

N9/N10 Kilcullen to Waterford Scheme:
Waterford to Knocktopher – Phase 2
Archaeological Resolution
Dunkitt to Knocktopher townlands, Co. Kilkenny

FINAL REPORT
Ministerial Direction: A032/000
Registration Number: E2516

Site Name: AR050, Sheepstown Townland
Co Kilkenny

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SUMMARY

This report comprises the final results of the archaeological excavation of AR050, in the townland of Sheepstown in the parish and barony of Knocktopher, Co Kilkenny. This excavation was undertaken as part of the archaeological programme for the N9/N10 Kilcullen to Waterford road scheme; Waterford to Knocktopher Phase 2. The excavation was conducted by John Lehane under Ministerial Direction for Valerie J Keeley Ltd, during the months of August and September in 2006.

Excavation of AR050 led to the identification of the remains of a large burnt mound measuring approximately 400m², 15 troughs and pits, two hearths and a series of postholes and stake holes. Excavation of these features produced evidence of the reuse of some features on the site, indicating at least two phases of activity, Middle Bronze Age and Iron Age. Iron slag was found in one of the features, indicating use into the Iron Age and possibly the medieval period (see Young below).

All archaeological work is now complete for this site and this report constitutes the final report on this excavation. A digital copy of the archive is available at the post excavation offices of Valerie J Keeley Ltd., Brehon House, Kilkenny Road, Castlecomer, Co. Kilkenny. The original paper archive for this excavation will rest with the Road Design Offices of Kilkenny County Council.

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1.0 INTRODUCTION

1.1 Project Background

The proposed N9/N10 which consists of a high quality dual-carriageway/ motorway extends from Dunkitt townland on the outskirts of Waterford city to Kilcullen in Co. Kildare. Phase 2 of this development consists of the construction of 24 km of high quality dual carriageway, which will link into the proposed Waterford bypass road at Dunkitt, County Kilkenny, and to the R699 at Sheepstown, near Knocktopher in County Kilkenny. This phase of the development will run through a rural greenfield landscape. Construction work commenced in May 2007, following the completion of archaeological excavations

An Environmental Impact Statement (EIS) for the development was carried out in February 2005 by Valerie J Keeley Ltd. The studies confirmed the presence of a number of potential archaeological features along the route. Following this desk-based study archaeological test excavations were carried out by Margaret Gowen & Co Ltd in 2006 under licence issued by the authorities. The testing took the form of archaeologically directed centre-line testing along the entire route of the development. This testing determined the extent and nature of archaeological remains in areas highlighted as having archaeological potential in the EIS, and areas where no known archaeological features were present. A total of 53 areas of archaeological potential were highlighted by the testing as requiring further archaeological investigation.

Full excavation of the sites began in May 2006, and was carried out by Valerie J Keeley Ltd on behalf of Kilkenny County Council.

1.2 Aims & Objectives

Valerie J. Keeley Ltd. was appointed by Kilkenny County Council to excavate archaeological sites first identified during a programme of centreline testing carried out by Margaret Gowen & Co. Ltd., Scheme No./ Works No. A0032/000 (McQuade *et al* 2006). The scope of the archaeological measures was:

- To strip the topsoil from an area measuring approx 2500m² along the road corridor and identify the previously discovered archaeological features and any other archaeological features that may be present in this area.
- Photograph and plan any archaeological features or potential archaeological features.
- Excavate all archaeological features identified, record their contexts and sections; retaining samples where necessary, to resolve them by means of preservation by record.
- Reinstatement of excavated areas where required.

The goal of this project being to preserve by record the archaeological site/s exposed within the take of the proposed route, and to further assess areas previously unavailable for testing (McQuade *et al* 2006).

These works took place in accordance with the Directions issued by the Minister for Environment, Heritage and Local Government under Section 14A(2) of the National Monuments Acts (1930 – 2004), in accordance with the terms of the Contract between Kilkenny County Council and Valerie J Keeley Ltd and according to the terms of the *Code of Practice* agreed between the National Roads Authority and the Minister of Arts, Heritage, Gaeltacht and the Islands. The excavations also complied with the Policy and Guidelines on Archaeological Excavation (Govt of Ireland 1999) and were overseen by the Project Archaeologist.

1.3 Site Location & Access

AR050 (main chainage 25115) was located on the eastern slope at the base of a low hill. It was in the townland of Sheepstown, approx 1.5km west of the village of Knocktopher (NGR 251635E, 137332N), Co Kilkenny. It was bordered by a hedge and ditch to the east and had been cut by many drains, showing this part of the field has been boggy and wet since the time of its use as a burnt mound. Continuing east the land begins to rise again toward AR052 and to the north, the multi period hilltop site of Baysrath, AR053. AR052, according to local sources had a dancing platform on its surface between the 1930s and 1980s. A shallow stone drain or rudimentary path was found here, containing modern pottery, probably relating to this activity. The path was listed as a possible mass path. AR049, another burnt mound, albeit much smaller than AR050, was located to the south of the site in the townland of Glebe. AR051 was located to the northwest of AR050 and consisted of a recut ditch that branched off into three different ditches.

The natural sub-soil of AR050 consisted of grey marl, stony sand and dark, decayed vegetation, representing an area formerly covered by water. The land was in use as pasture for livestock before the excavation and this seemed to have been the main use of land within this part of Co. Kilkenny.

1.4 Project Timescale

Topsoil was stripped from this site on 4th August 2006. Excavation commenced on the 11th August 2006 with the site being resolved on 22nd September 2006. The site was backfilled by machine shortly after the work was carried out and the ground reinstated.

1.5 Summary of Archaeological Significance

The excavations at Sheepstown Townland revealed a large burnt mound and a number of trough features with various other cut features including stakeholes and possible post holes. Radiocarbon dating has placed four of the dated troughs in the Middle Bronze Age and another two in the Iron Age. This cluster of pyrolithic features indicates the area was eminently suitable for burnt mound activities during these periods, factors influencing the suitability of the location include; the water table / source, fuel source and ready access to suitable stones for burning. All of the above features were recorded in detail and no further work is recommended on this site.

2.0 BACKGROUND

2.1 Geology and Topography

County Kilkenny comprises three distinct topographical zones (Smyth 1990, 127-8): the upland area to the north, with the Slieveardagh hills and the Castlecomer plateau, the central limestone plain, and the southern upland area, where the Black Water valley cuts through the Walsh Mountains, hills which never rise higher than 294 m (970 feet). These form part of the Slievenaman ridge. This zone may be subdivided further, as there is a second lowland area between the Walsh mountains and the Suir. To the east are the deeper valleys of the Nore and the Barrow, which drain the central limestone plain. To the west is the Lingaun, a smaller river, which rises on the slopes of Slievenaman. The lower reaches of the Lingaun form the boundary between Counties Kilkenny and Tipperary.

The principal geological feature in South Kilkenny is the meeting of the Caledonian and Armorican structural elements. The Black Water valley and the hills on either side are still Armorican – the east-west trend of the geology of south Munster. To the west of this are the slates, shales and granites continuing down from the north-east (Whittow 1974, 239, 255).

2.2 Historical Background

The County of Kilkenny is based on the Kingdom of Ossory, and originally was coterminous with it, as was the diocese of Ossory. The northernmost part of the county, known as Upper Ossory, was lost when Queen's County was founded in 1556. A number of parishes west of the river Barrow were transferred from Carlow to Kilkenny. The southern half of the county, however, retains its original boundaries, apart from the small area of Tibbraghny in the south-west.

The name Ossory is derived from the Osraige, who were the earliest recorded inhabitants. The territory of the Osraige originally extended further to the south-west, into what is now County Tipperary, but in the 5th century AD they were driven out of this area by the Deisi. It is said that the Osraige 'fled like wild deer and they were followed till they reached a place called Luininn, where the close of the day put an end to the pursuit; '...and this place became the boundary ever after between Munster and Leinster'. (Carrigan 1905, I, 29) This is not entirely true, because although the Lingaun River became the boundary of Ossory and remains the boundary of County Kilkenny, Ossory did not become unambiguously a part of Leinster until some centuries later.

