2002), the fields were fairly consistently between 25-30m wide.

This appeared to indicate that the later (phase 4) field system was following a different system of field layout to that which preceded it, and indeed the way it appeared to attach to, but be entirely misaligned with, the phase 3 field system perhaps indicated that whilst the later fields were laid out in a more organised fashion, they were an organic extension to the original earlier system, rather than a replacement for it.

The Historic Landscape Characterisation study in Herefordshire (Ray and White 2004) noted that in the north-west of that county, in an area that was subject to only very limited impact by the Act of Parliamentary enclosure, the field systems extant today appear to be laid out on a NW-SE pattern, a layout that appeared to have been established as far back as 1000BC, and hence persisted through the Roman period (White 2003).

It seems, however, unlikely that the north-south alignment of the field systems at the Tirley site were in accordance with a planned regional landscape during the Roman period in northern Gloucestershire, but instead that they were aligned in accordance with the prevailing conditions of geology, topography and hydrology of the area, specifically to allow excess water from the fields to drain off into the Newhall Brook.

The Economy

The plant macrofossils recovered from the Tirley site were sparse and poorly preserved. Identifiable amongst them were barley and wheat, with only emmer and spelt definitive as varietals of wheat. Of these spelt was fractionally more common.

Weeds were also particularly scarce, which might indicate a meticulously run farmstead, but is more likely to also be the result of poor preservation. All of the weeds were common segetal and grassland plants.

Typically, a Roman assemblage from the West Midlands will be wheat and oat based, with barley much rarer, and the Tirley samples appear to conform to this pattern (Fryer 2012), as only a single sample produced evidence of barley.

The quernstones recovered from site were both fragments from the upper stones of rotary querns. One of these, from within the phase 3 enclosure, was derived from a hand-operated millstone though the other was too fragmentary to be certain of its nature (Shaffery 2012). These indicated that small scale crop processing was occurring at the site, though no evidence for more substantial processing activities such as corn dryers were located.

The faunal remains collected from the site were all from the settlement enclosure itself. Identified species were restricted to *equid* (horse family), cattle, sheep/goat and pig.

Of these the most prevalent were cow bones, being roughly twice as common as either *equid* or sheep/goat. Pig was the rarest with just a single bone. With such a small identified group, any study of such ratios is somewhat specious – even the cattle assemblage only totalled 14 bones –

but studies of animal bones on other small scale rural sites have shown a general transition in animal ratio from equal numbers of sheep/goat and cattle in the Middle Iron Age (Hamelton 1999) to a dominance of cattle – with sheep and goat being a more minor component – in the Roman period (King 1978).

Even counting for the non-specific animal bones (154 large mammal bones, seven medium mammal bones and 87 unidentified bones) this Roman ratio would appear to be broadly consistent with the material recovered from Tirley. This pattern is presumed to represent a shift in husbandry practices based on the relative productivity of the animals to meet an increased demand, and as evidence for increased deforestation in the region creating greater grazing land for cattle (Thatcher forthcoming).

The relatively high ratio of equid bones in relation to more traditional farmstock is almost certainly a result of the small assemblage, rather than horse rearing being undertaken on the site, though given the dispersal of the bones across multiple deposits the remains were likely to be derived from at least three different horses rather than a single animal.

None of the bones from the site showed any signs of butchery or pathology, and only three showed evidence of burning, providing little information as to the origin or exploitation of the animals on the site. Given the apparent small-scale and low status nature of the farmstead it is unlikely that they were importing many fully processed animals for consumption, and as such it is presumed that the majority of the animals found at the site were raised and processed there. The lack of butchery on the cattle might indicate that this was a dairy herd, though again without further evidence this is purely conjecture.

These factors (field size and nature of agriculture being undertaken) appeared to indicate a site engaged in both arable and pastoral farming, on a fairly small scale, with no evidence to suggest that this was anything other than a small, single-family operation surviving on a subsistence basis in the hinterlands of the larger Roman centres surrounding it. This in itself is quite interesting as such sites would appear to be unusual in the 2nd and 3rd centuries AD, as the arrival of the Romans to Iron Age Britain saw an

apparent shift in the agrarian economy away from localised subsistence production toward deliberately growing crops for sale and a market economy (Guest 2002).

4.2.3 The Roman Finds

The Roman finds uncovered at the Tirley site pointed to the site being a low status, farmstead site, on the very edge of the Empire.

The presence of small amount of brick and tile (14 fragments in total) recovered from within ditch fills and the overburden, suggested that some sort of, relatively small from the paucity of material, brick and tile structure once stood on the site during the Roman period. The location, nature, and function of this building was, however, unclear.

The nine Roman metal items discovered in ditch fills at the site, spanned phases 3 – 5, of these seven were single iron nails or studs whilst the other two were un-diagnostic iron off-cuts. Such items would be typical of a low status agricultural site.

The pottery further confirmed this picture (Timby 2012). The assemblage recovered from Tirley was quite typical for the area being dominated by a small range of wares from industries which spanned quite a long range of time and which remained quite conservative in their output. Dating of the material indicated that occupation at the site ranged from the early-mid 2nd century through to the first half of the 3rd century. There were no forms or fabrics present to suggest it continued beyond the 3rd century.

A number of sites have been investigated in the general area which can be compared with Tirley, in particular one to the south-east of Tewkesbury (Walker et al. 2004), Childswickham, south of Evesham (Timby 2004) and Hillcourt Farm, Longdon, Worcs (Timby 2010), although many of these show a longer period of occupation. In terms of a rural site Hillcourt Farm is very similar although a dominance of Malvernian wares, a feature also found at Tewkesbury, might indicate earlier origins for these two settlements compared to Tirley.

One of the most interesting aspects of the Roman finds from this small, low status rural site was that they were indicative of, at least some, indirect, contact with the wider region, and through that (again indirectly) to the wider empire.

That trade with the local region was occurring is indicated by two assemblages. Two rotary quern fragments (from two different querns) recovered from the site are both manufactured from Old Red Sandstone. The nearest source for this is 35km away, in the vicinity of the Forest of Dean (Shaffrey 2012). The distribution network for items produced of this material is fairly well understood, and the Tirley site falls within this network. Additionally, its location close to the River Severn and both Gloucester and Cheltenham place it in a prime position to receive and use items of this material (Shaffrey 2012).

The ceramic assemblage uncovered includes the local Malvernian ware, but as it accounts for only just under 5% of the total pottery assemblage it is by no means the most common material. That honour belongs to a material gained from a more regional, thought still fairly local source, Severn Valley ware (58% of the total assemblage). In addition there are significant quantities of material from more distant regional / national sources, including Dorset Black Burnished ware (accounting for just under 35% if the assemblage) and Oxfordshire White Ware (0.2%). This demonstrated that material from more distant regional and national sources, rather than only local sources, are being obtained –indicating that with the arrival of the Roman period trade routes were opening up and allowing material to move, via numerous intermediate parties, much further across the country. Indeed, this region of the country becomes well served by trade routes by the Roman period, the infra structure of existing water ways being complemented by a new road network including the major routes already discussed (4.2.1) – these networks both allowing and encouraging wider contact and trade.

In addition to the non local ware a small percentage of fine table ware is also being obtained – implying that the displaying of status is, at this time, becoming a more important element of life. This is demonstrated in the most significant change in the pottery assemblage of this period – the presence of

fine, foreign, imported, wares. Samian table ware from central Gaul makes up 0.5% of the assemblage.

Samian ware was one of the cultural icons of the Roman Empire and its presence in this region, at this time, indicates both how widely trade and trade routes had opened up in the region since the Iron Age, and also how the region had been incorporated into the Empire and its wider networks.

However, this aspect of the assemblage should not be overplayed, it represents only a tiny fraction of the overall assemblage. Indeed the most common materials are, by far and away, those that can be obtained relatively locally. This would appear to indicate that this site, somewhat unsurprisingly, sat only on the very edge of the Empire, making obtaining such material somewhat difficult and expensive. Therefore there was either not the agricultural surplus to afford more and / or a lack of desire / need to own, and display, these particular status items in any quantity. However, the presence of Romanised (locally produced) pottery suggests that by the 2nd century, the regions occupants were aspiring to a Roman way of life. The presence of mortaria, albeit a single sherd of Wroxeter White Ware mortaria, indicates the presence of Roman cooking methods.

4.2.4 Decline and Abandonment

The effects of the withdrawal of the Romans from Britain were felt in both town and countryside. The arrival of the Romans in Britain created a broad, ordered, well functioning economy, influenced a hierarchy of settlement, imposed order on both town and country, and created and maintained a well ordered communication network (the roads). When they left this began to collapse and it was the rural sites that were worst hit: many rural sites, both farmsteads and villas having vanished by the mid / end of the 4th Century, their populations moving away from locations that were no longer economically viable and which could not maintain them. Urban centres - villages, towns and cities - were hit too, many going into a steep decline, some shrinking, others completely vanishing. But many of these centres, particularly the larger ones, did weather this period having stronger, more diverse economies and easier access to the road system (allowing them

access to a wider market), Worcester and Tewkesbury are good examples of this.

From the dating evidence it appeared that human activity within the Tirley site may have steadily declined during 3rd century AD with the rectilinear enclosure (**10708**) falling into disuse sometime during the early 3rd century AD when it was replaced by a later rectilinear enclosure (**10712** and **10703**) which itself was in disuse by the mid 3rd century AD.

The abandonment of the Tirley site during the 3rd century AD does not appear to be entirely consistent with other Roman rural sites within the area, many of which, such as Waltham Field (GHER 96098) and White House Farm (GHER 426972) appeared to be in use into at least the 4th century AD. This is true also of Childswickham Farm near Evesham and Hillcourt Farm near Longdon (WSM 36368), both of which yielded similar pottery assemblages to those recovered from Tirley but were occupied for a longer period of time (Timby 2010).

The cause of this decline in activity cannot be categorically proven, however; the Tirley site's location may have been a contributing factor. The Tirley site was remotely located – a small site in an isolated, rural setting. Whilst there were no doubt communication links in the form of track ways or very minor roads (now no longer seen and not recognised in the investigative works) this site was near the very, very edge of the Empire. As the Roman empire began to decline, both in terms of economy and civilization there would have been increasing pressure on sites on the very edge – both in terms of economic viability and links to centres. The decline of its most significant local centre (Gloucester) would have had a 'trickle down' impact on the economy of the Tirley site.

Larger centres, with stronger, more diverse economies and better access to communication links would have lasted longer, but in the end many of these also fell into decline and were abandoned (the afore mentioned Waltham field etc).

The flooding which contributed to the decline of Gloucester (4.2.1) may well have also been influential in the decline of the Tirley PRI site. The site sat south of the Newhall Brook, a very minor tributary of the River Severn 3km

to the east. The stream is currently canalised to a field boundary, but a much wider, though still fairly shallow post-Roman palaeochannel (10368) that covered part of the PRI site suggested a flooding event post abandonment – this even possibly being the cause of that abandonment, as the fill of the palaeochannel had many similarities with that of the phase 4 drainage gulleys. Layers of material located in the north west corner of the site (layers 10052 and 10051) along the associated bounding ditches (**10382** etc) appeared to confirm that the northern extent of the area revealed by the Tirley site was a wet, marshy, boggy area that required active management in order to contain and control it. The pottery from the site suggested that it had fallen into decline by the early 3rd century AD, and this would bear similarities to a study undertaken on the Arrow Valley in Herefordshire, which indicated a high point in flood sediment deposition around 200AD, possibly as a result of increased deforestation (Macklin *et al*. 2003).

It is likely that both of these factors environmental and economic - where involved in the decline of the site.

4.3 Post-Roman Activity

The work at the Tirley site produced no evidence of settlement post-dating the Roman period, whilst activity into the post-Roman period appeared to have been limited to low-density agriculture. The geophysical survey undertaken prior to the excavation (Bartlett Clark 2008) identified a number of linear features within the south east field which were likely to be cultivation marks, probably plough furrows, and a linear gulley identified during the excavation (**G10037**), from which a 13th century horseshoe was recovered, was most likely the truncated remnant of a furrow. Ridge and furrow ploughing was common during the Medieval and post-Medieval periods and the presence of a small volumes of Post Medieval pottery (dated from the late 17th century through to the early 19th century) along with 19th century buckle harnesses and a cup hook of the same date, recovered from what may well have been the truncated remains of further ridge and furrow, appeared to confirm that agricultural activity took place at the site from the medieval period through to the later post-medieval.

Other examples of ridge and furrow activity from the region around the Tirley site have been identified at Redmarley D'Abitot (MON 1327172), Berrow (MON 113587), Eldersfield (WSM 10563 and 44932) and Hartpury (MON 1457142).

This low density of activity appeared to continue up to the present day with the most recent features identified appeared to be a network of ditches associated with drainage (**10318**, **10695** and **10360**), and a number of 19th century ceramic land drains. As a whole this evidence appears to fit into the wider picture for this landscape at this time, as during the Medieval and Post medieval period the region was dominated by large swathes of land put over to agricultural use with a moderate number of small settlements (villages and hamlets) dotted around it and a far smaller number of large centres. The main small local centres to the Tirley site would have been Coarse Lawn (*c.* 1km to the NE) and Tirley (*c.*1km to the east); Gloucester and Tewkesbury would have been the main, local, significant urban centres and trade markets.

5 CONCLUSIONS & CONSIDERATIONS

Evidence of prehistoric exploitation of the site was scarce, though a distinct Neolithic component has been recognised. Such activity, however, appears to have been intermittent and ephemeral.

The site appears to remain largely un-utilised until the establishment of a small, low status farmstead and its attendant field systems in the Roman period.

The land worked by the farm was very limited and would likely have been insufficient for more than a subsistence existence for the inhabitants of the farmstead.

The presence of a small number of higher status finds, such as imported continental potteries, indicated that at least a small degree of trade was occurring at the site, possibly at a local market centre such as Tewkesbury where pottery assemblages from excavated sites show a marked increase in wares such as Samian.

Tewkesbury was also likely to be the nearest significant hub for trade and communication, sitting as it does at the confluence of two major rivers, the Severn and the Avon, as well as two lesser waterways - the Swilgate and the Carrant Brook.

No definite Roman roads are known in the near vicinity to the Tirley PRI site, though a presumed route from Gloucester, past Deerhurst to Tewkesbury, then north through the Mythe to Worcester is mentioned by Rogers (1905). A Roman road from Gloucester to Dymock has also been located in part (GHERs 7187 and 7677) suggesting that the Tirley site might have been located between two established roads, though not sufficiently close to benefit from them.

As such, the site gives the impression of living on the edge, both of economic survival and of the Roman empire.

As the Roman empire grew to its peak in the 2nd century and an increasingly stable and urbanised population increased the demand on resources it was

likely that small, pioneering farmers would begin to exploit land away from the major trade arteries in order to meet that demand, particularly within the supposedly safer, more pacified lands under Roman authority.

The site at Tirley is presumed to be such a farm, set up to take advantage of an economic boom brought by a fairly stable empire, exploiting fertile river lands away from the more densely populated Roman centres. The small size of the early farm and its subsequent expansion suggests that this was a fairly successful operation, although it does not appear to have ever become particularly prosperous.

This expansion may have overstretched the latest use of the site, the productivity of which may have been adversely affected by a marked increase in riverine flooding. This, together with other similarly threatened farmsteads may therefore have contributed to the collapse of the primary markets at Tewkesbury and Gloucester. The withdrawal of the Romans from the country would have been a final nail in the coffin of any attempt to re-establish the site.

It should, though, be noted that this story of the site presupposes that the Tirley site existed in relative isolation, as the current archaeological record suggests.

The presence of further 2nd to 3rd century AD Roman enclosures at Lime Street, less than 1km to the north west of the site, and another possible locus of 2nd century AD Roman activity to the south east of the site, however, suggested that the site did not sit in a desolate rural hinterland, but instead in a fairly densely utilised landscape. It is postulated, therefore, that the Tirley site may not have been an independent farmer struggling to survive in a pioneering hinterland, away from trade routes and centres, but rather part of a larger estate, or aggregated village that would have had a more substantial hub for processing the crops and animals raised on its dependent farmsteads. The presence of two probable *imbrex* roof tiles amongst the detritus from the Tirley site are perhaps indicative of a more substantial building in relative proximity, though no such building appeared to exist within the enclosure.

The area in which the site was located is one where minimal modern development has occurred, particularly on the scale of the PRI site and its attendant pipeline, meaning that any such sites may well remain undetected.

Much of the Gloucestershire and Worcestershire historic environment records for Roman sites in this area are derived from cropmark or other non-intrusive surveys of the landscape, yet the preliminary work undertaken at the Tirley PRI, including the geophysical surveys, were notably ineffective and not even the relatively substantial ditches of the enclosure were detected. Also of note was the dearth of Roman artefacts in topsoil across the whole PRI area, suggesting that fieldwalking, had it been attempted, would have likewise failed to identify the site.

As such the lack of intrusive fieldwork in the area, particularly in recent times, is probably the main reason for the lack of evidence of Roman activity within the vicinity.

This would suggest that any future work in the area should take into consideration the possibility of further elements of a Roman estate or aggregated village to both the south-east and north-west of the Tirley site, and especial thought should be given to the archaeological processes used to assess the presence or absence of remains within any proposed development area. Even if the mitigations suggested in section 2.2 were applied to non-intrusive survey of sites it is advised that any future work in the area should incorporate an element of intensive intrusive work, such as trench evaluation, which was a much more reliable indicator of activity.

The Tirley site itself, whilst interesting for its relative rarity in the immediate vicinity, does not warrant any further work beyond this report and a brief publication of the results of the work in a suitable journal.

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APPENDIX A

SPECIALIST FINDS REPORTS

Animal Remains

Jennifer Wood BSc MA MifA

INTRODUCTION

A total of 278 (558g) refitted fragments of bone were recovered by hand during the archaeological works undertaken by Network Archaeology Ltd at Tirley PRI in Gloucestershire. Where fresh breaks were observed, fragments were refitted and counted as one.

METHODOLOGY

The entire hand collected assemblage has been fully recorded into a database archive. Where fresh breaks were observed, fragments were refitted and counted as one.

Identification of the bone was undertaken with access to a reference collection and published guides. All animal remains were counted and weighed, and where possible identified to species, element, side and zone (Serjeantson 1996). Also fusion data, butchery marks (Binford 1981), gnawing, burning and pathological changes were noted when present. Ribs and vertebrae were only recorded to species when they were substantially complete and could accurately be identified. Undiagnostic bones were recorded as micro (rodent size), small (rabbit size), medium (sheep size) or large (cattle size). The separation of sheep and goat bones was done using the criteria of Boessneck (1969) and Prummel and Frisch (1986), in addition to the use of the reference material. Where distinctions could not be made, the bone was recorded as sheep/goat (S/G).