The mention of wild deer is probably an attempt to explain the name of the Osraige, which means 'deer-people'. The more usual explanation among the Osraige themselves, however, was that they were called after one Aengus Osraithe, said to have been their ancestor and the first King of Ossory, living in the second century AD. Osraithe or Osfrithe meant 'the deer-found', and it was said that he had been found among the wild deer,

although Carrigan interprets it more prosaically as meaning that he was 'born or brought up in a place where deer abounded' (Carrigan 1905, II, 27).

The 'deer-found' explanation seems to be an explanation of a Christian society familiar with the Biblical tale of Moses and the classical story of Romulus and Remus. This would have been more palatable than what we now realise is the more likely explanation. Some of the earliest peoples mentioned in the Irish written sources had similar names – Artraige 'bear people', Dartraige 'calf people'. These names are likely to be totemic, the animal representing a divinity worshipped by the people in question (MacNiocall 1972, 3).

Despite their defeat and their subjugation by the Corco Loígde, the Osraige were one of the few early population groups to retain their identity and importance in later times when dynastic identity became more important. This was because of the position of their territory.

In ancient times, Munster was largely cut off from the rest of Ireland by natural barriers such as the Slieve Bloom and the midland bogs, and indeed the Shannon, until the Vikings showed the military advantages of water transport. To the east, rivers and hills separated Munster from Leinster, with Ossory as a buffer zone. It was through Ossory that a northern army had to pass to invade Munster, across by *Belach Gabhráin* at Gowran through the central plain of the county (Byrne 1973, 169)

An attempt to map the road network of Ireland at that time was made by O' Lochlainn in 1940. He did this by first mapping all placenames incorporating relevant words such as *droichead* (bridge) and *bealach* (passage) and, more importantly, by mapping journeys described in ancient accounts such as saints' lives. He also mapped the Five Great Roads or *Slíte* which were said to radiate from Tara. The former suggested that a route led south-westwards from Castledermot via Sleaty to Dind Ríg, a royal residence near the present Leighlinbridge, and from there via Gowran to Kilkenny. However, he shows the *Sli Chualann*, one of the Five Great Roads, running alongside the Barrow as far south as the site of New Ross, where it crosses the Barrow to follow what would be the line of the present R704 to Mullinavat, and turning southwards down the Black Water valley to Waterford (O' Lochlainn 1940).

By the 11th century the Kings of Ossory had shaken off the overlordship of the Kings of Cashel (i.e. Munster) and associated themselves with Leinster. (Byrne 1973 131). They had ambitions to rule Leinster, and had their genealogists concoct a Leinster pedigree (*ibid* 163).

The most powerful of the kings of Ossory was Cerball Mac Dúnlainge, who reigned from 847 until 889. By now there was a new force in Irish politics: the Vikings. He played off rival bands of Vikings against one another and took some into his own service. Furthermore, his daughters married Norsemen, and he is recorded in Icelandic pedigrees as Kjarvalr Irakonung – Kjarval the Irish king (Byrne 1973, 162). Cerball failed to gain recognition as ruler of Leinster by the High King. His successors continued to contest the kingship of Leinster over the next one and a half centuries, but the first to succeed, Donnchad Mac Gilla Pátraic in 1036, was also the last. Nonetheless, Ossory remained a powerful kingdom within Leinster. It was now ruled by the Mac Gilla Pátraic

family, who were to remain kings of Ossory until the late 12th century, and remained powerful in Upper Ossory until the sixteenth century.

When territorial dioceses were set up at the Synod of Rath Bressail in 1111, the Bishop of Ossory was granted the territory lying between the Slieve Blooms and the meeting of the three rivers, and between Grane Hill, in the parish of Urlingford, and Slieve Mairge.

Meanwhile in 1103, after the death in battle of Gillapattrick Ruadh, King of Ossory, the kingdom was broken up into three divisions. Deisceart Osraighe was the southern part. It probably consisted of the baronies of Ida and Iverk and the southern extremity of the Barony of Knocktopher. By the middle of the century there was considerable friction between Ossory and Leinster. In the 1140's Dermot MacMurrough, King of Leinster, deposed Cearbhall King of South Ossory and gave his kingdom to Donnchadh, King of Tuaisceart Osraighe. In 1151, however, he imprisoned Donnchadh and reinstated Cearbhall as king over almost all of Ossory until Donnchadh's release, when the two were restored to their original kingdoms. Subsequently, however, Dermot MacMurrough expelled Cearbhall and extended Donnchadh's rule over most of Ossory.

The king of Ossory was among the Leinster chiefs who refused to acknowledge Dermot MacMurrough as King of Leinster in 1166. After the Norman invasion, MacMurrough invaded Ossory. The king of Ossory 'advanced with 3000 men to oppose them, near the eastern confines of Ossory, where he made deep cuttings and trenches, and plashed the pass' (the latter evidently means 'pleached', i.e. interwove the branches of trees and bushes to form a barrier). After a day's fighting, the Leinster army succeeded in breaking through, and wasted Ossory. These, and other subsequent incursions, seem to have been in the northern half of Ossory, entering via Old Leighlin (Carrigan 1905, 60-62).

After Dermot's death, Domhnall acknowledged Strongbow as his feudal lord and submitted to Henry II. He was left in possession of Tuaisceart Osraige, the more important northern part, while South Ossory (Deisceart Osraighe) was granted to Milo FitzDavid. It became known as 'Overk in Ossory'

The Liberty of Kilkenny, as Ossory now became (Dudley Edwards 1973, 84-5), was divided into manors. These in south and central Kilkenny were unusually large compared to other areas, comprising an entire cantred or barony, such as Iverk and Knocktopher. These were subdivided into dependent fiefs. (Empey 1990, 75)

The Walsh family acquired extensive territories across the southern half of County Kilkenny, giving their names to the rough upland area known as the Walsh Mountains. They held this land, with an 'interweaving of Gaelic and feudal strategies of land management and social control' (Smyth 1990, 139) until the seventeenth century. Their feudal overlords were the Butler families who, from the middle of the 14th century, came to dominate counties Kilkenny and Tipperary (Smyth 1990, 137).

2.3 Archaeological Background

2.3.1 Prehistoric Archaeology

Prior to this scheme and its associated archaeological works, there were no known prehistoric sites in the townland of Glebe. The Records of Monuments and Places (RMP) shows several RMPs in the townland of Knocktopherabbey, 1.5km east of AR49. These sites consist of a ritual site-house (RMP KK031-017009) and a tomb (RMP KK031-017011). Although these sites have not been scientifically dated, both may represent evidence of prehistoric archaeological activity in the area.

2.3.2 Historical Archaeology

The Records of Monuments and Places (RMP) shows several RMPs in the environs of AR 50. These include an early 12th century church with a Romanesque mounding (KK031-015001). Other recorded sites within the Townland are an unclassified castle (KK031-014), a graveyard (KK031-015002), a possible enclosure (KK031-015003), a road/trackway (KK031-015004) and an abandoned medieval settlement (KK031-015005).

2.4 Sheepstown Townland

This site was located in the Townland of Sheepstown, in the civil parish of Knocktopher and the barony of Knocktopher, as listed in the General Alphabetical Index to the Townlands and Towns, parishes and Baronies of Ireland (1851). The townlands are south of the village of Mullinavat in the parish of Kilbeacon, County Kilkenny in the province of Leinster, 7 miles south east of Knocktopher, on the road from Kilkenny to Waterford.

The barony of Sheepstown covers approximately 572 acres and is an Anglicisation of the *Baile na gcaorach*, place of the sheep. The early 12th century Sheepstown church, in ruins, near the roadside was known as *Teampall Bhaile na gcaorach* and St. Muicin of Maighin was patron. The site of Sheepstown castle (unclassified) which belonged to the Rothes until the 17th century is west of the road.

3.0 THE EXCAVATION

3.1 Setting

AR050 (main chainage 25115) was located on the eastern slope at the base of a low hill. It was in the townland of Sheepstown, approx 1.5km west of the village of Knocktopher (NGR 251635E, 137332N), Co Kilkenny. It was bordered by a hedge and ditch to the east and had been cut by many drains, showing this part of the field has been boggy and wet since the time of its use as a burnt mound. Continuing east the land begins to rise again toward AR052 and to the north, the multi period hilltop site of Baysrath, AR053. AR052, according to local sources had a dancing platform on its surface between the 1930s and 1980s. A shallow stone drain or rudimentary path was found here, containing modern pottery, probably relating to this activity. The path was listed as a possible mass path. AR049, another burnt mound, albeit much smaller than AR050, was located to the south of the site in the townland of Glebe. AR051 was located to the northwest of AR050 and consisted of a recut ditch that branched off into three different ditches.

The land was in use as pasture for livestock before the excavation and this seemed to have been the main use of land within this part of Co. Kilkenny.

3.2 Previous Archaeological Assessment

An EIS report was compiled by Valerie J. Keeley Ltd in 2005, with regard to the Archaeological, Architectural and Cultural Heritage of the entire route of the proposed scheme. Archaeological testing by Emer Dennehy for Margaret Gowen and Co. Ltd. in September/October 2005 (A0032/06B) revealed a burnt mound measuring 17 x 16 x 0.2m at Chainage 25115 (NGR 251635, 137332)

3.3 Excavation Methodology

The topsoil at this site was removed utilising a hydraulic excavator under the direction, supervision and monitoring of a qualified archaeologist. Once the topsoil had been removed, the entirety of the site area was cleaned back to reveal the burnt mound identified during the previous testing, and to try to identify any new features which may have been exposed.

Upon location, all archaeological materials were cleaned and excavated by hand using methods appropriate to their composition, nature and date.

In AR050, as drains had cut through the mound in more recent years, their fill was removed first and this created sections through the deposit. These sections were then drawn and the rest of the mound was removed. All archaeological contexts were photographed and planned (in relation to the site grid) prior to excavation. Sections were excavated through all features to obtain profiles and to expose the stratigraphic sequences and then fully excavated. Features that proved to be of modern origin were not fully excavated e.g. drains

The composition, stratigraphic position and interpretation of all contexts were recorded on a context sheet prior to and during excavation. Contexts have been sampled for palaeobotanical material, radiocarbon dating, petrology, insect and wood identification, where appropriate. Samples were taken from the base and sides of some troughs for analysis. All sections and cut features were photographed and drawn. The position of all finds and samples were recorded in three-dimensions (where practicable) in relation to the site-grid.

3.4 Stratigraphic Description

AR050 consisted of a large burnt mound, beneath which were 15 pits or troughs. The site was roughly divided into two areas. The east area was closest to the water's edge and the features found here were predominantly troughs. The western area contained lots of stakeholes; postholes as well as four pits (see Figure 8).

3.4.1 Natural

The natural sub-soil of AR050 consisted of grey marl, stony sand and dark, decayed vegetation, representing an area formerly covered by water.

3.4.2 Burnt Mound

The burnt mound [c6=c21] was roughly comma shaped in plan, measuring 23.5m x 17m x 0.4m. It was a loosely compacted dark brown-black medium silty-sand with approximately 50 - 60% heat-shattered stones. The deposit also contained a moderate amount of charcoal and burnt roots. The burnt mound covered the majority of the troughs and sub-surface features identified across the site.

3.4.3 The Eastern Area

3.4.3.1 The Troughs

Trough [c141] was a rectilinear shaped trough with a raised circular platform on its south-eastern side. It was orientated NW-SE and measured 3.7m x 1.75m x 0.55m. The sides were all sloping except for the more vertical southern edge, which broke sharply onto a flat base. The corners of the trough were all bowl-shaped, and contained small concentrations of charcoal. The trough was primarily filled with [c127] which was a dark-grey sticky sandy-clay with c.40% burnt stone. The deposit contained frequent amounts of charcoal and moderate amounts of decayed vegetation. The trough was re-cut by trough [c39]. This was also rectilinear in plan and measured 2.5m x 1.75m x 0.26m. The addition of a layer of clay (0.10m thick), [c38] was found on the south side of [c39], and is thought to have acted as a water proof barrier against the burnt mound fill [c127] found within [c141]. The fills of both original cut, [c127] and the later re-cut, [c27] were quite similar in nature. Both were damp and contained a lot of organic material including wood, burnt hazel nut and burnt bone fragments. A

shallow linear channel extended from the western side of the trough. It measured 2m x 0.9m x 0.1m but was quite ephemeral and had almost imperceptible shallow edges and a flat base. The relationship between the channel and trough was unfortunately obscured by later truncation by drain [c10]. The channel appeared to extend towards the edge of a larger trough [c56]

Trough [c56] was rectilinear in plan and measured 5.6m x 2.25m x 0.35m deep. It was slightly rounder at the north-western end and rose to form a shallow platform at the southeastern side which was 1.4m long. The sides were vertical, although the western edge was more gradual. The sides broke sharply onto a gently undulating base which sloped gently from the southwest to northeast. The primary fill of the trough was (c93) which was a deposit of unburnt stones which were found on the northern ledge. The collection of stones was in a pile which measured 1.55m x 0.8m x 0.15m, and appears to have been part of a stock-pile of unburnt limestone. Two further fills sealed this deposit of stones. The secondary fill of this feature [c55] consisted of light grey yellow, loose clayey sand with occasional burnt stone and charcoal flecks and this was sealed by the tertiary fill [c25] which consisted of dark grey, loose and fine clayey silt made up of approx 40% heat shattered stones. This deposit was partly covered by an area of oxidisation [c35] caused by *in-situ* burning. The area of oxidisation was bright orange in colour and measured 1.65m x 1.4m x 0.05m. It was partly covered by [c14] comprised predominantly of heat shattered stone with a moderately compact dark brown-black coarse silty-sand matrix. The oxidised deposit indicates the use of the site even after at least one of the troughs had been backfilled. A sample of hazel charcoal from fill [c55] was radiocarbon dated to 3741±21 BP (1409 – 1271 cal BC) (UBA-14010); this establishes a date in the mid Bronze Age for this feature.

The area of oxidisation, [c35] was surrounded by 39 stake holes. They were found clustered around the south western edge of trough [c56]. The stakeholes were no larger than 0.07m in diameter and 0.12m deep and were filled predominantly with charcoal, implying they were burnt *in-situ*. These features were [c98], [c119], [c121], [c128], [c132], [c135], [c137], [c139], [c142], [c144], [c146], [c148], [c150], [c152], [c154], [c158], [c168], [c170], [c172], [c174], [c176], [c180], [c182], [c184], [c186], [c188], [c190], [c196], [c198] and [c207]. A larger post-hole [c74] was located on the western edge of the stakehole cluster. It was sub-rectangular in plan, with vertical sides and measured 0.37m x 0.32m x 0.18m. It was filled entirely with [c73] which was a dark grey-brown loosely compacted sandy-clay. This posthole may be associated with an alignment of features described below.

Several of the larger stakeholes in this area appear to form a rectangular structure around the hearth (Plate 12), probably some kind of windbreak. The cuts of stake cluster [c207] leaned away from the hearth but most of the others around the hearth were vertical. These stakes may have been there to support something over the fire rather than a windbreak around it although due to the amount of stakes that were found it seems possible that as they were burnt *in-situ* on the edges of the hearth, and were then replaced by a later stake in a similar location

Immediately to the north of the stakeholes and hearth [c35] three similarly sized postholes [c112], [c102] and [c106] appeared to form a triangle around trough [c56] (Plate 3). Post-hole [c106] was located on the eastern edge of trough [c56]. It measured 0.34m x 0.3m x 0.22m and was filled entirely with [c107] which was

predominantly comprised of burnt stone with a dark grey slightly gritty silt matrix. Post-hole [c102] was located on the western edge of the trough. It measured 0.35m x 0.26m x 0.26m and was filled entirely with [c103] which was a moderately compact dark grey sticky clayey-silt with frequent charcoal inclusion and occasional burnt stone inclusions. The post-hole was surrounded on its northern and eastern edges by seven small stakeholes which formed a rough V shape. The stakeholes [c117], [c123], [c130], [c160], [c162], [c192], [c194] were no larger than 0.06m in diameter x 0.12m deep, and were all filled by a similar light grey friable sandy silt with occasional yellow mottling. Two slightly larger stakeholes were located to the north of this arrangement. Stakehole [c115] was located immediately next to the western edge of [c56] and measured 0.1m in diameter and was 0.26m deep. It was filled with [c116] which was loosely compacted dark grey sticky clay with occasional charcoal inclusions. Stakehole [c100] was located approximately 0.6m to the south-west and was 0.14m in diameter and 0.27m deep, and was filled with [c101] which was similar material to [c116]. Post-hole [c112] was located 1.5m northwest of [c115]. It measured 0.36m x 0.31m x 0.29m and contained two fills. The primary fill was [c111] which was a compact light black-brown sticky silty-clay with charcoal flecking which filled the feature to a maximum depth of 0.17m. [c110] was a compact mid black-brown sticky silty-clay with burnt stone and charcoal flecks. A smaller posthole [c135] was located immediately to the east of [c112]. It measured 0.16m x 0.12m x 0.22m and was filled entirely with [c136] which was a mid orange-grey sticky silty-clay with burn stone and charcoal inclusions. It was very similar to the upper fill of [c112].