The condition of the bone was graded using the criteria stipulated by Lyman (1996). Grade 0 being the best preserved bone and grade 5 indicating that the bone had suffered such structural and attritional damage as to make it unrecognisable.
The quantification of species was carried out using the total fragment count, in which the total number of fragments of bone and teeth was calculated for each taxon. Where fresh breaks were noted, fragments were refitted and counted as one.
Tooth eruption and wear stages were measured using a combination of Halstead (1985), Grant (1982) and Levine (1982), and fusion data was analysed according to Silver (1969). Measurements of adult, that is, fully fused bones were taken according to the methods of von den Driesch (1976), with asterisked (*) measurements indicating bones that were reconstructed or had slight abrasion of the surface.

ASSESSMENT OF ASSEMBLAGE

Quantity

A total of 278 (558g) refitted fragments were recovered from the excavation area.

Provenance

The remains were recovered from predominantly enclosure ditch deposits, with a small number of fragments recovered from pits, gullies and layers. The majority of the remains were recovered from features cohesively dated from the 2nd -3rd century AD.

Range and Variety of Material

Table 1 Number of species identified to species by date

	Date		
Taxon	**2nd-3rd Century**	**Undated**	**Total**
Equid (Horse Family)	7	1	8
Cattle	13	1	14
Sheep/Goat	7		7
Pig	1		1
Large Mammal	154		154
Medium Mammal	7		7
Unidentified	87		87
N=	276	2	278

Cattle were the most abundant species identified within the assemblage, followed by Equid (horse family), sheep/goat and pig. The majority of the assemblage was unidentifiable beyond large mammal size. A large proportion of the assemblage was represented by fragmentary teeth.

Condition of Material

The overall condition of the hand collected bone was poor, averaging at grade 4 on the Lyman Criteria.

Table 2 Number of fragments by Condition Grade Score (Lyman, 1996)

Condition	Total
2	3
3	63
4	212
Total	**278**

Due to the small size of the assemblage and the poor condition of the remains the number of remains that could be scored for pathology, butchery, burning, gnawing, measurements and tooth wear age scores were very minimal.

No evidence of pathology, butchery or gnawing was noted on any of the remains. None of the remains were complete enough to provide measurements and no complete mandibles were present to provide aging data.

Three fragments of bone displayed evidence of burning.

Statement of Potential

Due to the small size and rather poor and fragmentary condition of the assemblage, very little information can be gained from the material, save the presence of the remains on site.

New Research Questions and Potential of Data

The collected assemblage is small and of poor condition severely limiting the potential to provide any further information than already gained within this assessment. No further analysis is recommended for the assemblage.

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Table 3 Catalogue of animal bone

Ctxt No	Sample No	Taxon	Element	Side	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Prox	Dist	Path	Butch	Worked	Burnt	Gnaw	Fresh Break	Assoc'd	Measured	Tooth Wear	Surface	Condition	No	(g)	Notes
10362	0	Equid	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	R	4	1	26	Upper PM/M broken
10448	0	Equid	Metatarsal	L	N	Y	N	N	N	N	N	N	F	X	N	N	N	N	N	N	N	N	N	X	3	1	4	
10448	0	Large Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	18	42	
10448	0	Large Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	4	67	44	
10452	0	Cattle	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	N	X	3	1	5	lower molar fragment
10470	0	Cattle	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	N	X	3	1	3	Fragmentary upper PM
10472	0	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	Y	N	N	N	N	N	X	3	2	1	Burnt white/grey
10474	0	Cattle	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	N	X	3	1	10	Fragmentary molar
10501	0	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	4	2	3	
10501	0	Medium Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	4	1	0	
10501	0	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	4	1	1	
10501	0	Cattle	Carpal/Tarsal	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	4	1	5	
10531	0	Cattle	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	N	X	3	1	12	fragmentary lower M3
10535	0	Cattle	Metapodial	L	N	N	N	N	N	N	Y	Y	X	F	N	N	N	N	N	Y	N	N	N	X	3	1	39	condyles only
10540	0	Sheep/Goat	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	N	X	3	1	1	Lower molar fragment
10541	0	Large Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	4	5	8	
10541	0	Large Mammal	Mandible	L	N	N	N	N	N	N	N	Y	X	X	N	N	N	N	N	N	N	N	N	X	3	1	4	
10541	0	Equid	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	1	40	Upper M1 broken
10541	0	Equid	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	1	24	Upper M2, unworn, broken
10541	0	Equid	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	1	28	Upper M3
10541	0	Equid	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	1	16	Upper dm1
10541	0	Equid	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	1	27	Upper PM
10541	0	Equid	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	4	1	3	Upper insicor
10541	0	Sheep/Goat	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	Y	X	3	1	5	Lower M3=c
10541	0	Cattle	Radius	R	N	Y	N	N	N	N	N	N	F	X	N	N	N	N	N	Y	N	N	N	X	3	1	21	
10607	0	Cattle	Astragalus	L	N	Y	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	1	9	
10607	0	Large Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	12	30	
10607	0	Large Mammal	Carpal/Tarsal	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	4	3	15	
10607	0	Cattle	Calcaneus	L	Y	Y	N	Y	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	1	10	
10607	0	Large Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	4	44	45	
10636	0	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	4	3	
10636	0	Cattle	Phalanx (II)	L	Y	N	Y	N	Y	N	Y	N	F	F	N	N	N	N	N	Y	N	N	N	X	4	1	4	
10636	0	Cattle	Phalanx (I)	L	N	N	N	N	N	N	Y	N	X	F	N	N	N	N	N	N	N	N	N	X	3	1	5	
10641	0	Large Mammal	Carpal/Tarsal	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	N	X	3	1	5	
10642	0	Cattle	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	N	X	3	1	10	fragmentary molar
10645	0	Sheep/Goat	Tibia	L	N	N	N	N	Y	Y	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	1	2	
10664	0	Cattle	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	N	X	3	1	3	Fragmentary lower molar
10690	0	Cattle	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	N	X	2	1	16	Upper M2
10709	0	Pig	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	Y	X	3	1	4	Lower M1=a
10720	0	Sheep/Goat	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	Y	X	2	1	6	Lower M3=f

Ctxt No	Sample No	Taxon	Element	Side	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Prox	Dist	Path	Butch	Worked	Burnt	Gnaw	Fresh Break	Assoc'd	Measured	Tooth Wear	Surface	Condition	No	(g)	Notes
10720	0	Sheep/Goat	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	Y	X	2	1	2	Lower M2=h
10742	0	Medium Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	Y	N	N	N	N	N	X	3	1	1	Burnt white
10755	0	Sheep/Goat	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	N	X	3	1	1	Fragmentary lower molar
10763	0	Sheep/Goat	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	N	X	3	1	4	Fragmentary M3
10820	0	Medium Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	N	X	3	1	0	Burnt grey/black
10836	0	Unidentified	Unidentified	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	4	78	6	
10840	0	Large Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	4	1	3	
10849	0	Medium Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	4	4	1	
10849	0	Large Mammal	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	4	2	1	

Ceramic building material and fired clay

Rachel Hall

Ceramic building material (CBM)

Introduction

A total of 28 fragments of CBM, weighing 1564g were recovered from seventeen contexts (see Table 4).

The assemblage

The assemblage comprises 12 tile fragments, 10 brick fragment and 6 undiagnostic fragments. The fabrics are all coarse sandy and oxidised. The condition of the assemblage ranges from fair to poor.

Results

Fourteen fragments were recovered that date to the Romano-British period. Tile fragments were recovered from ditch [10489], enclosure ditch [10640], (GPS 6105030), (GPS 610535) and (GPS 6141022). A small number of brick fragments were also recovered from (GPS 6141011). With exception of a white fabric tile from GPS 6105030, they are all sandy and oxidised with a soft abraded fabric. One brick fragment recovered from (GPS 6141011), measured 50mm wide.

The remaining assemblage comprises post-medieval fragments of tile recovered from boundary ditch [10069], gully [10356], layer 10538, GPS 6141020 and [10722] and brick fragments from agricultural feature [10573] (measuring 50mm wide), feature [10725] (measuring 70mm x 8mm) and gully [10644]. The remaining undiagnostic fragments were recovered from gullies [10340], [10465] and primary fill of ditch [10595].

FIRED CLAY

Introduction

A total of 104 fragments of Fired Clay weighing 1547g were recovered from 31 contexts (see Table 4).

With the exception of a small amount of objects the assemblage comprises small and abraded, undiagnostic fragments. They are all in a sandy fabric with sparse Iron Oxide and organic inclusions with variable firing.

Results

A small amount of fragments have at least one surface and an edge/ corner or a curved surface. These represent possible objects such as loomweights or Kiln

bricks/mould fragments. These were recovered form layers (10538), (10645), ditch [10558], pit [10591], features [10674], [10725] and GPS 6105031.

A single fragment of Daub was recovered from Layer (20312). It has a surface and wattle impressions. The remaining fragments may also represent daub fragments from house structures.

With exception of brick recovered from Romano-British ditch [10558], the assemblage is undated.

Recommendations

The small amount of material offers little potential for further research. No further work is required.

Table 4 Catalogue of ceramic building and fired clay

Context	GPS	Material	Form	Number	Weight	Date	Comments
10070		CBM	Tile	1	57	Pmed	sparse flint inclusions, well finished, hard fired tile frag
10341		CBM	undiagnostic	1	44	Undated	very abraded fragment
10357		CBM	Tile	2	32	Pmed	well finished hard fired tile fragment
10464		CBM	undiagnostic	3	46	Undated	abraded fragments
10488		CBM	Tile	1	8	?RB	sandy and oxidised with flint and Iron oxides inclusions, abraded
10538		CBM	Tile	1	42	Pmed	well finished hard fired tile fragment, reduced firing
10574		CBM	brick	1	94	Pmed	fragment of narrow brick 50mm wide with three surfaces. Oxidised with reduced core
10599		CBM	undiagnostic	2	11	Undated	abraded fragments
10607		CBM	Tile	1	182	RB	curved thick tile, possible imbrex tile, soft fabric
10643		CBM	brick	7	147	Pmed	two surfaces and edge of a brick, and some very abraded fragments of ?tile
10719		CBM	Tile	2	28	Pmed	tile and abraded fragment, hard fired.
10726		CBM	brick	1	563	Pmed	large brick fragment, measuring 70mm wide x ?85mm depth. Oxidised fabric with sandy and organic inclusions
	6105030	CBM	Tile	1	17	RB	thick tile fragment, in white fabric
	6105035	CBM	Tile	1	54	RB	sandy with quartz inclusions thick tile with surfaces
	6141011	CBM	brick	1	130	RB	light fabric, ?burnt with voids (calcareous fabric) measuring 50mm wide.
	6141020	CBM	Tile	1	56	Pmed	hard fired tile fragment
	6141022	CBM	Tile	1	53	RB	soft fabric, curved tile fragment, ?imbrex
10054		Fired Clay	Undiagnostic	4	5	unassigned	very abraded fragments
10357		Fired Clay	Undiagnostic	8	37	unassigned	abraded fragments, one has a reduced core
10402		Fired Clay	Undiagnostic	1	6	unassigned	abraded fragment
10448		Fired Clay	Undiagnostic	8	32	unassigned	abraded fragments
10464		Fired Clay	Undiagnostic	1	10	unassigned	abraded fragment
10452		Fired Clay	Undiagnostic	2	8	unassigned	abraded fragments
10468		Fired Clay	Undiagnostic	1	6	unassigned	abraded fragment
10478		Fired Clay	Undiagnostic	1	11	unassigned	abraded fragment
10511		Fired Clay	Undiagnostic	2	33	unassigned	abraded fragments
10513		Fired Clay	Undiagnostic	3	23	unassigned	abraded fragments
10515		Fired Clay	Undiagnostic	7	30	unassigned	abraded fragments
10538		Fired Clay	Undiagnostic	3	22	unassigned	abraded fragments
10538		Fired Clay	object	1	231	unassigned	object with an edge and corner with three surfaces. Abraded but possible loomweight or kiln brick.
10541		Fired Clay	Undiagnostic	5	27	unassigned	abraded fragments, two have slight surfaces.
10557		Fired Clay	object	1	16	unassigned	abraded fragment with two surfaces and an edge. Oxidised with a reduced core. ?kiln brick/loomweight
10557		Fired Clay	Undiagnostic	1	3	RB	abraded fragment
10575		Fired Clay	Undiagnostic	5	117	unassigned	abraded fragments
10592		Fired Clay	Undiagnostic	6	50	unassigned	abraded fragments

Context	GPS	Material	Form	Number	Weight	Date	Comments
10592		Fired Clay	object	2	98	unassigned	two fragments with surfaces, one flat and one curved, possible loomweights
10599		Fired Clay	Undiagnostic	1	7	unassigned	abraded fragment
10634		Fired Clay	Undiagnostic	4	33	unassigned	abraded fragments
10643		Fired Clay	Undiagnostic	1	11	unassigned	abraded fragment
10645		Fired Clay	Undiagnostic	2	18	unassigned	abraded fragments
10645		Fired Clay	object	1	30	unassigned	curved surface, part of an object, possibly a loomweight or maybe mould fragment.
10655		Fired Clay	Undiagnostic	2	17	unassigned	abraded fragments
10663		Fired Clay	Undiagnostic	3	13	unassigned	abraded fragments
10675		Fired Clay	object	1	7	unassigned	two surfaces and an edge, abraded object
10708		Fired Clay	Undiagnostic	2	196	unassigned	abraded fragments, possible surface on one.
10726		Fired Clay	object	1	101	unassigned	abraded fragment with one curved surface
10743		Fired Clay	Undiagnostic	5	8	unassigned	abraded fragments
10747		Fired Clay	Undiagnostic	1	5	unassigned	abraded fragment
10819		Fired Clay	Undiagnostic	3	10	unassigned	abraded fragments
20312		Fired Clay	daub	7	157	unassigned	abraded fragments with one fragment having a surface . Several wattle impressions.
	6105032	Fired Clay	object	6	156	unassigned	curved surface, part of an object, possibly a loomweight or maybe mould fragment. The majority are reduced in fabric with one surface that may be burnt.
	6141036	Fired Clay	Undiagnostic	2	13	unassigned	abraded fragments

Clay tobacco pipe

Mike Wood BA (hons) MLitt MIfA

Introduction

Twelve fragments of clay tobacco pipes were recovered from archaeological works at the Tirley PRI project (TIR). The stratified material was derived gulley fills; unstratified artefacts collected during the work were located by gps co-ordinates.

Methodology

The material was counted and weighed in grams, then examined visually to identify any diagnostic pieces and the overall condition of the assemblage. Reference was made to published guidelines (Higgins & Davey 2004). Where no other identification has been possible, stems have been dated by established stem bore guidelines (Oswald 1975). It should be noted that dates provided by stem bore size can have an appreciable margin for error and are intended only as a general guide. A summary of the material is recorded in Table 5.

Discussion

The assemblage comprises a mixture of 18th and 19th century clay pipes almost all represented by stem fragments. A single stem retains a faded club decoration and a decorated 19th century pipe has a moulded acorn forming part of the bowl, typical of this period.

Condition

Many of the pipes exhibit signs of weathering as would be expected from their recovery from topsoil and subsoil layers. Two of the stems, including the one with the club decoration, have been burnt, probably in domestic fires.
Recommendations for further work

None of the material warrants any further work or illustration. The decorated bowl would, however, benefit from a photographic record to go with the final archive. All the artefacts are in a stable condition and require no further conservation.

Reference:

Higgins, D A & Davey, P J, 2004, '*Appendix 4: Draft guidelines for using the clay tobacco pipe record sheets*' in S D White, *The Dynamics of Regionalisation and Trade: Yorkshire Clay Tobacco Pipes c1600-1800, The Archaeology of the Clay Tobacco Pipe, XVIII*, British Archaeological Reports (British Series 374), Oxford, 487-490 (567pp)

Oswald, A, 1975 *Clay Pipes for the Archaeologist* BAR 14, Oxford

Table 5 Clay pipe catalogue

Context	Deposit	Date range	Count	Weight (g)	Stem bore	Comments
gps 6141032	na	1767-1782	1	2	4/64"	stem
gps 6105005	na	1767-1782	1	1	4/64"	stem burnt
gps 6105005	na	1780+	1	1	3/64"	stem
gps 6141045	na	1780+	1	1	3/64"	stem, fractured
gps 6081029	na	1767-1782	1	2	4/64"	stem, weathered
gps 6141050	na	1780+	1	2	3/64"	stem
10388	fill of gulley 10389	1767-1782	1	1	4/64"	stem, fractured
gps 6105002	na	1780+	1	2	3/64"	stem
10660	fill of 10659	1682-1757	1	1	5/64"	thin walled stem with squashed appearance, misfire?
gps 6141048	na	1767-1782	1	1	4/64"	thin walled stem
gps 6105004	na	1780-1850	1	2	3/64"	Decorated stem. Club/torch? Surrounded by a corded border. Burnt
10643	fill of gulley 10644	1840-1860	1	7	3/64"	Decorated bowl. Narrow spur, acorn design for base of bowl, leaves decorate the seams.

Flint

Dr Hugo Anderson-Whymark

Introduction

Eighteen struck flints and two pieces of burnt unworked flint was recovered from excavations at Tirley, Gloucestershire (TFC 36). The vast majority of the flintwork was recovered from topsoil, but a small number of artefacts were recovered from archaeological features. The stratified flints cannot, however, assist in dating these features.

Results

The lithic assemblage includes nine flakes and one blade. This debitage is of regular proportions and the blade was struck from a single platform blade core. The technology and proportions of the blade indicate a Mesolithic or early Neolithic date; the flake debitage is only broad datable to the Neolithic or early Bronze Age. In addition to the flakes, three flake cores were recovered. Two are of small proportions, weighing 22 g and 8 g, and have been extensively worked. The other core is of good quality chalk flint and has only been partially worked before being burnt and abandoned (weight 208 g).

Four retouched tools were recovered, comprising two rod-shaped fabricators (strike-a-lights), a knife and an end scraper/piercer multi-tool. The fabricators are classic examples and both exhibit characteristic rounded use-wear on their ends, which results from use against iron pyrites to create sparks. The knife, although exhibiting extensive plough damage, is a fine tool and it was manufactured with a good degree of skill on a regular blade. The knife and one of the fabricators exhibit high quality scale flaking characteristic of late Neolithic/early Bronze Age artefacts. The other artefacts may be broadly contemporary, although only a Neolithic to early Bronze Age date can be proposed.