The postholes may have supported some sort of cover over the feature however they may also tie in with the semi circular line of posts that are found predominantly in the western area which are described below (Plate 5).

Troughs [c30] and [c178] also appeared quite symmetrical. Both were round with circular annexes coming from one side which may have been possible access points. They both had steep sides and slightly sloping bases and were of similar lengths. Trough [c30] measured 2.54m x 2.25m x 0.52m and [c178] measured 2.3m x 2m x 0.26m. The primary fill of [c30] was a (c23), a dark grey-brown friable sandy-silt with approximately 50% heat-shattered stones. The deposit measured 1.62m x 1.05m x 0.3m and was found predominantly in the southern half of the trough, a sample of oak charcoal from this feature was radiocarbon dated to 3151±34 BP (1499 – 1322 cal BC) (UBA-14012) suggestive that the feature dates to the mid Bronze Age. The secondary fill was (c22) was very similar to (c23) but was darker in colour and contained less heat-shattered stones. Several finds were made in [c22] the secondary fill of [c30] including a piece of iron slag (A032/027:50:84 see Young below), a quartzite hammer-stone or pounder (E2516:21 see Moore below) and a rectangular flat stone (E2516:15). [c178] was filled entirely with (c179) which was a loosely compacted grey-black sticky sandy-clay with approximately 40% heat-shattered stone. The deposit contained a large amount of charcoal, some fragments of decayed wood and a fragment of burnt bone, a sample of alder charcoal from this feature returned a radiocarbon date of 2192±34 BP (381 – 168 cal BC) (UBA-14014), suggesting a date in the Iron Age. This indicates that the features are not contemporary and any similarity in morphology must be coincidental or that the form itself had a particular benefit for a particular purpose.

Both troughs had smaller pits approx 0.60m to their northwest sides. These pits, [c33] (Plate 4) and [c134] (Plate 6) were roughly circular in shape and similar in dimension. Cut [c33] held two fills [c31] and [c32] while [c134] held a single fill [c20]. Both features appeared to be quite close to the water table as the bases remained moist and [c33] had constant seepage of water into its base. Pit [c33] had a piece of struck flint in its base. It is possible these smaller pits stored something that was then transferred or added to the larger pits, using the suggested access points. A modern drain [c8] partially cut the eastern edge of [c134] and the south eastern edge of [c178].

Trough [c34] is a large, shallow pit which was located between troughs [c178] and [c30]. The trough was sub-rectangular in shape and had straight sides and a gently westward sloping base. It measured 2.5m E-W x 1.77m max x 0.28m. It was filled entirely by [c17] which was a dark grey-black loosely compacted coarse sandy-silt with frequent inclusions of small to medium sized heat-shattered stone and charcoal. As with troughs [c178] and [c30] it had a smaller pit located 0.20m to the north. This small pit, [c65] was sub rectangular with an indented southeast corner. It had steep sides and a slightly concave base and contained a single fill [c18] and was similar in shape and size to pits [c134] and [c33], but much shallower. Pit [c57] was located immediately beside [c65]. It was sub rectangular in plan with gradually sloping sides and a slightly concave base. It was filled entirely by [c19] which was a loosely compact dark-grey peat deposit. The context contained a large amount of heat-shattered stone, which increased towards the base of the feature. A piece of deer antler broken in two (E2516:9 and E2516:10, Plate 7, see Svensson below) was also recovered from the fill. The deer antler is not thought to have been cut or butchered but rather to have been shed naturally (ibid). A sample of barley seeds from the fill [c19] returned a radiocarbon dates of 3153±27 BP (1495 – 1391 cal BC) (UBA-14009), indicating that the feature dates to the mid Bronze Age.

All of the above mentioned pits and troughs appeared to cut a mid yellow-grey, re-deposited sandy-clay layer [c60] (Figs 6 & 8). The deposit measured 12m x 7m x 0.2m max and contained inclusions of heat-shattered stone and charcoal. Two pieces of possible metal slag were found in this layer during a clean back (Sample 85). The heat shattered stone may either be the remains of earlier burnt mound activity relating to earlier pits [c200], [c113] and [c114], or alternatively may have been trampled into the deposit. It is thought that the deposit was intentionally laid down to create a smoother, drier, working platform. It should be noted that during the excavation this deposit was not covered by water, even after heavy rains on site which filled all the surrounding troughs full of water (Plate 8). It is possible however, that this deposit [c60] may have been formed by taphonomic processes, it must be considered that this could be a naturally formed layer which had been built up after the site fell into disuse.

Pit [c113], possible post hole [c114] and pit [c200] were all found underneath this layer [c60]. Pit [c113] was oval shaped pit with vertical sides breaking onto a flat base. It measured 0.72m x 0.57m x 0.33m. It was filled

entirely with [c36] which was a compact dark grey-brown silty-clay with approximately 30% heat-shattered stone and occasional charcoal inclusions, a sample of ash / blackthorn charcoal from this fill was radiocarbon dated to 2170±29 BP (361 – 116 cal BC) (UBA-14013) indicating that this feature pertains to the Iron Age. [c114] was circular pit with gently sloping sides and a flat base (Plate 9). It measured 0.34m in diameter and was 0.08m. It was filled entirely with [c37] which was a loosely compacted light brown silty-clay with occasional burnt stones. Pit [c200] was oval in shape with relatively steep sides, except for the southwest edge which was more gradual before leading to a sharper drop. The edges broke sharply onto flat base which had been lined with stone [c206], some of which were burnt. The main fill of the feature was [c201] which was a loosely compacted dark grey silty-clay with occasional inclusions of charcoal and burnt stones. The tertiary fill of the feature was [c202], which was a loosely compacted mid-grey silty-clay with occasional inclusions of burnt angular stone and charcoal. Two stakeholes, [c156] and [c166], were excavated between pit [c200] and [c113]. They were similar in size with each other and both held single fills, [c157] and [c167] respectively. They also appear to line up with stakes [c87], [c77], [c81], [c165] and [c96], all of which held single fills, in the east area, which possibly formed a line of fencing, possibly a windbreak.

3.4.4 The Western Area

The features in this area of site AR050 were predominantly post holes and stake holes with a few pits.

Pit [c108] was a sub rectangular shaped pit with steeply sloping edges at the western edge, and more gradual in the east. It was filled entirely with, [c109] which was different to that of all other pits in that it did not contain any burnt mound material. The fill was a dark greyish-brown sticky silty clay with frequent stone inclusions. It contained animal bone fragments and a large piece of wood. It did not appear immediately related to any other feature on the site but was sealed by burnt mound [c6]. It may have functioned as a rubbish or storage pit.

Pit [c49] was a shallow sub rectangular pit with slightly concave sides and a flat base which sloped slightly to the north-west. It was filled entirely with [c48] which was a dark black-brown sandy-silt with large amounts of heat shattered stone and frequent amounts of charcoal. An oak charcoal sample from [c48] returned a date of 3002±27 BP (1374 – 1130 cal BC) (UBA-14011). An area of oxidised sub-soil [c50] was located 0.72m to the south-west of the pit. The sub-soil in an area measuring 1.35m x 1m x 0.02m had been turned a bright orange colour due to the heat of a fire in this location. The two features were linked by a narrow shallow channel measuring 0.72m x 0.6m (max) x 0.1m. It seems that stones may have been heated in the hearth and then rolled down the slope into pit [c49] using the channel (Plates 10, 11). This pit was further away from the waters edge and was also higher up slope. It is possible they it was intended to be kept dry.