Potential

The lithic assemblage has no potential for further analysis, but some of the artefacts are of intrinsic interest and serve to indicate earlier prehistoric activity in the landscape. The late Neolithic/early Bronze Age (Beaker) artefacts are particularly notable as these tools are comparatively uncommon. It is therefore recommended that this text is edited for inclusion in the publication. Illustrations of both fabricators and the knife will complement the report.

Table 6 The flint assemblage

Artefact type	Total no.
Flake	9
Blade	1
Irregular waste	1
Single platform flake core	2
Core on a flake	1

Artefact type	Total no.
Fabricator (strike-a-light)	2
Knife	1
End scraper/piercer combination tool	1
Burnt unworked flint	2
Grand total	**20**

Catalogue

Thin and regular blade struck from a single platform blade core. SF1. Mesolithic or early Neolithic?

Burnt unworked flint. Context 5271. Weight: 12 g.

Flake with facetted butt. Context 10017. Weight: 2 g. Neolithic or early Bronze Age?

Regular single platform flake core exhibiting cortical platform and platform edge-abrasion. Chalk flint with c7mm thick white cortex. Burnt. Context 10182, SF 2. Weight: 208 g. Probably Neolithic-early Bronze Age.

Broken blade-like flake with slight edge damage. Context 10315. Weight: 1 g. Prehistoric.

Broken flake with use-damage. Context 10388. Weight: 1 g. Prehistoric.

Burnt and broken flake with use-damage. Context 10473. Weight: 1 g. Prehistoric.

Irregular flake. Context 10805. Weight: 1 g. Prehistoric.

Rod-shaped fabricator. Abrupt retouch along right hand side and distal left land side which converges in a distal point. The retouch was pressure flakes and exhibits some scale flaking typical of the late Neolithic/early Bronze Age. The pointed distal end and proximal end exhibit rounded use-wear typical of use as a strike-a-light. GPS 6105006. Weight: 9 g. Late Neolithic-early Bronze Age. (Illustration 1)

Rod-shaped fabricator. Lighted corticated ventral surface and uncorticated retouch indicates the tool was manufactured on an earlier flake. Coarse abrupt retouch around the entire perimeter of tool with rounded use-wear on both ends. GPS 6105008. Weight : 16 g. Neolithic-early Bronze Age. (Illustration 2)

Burnt unworked flint. GPS 6105026. Weight: 4 g.
Irregular flint waste. GPS 6105027. Weight: 6 g.
Small flake re-used as a core from small flake removals. Light white cortication. GPS 6105033. Weight: 8 g. Prehistoric.

knife manufactured on a blade. Lhs exhibits low angle scale retouch typical of the late Neolithic/early Bronze Age. Extensive post-depositional edge-damage. GPS 6105034. Weight: 7 g. Late Neolithic/early Bronze Age. (Illustration 3)

Broken flake. GPS 6105036. Weight: 1 g. Neolithic to early Bronze Age?
Single platform flake core. Regular removal, but crushed platform edge. GPS 6141010. Weight: 22 g. Neolithic to early Bronze Age?

End scraper and piercer combination tool manufactured on a regular plunging flake struck from a single platform blade core. Proximal piercer and distal scraping edge with spur. Black flint with white chalk cortex. GPS 6141028. Weight: 20 g. Neolithic to early Bronze Age?

Flake. GPS 6141035. Weight: 1 g. Prehistoric.

Flake. GPS 6141037. Weight: 11 g. Prehistoric.

Flake. Removal of protrusion from core. GPS 6141046. Weight: 12 g. Prehistoric.

Glass

Mike Wood BA (hons) MLitt MIfA

Introduction

Seven items of glass weighing 53g were recovered during archaeological work at Tirley PRI in Gloucestershire. The material was derived from a layer and the fill of a cut feature. All of the finds date to the 19th or 20th century.

Methodology

The material was counted and weighed in grams, then examined visually to identify any diagnostic pieces and the overall condition of the assemblage. Reference was made to published sources (Davis 1973, Dumbrell 1983). A summary of the material is recorded in Table 7.

Discussion

The assemblage contained a mix of bottle glass spanning the 19th to 20th century. The assemblage appears typical of domestic debris from this period.
A black glass wine bottle from layer (10073) can be placed in the early nineteenth century, whilst the remaining bottle fragments can only be broadly dated.
Recommendations for further work
No further work is recommended. All of the artefacts could be passed to suitable teaching collections, returned to the landowner or be discarded.

References:

Davis, Derek. C., 1972, *English Bottles and Decanters 1650-1900*.Charles Letts and Company Ltd

Dumbrell, R., 1983, *Understanding Antique Wine Bottles*. Baron Publishing Suffolk

Table 7 Glass catalogue

Context	Deposit	Form	Colour	Date	Shds	Wt (g)	Comments
Gps 6105013	na	bottle	dark green	19th	1	2	fractured and slight irridesence
10696	Fill of 10	bottle	pale aqua	19th-20th	1	15	fractured chunk
10073	layer	bottle	dark green	1800-1810	1	12	faint curve to base and depth of kick suggest start of 19th c.

Metalwork

Dr Kevin Leahy, FSA, MIfA

The finds were received in an as found condition and no radiographs were available at the time of initial examination. This archive consisted of 14 items from TIR 36 of which 13 were iron and one copper alloy. The iron objects were corroded, but relatively well preserved, although some detail was hidden by corrosion products. The copper alloy was in good condition but with some loss of surface.

Finds were examined at x10 magnification, sketched and described in detail. Materials were identified visually and dimensions were recorded using vernier callipers. Masses were obtained on an electronic balance to an accuracy of 0.01g.

Discussion

Of the items submitted only two could be dated one of which was the copper alloy cup-hook, GPS 60811029, which is of nineteenth, or earlier twentieth century date. The other dated object is the iron horseshoe, 10026 which is likely to be thirteenth century or earlier.

Recommendations

With the exception of the Medieval horseshoe it is not thought that any of this material has any intrinsic archaeological importance although in some cases it may have come from a context which makes it worthy of note. It is not worth taking the discussion of the horseshoe any further and the account of it given below should be sufficient for its publication.

Table 8 Summary table of registered finds

Context	Description	Material	Mass	Dating
10026	Horseshoe	Iron	82.56g	13th century
10645	Nail or stud	Iron	12.35g	?
10648	Nail or stud	Iron	6.14g	?
10667	Nail?	Iron	4.02g	?
10709	Nail or stud	Iron	10.94g	?
10763	Off-cut?	Iron	11.07g	?
10820	Off-cut?	Iron	1.46g	?
10836	Nail	Iron	7.82g	?
10840	Nail	Iron	13.12g	?
GPS 614102	Unidentifiable	Iron	19.48g	?
GPS 6105005	Buckle, harness	Iron	23.91g	19th century
GPS 6141024	Off-cut?	Iron	9.69g	?
GPS 6141049	Buckle, harness	Iron	23.91g	19th century
GPS 60811029	Cup-hook	Copper alloy	30.32g	19th century

Catalogue

Context:	(10026)	<>
Material	Iron	
Condition:	Corroded but good, one branch broken	
Description:	Horseshoe, narrow web (17.5mm wide x 6.3mm thick) with a wavy outer edge the nail holes having deep, oval (15.5 x 6.2mm) countersinkings around them. It appears that there were three nails through each branch. On the end of the surviving branch is a small raised calkin apparently formed by folding the metal back.	
Dimensions:	Length 100.4mm, Width 101.3mm	
Mass:	82.56g	
Identification:	Horseshoe	
Dating of find:	This object belongs to Clark (Clark J ed, 2004 The Medieval Horse and its Equipment, Museum of London, Boydell, Bury St Edmunds) Type 2 formally 'Norman' horseshoe. While the type comes into use during the eleventh century a thirteenth century date is perhaps more likely.	
Context description	Cultivation feature or sunken trackway	
Further action	Illustrate and describe if from a useful context	

Context:	(10645)	<10>
Material	Iron	
Condition:	Corroded and encrusted	
Description:	Iron nail, oval head 22.7 x 19.9mm, square sectioned shaft 7.1 x 7.1mm, point missing	
Dimensions:	Length 26.8mm	
Mass:	12.35g	
Identification:	Nail or stud	
Dating of find:	Not datable	
Context description	Layer containing pottery and bone	
Further action	None required	

Context:	(10648)	<11>
Material	Iron	
Condition:	Corroded, good	
Description:	Iron nail, square head 12.9 x 12.7mm, square sectioned shaft 7.7 x 7.7mm, tapering to point	
Dimensions:	Length 29.8mm	
Mass:	6.14g	
Identification:	Nail or stud	
Dating of find:	Not datable	
Context description	Fill of post-hole forming part of a group with the same alignment as the Romano-British enclosure	
Further action	None required	

Context:	(10667)	<>
Material	Iron	
Condition:	Corroded and encrusted	
Description:	Iron object obscured by corrosion. It appears to have had a square section 6.2 x 6.0mm, but there is no indication of a head.	

Dimensions:	Length 47.0mm
Mass:	4.02g
Identification:	Nail?
Dating of find:	Not datable
Context description	Fill of 10669
Further action	None required

Context:	(10709) <>
Material	Iron
Condition:	Good but corroded
Description:	Iron nail, oval head 20.1 x 15.5mm, shaft square 6.5 x 6.3mm
Dimensions:	Length 39.2mm
Mass:	10.94g
Identification:	Nail or stud
Dating of find:	Not datable
Context description	Group
Further action	None required

Context:	(10763) <>
Material	Iron
Condition:	Corroded with some concretions
Description:	Iron bar, square section, 6.7 x 6.7mm
Dimensions:	Length 46.6mm
Mass:	11.07g
Identification:	Off-cut?
Dating of find:	Not datable
Context description	Fill of 10764
Further action	None required

Context:	(10820) <>
Material	Iron
Condition:	Corroded and encrusted
Description:	Bar, section probably square
Dimensions:	Length 21.0mm, Width 4.8mm, Thickness 4.4mm
Mass:	1.46g
Identification:	Off-cut?
Dating of find:	Not datable
Context description	Fill of 10821
Further action	None required

Context:	(10836) <>
Material	Iron
Condition:	Corroded, good
Description:	Nail, head square, 9.5 x 9.2mm, shaft square 7.5 x 6.8mm tapering slightly, point missing
Dimensions:	Length 39.1mm
Mass:	7.82g
Identification:	Nail
Dating of find:	Not datable
Context description	Fill of 10834
Further action	None required

Context:	(10840) <>
Material	Iron
Condition:	Corroded and encrusted

Description:	Iron object the shape of which is obscured by corrosion. It appears to be expanded at one end to form a 'head' 23.5 x 19.8mm, the shaft now has a 13.8mm diameter.
Dimensions:	Length 34.2mm
Mass:	13.12g
Identification:	Nail
Dating of find:	Not datable
Context description	Fill of 10841
Further action	None required

Context:	(GPS 614102)	<>
Material	Iron	
Condition:	Corroded, no detail surviving	
Description:	Iron object, oval its section changing from 14.9 x 9.3mm at one end to 22.1 x 4.3mm at the other.	
Dimensions:	Length 53.3mm, Width (maximum) 22.1mm, Thickness (maximum) 9.3mm	
Mass:	19.48mm	
Identification:	Unknown	
Dating of find:	Not datable	
Context description		
Further action	None required	None required

Context:	(GPS 6105005)	<>
Material	Iron	
Condition:	Incomplete, corroded and exfoliating	
Description:	Remains of a rectangular buckle frame made from 10.1mm diameter rod, one side and most of one end missing	
Dimensions:	Length 58.4mm, Width 43.8mm	
Mass:	23.91g	
Identification:	Harness buckle	
Dating of find:	Nineteenth or earlier twentieth century	
Context description		
Further action	None required	

Context:	(GPS 6141024)	<>
Material	Iron	
Condition:	Corroded and encrusted	
Description:	Iron bar, while hidden by corrosion the section appears to have been rectangular.	
Dimensions:	Length 47.1mm, Width 8.6mm, Thickness 7.1mm	
Mass:	9.69g	
Identification:	Off-cut?	
Dating of find:	Not datable	
Context description		
Further action	None required	

Context:	(GPS 6141049)	<>
Material	Iron	
Condition:	Incomplete, corroded and exfoliating	
Description:	Remains of a rectangular buckle frame made from round sectioned rod, 7.8mm diameter at the ends, 9.1mm diameter at the sides. Both the ends and sides of the buckle are incurved as is its back.	
Dimensions:	Length 58.0mm, Width 58.1mm	

Mass:	37.75g	
Identification:	Harness buckle	
Dating of find:	Nineteenth or earlier twentieth century	
Context description		
Further action	None required	
Context:	(GPS 60811029)	<>
Material	Copper alloy	
Condition:	Good but with some loss of its patinated surface	
Description:	Cast copper alloy hook, shaft tapering from 9.2mm to 4.2mm diameter where it bends through 90 degrees. On its end is an oblate terminal 13.0mm diameter x 11.2mm high. The other end expands to a 18.0mm diameter, trumpet-shaped terminal in the centre of which are traces of an iron screw.	
Dimensions:	Length 82.1mm, Diameter 18.0mm	
Mass:	30.32g	
Identification:	Cup-hook	
Dating of find:	nineteenth or early twentieth century	
Context description		
Further action	None required	None required

Post-Roman pottery

Paul Courtney

Introduction

Forty sherds of pottery weighing 332g (and a piece of polished stone) were examined using a x20 binocular microscope. Two sherds were Romano-British and the rest all post-medieval. All the pre-industrial ceramics were of common regionally-produced types. All four contexts appear to be post-medieval in date. Context 10070 was late 17th century or later though based on a single sherd. The remaining three contexts (5403, 10154 and 10388) were 19th century or later.

Fabric Types

CMRW Coal Measures Red Ware

A single sherd from a bowl base in a red fabric with white 'marl' inclusions and dark brown internal glaze. It was made from a Coal Measures clay, probably from Bristol or Staffordshire, 17th to early 18th century.

DEWW Developed Whiteware

Industrial whitewares, mostly with blue transfer decoration c.1820-

EBSW English Brown Stoneware

Sherds from stone ware utilitarian jars of the 19th to early 20th century.

INYW Industrial yellow ware

A single shed in a buff fabric with yellow glaze, c.1830 onwards

RBSV Romano-British Severn Valley ware

A very worn sherd in a hard fabric with sparse fine mica, oxidized surfaces and reduced core (Timby 1990).

MOTW Mottled Ware

A single sherd with a brown mottled glaze over a white fabric, Staffordshire or Bristol c.1670-1760

PEAW Pearlware.

Blue tinged industrial white ware, c. 1780-1830. 1 sherd.

RBMS Romano-British Mica Slipped Ware

A single worn rim-sherd from a mica-slipped oxidized bowl (a variant of Severn valley ware), Gloucester fabric TF3A (Timby 1990).

SPOR Semi-Porcelain

A single sherd from a cup with worn gilt decoration, mid 19th-early 20th century.

STRE Stroat-Type Red Earthenware

Non-micaceous red earthenware with lead glazing. This ware occurs at Gloucester (TF97 ware) and a production centre identified at Stroat which appears to have shipped the ware up the Severn, Late 16th-17th century (Vince 1984, ch. 2).

TILE Tile or Pipe

One sherd in a micaceous unglazed red earthenware, from a ridge tile or pipe. Probably 18th-20th century.

WBRE Welsh Borders Red Earthenware

Red firing post-medieval earthenware with lead glaze. The fabric is finely micaceous suggesting an Old Red Sandstone source. This is Vince's Hereford A7d (Post-Medieval Welsh Borderland wares) which was made at various centres from the end of the 16th to early 18th centuries including Upton, Dymock, Whitney-on-Wye and Newent Glasshouse (Vince 1977 and 1984, ch.2).

References

Timby, J. 1990, '*Severn Valley Wares: A Reassessment'*, Britannia 21, 243-251.

Vince, A. 1977, *Newent Glasshouse: a late 16th and 17th century glasshouse and late 17th and 18th century pottery*. Bristol: CRAAGS Occasional Paper.

Vince, A. G. 1984, *The Ceramic Industry of the Severn Valley*, unpublished Ph.D. thesis, University of Southampton. Available online at http://www.postex.demon.co.uk/thesis/thesis.htm (accessed 02/02/2011).

CATALOGUE

Table 9 Context 5403

Fabric	Sherd Nos	Wt g.	Form	Other
CMRW	1	12	?bowl	
INYW	1	4	?bowl	carinated
PEAW	6	34	Dis rim; mugs/jugs	Blue transfer-chinoiserie; mocha
DEWW	4	11	dishes	Blue transfer-floral/Chinoiserie
SPOR	1	2	cup rim	Gilt- lost

Context 19th century

Table 10 Context 10070

Fabric	Sherd Nos	Wt g.	Form	Other
MOTW	1	17	Base	Int. mottled glaze
RBSV	1	9	? bowl	Very worn

Context: Late 17th century or later

Table 11 Context 10388

Fabric	Sherd Nos	Wt g.	Form	Other
PEAW	2	3	?	Blue transfer- Chinoiserie

Context: early 19th-century or later

Table 12 Context 10154

Fabric	Sherd Nos	Wt g.	Form	Other
INYW	3	8	?	

Context: early 19th-century or later

Table 13 Finds located by GPS

GPS	Fabric	Sherd Nos	Wt g.	Form	Other	Date
6105021	WBRE	1	8	? bowl	Int glazed	L16-E18
6105022	EBSW	1	7	Jar		19-E20
6105022	RBMS	1	5	Bowl rim	micaceous	RB
6141009	EBSW	1	36	Jar handle		19
6141012	EBSW	1	16	Jar/jug		19-E20
6141018	STRE	1	17	Bowl base		17-E18
6141025	EBSW	1	11	Jug/bottle handle		19-E20
614038	DEWW	1	4	Plate rim, burnt	Moulded vine sprig, blue	M19-E20
6141039	ETGE	1	1	Hollow ware	Blue painted dec.	17-E18
614143	EBSW	1	1	?Jar		19-E20
6141047	WBRE	1	4	?bowl	Int. glaze	L16-E18
6141042	WBRE	1	17	Bowl base	Int glazed	L16-E18
6141042	EBSW	1	2	Jar?	Blue painted bands	19
6141051	EBSW	1	8	?Jar	Underfired	19
615001	Stone	1	8	Polished fine grey stone	??	?
6105023	TILE	1	11	Ridge tile or drain	Unglazed, micaceous	
6105023	DEWW	2	16	Plate rim, base ring	Transfer decoration-stylised plants	M19-E20
6105023	PEAW	1	16	?	Trace of blue transfer	E19
6211001	DEWW	1	1	Plate rim	Blue transfer- Cinoiserie	M19-E20
6211001	WBRE	1	3	?bowl	Int. glazed	L16-E18
6211004	STRE	1	48	Bowl rim	Int. glazed	L16-17

Production process residues

Mike Wood BA (hons) MLitt MIfA

Introduction

A small collection of coal, clinker and slag was recovered during archaeological work at Tirley PRI (TIR) in Gloucestershire. The material was all derived from ditch and gulley fills.

Methodology

The material was counted and weighed in grams, then examined visually to identify any diagnostic pieces and the overall condition of the assemblage. A summary of the material is recorded in Table 14.

Discussion

The coal and clinker are of little value, beyond identifying their presence; while the small assemblage size suggests there has been no sustained deposition of industrial waste and this is more likely to be post-medieval or modern waste passed from domestic hearths onto the fields, and buried features, by manuring and ploughing. The single piece of vesicular slag suggests an industrial process which has caused waste products to bond with an adjacent medium. The lack of any other industrial material from the site again implies there has been no sustained industrial activity.

Recommendations for further work

All the artefacts are in a stable condition and require no further conservation. While the slag is a very small assemblage, it should be retained as part of the archive. The clinker and coal could be discarded.

Reference:

Biek, L. and Bayley, J. 1979: *Glass and other vitreous materials* World Archaeology xi, 1-25

Table 14 Catalogue of production process residues

Context	Deposit	Count	Weight (g)	Date	Material	Comments
10513	fill of ditch 10512	6	23	undated	Coal	
10316	fill of 10308?	1	1	undated	Clinker	
10523	fill of gulley 10522	5	3	undated	Coal	
10493	fill of ditch 10495	1	22	undated	Slag	Concreted fragment of vesicular slag. Bonded to mix of quartz and limestone flecks.

Roman pottery

Jane Timby

Introduction

The archaeological work resulted in the recovery of some 2937 sherds of pottery weighing c 249 kg and with 22.32 estimated vessel equivalents (EVE), dating to the Roman period. The pottery is generally in good condition with a number of instances of joining sherds from the same vessels although the fragmentation rate is quite high. This is reflected in the overall average sherd weight of 8.5 g, possibly indicative of material that has undergone some ongoing disturbance or a consequence of the soft nature of some of the fabrics.

Roman pottery was recovered from 180 individual contexts, 44 of which have been amalgamated into some 10 stratigraphic groups. Approximately 15% of the assemblage by count, and 13.2% by weight, came from the topsoil or unstratified collection. In the following report, following a statement on the methodology, a brief description is given of the fabrics and associated forms.

Methodology

The pottery was sorted into fabrics based on the type, size and frequency of inclusions and firing colour. Named traded wares were coded using the National Roman reference codes (Tomber and Dore 1998 (=T & D) (see Table 14)). Other sherds are coded more generically by colour. The sorted material was quantified by sherd count, weight and estimated vessel equivalent (rim only). Where sherds had evidently broken during or after retrieval these were counted as one. Rim sherds were coded according to vessel type. The quantified data was entered onto a MS Excel spreadsheet, a copy of which is deposited with the site archive.

Table 15 The Roman pottery

	NRFCC/GL	Description	No	% No	Wt	% Wt	EVE	% EVE
Native	MAL RE A	Malvernian Peacock Gp A	85	3.0	624.5	2.6	37	1.7
	MAL RE B	Malvernian Peacock Gp B	44	1.6	222.5	0.9	0	0.0
	MAL VAR	Malvernian variant	1	0.0	60	0.2	0	0.0
Imports	LEZ SA	Central Gaulish samian	13	0.5	164.75	0.7	17	0.8
	KOL CC	Cologne colour-coat	1	0.0	5	0.0	8	0.4
Regional	DOR BB1	Dorset black burnished ware	978	34.5	5943.5	24.5	777	35.7
	OXF WH	Oxfordshire whiteware	2	0.1	4	0.0	0	0.0
	OXF WHM	Oxfordshire whiteware mortaria	3	0.1	19	0.1	1	0.0

	NRFCC/GL	Description	No	% No	Wt	% Wt	EVE	% EVE
	WRX WH	Wroxeter whiteware mortaria	1	0.0	67	0.3	0	0.0
Local	SVW OX	Severn Valley ware (oxidised)	1577	55.6	16237.5	66.8	1204	55.4
	SVW RE	Severn Valley ware (reduced)	69	2.4	617	2.5	102	4.7
	MAL RT	Malvernian wheelmade	6	0.2	191	0.8	0	0.0
	GLO MO	Gloucester mortaria	1	0.0	15	0.1	0	0.0
Unknown	BWF SY	medium-fine black sandy ware	3	0.1	4	0.0	0	0.0
	BWSY	black sandy ware	29	1.0	57	0.2	7	0.3
	GY SLIP	grey slipped roughcast ware	3	0.1	5	0.0	0	0.0
	GREY	grey sandy ware	8	0.3	25	0.1	11	0.5
	OXID	orange sandy ware	9	0.3	13	0.1	0	0.0
	MISC	misc sandy wares	5	0.2	23	0.1	10	0.5
TOTAL			**2838**	**100.0**	**24298**	**100.0**	**2174**	**100.0**

Discussion of fabrics and associated forms

Roman native wares

Malvernian metamorphic ware (T & D 1998, 147, MAL REA). This ware accounts for 3% by sherd count and 2.6% by weight. Forms: vessels are handmade, usually simple forms with horizontal or vertical burnished finish. Two forms are present, straight-sided tubby jars and everted rim jars.

Malvernian limestone-tempered. (Peacock 1967, Gp B; MAL REB).
A small group of 44 sherds contributing 1.6% by count to the total recovered assemblage. Most sherds came from unstratified collection with no featured pieces. Malvernian variant. A single bodysherd from gully 10615 from a handmade vessel.

Roman: continental imports

Central Gaulish samian (LEZ SA). A small assemblage of 13 sherds of Central Gaulish samian was present, 0.5% of the total assemblage. Forms include examples of Dragendorff 31 and Curle 21. One base, probably a Drag. 31 has a complete worn stamp :PRIMVI. This is probably one of the dies of the potter Primulus iv die 3a, who was working at Lezoux in the mid Antonine period (Hartley et al. 2011, Vol. 7, 216). Cologne colour-coated ware (T & D, 1998, 00, KOL CC). A single beaker (Fig. 00.6) with traces of underslip barbotine decoration probably defining the stop of a decorative frieze. Probably mid –late 2nd century.

Roman: regional wares

Dorset black-burnished ware (T & D 1998, 127, DOR BB1). This is the second commonest fabric on the site accounting for 34.5% by sherd count, 24.5% by weight and 35.7% by EVE. Forms: jars dominate the assemblage accounting for 88% of the EVEs (Fig. 00.5). The remaining 12% comprises dishes and a single beaded rim bowl. Many of the jars have burnished wavy lines around the neck and acute burnished lattice typical of the 2nd-century. A few examples of vessels with oblique

latticing indicate the presence of 3rd-century material amongst the unstratified material. There are no 3rd-4th-century bowl forms present.

Oxfordshire white-ware (T & D 1998, 175, OXF WH). Three white-ware mortaria sherds from layer 10528 are from a vessel Young (1977), type M12 dating to the later 2nd to mid 3rd century. Two bodysherds, probably flagon, came from ditch group 10708.

Wroxeter white ware mortaria (ibid. 179, WRX WH). A single unstratified sherd from a partly burnt white-ware mortaria which has lost its trituration grits.

Roman wares: local Severn Valley wares

Severn Valley ware (T & D 1998, 148-9, SVW OX). This fabric was by far the commonest accounting for 55.6% by sherd count, 66.8% by weight, 55.4% EVE of the total assemblage. A number of sherds of the reduced greyware version are also present (SVW RE) accounting for a further 2.4%. Forms: a diverse range of forms is present largely dating to the 2nd to 3rd centuries. Jars and tankards dominate; the former accounting for 52.6% EVE; the latter 41.7%. The former include both wide-mouthed and narrow necked versions with everted, flared rim (Fig. 00.4), triangular and pendant forms. The tankards include several semi-complete examples (Fig. 00. 3). Other forms include large wide flat or expanded-rim bowls (Fig. 00.1) and a single curved-wall dish.

Malvernian (Roman). Just six sherds, two from the knob of a handmade lid (Fig. 00.2) and four sherds from jars.

Gloucester mortarium. A single sherd, probably from a Gloucester oxidised mortarium, came from layer 10658.

Roman: source unknown

Fine black sandy ware (BWFSY). Three unfeatured sherds.

Black sandy ware (BWSY). A small group of 29 sherds including two everted rim jars.

Grey sandy ware (GREY). A miscellaneous group of wares, not necessarily from a single source. Forms: Sherds include two jars with rusticated decoration and one with wavy combed line decoration.

Slipped, grey, roughcast ware. Three sherds from a fine oxidised beaker with a grey slip and very fine silty sand roughcast decoration. Probably a local product dating to the early 2nd century. All three sherds came from feature 10821.

Sandy oxidised ware. Just nine unfeatured sherds.

Forms

A breakdown of the forms present by estimated vessel equivalents (Table 16) shows jars to dominate at 66.2% followed by tankards at 25%. Bowls/ dishes account for a further 8.5% but beaker and mortaria each contribute less than 1%. Flagons and lids, although present, are not represented by rims.

Table 16 Forms present by estimated vessel equivalents

Forms	EVE	EVE %
Jar	1434	66.2
Bowl	93	4.3
Dish	90	4.2
mortaria	1	0.0
tankard	541	25.0
beaker	8	0.4
TOTAL	**2167**	**100.0**

Phased groups

The largest group of stratified pottery that can be segregated out is that from the Phase 1 rectangular enclosure (group 10708). This produced 649 sherds of pottery weighing 6091 g, 22% of the complete recovered assemblage. The overall fragmentation rate is slightly lower than the overall site average with the average sherd weight being slightly higher at 9.4 g. The composition of the assemblage reflects that from the site as a whole with SVW OX dominating at 58% count followed by DOR BB1 at 32.7%. The fine wares include seven sherds of Central Gaulish samian including the dish stamped by Primulus who was working in the mid Antonine period thus providing a terminus post quem for the filling of the ditches. The DOR BB1 includes jars with acute and right-angled lattice decoration from the primary fill and a jar with oblique lattice decoration from ditch 10496. There is a transition from an acute lattice to a right-angled lattice in the later 2nd century and then to an oblique lattice in the early 3rd century. This would suggest that the ditches were still receiving domestic rubbish into the 3rd century. The complete absence of any colour-coated wares or other local types prevalent after the mid 3rd century might suggest that the enclosure had fallen into disuse it he first half of the 3rd century. Of the internal features within this enclosure only 106713 appears to have contained pottery and this is just a small group of eight sherds including two tankards and a small samian fragment which can only broadly be dated to the 2nd century or later.

Of the other ditch groups allocated to Phase 1 on the basis of alignment only 10699 produced pottery with 28 sherds, largely SVW OX with some DOR BB1 and a Malvernian handmade jar. Again the only featured sherds apart from the jar are tankards of 2nd-century, or later, date.

The only pottery associated with the Phase 2 field layout came from 10700 with just four sherds. Similarly pottery from Phase 3 is sparse with five very small fragments from ditch 10703.

At least seven contexts or features produced in excess of 50 sherds: layers (10645) and (10538); pit 10469; ditches 10537, 10626 and 10841 and feature 10722. Collectively these groups account for 37.5% of the total assemblage. The largest by far is that from feature 10841 with some 397 sherds weighing 4.9 kg. Of note from this group are a large number of DOR BB1 jars with wavy burnished lines around the neck (Fig. 00. 5). This characteristic disappears towards the end of the 2nd century. A similar deposit of such jars came from ditch 10626 from which an assemblage of 151 sherds was recovered. Layer (10538) produced 223 sherds amongst which were a semi-complete SVW OX tankard (Fig. 00.3).

A further 25% of the pottery was distributed across a large number of ditches, gullies and pits with in most cases very modest amounts. This combined with a very limited

range of fabrics, a fairly short chronological span and the nature of the site layout makes it difficult to create a meaningful refined ceramic phasing. The final 15% of the pottery came from unstratified collection.

Discussion

The assemblage recovered from Tirley is quite typical for the area being dominated by a small range of wares from industries which span quite a long range of time and which remained quite conservative in their output. Occupation at the site appears to date from the early-mid 2nd century through to the first half of the 3rd century. There are no forms or fabrics present to suggest it continued beyond the 3rd century.

Continental imports to the site are negligible with just 13 sherds of samian, 0.5% of the total assemblage by count and one imported colour-coated beaker. Regional imports are dominated by DOR BB1 vessels particularly jars accounting for 34.5% by count. This evident lack of trading contacts and the preponderance of jars, typical of rural assemblages, might suggest a fairly low status rural settlement. The proximity of the site to known production sites for Severn Valley wares would account for the dominance of these wares.

A number of sites have been investigated in the general area, which can be compared with Tirley in particular one to the south-east of Tewkesbury (Walker et al. 2004), Childswickham, south of Evesham (Timby 2004) and Hillcourt Farm, Longdon, Worcs (Timby 2010), although many of these show a longer period of occupation. In terms of a rural site Hillcourt Farm is very similar although a dominance of Malvernian wares, a feature also found at Tewkesbury, might indicate earlier origins for these two settlements compared to Tirley. At Longdon SVW OX accounted for 49.9% compared to 55.6% at Tirley but DOR BB1 only accounted for 1.5%. At the site near Tewkesbury where the Roman occupation is largely of 2nd to 3rd -century date, the assemblage is similarly dominated by SVW OX, followed by Malvernian rock-tempered wares (MAL RE A). Dorset black burnished ware was the main regional import accounting for 11%. Excavations within Tewkesbury itself have produced a wider range of imports including significantly more samian (MacRobert 1993) and it is possible that this was a larger settlement and perhaps local market for the region which would account for a slightly higher ratio of imports.

Catalogue of illustrated sherds

1. Large hemispherical bowl with an expanded rim. Fabric: SVW OX. Ditch 10640 (10607), Group 10708.

2. Lid knob. Fabric: Malvernian ware. Ditch 10558 (10642), Group 10708.

3. Handled tankard. Fabric: SVW OX. Feature 10538 (10557). SF 8.

4. Narrow necked, flared rim jar. Fabric: SVW OX. Feature 10538 (10557).

5. Everted rim jar decorated with a burnished wavy line. Fabric: DOR BB1. Ditch 10626 (10624).

6. Beaker with traces of underslip barbotine decoration. Fabric: KOL CC. Gp 6105015, unstratified.

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Table 17 Catalogue of Roman pottery

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	10001	0	0	topsoil	us	SVWOX			18	1	0	0	
TIR 36	10363	0	0	layer		SVWOX			50	4	0	0	
TIR 36	10538	0	0	layer		SVWOX	I11	jar	176	20	2	17	
TIR 36	10538	0	0	layer		SVWRE	I11	jar	28	0	1	17	
TIR 36	10538	0	0	layer		BWSY	I2	jar	4	0	1	2	
TIR 36	10538	0	0	layer		SVWRE	I2	jar	2	0	1	2	
TIR 36	10538	0	0	layer		OXFWHM	IX	mortaria	19	2	1	1	Young M12 ?180-240
TIR 36	10538	0	0	layer		DORBB1			1	3	0	0	
TIR 36	10538	0	0	layer		DORBB1			19	3	0	0	
TIR 36	10538	0	0	layer		MALREA			0.5	1	0	0	
TIR 36	10538	0	0	layer		OXIDSY			5	4	0	0	
TIR 36	10538	0	0	layer		OXIDSY			7	4	0	0	
TIR 36	10538	0	0	layer		SVWOX			7	6	0	0	
TIR 36	10538	0	0	layer		SVWOX			158	17	0	0	
TIR 36	10538	0	0	layer		SVWRE			0.5	1	0	0	
TIR 36	10645	0	0	layer		MALREA	I tub	jar	26	1	1	7	
TIR 36	10645	0	0	layer		SVWOX	I11	jar	42	0	3	19	
TIR 36	10645	0	0	layer		SVWOX	I11	jar	18	0	1	12	
TIR	10645	0	0	layer		SVWOX	I11	jar	10	0	2	15	

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
36													
TIR 36	10645	0	0	layer		SVWOX	I11	jar	11	0	1	5	
TIR 36	10645	0	0	layer		SVWOX	IICW	dish	12	0	1	10	
TIR 36	10645	0	0	layer		SVWOX	XIV	tankard	10	0	1	17	
TIR 36	10645	0	0	layer		SVWOX	XIV	tankard	2	0	1	3	
TIR 36	10645	0	0	layer		SVWOX	XIV	tankard	2	0	1	3	
TIR 36	10645	0	0	layer		SVWRE	XIV	tankard	11	0	1	12	
TIR 36	10645	0	0	layer		DORBB1			3	1	0	0	acute, residue int
TIR 36	10645	0	0	layer		DORBB1			22	7	0	0	
TIR 36	10645	0	0	layer		LEZSA			11	2	0	0	
TIR 36	10645	0	0	layer		SVWOX			41	8	0	0	
TIR 36	10645	0	0	layer		SVWOX			111	4	0	0	
TIR 36	10645	0	0	layer		SVWOX			393	52	0	0	
TIR 36	10645	0	0	layer		SVWRE			23	4	0	0	
TIR 36	10658	0	0	layer		DORBB1	IICW	dish	5	0	1	3	
TIR 36	10658	0	0	layer		SVWOX	XIV	tankard	8	0	1	8	
TIR 36	10658	0	0	layer		SVWOX	XIV	tankard	107	14	1	5	
TIR 36	10658	0	0	layer		DORBB1			13	1	0	0	
TIR 36	10658	0	0	layer		DORBB1			34	8	0	0	
TIR 36	10658	0	0	layer		MALREA			0.5	1	0	0	