Three postholes appeared to form a triangle around pit [c49], but not hearth [c50] (Plate 5). Posthole [c47] was circular in plan with vertical sides and a slightly concave base. It measured 0.27m in diameter and was 0.3m deep. The primary fill was [c64] which was a moderately compact mid grey-brown silty clay with occasional small burnt stones. This context was probably a packing fill around the post. The upper fill was [c46] which was a

moderately compact dark brown silty-clay with occasional fragments of burnt stone. Post-hole [c52] was oval in plan with straight sides and a flat base, it measured 0.26m x 0.21m x 0.36m. It was filled entirely with [c51] which was a moderately compact dark grey-brown silty-clay with approximately 30% burnt stones. Post-hole [c75] was circular in plan and measured 0.14m in diameter x 0.04m deep. It was filled [c76] which was a similar material to [c51]. These post-holes may have supported a structure above the ground surface.

A possible slot trench [c104] was found to the north east of [c49]. However this feature was quite small (0.80m x 0.09m x 0.03m) and therefore its exact function cannot be determined. There were other post and stakeholes to the east and northwest of this feature, [c41], [c52], [c59], [c80] and [c83] but none to the south, southwest or northwest of hearth [c50], indicating it was left unprotected from the elements, namely the south westerly winds. Perhaps they were aiming the wind through the little channel/flue into and above pit [c49].

Postholes [c47], [c52], [c91], [c54] and [c74], [c102], [c112] and [c106], which have been described previously, were all fairly similar in size and shape, measuring approximately 0.26m in diameter and 0.25m deep. The posts appear to have created a curvilinear C-shaped fence between trough [c56] and pit [c49] (Plate 5). An alignment of smaller stakeholes appears to have formed a slightly curving NW-SE alignment, possibly continuing towards stakeholes [c166], [c156] and [c123]. Stakeholes [c77], [c81] [c83], [c85] [c87], [c89] were all extremely small, measuring 0.04m in diameter and 0.04m deep, and were located within 2 metres of the eastern edge of [c49]. The remaining stakes [c41], [c45], [c59] [c94] [c96], [c165] measured between 0.09m and 0.16m in plan and were between 0.09m and 0.23m deep. If the posts did support a fence then it may have functioned as a large wind break to protect against the south westerly winds and create a sheltered work area on the north-eastern side of [c049]. The stakeholes or possible fence may also have acted as some sort of drying rack or even clothes line which took advantage of the winds. A chert end scraper was found on the natural ground surface approx 0.05m north of post [c81].

Pit [c43] was located approximately 1m southwest of stakeholes [c41] and [c45]. It was roughly circular in plan with near vertical sides and a flat base. It measured 0.67m in diameter and was 0.2m deep. The primary fill [c67] was a loosely compacted yellow-brown sandy-clay with occasional charcoal flecking. It was very similar to the natural sub-soil and may have been the result of natural silting. The upper fill [c42] was a dark black-brown silty-sand with large amounts of heat-shattered stone. It was very similar to mound material [c6]. No finds came from this pit so there is no clear evidence for its function.

Pit [c68] was located approximately 3m south of the stakehole alignment formed by [c165] and [c96]. It was circular in plan with gently sloping sides and a slightly concave base. It measured 0.62m x 0.58m x 0.15m. It contained a single fill [c69], which was a mid black-brown sandy-silt with moderate inclusions of heat-shattered stone and charcoal. The feature may have been a natural depression within the sub-soil which was filled with burnt mound material.

Three modern field drains dissected the site in a NW-SE orientation, truncating the burnt mound [c6] and several of the underlying troughs. The drains [c8], [c10] and [c12] ran the entire width of the site, and were 0.3m wide and between 0.45m and 0.5m deep. The drains were filled with loose pea-sized limestone gravel.

4.0 THE FINDS

4.1 Overview

Four pieces of flint, a chert endscraper and a hammer-stone were all recovered from AR 50.

4.2 Lithic Report by Dermot G. Moore

4.2.1 Abstract

A small lithic assemblage numbering fourteen pieces was recovered from the excavation of Site AR050 (E2516) in Sheepstown townland, county Kilkenny. Four pieces of flint, a chert endscraper and a hammer-stone represent material of general domestic activity associated with a burnt mound. As the material was generally undiagnostic only a broad date range from the Neolithic to the Bronze Age can be applied.

4.2.2 Introduction

The lithic assemblage recovered from the excavations at Sheepstown (AR050) was retrieved from nine contexts associated with a burnt mound and its related features.

4.2.3 The Lithic Assemblage

Fourteen individual pieces of lithic material were identified consisting of flint, chert, quartzite and a number of natural limestone and slate pieces.

4.2.4 Flint

A total of four pieces of flint were recovered during the excavation indicating a pebble-based industry likely derived from the local glacial drift material. The first piece was a heavily worked portion of a dual-platformed pebble core (E2516:3) which measured 22mm x 11mm x 13mm. It was quite heavily flaked from two opposing directions.

Two flakes were also identified consisting of a regular thick flake and a small irregular flint flake struck from a pebble. Both exhibited decortical platforms and dorsal flake scars indicative of being knapped from well-worked cores.

The only modified flint piece (E2516:4) was a broken regular flake with dorsal scars which measured 33mm x 23mm x 5mm. It exhibited a small area of steep secondary working along a portion of the right lateral dorsal edge.

4.2.5 Chert

A single fine quality end + 2 sides scraper (E2516:18) made on a flake which measured 24mm x 27mm x 7mm and which exhibited a planar platform was the only chert piece recovered. The secondary working which was confined to the dorsal surface only consisted of fine semi-invasive edge retouch on the dorsal distal end and along the right lateral dorsal edge. The secondary working of the left lateral dorsal edge was much cruder and consisted of edge nibbling.

4.2.6 Coarse Stone

The coarse stone component of the assemblage comprised a single quartzite hammer-stone, six pieces of natural limestone, one piece of natural slate and a piece of natural quartzite.

4.2.6.1 Quartzite Hammer-Stone / Pounder

The hammer-stone/pounder (E2516:21) was made from micro-crystalline pink-grey quartzite which had been naturally shattered/split. This piece measured 157mm x 40mm x 35mm and weighed 357gms. There was distinct evidence of utilization in the form of flaking and pounding/pecking of one end indicative of use as some form of pounder and/or hammer-stone. There was also some evidence of heat treatment or burning indicated by the variation in the colour.

4.2.6.2 Natural Pieces

The natural pieces consisted of a large natural rectangular piece of micro-crystalline grey quartzite which had been naturally split, a natural heavily weathered shale/slate wedge-shaped piece and six pieces of natural weathered limestone one of which exhibited a coral or crinoid fossil impression

4.2.7 Summary

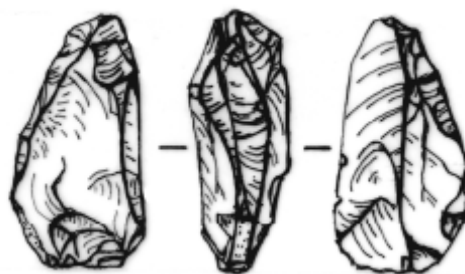
The three flint artefacts and the single small chert end + 2 sides scraper recovered are relatively undiagnostic as in this area of southeast Ireland, the small size of the flint pebbles utilized as the source of the raw material makes any distinction between periods rather arbitrary (Woodman and Scannell 1993; Woodman 1994; Moore 1999). The Ballylough Project in south county Waterford (Green and Zvelebil 1990) provides further evidence of this, whereby, in the absence of such diagnostic tools, the variability (especially quality, size and type) of the resource made assigning undiagnostic implements such as scrapers difficult.

The recovery of the quartzite pounder may have been associated with these domestic activities. While hammer-stones are common on Neolithic sites, most notably at the Ballygalley sites of Croft Manor (Moore, Simpson and Dunne in prep) and Cairncastle Road, both in county Antrim (Moore 1995) where they are found in large numbers, they are also noted from a number of Late Bronze Age sites such as Haughey's Fort in Armagh (Mallory, Canning and Moore 1996) and Killymoon in county Tyrone which also produced several bevelled specimens (Hurl 1996). Single hammer-stones were each retrieved from the sites of Ballykillaboy (AR015) which also produced a flint endscraper and Glebe (AR049) which also produced a single flint flake.