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	10658	0	0	layer		GLOS MO			15	1	0	0	?Glos
TIR 36	10658	0	0	layer		SVWOX			23	6	0	0	
TIR 36	10099	10100	0	rectilin plot		SVWOX			2	1	0	0	
TIR 36	10170	10169	0	ditch		SVWOX			1	5	0	0	
TIR 36	10170	10169	0	ditch		SVWOX			37	3	0	0	
TIR 36	10184	10183	0	gully term		SVWOX			1	1	0	0	
TIR 36	10210	10209	0	gully term		SVWRE			0.5	1	0	0	
TIR 36	10271	10269	0	gully		SVWOX	I11	jar	165	15	5	70	
TIR 36	10271	10269	0	gully		DORBB1			17	7	0	0	
TIR 36	10301	10302	0	gully		SVWOX			7	1	0	0	
TIR 36	10315	10306	0	tree hole		SAND			3	2	0	0	
TIR 36	10349	10348	0	linear		SVWOX			14	5	0	0	
TIR 36	10427	10426	0	gully		SVWOX			14	4	0	0	
TIR 36	10427	10426	0	gully		SVWRE			7	1	0	0	
TIR 36	10458	10456	0			DORBB1			1	1	0	0	
TIR 36	10458	10456	0			SVWOX			25	4	0	0	
TIR 36	10462	10463	0	gully		SVWOX			7	3	0	0	
TIR 36	10470	10469	0	primary fill pit		SVWOX	XIV	tankard	30	4	1	11	
TIR 36	10470	10469	0	primary fill pit		DORBB1			43	12	0	0	?acute
TIR 36	10470	10469	0	primary fill pit		SVWRE			8	1	0	0	

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	10472	10469	0	second fill pit		DORBB1			9	8	0	0	
TIR 36	10472	10469	0	second fill pit		SVWOX			56	24	0	0	
TIR 36	10472	10469	0	second fill pit		SVWRE			24	2	0	0	
TIR 36	10487	10489	0	ditch upper fill		SVWOX			6	2	0	0	
TIR 36	10490	10492	0	upper fill ditch		SVWOX			13	2	0	0	
TIR 36	10493	10495	0	ditch		DORBB1			1	1	0	0	
TIR 36	10513	10512	0	pm field ditch		SVWOX			9	1	0	0	
TIR 36	10535	10537	0	ditch		SVWRE	I1	jar	36	1	1	18	
TIR 36	10535	10537	0	ditch		SVWOX	XIV	tankard	20	0	4	12	
TIR 36	10535	10537	0	ditch		SVWOX	XIV	tankard	10	0	1	7	
TIR 36	10535	10537	0	ditch		DORBB1			16	3	0	0	
TIR 36	10535	10537	0	ditch		SVWOX			199	31	0	0	
TIR 36	10535	10537	0	ditch		SVWRE			39	4	0	0	
TIR 36	10536	10537	0	second fill ditch		MALREA			35	4	0	0	
TIR 36	10536	10537	0	second fill ditch		SVWOX			7	1	0	0	
TIR 36	10557	10538	0	layer		DORBB1	I	jar	4	0	1	3	
TIR 36	10557	10538	0	layer		SVWOX	I11	jar	9	0	1	7	
TIR 36	10557	10538	0	layer		SVWOX	I11	jar	118	0	5	70	
TIR 36	10557	10538	0	layer		SVWOX	I3/11	jar	20	0	2	12	
TIR 36	10557	10538	0	layer		DORBB1	II1	bowl	20	0	4	20	

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	10557	10538	0	layer		GYSY	XIV	tankard	5	0	1	11	
TIR 36	10557	10538	0	layer		SVWOX	XIV	tankard	452	20	5	87	sf8 *
TIR 36	10557	10538	0	layer		SVWOX	XIV	tankard	17	0	1	12	
TIR 36	10557	10538	0	layer		SVWOX	XIV	tankard	1	0	1	3	
TIR 36	10557	10538	0	layer		DORBB1			70	55	0	0	
TIR 36	10557	10538	0	layer		DORBB1			1	1	0	0	
TIR 36	10557	10538	0	layer		FC			78	9	0	0	
TIR 36	10557	10538	0	layer		LEZSA			0.25	1	0	0	
TIR 36	10557	10538	0	layer		MALREA			5	1	0	0	
TIR 36	10557	10538	0	layer		MALREA			11	2	0	0	
TIR 36	10557	10538	0	layer		SVWOX			998	107	0	0	
TIR 36	10557	10538	0	layer		SVWOX			269	15	0	0	
TIR 36	10566	10565	0	gully		DORBB1	I	jar	140	8	5	47	
TIR 36	10566	10565	0	gully		SVWOX	XIV	tankard	42	5	1	12	
TIR 36	10572	10571	0	gully		SVWOX			15	2	0	0	
TIR 36	10586	10585	0	gully		SVWOX			13	3	0	0	
TIR 36	10598	10595	0	primary ditch fill		SVWOX			13	4	0	0	
TIR 36	10599	10595	0	primary ditch fill		SVWOX			86	7	0	0	
TIR 36	10611	10610	0	gully		SVWOX	I11	jar	5	0	1	7	
TIR 36	10611	10610	0	gully		MALREA			3	1	0	0	

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	10617	10615	0	gully		SVWRE	XIV	tankard	6	1	1	5	
TIR 36	10617	10615	0	gully		GYSY			1	1	0	0	
TIR 36	10617	10615	0	gully		MALVvar			60	1	0	0	
TIR 36	10617	10615	0	gully		SVWOX			125	4	0	0	
TIR 36	10624	10626	0	ditch		DORBB1	I2	jar	137	0	3	45	wavy line
TIR 36	10624	10626	0	ditch		DORBB1	I2	jar	52	0	2	23	wavy line
TIR 36	10624	10626	0	ditch		DORBB1	I2	jar	84	0	2	22	wavy line
TIR 36	10624	10626	0	ditch		DORBB1	I2	jar	11	0	1	12	wavy line
TIR 36	10624	10626	0	ditch		DORBB1	I2	jar	7	0	1	5	
TIR 36	10624	10626	0	ditch		SVWOX	XIV	tankard	24	0	2	15	
TIR 36	10624	10626	0	ditch		BWFSY			2	2	0	0	
TIR 36	10624	10626	0	ditch		DORBB1			492	108	0	0	
TIR 36	10624	10626	0	ditch		SVWOX			383	30	0	0	
TIR 36	10628	10627	0	gully		SVWOX			65	11	0	0	
TIR 36	10646	10647	0	modern land drain	us	DORBB1	I	jar	22	0	3	17	wavy line
TIR 36	10646	10647	0	modern land drain	us	GYSY	XIV	tankard	6	1	0	0	
TIR 36	10646	10647	0	modern land drain	us	DORBB1			150	35	0	0	acute lattice
TIR 36	10646	10647	0	modern land drain	us	SVWOX			204	5	0	0	
TIR 36	10625	10656	0	primary fill ditch		SVWOX	I11	jar	36	0	2	25	
TIR 36	10625	10656	0	primary fill ditch		SVWOX	XIV	tankard	110	0	5	31	part burnt

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	10625	10656	0	primary fill ditch		DORBB1			21	6	0	0	
TIR 36	10625	10656	0	primary fill ditch		GYSY			1	1	0	0	
TIR 36	10625	10656	0	primary fill ditch		SVWOX			249	26	0	0	
TIR 36	10663	10662	0	pit		SVWOX			11	6	0	0	
TIR 36	10675	10674	0	gully		DORBB1	I	jar	14	3	1	2	
TIR 36	10675	10674	0	gully		SVWRE	I11	jar	66	2	2	20	
TIR 36	10675	10674	0	gully		SVWOX	XIV	tankard	54	10	1	4	
TIR 36	10675	10674	0	gully		MALREA			3	1	0	0	
TIR 36	10690	10689	0	ditch		DORBB1			6	2	0	0	
TIR 36	10690	10689	0	ditch		SVWOX			52	6	0	0	
TIR 36	10719	10722	0	trample		SVWOX	IIB	bowl	214	30	1	7	
TIR 36	10719	10722	0	trample		SVWOX	XIV	tankard	29	0	1	12	
TIR 36	10719	10722	0	trample		DORBB1			40	5	0	0	
TIR 36	10719	10722	0	trample		LEZSA			10	1	0	0	
TIR 36	10719	10722	0	trample		MALREA			10	1	0	0	
TIR 36	10719	10722	0	trample		PM			0.5	1	0	0	
TIR 36	10719	10722	0	trample		SVWRE			9	1	0	0	
TIR 36	10720	10722	0	redposited natural		SVWOX	I11	jar	18	0	1	7	
TIR 36	10720	10722	0	redposited natural		SVWOX	I11	jar	5	0	1	10	
TIR 36	10720	10722	0	redposited natural		SVWOX	I11/12	jar	44	0	2	20	

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	10720	10722	0	redposited natural		DORBB1	IG30	jar	8	0	1	6	
TIR 36	10720	10722	0	redposited natural		SVWOX	IIB	bowl	65	0	1	6	
TIR 36	10720	10722	0	redposited natural		SVWOX	XIV	tankard	5	0	1	10	
TIR 36	10720	10722	0	redposited natural		DORBB1			23	6	0	0	x1 drilled hole
TIR 36	10720	10722	0	redposited natural		SVWOX			232	46	0	0	
TIR 36	10720	10722	0	redposited natural		SVWRE			8	1	0	0	
TIR 36	10742	10741	0	pit		SVWOX			0.5	1	0	0	
TIR 36	10755	10754	0	gully		DORBB1			6	4	0	0	
TIR 36	10755	10754	0	gully		MALREB			0.5	2	0	0	
TIR 36	10757	10756	0	primary ditch fill		DORBB1			2	2	0	0	
TIR 36	10758	10756	0	primary ditch fill		DORBB1	I	jar	15	3	2	7	
TIR 36	10758	10756	0	primary ditch fill		SVWOX			96	11	0	0	
TIR 36	10760	10759	0	gully		SVWOX			20	3	0	0	
TIR 36	10761	10759	0	gully		SVWRE	I	jar	50	2	2	15	
TIR 36	10761	10759	0	gully		MALREA	I2	jar	23	0	2	17	
TIR 36	10761	10759	0	gully		SVWOX	IIB	bowl	6	0	1	7	
TIR 36	10761	10759	0	gully		SVWOX	XIV	tankard	122	9	1	7	
TIR 36	10761	10759	0	gully		SVWOX	XIV	tankard	25	0	3	25	
TIR 36	10761	10759	0	gully		DORBB1			119	11	0	0	
TIR 36	10763	10764	0	pit		SVWOX	XIV	tankard	57	11	1	8	

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	10763	10764	0	pit		DORBB1			2	1	0	0	
TIR 36	10763	10764	0	pit		SVWOX			10	3	0	0	
TIR 36	10763	10764	0	pit		SVWRE			4	2	0	0	
TIR 36	10763	10764	0	pit		SVWRE			4	1	0	0	
TIR 36	10765	10766	0	pit		SVWOX	I12	jar	47	2	1	12	
TIR 36	10765	10766	0	pit		DORBB1	I2	jar	53	0	5	47	
TIR 36	10765	10766	0	pit		DORBB1	I2	jar	52	0	5	38	
TIR 36	10765	10766	0	pit		DORBB1			257	38	0	0	acute
TIR 36	10772	10771	0	pit		SVWOX			0.5	1	0	0	
TIR 36	10799	10778	0	gully		DORBB1	I	jar	20	9	1	1	
TIR 36	10799	10778	0	gully		SVWOX	I11	jar	85	9	1	7	
TIR 36	10799	10778	0	gully		DORBB1	I2	jar	67	0	1	17	wavy line
TIR 36	10848	10795	0	dich fill		DORBB1			1	1	0	0	
TIR 36	10806	10808	0	hearth		SVWOX			8	5	0	0	
TIR 36	10809	10810	0	pit		SVWOX			50	1	0	0	
TIR 36	10820	10821	0	pit		DORBB1	IIC	dish	40	0	2	15	
TIR 36	10820	10821	0	pit		DORBB1	IIC2	dish	45	0	2	13	
TIR 36	10820	10821	0	pit		SVWOX	XIV	tankard	40	4	1	10	
TIR 36	10820	10821	0	pit		BWSY			7	6	0	0	
TIR 36	10820	10821	0	pit		DORBB1			30	11	0	0	

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	10820	10821	0	pit		GYSLIP			5	3	0	0	roughcast bkr
TIR 36	10822	10823	0	gully		DORBB1			1	3	0	0	
TIR 36	10822	10823	0	gully		SVWOX			1	3	0	0	
TIR 36	10831	10832	0	natural hollow		SVWOX			0.5	1	0	0	
TIR 36	10833	10832	0	ditch fill		MALREA			40	6	0	0	
TIR 36	10835	10834	0	primary ditch fill		SVWOX			284	39	0	0	
TIR 36	10836	10834	0	secondary ditch fill		DORBB1			1	4	0	0	
TIR 36	10836	10834	0	secondary ditch fill		SVWOX			35	10	0	0	
TIR 36	10836	10834	0	secondary ditch fill		SVWRE			3	1	0	0	
TIR 36	10837	10839	0	upper fill ditch		LEZSA	C21	bowl	13	0	1	3	
TIR 36	10837	10839	0	upper fill ditch		SVWOX	IIB	bowl	18	0	1	7	
TIR 36	10837	10839	0	upper fill ditch		SVWOX	XIV	tankard	337	13	1	12	
TIR 36	10837	10839	0	upper fill ditch		DORBB1			20	3	0	0	
TIR 36	10837	10839	0	upper fill ditch		SVWRE			24	2	0	0	
TIR 36	10840	10843	0	ditch fill		SVWOX			2120	86	0	0	tankard handle
TIR 36	10840	10843	0	ditch fill		DORBB1	I	jar	24	1	1	2	burnt
TIR 36	10840	10843	0	ditch fill		DORBB1	I2	jar	50	0	1	12	wavy line
TIR 36	10840	10843	0	ditch fill		DORBB1	I2	jar	21	0	1	7	wavy line
TIR 36	10840	10843	0	ditch fill		DORBB1	I2	jar	10	0	1	8	wavy line
TIR 36	10840	10843	0	ditch fill		DORBB1	I2	jar	70	0	2	17	wavy line

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	10840	10843	0	ditch fill		DORBB1	I2	jar	116	0	2	40	wavy line
TIR 36	10840	10843	0	ditch fill		DORBB1	I2	jar	193	0	4	50	acute
TIR 36	10840	10843	0	ditch fill		SVWOX	I2	jar	21	0	1	10	
TIR 36	10840	10843	0	ditch fill		SVWOX	XIV	tankard	83	0	1	10	
TIR 36	10840	10843	0	ditch fill		SVWOX	XIV	tankard	20	0	1	10	
TIR 36	10840	10843	0	ditch fill		SVWOX	XIV	tankard	10	0	1	7	
TIR 36	10840	10843	0	ditch fill		DORBB1			1553	201	0	0	acute
TIR 36	10840	10843	0	ditch fill		DORBB1			134	24	0	0	acute
TIR 36	10840	10843	0	ditch fill		MALREA			146	15	0	0	
TIR 36	10840	10843	0	ditch fill		MALREA			180	27	0	0	
TIR 36	10840	10843	0	ditch fill		SVWOX			11	7	0	0	
TIR 36	10840	10843	0	ditch fill		SVWOX			120	15	0	0	
TIR 36	10840	10843	0	ditch fill		SVWRE			23	5	0	0	
TIR 36	10849	10851	0	upper fill ditch		SVWOX	XIV	tankard	186	57	1	7	
TIR 36	10026	10027	10037	furrow or trackway	us	SVWOX			34	11	0	0	
TIR 36	10094	10095	10098	ditch		SVWOX			0.5	1	0	0	
TIR 36	10696	GROUP	10696	ditch		DORBB1	I	jar	30	4	1	5	
TIR 36	10605	10604	10699	ditch		DORBB1			5	2	0	0	
TIR 36	10619	10620	10699	gully		MALREA	I	jar	7	2	1	3	
TIR 36	10619	10620	10699	gully		SVWOX			5	2	0	0	

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	10551	10550	10700	gully		MALRT			104	3	0	0	TF19
TIR 36	10551	10550	10700	gully		SVWOX			0.5	1	0	0	
TIR 36	10181	10180	10702	gully term		SVWOX			12	3	0	0	
TIR 36	10445	10446	10703	ditch		SVWOX			3	1	0	0	
TIR 36	10454	10455	10703	ditch		BWFMIC			2	1	0	0	
TIR 36	10454	10455	10703	ditch		SVWOX			1	1	0	0	
TIR 36	10507	10508	10703	ditch		SVWOX			0.5	2	0	0	
TIR 36	10688	10687	10705	gully		SVWOX			3	4	0	0	
TIR 36	10432	10430	10708	ditch	1	DORBB1			1	1	0	0	
TIR 36	10432	10430	10708	ditch	1	SVWOX			78	5	0	0	
TIR 36	10448	10447	10708	ditch	1	SVWOX	I11	jar	178	19	6	35	
TIR 36	10448	10447	10708	ditch	1	BWSY	I2	jar	5	0	1	5	
TIR 36	10448	10447	10708	ditch	1	SVWOX	I7	jar	7	0	1	4	
TIR 36	10448	10447	10708	ditch	1	BWSY			2	2	0	0	
TIR 36	10448	10447	10708	ditch	1	BWSY			39	19	0	0	
TIR 36	10448	10447	10708	ditch	1	SVWOX			1	1	0	0	
TIR 36	10448	10447	10708	ditch	1	SVWOX			59	5	0	0	
TIR 36	10448	10447	10708	ditch	1	SVWRE			3	1	0	0	
TIR 36	10532	10447	10708	primary ditch fill	1	LEZSA	II	bowl	2	0	1	6	
TIR 36	10452	10449	10708	ditch	1	SVWOX	XIV	tankard	27	0	1	15	

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	10467	10466	10708	primary ditch fill	1	DORBB1	I	jar	93	6	2	21	acute
TIR 36	10467	10466	10708	primary ditch fill	1	SVWOX	I12	jar	79	6	3	37	BNN
TIR 36	10467	10466	10708	primary ditch fill	1	MALREA	I2	jar	67	8	2	3	
TIR 36	10467	10466	10708	primary ditch fill	1	DORBB1			25	11	0	0	
TIR 36	10467	10466	10708	primary ditch fill	1	SVWOX			109	25	0	0	
TIR 36	10468	10466	10708	secondary ditch fill	1	DORBB1			4	2	0	0	
TIR 36	10468	10466	10708	secondary ditch fill	1	SVWOX	I11	jar	37	3	2	21	NN
TIR 36	10468	10466	10708	secondary ditch fill	1	DORBB1	I2	jar	13	3	2	10	
TIR 36	10468	10466	10708	secondary ditch fill	1	LEZSA			0.5	1	0	0	
TIR 36	10468	10466	10708	secondary ditch fill	1	SVWOX			11	3	0	0	
TIR 36	10473	10475	10708	ditch	1	SVWOX			71	7	0	0	
TIR 36	10473	10475	10708	ditch	1	SVWRE			4	2	0	0	
TIR 36	10474	10475	10708	ditch	1	SVWOX	IIB	bowl	20	2	1	4	
TIR 36	10474	10475	10708	ditch	1	SVWRE			3	1	0	0	
TIR 36	10481	10483	10708	ditch	1	SVWOX			117	17	0	0	
TIR 36	10482	10483	10708	primary fill	1	SVWOX	XIV	tankard	47	3	1	3	
TIR 36	10484	10486	10708	upper fill	1	SVWOX			5	3	0	0	
TIR 36	10500	10496	10708	encl ditch	1	SVWOX			3	3	0	0	
TIR 36	10501	10496	10708	encl ditch	1	LEZSA	Dr31	dish	112	1	0	0	SF6 PRIMVLVS
TIR 36	10501	10496	10708	encl ditch	1	DORBB1	I	jar	194	53	4	45	oblique