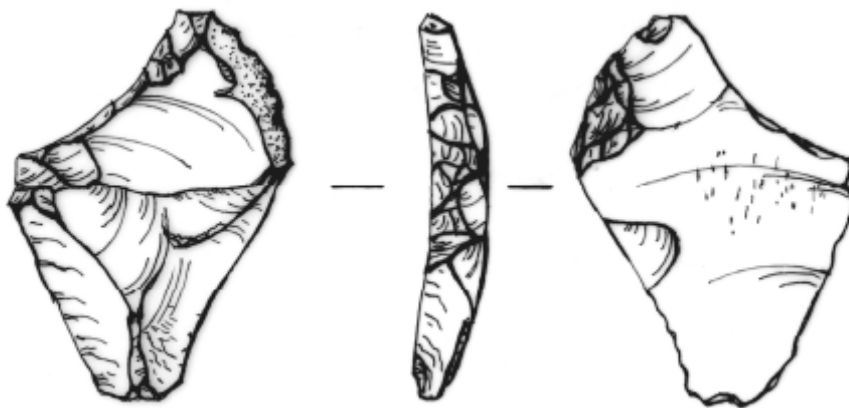
In conclusion, the small lithic assemblage recovered from AR050 represents a very small range of domestic material in the form of an endscraper and a hammer-stone associated with activities related to burnt mounds. These may have been associated with the processing of food and possibly the preparation of hides. As no specific diagnostic implements were recovered, only a very general date range, from the Neolithic – Bronze Age, for the assemblage can be assigned.

4.2.8 References

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E2516:3



E2516:4

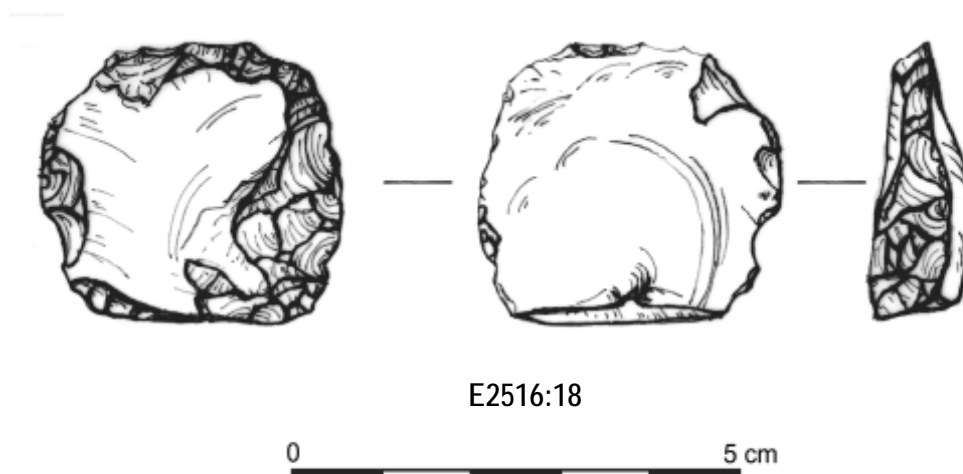


Illustration 1: Flint artefacts from AR50: E2516:5:3, E2516:6:4& E2516:4:18 (*Illustration by Lisa Wilson VJK Ltd.*)

5.0 DISCUSSION

Burnt mounds, or *fulachta fiadh*, have traditionally been thought of as places for cooking, usually dating from the Bronze Age although possibly as late as the medieval period. To cook the meat, a trough was dug into the ground and filled with water. This water was then boiled by adding heated stones from a nearby hearth. The mound was comprised of the heat shattered remains of these stones after a trough had been cleaned out and the stones were thrown to the side.

While it is possible that AR050 had been used for such a purpose it seems possible that it may have been involved in something more industrial. The quantity of troughs pits and posts and the recutting of one trough [c141] seem to suggest that this site was used repeatedly over a period of time. The different sizes and shapes of troughs may indicate usage for different things. The radiocarbon dates from six of the features indicate at least two phases of use on site, four of the six have been dated to the middle Bronze Age, whilst two of the features [c113] & [c178] are dated to the Iron Age. This in itself is not unusual, the excavation of a burnt mound nearby at Glebe (AR049) also revealed the site to have dated from two non-consecutive time periods, which suggests that the ground conditions on site made it an ideal place to establish a burnt mound, factors that would have influenced the placement of the burnt mound would include the water table / water source to fill the trough, and the ready accessibility of fuel for the site (Jackman & Lehané 2010).

Many other uses have been associated with burnt mounds such as bathing, sweat houses, dying of cloth or wool or tanning of leather. The evidence from this site does not point to any one of these functions in particular. If some of the pits were open at the same time it may be possible that a substance was left soaking in various mixtures for different lengths of time to end up with one finished product, perhaps a product that needed to be

hung up to dry? Maybe it was used for cooking but rather than a temporary stop off coming back from a hunt it was more of an outdoor kitchen, perhaps catering for large feasts for nearby dwellings with different quantities of food cooking in different volumes of water.

Troughs [c39] and [c56] appeared to have been connected by a shallow linear channel, apparently showing connectivity between the features. Trough [c56] also had a shallow step or ledge located to its north and south (Plate 2) while [c39] had a similar ledge on its eastern side. These ledges may have been designed to make accessing the troughs easier. Their function may also have lessening the splash back caused by rolling hot stones into the water at these access points. If a lid was placed over the troughs to contain heat or steam then these ledges may have been an opening for the heated stones without having to lift it and lose heat every time.

Deer antler was found in pit [c57]. However, there were no butchery marks on it. They may have been left to soak in warm water intentionally to soften them in order to work them. A couple of burnt hazelnut shells have been found, along with some burnt bone, perhaps hinting at larger scale food production or waste. However, considering the size of the mound and the amount of troughs and pits this seems a rather small quantity to have left behind.

Some possible metal slag was found in pit [c30] and on the clay platform [c60], which was in between all the pits and troughs on the east side. It is possible that they have been shattering stones using heat in order to extract ore from the rock, however it must be possible that this 'metal slag' was intrusive in the feature.

One recurring pattern of a number of excavated sites on the southern and central section of the N8/M8 Cullahill to Cashel road scheme was the positioning of a rectangular/sub-rectangular trough adjacent to a large circular/oval pit or possible waterhole with a smaller pit also in close proximity. This positioning of three separate features is especially evident on E2372 / AR 28 (McCullough 2009). Similar patterns can be suggested on E2360 / AR 7 (Moore 2009), E2371 / AR 35 (Conboy 2009a), E2379 / AR 37 (Conboy 2009b) and E2391 / AR 49 (Hardy 2009).

This identification of three units under the burnt mound has also been paralleled on a number of the sites from the N9/N10. This is evident from E2999 / AR 16 (Laidlaw 2007), E2509 / AR 29 (Nolan 2007), E3018 / AR 49 (Lehane 2007), E2516 / AR 50 and E3645 / UTA 4 (Wren 2007). It could be possible that this idea of three separate units to the burnt mound site type could be a regional distinction to the southeast of the country. On excavation of the burnt mounds on the northern extents of the N8/M8 Cullahill to Cashel it was noticeable that this three featured evidence was absent. Further research and investigation of the excavations of burnt mounds from the remainder of the country is required to determine as to whether this is a Munster/south-eastern phenomenon.

Large pits/waterholes under burnt mounds have also been recorded at Site 5, Cherryville Co. Kildare (Breen 2001) and at Site G Ballyshaneduff or The Derries Co. Laois (Breen 2003). The former produced two deep pits c. 2m in diameter and 1.3m deep while at Ballyshaneduff the pit/well was 4.5m in diameter and 1m deep. Other sites that included large pits/wells/waterholes were Finniterstown, Co. Limerick (Hull & McKinstry 2002) with

similar groupings of rectangular troughs and large oval pits/waterholes being excavated at Clonymeach, Co. Meath which produced two large, oval, pit-like troughs, two sub-rectangular troughs, two small pits and a large oval 'sump' or pit (Byrnes, 2002) and Rathbane South, Co. Limerick (McLoughlin 1999). These pits/waterholes may have been wells or used as a cistern to store the water to access necessary for the cooking process in the adjacent trough.

Charcoal analysis from AR050/E2516 produced evidence for the presence of alder, oak, hazel, pomoideae, willow, blackthorn, ash, yew, birch, blackthorn/cherry and holly in Sheepstown townland during the Middle Bronze Age. The taxa identified at AR050 may be taken as an indication of aspects of the local landscape (mixed woodlands). The wood identified from the analysed features could have originated from scrubland areas (blackthorn, pomoideae, holly) or from mixed woodlands (ash, oak and hazel) nearby. The charcoal results from AR050/E2516 may reflect a general pattern, where a range of wood types was selected for their heat-producing or calorific qualities. There is also evidence to suggest that alder was selected for its waterproof qualities, as it could have possibly been used to line the trough [C178] (see O'Carroll 9.1).

Another interpretation from the site may be found in the presence of barley and wheat grains on site (see McClatchie 9.2). The presence of a cereal grain on the site has added further fuel to the debate on the use of burnt mound sites as described by McClatchie.

'Barley and wheat grains are regularly recovered from many archaeological sites dating to the prehistoric and historic periods in Ireland, but it should be noted that cereal remains are very often absent from burnt mound sites (McClatchie *et al.* 2007). The presence of cereal grains at Site AR50 is therefore rather unusual. A recent study of *fulachta fiadh* suggested that these sites may have been the locations of beer production (Quinn and Moore 2007), which would have required large quantities of cereals, but this suggestion has been contested (McClatchie *et al.* 2007). If cereal-based activities were regularly taking place at AR50, it is very likely that a greater quantity of cereal remains would have been recorded, given the possibility for charring of cereals during the malting and mashing stages of brewing. It is therefore suggested that cereal-based activities were not a major component of activities at this site. The presence of a small number of cereal grains does indicate that the inhabitants of this site had access to cereals, but it seems very unlikely that any large-scale processing of cereals and/or preparation of cereal-based foodstuffs/drinks was taking place in this location'.

This seems to follow the argument that a few grains does not a brewery make. However there is validity in the counter argument from Quinn and Moore:

'The grain normally found on archaeological sites is usually charred and survives owing to its carbonised state, which makes it less susceptible to decay. Charred grain has no nutritional value and

certainly no place in brewing as it would spoil a beer mash. Ordinary malted grain after mashing is reduced to a non-starchy material consisting of a cellulose pulp comprising the hull and pericarp (the tissue around the seeds). This pulp still contains sugar residues and, given its de-natured state and its high water content, is more vulnerable to microbiological decay if left exposed to the elements. In the archaeological record, given the time-frame, this evidence would be entirely ephemeral. Indeed, in our own experience... within a matter of three months the dumped grain (approximately 125 kg) had disappeared and it was practically impossible to locate the exact dumping spot. The spent grain was eaten by animals, birds or vermin, or simply decayed'. (Quinn and Moore, 2008)

It is impossible to state with any certainty whether one of the trough features identified at Sheepstown was used primarily as a brewery. The identification of a small amount of cereal grain on the site is simply not compelling enough to argue that the site was exclusively a brewery, however it must be considered that the site *could* have been used as such, from Quinn and Moore's experimental work it is clear that such sites are eminently suitable to brew beer, and from personal experience the quality of the produce is certainly of a high enough standard and easy to make that it is likely that at least some of the many thousands of burnt mound sites would have been used to brew.

The presence on the site of multiple troughs with burnt mounds dating from two non consecutive time periods suggests that the ground conditions on site made it an ideal place to establish a burnt mound, factors that would have influenced the placement of the burnt mound would include the water table / water source to fill the trough, and the ready accessibility of fuel for the site.

6.0 CONCLUSION

The excavation of this site revealed 15 troughs and pits, two hearths and a series of postholes and stake holes with two distinct phases of activity dating to the Middle Bronze Age and Iron Age. The small lithic assemblage recovered from AR050 represents a very small range of domestic material which may have association to burnt mounds in the form of processing of food and possibly the preparation of hides. The endscraper and hammerstone date from the Neolithic – Bronze Age.

The quantity of troughs pits and posts and the recutting of one trough [c141] seem to suggest that this site was used repeatedly over a period of time. The different sizes and shapes of troughs may indicate usage for different things. The radiocarbon dates from six of the features indicate at least two phases of use on site, four of the six have been dated to the middle Bronze Age, whilst two of the features [c113] & [c178] are dated to the Iron Age. This in itself is not unusual, the excavation of a burnt mound nearby at Glebe (AR049) also revealed the site to have dated from two non-consecutive time periods, which suggests that the ground conditions on site made it an ideal place to establish a burnt mound, factors that would have influenced the placement of the burnt mound would include the water table / water source to fill the trough, and the ready accessibility of fuel for the site (Jackman & Lehane 2010).

7.0 ACKNOWLEDGEMENTS

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9.0 SPECIALIST APPENDICES

9.1 Wood and Charcoal Report by Ellen O'Carroll

9.1.1 Background and Introduction

Archaeological excavation of AR050/E2516 Sheepstown townland, Co. Kilkenny was carried out as part of the archaeological resolution of the N9/N10 Kilcullen to Waterford Road Scheme (Waterford to Powerstown-Phase 2). It was excavated by John Lehane on behalf of Valerie J. Keeley Ltd., during the months of August and September 2006 (Lehane 2007). Excavation uncovered the remains of a large, 'comma-shaped' burnt mound, which overlay 15 troughs/pits, two hearths and a series of postholes and stakeholes. The troughs/pits were mainly located on the eastern side of the site, whereas the post- and stakeholes occurred mainly in the west. Excavation showed some evidence for the reuse of some features, indicating at least two phases of activity (*ibid.*, 3-10). Finds included antler and bone, as well as six possible whetstones. A quantity of hazelnut shell was also identified. A quantity of iron slag was found in one of the features, suggesting that this site may have had an industrial function (*ibid.*). A series of post-medieval field drains were also uncovered.

A total of 538 charcoal fragments, weighing 110.56g, were analysed to species. Charcoal for analysis was recovered from 12 contexts; C19/S2/fill of sub-rectangular pit [C57]; C38/S4/fill of trough [C39]; C55/S11/ fill of trough [C56]; C48/S13/burnt mound type fill of pit [C49]; C27/S19/fill of trough [C39]; C6/S23/main burnt mound material; C23/S26/fill of trough [C30]; C36/S56/fill of pit [C113]; C127/S70/fill of trough [C141]; C32/S78/primary fill of trough [C33]; C179/S107/fill of trough [C178]; C202/S114/fill of pit [C200]. A wide variety of native taxa was identified, comprising alder, oak, hazel, pomoideae, willow, blackthorn, blackthorn/cherry, ash, birch and yew. The level of preservation within the charcoal assemblage was good. Some of the charcoal flecks were tiny (notably in C32/S78 and C202/S114) and a certain quantity of the charcoal came from twigs. Taphonomic

alteration, such as repeated saturation, had not affected the quality of the charcoal. There was no evidence to suggest that the charcoal had become coated with any calcareous concretions that would compromise future radiocarbon dating submissions. No insect channels were noted on the identified material, suggesting that the wood was freshly cut.

Five charcoal samples and a seed sample were sent for radiocarbon dating, which confirmed that two phases of activity occurred within the study area. Oak charcoal from C23/S26/fill of trough [C30] was dated to 1499-1322 cal. BC; hazel charcoal from C55/S11/ fill of trough [C56] dated to 1409-1271 BC and oak charcoal from C48/S13/burnt mound type fill of pit [C49] was dated to 1374-1130 cal. BC; a small quantity of barley seeds from C19/S2/fill of sub-rectangular pit [C57] were dated to 1495-1391 cal. BC. These dates suggest a period of human activity in the landscape during the Middle Bronze Age. Radiocarbon determinations identified a second phase of activity during the early Iron Age. Charcoal (identified as ash or blackthorn) from C36/S56/fill of pit [C113] was dated to 361-116 cal. BC and a quantity of alder charcoal from C179/S107/fill of trough [C178] indicated some contemporaneity, returning a date of 381-168 cal. BC.