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	10501	10496	10708	encl ditch	1	SVWOX			38	7	0	0	
TIR 36	10501	10496	10708	encl ditch	1	SVWOX			63	4	0	0	
TIR 36	10510	10509	10708	primary fill ditch	1	DORBB1	I	jar	7	0	1	5	rt angle
TIR 36	10510	10509	10708	primary fill ditch	1	DORBB1			91	21	1	7	
TIR 36	10510	10509	10708	primary fill ditch	1	SVWOX			4	1	0	0	
TIR 36	10511	10509	10708	upper fill ditch	1	DORBB1	I	jar	104	9	3	30	
TIR 36	10511	10509	10708	upper fill ditch	1	SVWOX	XIV	tankard	65	10	1	5	
TIR 36	10530	10528	10708	second fill ditch	1	DORBB1	I	jar	32	0	2	10	
TIR 36	10530	10528	10708	second fill ditch	1	SVWOX	I12/11	jar	842	30	3	65	1 VESS
TIR 36	10530	10528	10708	second fill ditch	1	DORBB1	IICW	dish	119	10	2	22	
TIR 36	10530	10528	10708	second fill ditch	1	SVWOX			786	41	0	0	
TIR 36	10530	10528	10708	second fill ditch	1	SVWOX			15	2	0	0	
TIR 36	10531	10528	10708	ditch	1	SVWOX			28	7	0	0	
TIR 36	10540	10539	10708	ditch	1	SVWOX	I2	jar	30	8	1	5	
TIR 36	10540	10539	10708	ditch	1	DORBB1			0.5	1	0	0	
TIR 36	10541	10539	10708	primary fill ditch	1	SVWOX	I11	jar	30	0	1	9	
TIR 36	10541	10539	10708	primary fill ditch	1	SVWOX	XIV	tankard	279	5	1	10	1 vess
TIR 36	10541	10539	10708	primary fill ditch	1	SVWOX	XIV	tankard	34	5	1	10	
TIR 36	10541	10539	10708	primary fill ditch	1	DORBB1			113	43	0	0	
TIR 36	10541	10539	10708	primary fill ditch	1	SVWOX			6	6	0	0	

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	10541	10539	10708	primary fill ditch	1	SVWRE			62	3	0	0	
TIR 36	10642	10558	10708	encl ditch	1	DORBB1	I	jar	19	1	1	3	
TIR 36	10642	10558	10708	encl ditch	1	MALRT	XI	lid	85	2	0	0	lid knob TF19
TIR 36	10642	10558	10708	encl ditch	1	SVWOX			36	12	0	0	
TIR 36	10581	10579	10708	upper fill ditch	1	SVWOX	I	jar	86	0	1	10	wmthd
TIR 36	10582	10584	10708	upper fill ditch	1	LEZSA	IV	dish	15	2	2	5	
TIR 36	10582	10584	10708	upper fill ditch	1	DORBB1			1	2	0	0	
TIR 36	10582	10584	10708	upper fill ditch	1	SVWOX			85	11	0	0	
TIR 36	10636	10635	10708	encl ditch	1	SVWOX			287	2	0	0	
TIR 36	10636	10635	10708	encl ditch	1	SVWOX			18	16	0	0	
TIR 36	10637	10635	10708	encl ditch	1	DORBB1			2	1	0	0	
TIR 36	10637	10635	10708	encl ditch	1	SVWOX			9	3	0	0	
TIR 36	10607	10640	10708	upper fill ditch	1	SVWOX	IIB	bowl	389	14	2	20	
TIR 36	10607	10640	10708	upper fill ditch	1	DORBB1			3	1	0	0	
TIR 36	10607	10640	10708	upper fill ditch	1	GYSY			2	1	0	0	
TIR 36	10762	10773	10708	encl ditch	1	DORBB1	IVB	dish	61	0	1	12	
TIR 36	10762	10773	10708	encl ditch	1	SVWOX			87	1	0	0	XIV
TIR 36	10804	10773	10708	encl ditch	1	SVWOX			35	6	0	0	
TIR 36	10805	10773	10708	encl ditch	1	SVWOX	I	jar	9	0	1	5	
TIR 36	10805	10773	10708	encl ditch	1	SVWOX	IIB	bowl	40	0	1	10	hemi

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	10805	10773	10708	encl ditch	1	SVWOX	XIV	tankard	22	0	1	14	
TIR 36	10805	10773	10708	encl ditch	1	DORBB1			38	14	0	0	
TIR 36	10805	10773	10708	encl ditch	1	MALREA			10	2	0	0	
TIR 36	10805	10773	10708	encl ditch	1	SVWOX			175	34	0	0	
TIR 36	10805	10773	10708	encl ditch	1	SVWRE			1	3	0	0	
TIR 36	10708	GROUP	10708	ditch	1	DORBB1	I	jar	28	2	1	7	
TIR 36	10708	GROUP	10708	ditch	1	SVWOX	I11/7	jar	66	1	1	10	WM
TIR 36	10708	GROUP	10708	ditch	1	SVWOX			83	1	0	0	
TIR 36	10709	GROUP	10708	ditch	1	OXIDSY			1	1	0	0	
TIR 36	10709	GROUP	10708	ditch	1	DORBB1	I2	jar	39	4	2	15	
TIR 36	10709	GROUP	10708	ditch	1	BWNSY	IICW	dish	17	0	1	10	
TIR 36	10709	GROUP	10708	ditch	1	DORBB1			4	5	0	0	
TIR 36	10709	GROUP	10708	ditch	1	OXFWH			4	2	0	0	
TIR 36	10709	GROUP	10708	ditch	1	SVWOX			151	16	0	0	
TIR 36	10709	GROUP	10708	ditch	1	SVWRE			18	4	0	0	
TIR 36	10824	10825	10713	gully		SVWOX			81	5	0	0	
TIR 36	10825	10825	10713	gully	1	SVWOX	XIV	tankard	10	0	2	12	
TIR 36	10825	10825	10713	gully	1	SVWRE	XIV	tankard	11	1	2	10	
TIR 36	10826	10827	10713	gully	1	SVWOX			1	2	0	0	
TIR 36	10828	10829	10713	gully	1	LEZSA	II	bowl	1	0	1	3	

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	10646	10647		modern land drain	us	DORBB1	I	jar	62	0	3	27	wavy line
TIR 36	10555	?	?	?	us	SVWOX			41	3	0	0	
TIR 36	10667	10669	G	ditch	1	SVWOX	XIV	tankard	18	0	2	17	
TIR 36	10667	10669	G	ditch		SVWOX	XIV	tankard	39	6	1	3	
TIR 36	10667	10669	G	ditch	1	DORBB1			3	1	0	0	
TIR 36	10667	10669	G	ditch	1	GYSY			1	1	0	0	
TIR 36	10668	10669	G	ditch	1	SVWOX	I11	jar	45	11	2	12	
TIR 36	10668	10669	G	ditch	1	DORBB1			4	1	0	0	
TIR 36	10312	10306		treehole fill	us	DORBB1			11	1	0	0	
TIR 36	10312	10306		treehole fill	us	SVWOX			47	12	0	0	
TIR 36	10885				us	DORBB1	I2	jar	38	0	1	15	
TIR 36	10885				us	DORBB1	I2	jar	131	0	4	50	
TIR 36	10885				us	SVWOX	XIV	tankard	78	6	4	35	
TIR 36	10885				us	DORBB1			147	67	0	0	acute
TIR 36	10885				us	MALREA			0.5	1	0	0	
TIR 36	6081025				us	SVWOX			2	1	0	0	
TIR 36	6015015				us	DORBB1	I	jar	48	12	1	2	
TIR 36	6015015				us	DORBB1	I2	jar	8	0	1	7	?oblique
TIR 36	6015015				us	SVWOX	XIV	tankard	29	9	1	10	
TIR 36	6015015				us	SVWRE			131	8	0	0	

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	6071022				us	SVWOX			8	1	0	0	
TIR 36	6071023				us	BWNSY			3	2	0	0	
TIR 36	6071023				us	SVWOX			24	3	0	0	
TIR 36	6071024				us	SVWOX			3	1	0	0	
TIR 36	6071025				us	SVWOX			69	6	0	0	
TIR 36	6071026				us	SVWOX			23	2	0	0	
TIR 36	6071027				us	SVWOX			4	3	0	0	
TIR 36	6071028				us	MALREA			8	1	0	0	
TIR 36	6071028				us	SVWOX			9	2	0	0	
TIR 36	6071029				us	DORBB1			5	1	0	0	
TIR 36	6071030				us	MALREA			11	1	0	0	oxid hm
TIR 36	6071031				us	SVWOX			3	1	0	0	
TIR 36	6071032				us	DORBB1			12	1	0	0	
TIR 36	6071032				us	SVWOX			0.5	2	0	0	
TIR 36	6071033				us	SVWOX			1	1	0	0	
TIR 36	6071034				us	SVWOX			1	1	0	0	
TIR 36	6071035				us	SVWOX			18	4	0	0	
TIR 36	6071036				us	SVWOX			4	1	0	0	
TIR 36	6071037				us	SVWOX			3	1	0	0	
TIR 36	6071038				us	SVWOX			8	1	0	0	

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	6071039				us	SVWOX			1	1	0	0	
TIR 36	6071040				us	SVWOX	I4	jar	79	0	1	5	
TIR 36	6071041				us	SVWOX			3	2	0	0	
TIR 36	6071042				us	SVWOX			12	1	0	0	
TIR 36	6081024				us	SVWOX			3	1	0	0	
TIR 36	6081028				us	WRX WH	IX	mortaria	67	1	0	0	2-1 part burnt
TIR 36	6105003				us	SVWOX			2	1	0	0	
TIR 36	6105009				us	SVWOX			10	2	0	0	
TIR 36	6105010				us	SVWOX			13	3	0	0	
TIR 36	6105011				us	SVWOX			2	1	0	0	
TIR 36	6105012				us	SVWOX			20	1	0	0	
TIR 36	6105013				us	SVWOX			5	17	0	0	
TIR 36	6105014				us	SVWOX			12	2	0	0	
TIR 36	6105015				us	KOLCC	VI	beaker	5	0	1	8	*
TIR 36	6105015				us	MALREA			18	1	0	0	
TIR 36	6105016				us	SVWOX	I7	jar	643	27	5	43	
TIR 36	6105016				us	DORBB1			17	4	0	0	
TIR 36	6105016				us	SVWRE			6	1	0	0	
TIR 36	6105017				us	SVWOX	XIV	tankard	44	0	3	21	
TIR 36	6105017				us	SVWOX			67	4	0	0	

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
TIR 36	6105025				us	MALREA	I2	jar	13	0	1	7	
TIR 36	6105031				us	SVWOX			11	1	0	0	
TIR 36	6105032				us	SVWOX	I7	jar	9	0	1	5	
TIR 36	6105037				us	SVWOX	I12	jar	86	10	1	5	
TIR 36	6105037				us	GYSY			9	2	0	0	
TFC36	6105054				us	SVWOX			28	2	0	0	
TFC36	6105066				us	PMED			3	1	0	0	
TFC36	6105136				us	SVWOX			4	2	0	0	
TFC36	6105137				us	MALREA			7	1	0	0	red-bwn or Preh
TFC36	6105137				us	SVWOX			5	3	0	0	
TFC36	6105140				us	SVWOX			6	5	0	0	
TIR 36	6105178				us	SVWOX			3	2	0	0	
TIR 36	6105183				us	SVWOX			7	1	0	0	
TIR 36	6105184				us	SVWRE	I2	jar	2	0	1	3	
TIR 36	6105184				us	SVWOX			4	1	0	0	
TIR 36	6105226				us	SVWOX	I2	jar	18	1	1	3	
TFC36	6105272				us	MALRO			2	1	0	0	Glos TF19
TFC36	6105273				us	SVWOX	I2	jar	8	0	1	6	
TIR 36	6105291				us	SVWOX			73	12	0	0	
TIR 36	6113025				us	MALREB			222	42	0	0	
TIR 36	6113027				us	SVWOX	I2	jar	6	0	1	11	
TIR 36	6141013				us	SVWOX			2	1	0	0	
TIR	6141014				us	SVWOX			1	1	0	0	

SITE	Context	Feature	Gp	Description	Phase	Fabric	Form	Type	Wt	No	Rim	Eve	Comment
36													
TIR 36	6141015				us	SVWOX			29	1	0	0	
TIR 36	6141016				us	SVWOX			9	1	0	0	
TIR 36	6141017				us	SVWOX			2	1	0	0	
TIR 36	6141019				us	DORBB1			9	1	0	0	
TIR 36	6141021				us	CBM			7	1	0	0	
TIR 36	6141029				us	SVWOX	I11	jar	9	0	1	8	
TIR 36	6141030				us	SVWOX	I7	jar	10	0	1	6	
TIR 36	6141040				us	SVWOX			3	1	0	0	
TIR 36	6141041				us	SVWOX			5	1	0	0	
TIR 36	6411052				us	SVWOX			2	1	0	0	
TIR 36	US				us	DORBB1	I2	jar	34	4	1	5	oblique
TIR 36	US				us	CBM			13	1	0	0	
TIR 36	US				us	SVWOX			87	8	0	0	

CHARRED PLANT MACROFOSSILS AND OTHER REMAINS

Val Fryer

Introduction and method statement

Excavations at Tirley PRI, undertaken by Network Archaeology as part of an ongoing project of works, recorded a number of pits, post-holes, gullies, ditches and other discrete features, very few of which were closely dated at the time of writing. Pottery/artefacts of prehistoric and Roman date were recovered from the site, but rarely from the sampled features. Samples for the retrieval of the plant macrofossil assemblages were taken from across the excavated area, and twenty two were submitted for assessment.

The samples were processed by manual water flotation/washover and the flots were collected in a 300 micron mesh sieve. The dried flots were scanned under a binocular microscope at magnifications up to x 16 and the plant macrofossils and other remains noted are listed in Table 17. Nomenclature within the table follows Stace (1997). All plant remains were charred. Modern fibrous roots, seeds and arthropod remains were present within most assemblages. Two samples (13 and 17) were completely devoid of flot and, therefore, do not appear within Table 17.
The non-floating residues were collected in a 1mm mesh sieve and will be sorted when dry. Any artefacts/ecofacts will be retained for further specialist analysis.

Results

Most of the recovered assemblages were extremely small (<0.1 litres in volume), and although charcoal/charred wood fragments were present throughout, other plant macrofossils were scarce. Preservation was also quite poor, with many of the macrofossils which were recorded being very fragmentary.

Both barley (Hordeum sp.) and wheat (Triticum sp.) grains were recovered, although most of the cereals were too poorly preserved for close identification. The wheat grains were mostly of an elongated ‘drop’ form typical of emmer (T. dicoccum) or spelt (T spelta), and spelt wheat glume bases were also noted within five assemblages. Weed seeds were particularly scarce, only occurring as single specimens within five of the assemblages studied. All were of common segetal/grassland weeds, namely, brome (Bromus sp.), small legumes (Fabaceae), a small grass (Poaceae) and dock (Rumex sp.). The charcoal/charred wood fragments were generally very small, and most were also rounded and abraded. Other plant macrofossils were scarce, but did include indeterminate buds, culm nodes and thorns.

Other remains occurred very infrequently. Small pieces of severely abraded bone, including some burnt/calcined fragments, were present within five assemblages, most notably including that from enclosure ditch [10640] (sample 12), where they

were moderately common. It was considered most likely that the small pieces of coal, which were noted within nine samples, were all probably intrusive within the contexts from which the samples were taken.

Conclusions and recommendations for further work

In summary, as with the assemblages from the previous two sites examined from Tirley, plant remains are exceedingly scarce, and those recorded are mostly very poorly preserved. Although the density of charcoal may indicate that some assemblages (for examples from samples 2, 23 and 26) are derived from small, deliberate deposits of material within various of the feature fills, it is considered most likely that the majority of the macrofossils and the other remains recorded from this site are derived from scattered or wind-dispersed detritus, some or all of which was accidentally incorporated within the feature fills.

As plant remains are so scarce within these assemblages, no further analysis is recommended. However, a summary of this assessment should be included within any publication of data from the site.

Reference

Stace, C., 1997 *New Flora of the British Isles*. 2nd edition. Cambridge University Press

Key to Table

x = 1 – 10 specimens xx = 11 - 50 specimens xxx = 51 – 100 specimens xxxx = 100+ specimens
fg = fragment cf = compare b = burnt ss = sub-sample ph = post-hole
E.ditch = enclosure ditch DT = ditch terminal

Table 18 Catalogue of plant macrofossils and other remains

Sample No.	1	2	3	9	10	11	12	14	15	16	19	20	21	22	23	25	26	27	28	29
Context No.	**10312**	**10315**	**10330**	**10499**	**10549**	**10535**	**10607**	**10675**	**10680**	**10681**	**10673**	**10675**	**10786**	**10789**	**10807**	**10805**	**10852**	**10854**	**10840**	**10819**
Feature No.	**10307**	**10307**	**10329/G 10382**	**10498**	**10548**	**10600**	**10640/G 10709**	**10674/G 10848**	**10679**	**10679**	**10672**	**10674/G 10709**	**10787/ G10654**	**10788/ G10654**	**10808**	**10773/ G10708**	**10853**	**10855**	**10841/G 10712**	**10847**
Feature type	**Pit**	**Pit**	**Gully**	**Pit**	**Pit/ph**	**Ditch**	**E.ditch**	**Gully**	**DT**	**DT**	**Gully**	**Gully**	**ph**	**Pit/ph**	**Hearth**	**E.ditch**	**Pit**	**Pit**	**Ditch**	**Furnace**
Date	**?Prehis**	**?Prehis**					**R/B**													
Cereals																				
Hordeum sp. (grains)						xfg														
Triticum sp. (grains)						x						xcf			xcf	x	xcf			
(glume bases)											xfg				x					
T. spelta L. (glume bases)				x							x	x			x				x	
Cereal indet. (grains)				xcf		x						xcffg					xfg			
Herbs																				
Bromus sp.																	xcf			
Fabaceae indet.						x	x													
Small Poaceae indet.						x					xfg									
Rumex sp.						x													x	
Other plant macrofossils																				
Charcoal <2mm	xxx	xxxx	x	xx	xxx	xx	x	x	x	x	x	xx	x	x	xxxx	x	xxxx	xx	xx	x
Charcoal >2mm	xx	xx	x		x	x	x	x	x	x	x	x	x	x	xxx		x	x	xx	
Charcoal >5mm						x									x		x			
Charred root/stem		x				x	x			x					x					
Indet.bud																	x		x	
Indet.culm node																	x			
Indet.fruit/fruit stone frags.						x														
Indet.seeds							x					x					x		x	
Indet.thorns						x											x			
Other remains																				
Black porous and tarry material			x			x								x	x	x			x	
Bone	x						xxx					x				xb			x xb	
Burnt/fired clay			x																	
?Ferrimanganiferous concretions																	xxx			
Mineralised concretions			xxx	xx									xx	xxxx						
Small coal frags.		x	x	x			x	x		x			x	x				x		
Sample volume (litres)	**15ss**	**14ss**	**14ss**	**16ss**	**10**	**18ss**	**14ss**	**16ss**	**16ss**	**16ss**	**14ss**	**13**	**14**	**14**	**16ss**	**16ss**	**17ss**	**16ss**	**15ss**	**13**
Volume of flot (litres)	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**
% flot sorted	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

The Rotary Querns

Ruth Shaffrey

Description

Two rotary quern fragments were retained; one from an upper stone and the other is probably from an upper stone, although it is unlikely they are from the same quern. The more complete of the two fragments (SF 9) is of an angled disc type quern with edges that lean in. The percentage of surviving circumference is too small to allow the diameter to be accurately estimated but it is distinct enough to determine that it is from a hand-operated quern rather than mechanically powered millstone. The second fragment (GPS ref 6105229) is more damaged but retains part of its grinding surface and edge. Neither quern is sufficiently complete for their form to be useful regarding dating or rarity, but identification of the lithology is useful.

Both rotary querns are made from a medium to coarse-grained sandstone containing moderate to frequently occurring quartz granules and small pebbles. This is certainly Old Red Sandstone and is very likely to be from the outcrops that occur in the Forest of Dean / Wye Valley area. Stone sources in that area have been exploited for rotary querns from the Iron Age but most widely distributed from the Roman period onwards (Shaffrey 2006). The site at Tirley is about 35km from the source area of Old Red Sandstone but well within the main distribution area (Shaffrey 2006, Fig 3.2). Its location close to the River Severn and close to both Gloucester and Cheltenham also made it in a prime position to receive and use querns of that material. Although Old Red Sandstone was not used to the exclusion of other quern materials in this area, it is dominant in the majority of assemblages for example Haymes Cleeve Hill, Portway and others (Rawes 1987, 90; Rawes 1985, 67). The findings here are thus in keeping with the understood picture of distribution and exploitation for the area.

Upper rotary quern fragment. Old Red Sandstone. Rim fragment, pecked all over. The circumference is straight but leans in quite significantly. The upper surface is slightly sloped and the grinding surface is roughly parallel to it. The grinding surface is worn smooth in places. Medium to coarse grained poorly sorted sandstone with lots of pink quartz including granules and very small pebbles. The rock contains various inclusions including probable rock fragments and has a quartz cement. It is very likely to be from the Forest of Dean area. Measures 57mm thick x indeterminate diameter. Sf 9.Ctx 10617

Rotary quern fragment. Old Red Sandstone. Rim fragment with part of edge and grinding surface surviving but with a damaged top. Probably from an upper stone. Very similar to SF9 although less granular and with less pink quartz. Likely to be from the Forest of Dean area. The measurements are indeterminate. GPS ref 6105229

References

Rawes, B. 1985 The Romano-British Site on the Portway, near Gloucester, *Transactions of the Bristol and Gloucestershire Archaeological Society 102*, 23-72

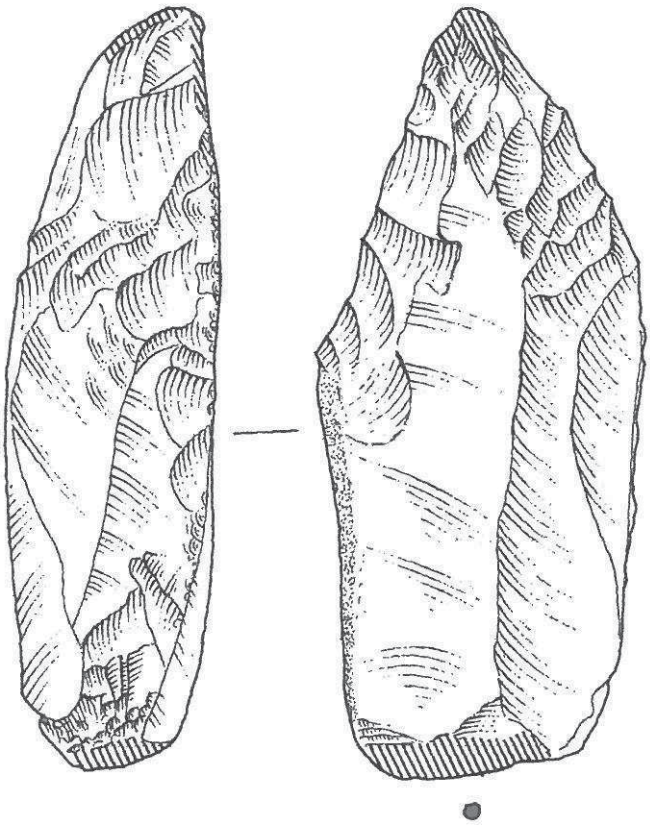
Rawes, B. 1987 The Romano-British settlement at Haymes, Cleeve Hill, near Cheltenham. *Transactions of the Bristol and Gloucestershire Archaeological Society 104*, 61-93

Shaffrey, R. 2006 *Grinding and Milling. Romano-British Rotary Querns made from Old Red Sandstone,* BAR British Series

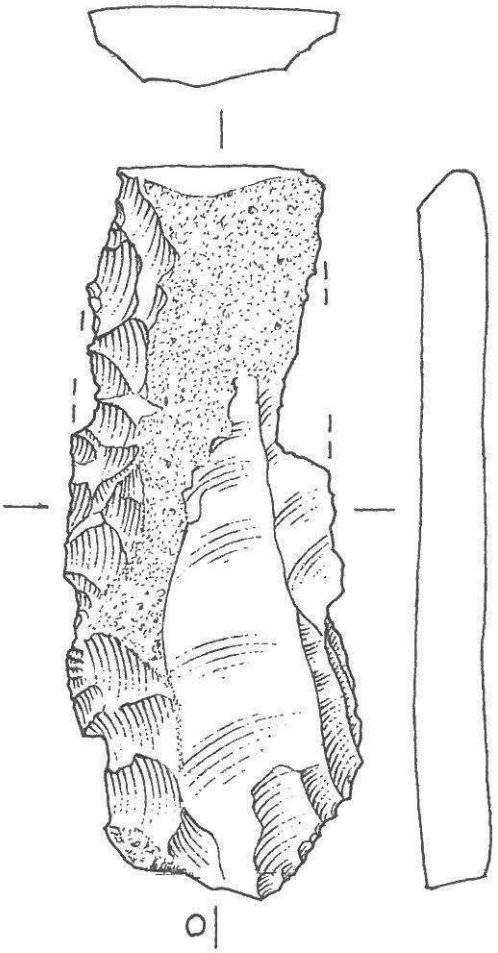
APPENDIX B

FINDS ILLUSTRATIONS

TIR Flint

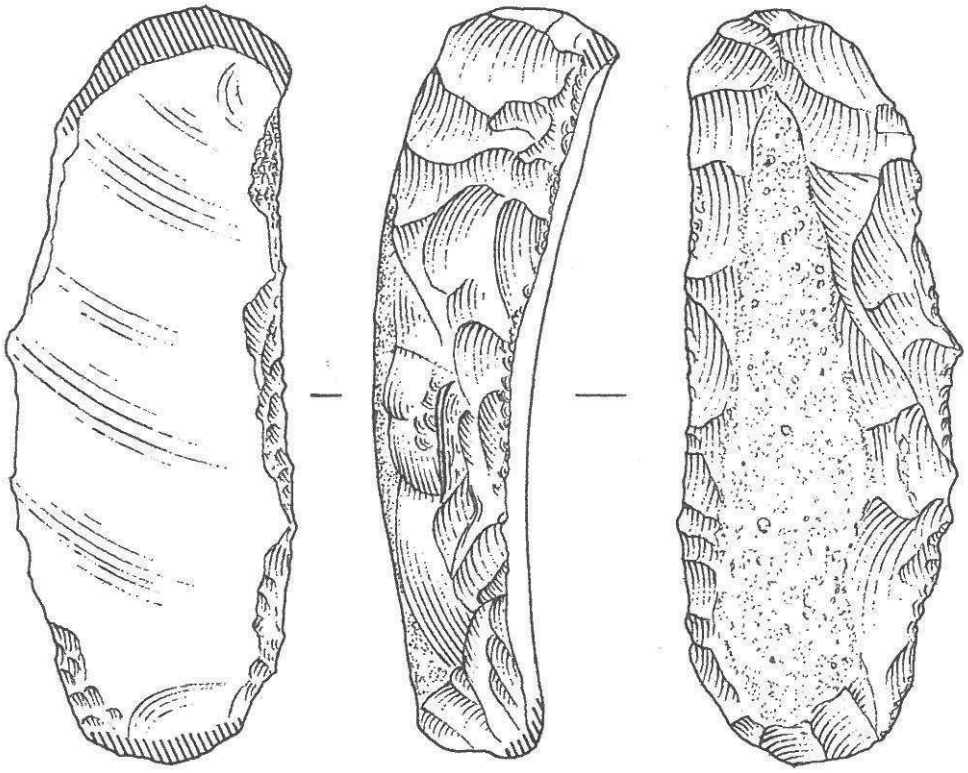


TIR Illustration 1



TIR Illustration 3

Areas polished/worn

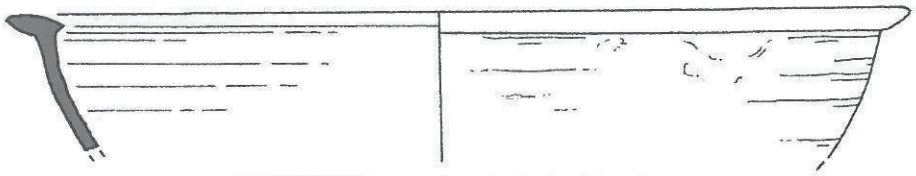


TIR Illustration 2

Scale 2:1

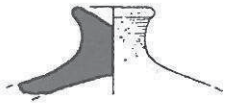
TIR Roman Pottery

Illustration 4



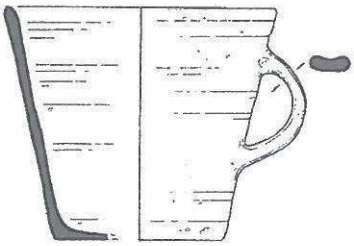
TIR (10607) Large hemispherical bowl

Illustration 5



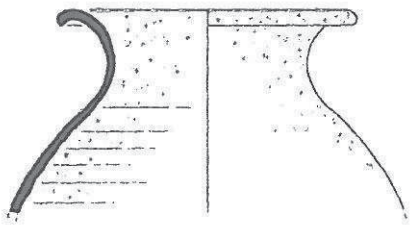
TIR (10642) Lid

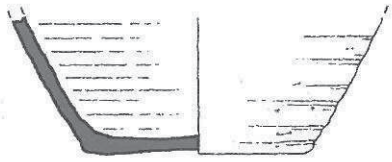
Illustration 6



TIR (10557) Tankard

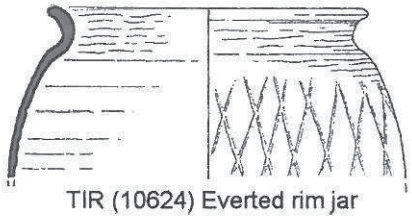
Illustration 7





TIR (10557) Narrow necked flared rim jar

Illustration 8



TIR (10624) Everted rim jar

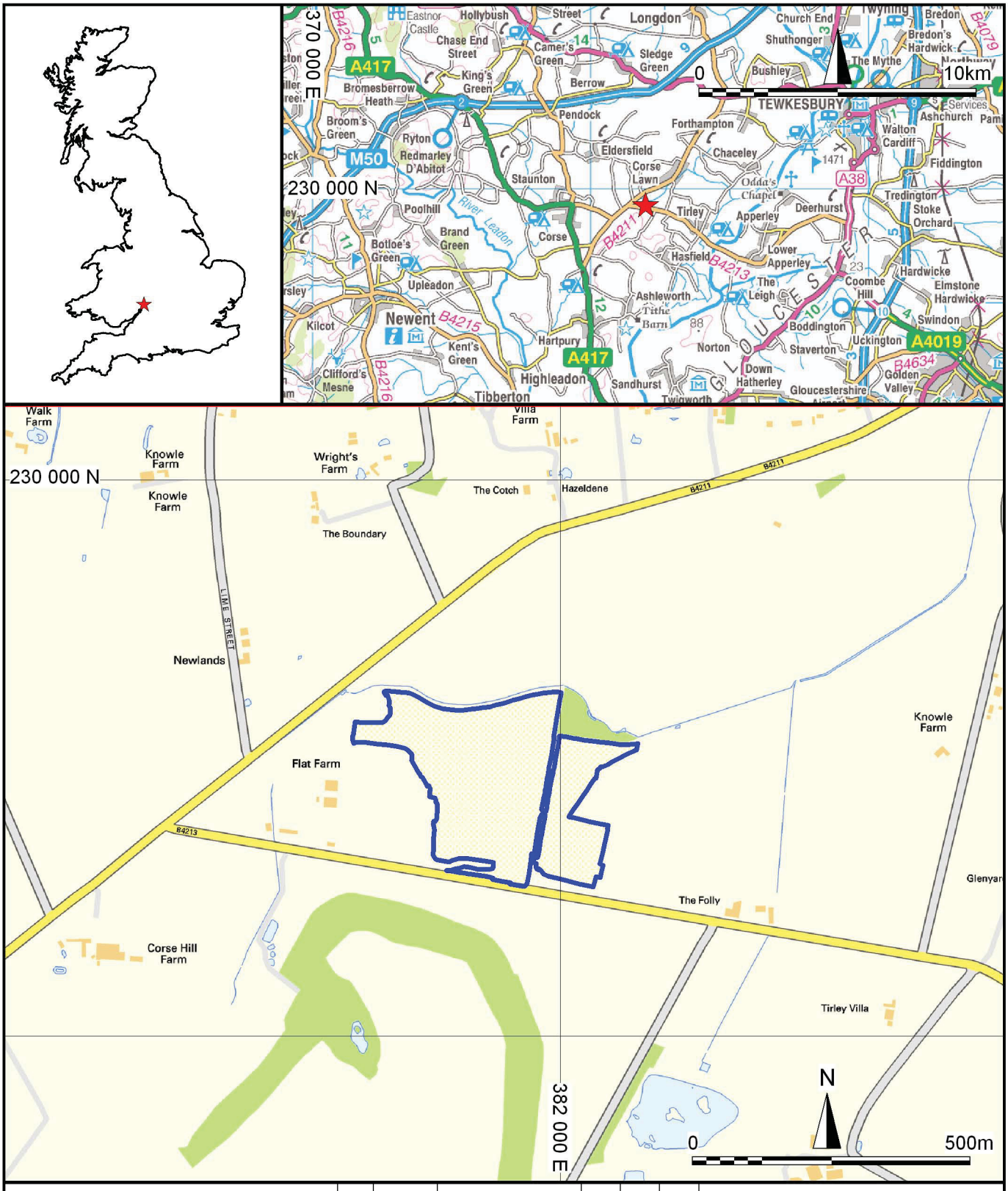
Illustration 9

TIR (Unstrat) Beaker

Scale 1:4

APPENDIX C

FIGURES



Area of controlled strip

Ver	Date	Description	Drn	Chk	App
0.06	19/06/12	First issue	SAF	GC	DB

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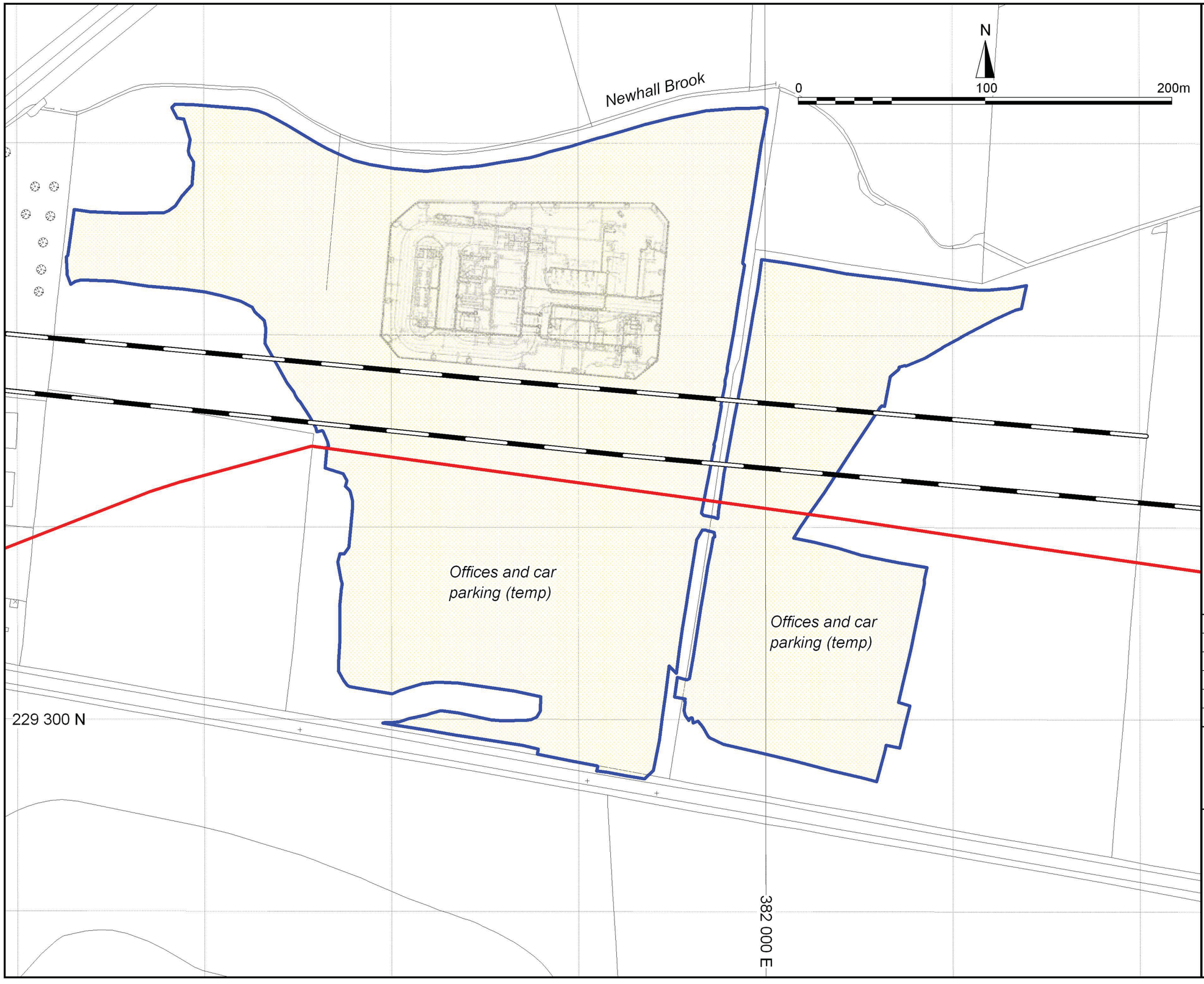
Tirley Pressure Reduction Installation

Figure 1
General Location of Tirley PRI

Scale: 1:200,000 and 1:10,000

FILE NAME:TIR\58\reportillustrations\mapinfo\ver01.00\workspaces\figure01.wor



Pipeline

Area of controlled strip

PRI area

Overhead cables

Ver	Date	Description	Drn	Chk	App
1.00	18/12/12	First issue	SAF	DH	DB

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Tirley Pressure Reduction Installation

Figure 2
Location of Controlled Strip Excavation Site within the Proposed PRI Area

Scale: 1:2000

FILE NAME:TIR\58\report\illustrations\mapinfo\ver01.00\workspaces\figure02.wor

Extant modern pipelines

Limit of excavation

Cut line

Projected line

Layer line

Phase 1

Phase 2

Phase 3

Phase 4

Phase 5

Phase 6

Unphased

Ver	Date	Description	DM	Chk	App
0.6	19/6/12	Edits	JLC	DH	DB
0.2	5/4/12	Phasing	SF	GC	DH
0.1	29/3/12	Digitising	JLC	GC	

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Tirley Pressure Reduction Installation

Figure 3: Overall Phased Site Plan

Scale 1:2000

FILE NAME: TIR\47\full report\AutoCAD\TIR SURVEY_ver00-06.dwg

0 50m

Limit of excavation
Cut line
Projected line
Phase 1
Phase 2
Phase 3
Phase 4
Phase 5
Phase 6
Unphased
Excavated sections

10383
10061
10710
10382
10706
10753
10711
10030
10752
10318
10205
10693
10707
10706
10701
10701
10704
10368
10442
10158
10098
10096
10417
10697
10698
10699
10443
10145

Ver	Date	Description	DM	Chk	App
0.6	19/6/12	Edits	JLC	DH	DB
0.2	5/4/12	Phasing	SF	GC	DH
0.1	29/3/12	Digitising	JLC	GC	

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Tirley Pressure Reduction Installation

Figure 4: Plan of Northern Area of Site

Scale 1:500

FILE NAME: TIR\47\full report\AutoCAD\TIR SURVEY_ver00-06.dwg

Limit of excavation
Cut line
Projected line
Phase 1
Phase 2
Phase 3
Phase 4
Phase 5
Phase 6
Unphased
Excavated sections

Ver	Date	Description	DM	Chk	App
0.6	19/6/12	Edits	JLC	DH	DB
0.2	5/4/12	Phasing	SF	GC	DH
0.1	29/3/12	Digitising	JLC	GC	

network archaeology

Tirley Pressure Reduction Installation

Figure 5: Plan of Southern Area of Site

Scale 1:500

FILE NAME: TIR\47\full report\AutoCAD\TIR SURVEY_ver00-06.dwg

Limit of excavation

Cut line

Projected line

Phase 1

Phase 2

Phase 3

Phase 4

Phase 5

Phase 6

Unphased

Excavated sections

Ver	Date	Description	DM	Chk	App
0.6	19/6/12	Edits	JLC	DH	DB
0.2	5/4/12	Phasing	SF	GC	DH
0.1	29/3/12	Digitising	JLC	GC	

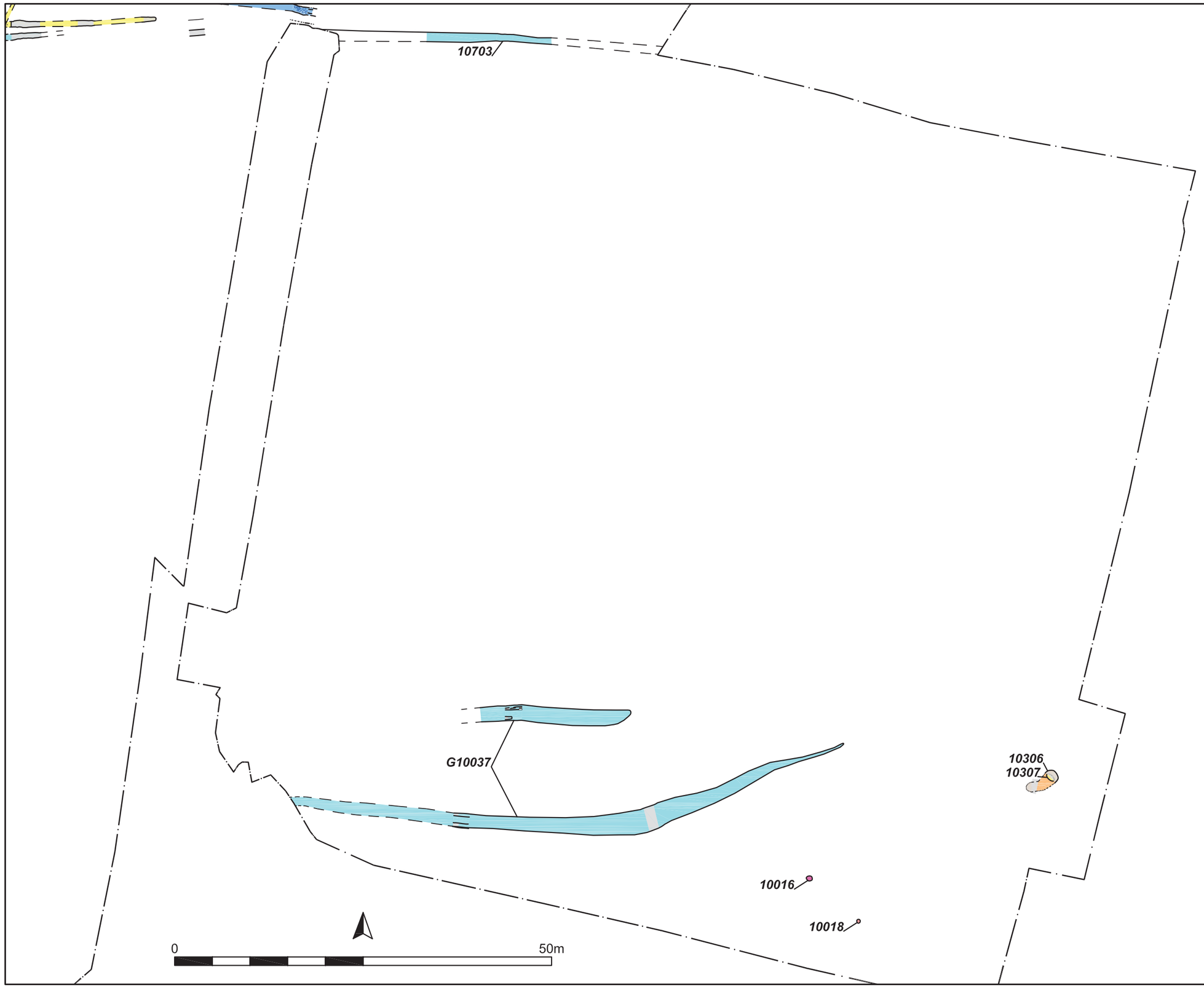
network archaeology

Tirley Pressure Reduction Installation

Figure 6: Detail Plan of Enclosure

Scale 1:200

FILE NAME: TIR\47\full report\AutoCAD\TIR SURVEY_ver00-06.dwg



Limit of excavation

Cut line

Projected line

Phase 1

Phase 2

Phase 3

Phase 4

Phase 5

Phase 6

Unphased

Excavated sections

Ver	Date	Description	DM	Chk	App
0.6	19/6/12	Edits	JLC	DH	DB
0.2	5/4/12	Phasing	SF	GC	DH
0.1	29/3/12	Digitising	JLC	GC	

network archaeology

Tirley Pressure Reduction Installation

Figure 7: Plan of South-Eastern Area of Site

Scale 1:500

FILE NAME: TIR\47\full report\AutoCAD\TIR SURVEY_ver00-06.dwg

Limit of excavation

Cut line

Projected line

Phase 2

All other phases

Ver	Date	Description	DM	Chk	App
0.6	19/6/12	Edits	JLC	DH	DB
0.2	5/4/12	Phasing	SF	GC	DH
0.1	29/3/12	Digitising	JLC	GC	

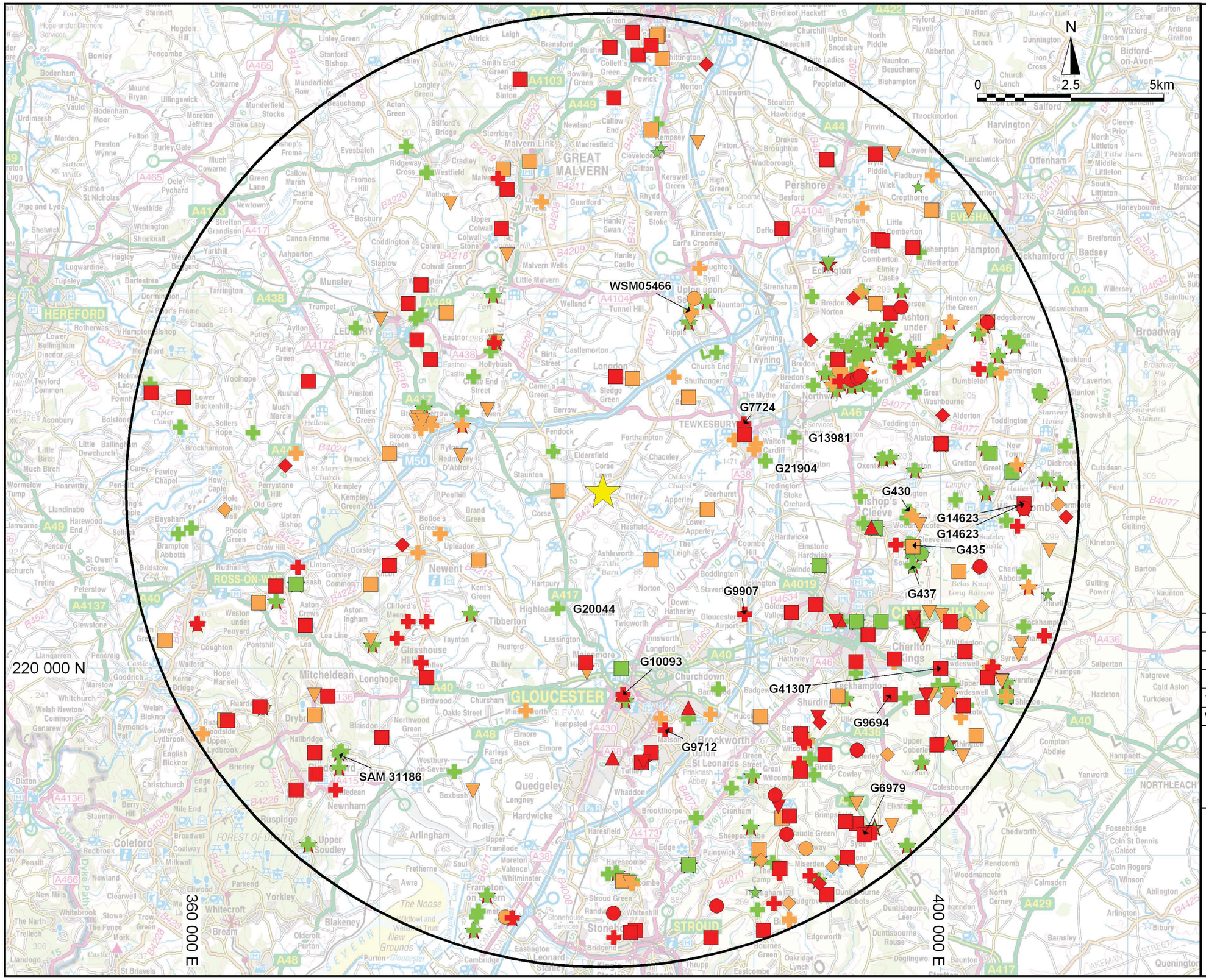
network archaeology

Tirley Pressure Reduction Installation

Figure 8: Detail Plan of Phase 2 Features

Scale 1:200

FILE NAME: TIR\47\full report\AutoCAD\TIR SURVEY_ver00-06.dwg



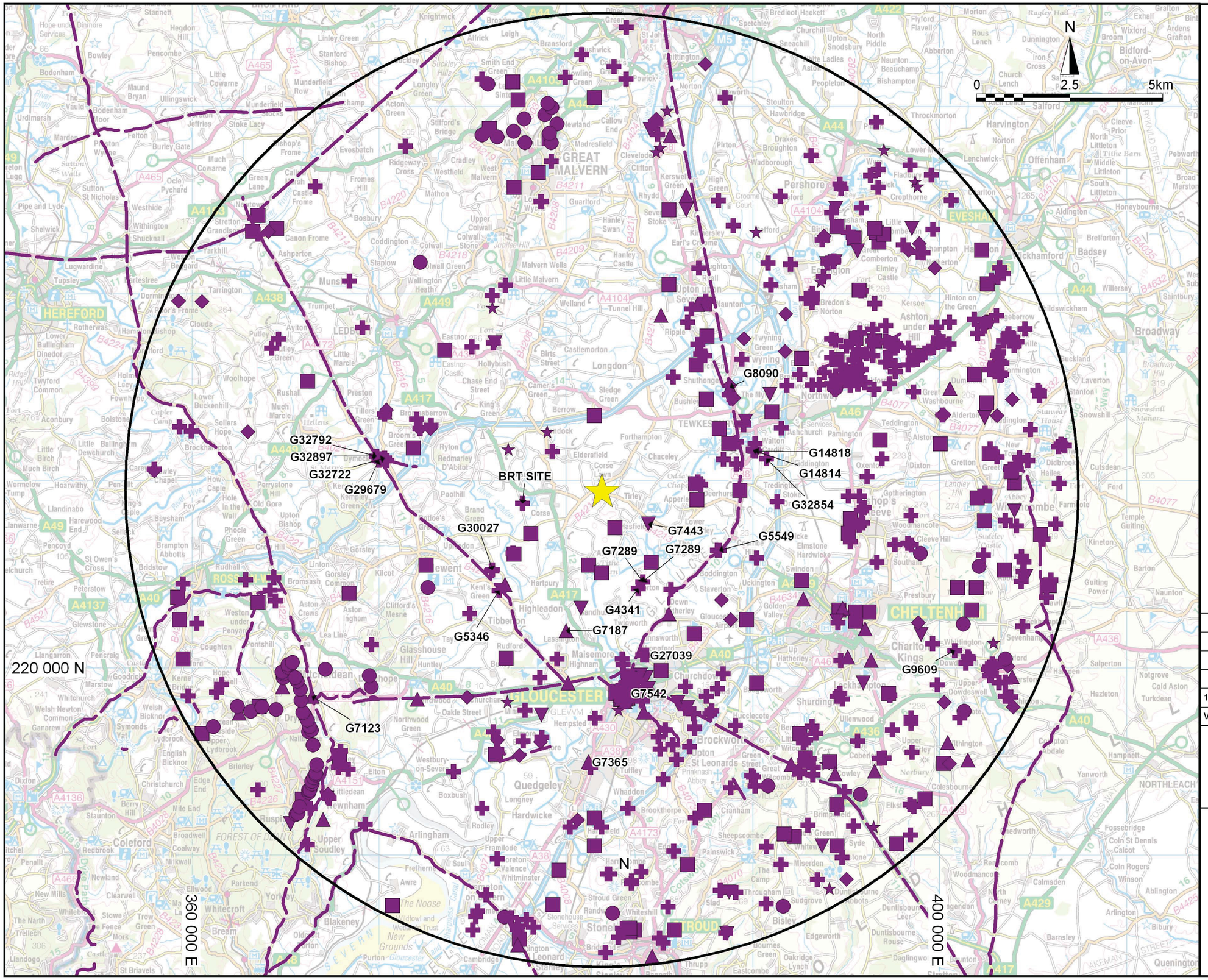
Ver	Date	Description	Drn	Chk	App
1.00	20/12/12	First issue	SAF	DH	DB

Tirley Pressure Reduction Installation

Figure 9
Distribution of Prehistoric activity in the region (within 25km radius of the Tirley site)

Scale: 1:200 000

FILE NAME:TIR\58\report\illustrations\mapinfo\ver01.00\workspaces\figure09.wor



- Tirley PRI

SIte Type

- Settlement
- Industrial
- Agriculture
- Ritual
- Road
- Finds scatter
- Other
- G5549 Site discussed in text

Period

- Roman

Ver	Date	Description	Drn	Chk	App
1.00	20/12/12	First issue	SAF	DH	DB

network archaeology

Tirley Pressure Reduction Installation

Figure 10
Distribution of Roman activity in the region (within 25km radius of the Tirley site)

Scale: 1:200 000

FILE NAME:TIR\58\report\illustrations\mapinfo\ver01.00\workspaces\figure10.wor