Wood and its by-product, charcoal, was a vital and widely used material from prehistoric to medieval times, although its importance is rarely reflected in the analysis of archaeological assemblages mainly due to its perishable nature. It is important to note that people in prehistoric, Early Christian and medieval communities were mainly dependant on woodland resources for the construction of buildings, for the manufacture of most implements and for fuel for wood-burning and metalworking activities. The woods in a surrounding catchment area were exploited and often managed to provide an essential raw material for the community. A study of the range of species on an archaeological site offers an indication of the composition of local woodland in its period of use and any selection policies for particular species at any given time and place.

Charcoal analysis is an important component of any post-excavation environmental work, as it can help in reconstructing an environment hitherto lost. However, this must be done with caution, as sufficient sample numbers are required for a complete and full understanding of the immediate environment. Keepax (1988) suggests 50 samples in a European temperate climate. Charcoal is also analysed and identified to determine what species are used and selected for particular functions on site *i.e.* postholes, wall-posts, burnt remains of wattle and so on. In summary, charcoals are excellent indicators of exploited environments and the vegetation that developed within them.

Large assemblages of wood and charcoal from the numerous road schemes currently under excavation and subsequent analysis of the sampled wood and charcoal are ongoing in Ireland. The analysis completed from the charcoal excavated from AR050 and indeed from the whole road scheme will contribute to the rapidly expanding database of environmental indicators particularly in relation to the prehistoric period in the area. This area of work is especially important in Ireland where there are very little written records up to the 18th century relating to the amount and type of woodland in Ireland (McCracken 1971, 15).

The analysis presented here concentrates on species identification, species selection and the composition of the local woodland during the period of time the features excavated at Sheepstown, Co. Kilkenny, were in use.

9.1.2. Methods

The process for identifying wood, whether it is charred, dried or waterlogged is carried out by comparing the anatomical structure of wood samples with known comparative material or keys (Schweingruber 1990). A wood reference collection from the Botanical Gardens in Glasnevin, Dublin was also used.

9.1.2.1 Charcoal

The identification of charcoal material involves breaking the charcoal piece along its three sections (transverse, tangential and radial) so clean sections of the wood pieces can be obtained. This charcoal is then identified to species under a universal compound microscope reflected and transmitted light sources at magnifications x 10-400. By close examination of the microanatomical features of the samples, the charcoal species are determined.

The purpose of the charcoal identifications was two-fold. In some cases the identifications were carried out prior to ¹⁴C dating in order to select specific species for dating. In other cases the charcoal was analysed to determine fuel selection policies and selection of wood types for structural use. Each species was identified, bagged together and then weighed. Insect channels were noted on the charcoal fragments identified, as this may indicate the use of dead or rotting wood used for fuel or other such functions. The distinction can sometimes be made between trunks, branches and twigs if the charcoal samples are large enough. This was noted where possible. When charcoal samples showed indications of fast or slow growth this was also recorded. The samples identified for environmental reconstruction and wood usage were counted per fragment and then weighed and tabulated. All fragments from the samples submitted for analysis were identified.

A number of wood taxa cannot be identified to species or sub-species level anatomically. Sessile oak (*Quercus petraea*) and pedunculate oak (*Quercus robur*) are both native and common in Ireland and the wood of these species cannot be differentiated on the basis of their anatomic characteristics. There is also some difficulty differentiating apple/hawthorn/rowan and pear woods microscopically and as a result, they are referred to as pomaceous fruitwood or pomoideae here. There are also over 13 different species of willow (Web 1953) therefore willow is also noted as *Salix* sp.

9.1.3 Description of feature type and receiving environment

Site AR050 represented the remains of a large, 'comma-shaped' burnt mound, which overlay 15 troughs/pits, two hearths and a series of postholes and stakeholes. The troughs/pits were mainly located on the eastern side of

the site, and the post- and stakeholes occurred mainly in the west. Excavation showed some evidence for the reuse of some features, indicating at least two phases of activity (Lehane 2007, 3-10). This interpretation is supported by a series of radiocarbon dates, which indicate that the site was first occupied during the Middle Bronze Age, with a second phase of activity occurring towards the later end of the Early Iron Age. A series of post-medieval field drains were also uncovered. Finds included antler and bone, as well as six possible whetstones. A quantity of hazelnut shell was also present.

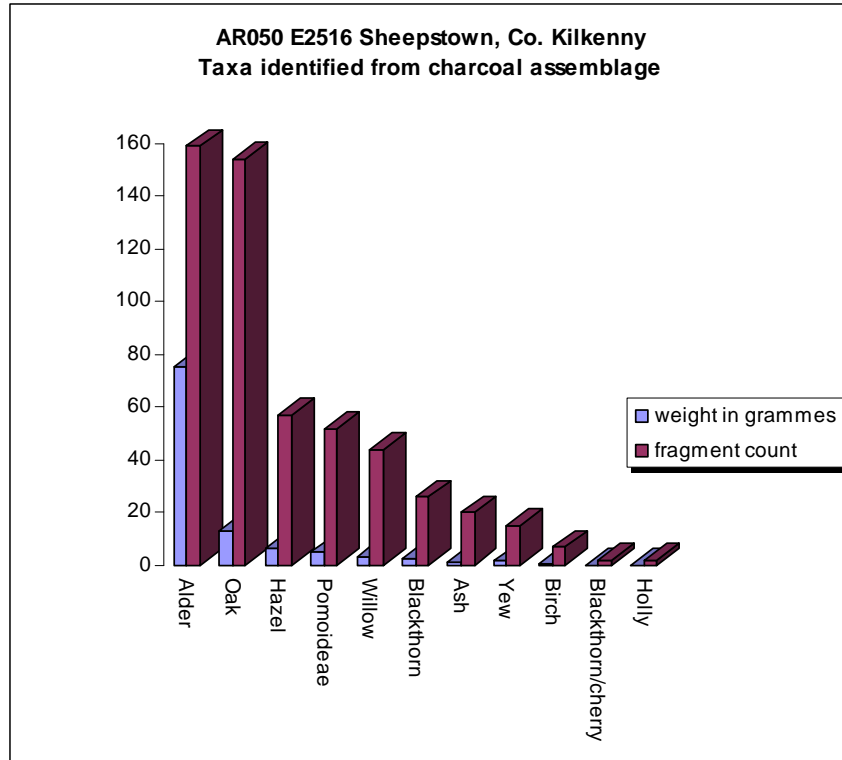
Charcoal for analysis was recovered from 12 contexts, which provided evidence for a variety of native taxa.

AR050/E2516 was located in Sheepstown townland, c. 1.5kms west of the village of Knocktopher. Co. Kilkenny (parish and barony of Knocktopher; Ch. 25115; NGR 251635E/137332N). The site was located at the base of the eastern slope of a low hill, which was delimited by hedgerow. The townland name is a literal translation of *Baile na gCaorach* (www.logainm.ie). It may have been the site of an early church settlement, as it was recorded in the *Annals of Leinster* as 'thomplevollianagaerach', but was known as 'Ballynageragh' up until 1584-7, when its name changed to 'Sheepstowne' (*ibid.*). AR050 was located within a landscape with a fairly high density of archaeological features. A smaller burnt mound (AR049), possibly dating to the Bronze Age was located to the south of the site, in the townland of Glebe. AR051 was located to the northwest and consisted of a re-cut ditch that branched off into three different ditches. AR052 was located on higher ground to the east and the multi-phase settlement/industrial site at Baysrath (AR053-054) was located to the north. The land was under pasture prior to excavation.

9.1.4. Results & Analysis

Eleven taxa were identified from the charcoal assemblage retrieved from the features excavated at AR050/E2516 Sheepstown townland, Co. Kilkenny. Charcoal was identified from 12 contexts; C19/S2/fill of sub-rectangular pit [C57]; C38/S4/fill of trough [C39]; C55/S11/ fill of trough [C56]; C48/S13/burnt mound type fill of pit [C49]; C27/S19/fill of trough [C39]; C6/S23/main burnt mound material; C23/S26/fill of trough [C30]; C36/S56/fill of pit [C113]; C127/S70/fill of trough [C141]; C32/S78/primary fill of trough [C33]; C179/S107/fill of trough [C178]; C202/S114/fill of pit [C200]. Alder was the dominant species identified (159 fragments from a total of 538), closely followed by oak (154 fragments), hazel (57 fragments), pomoideae/pomaceous fruitwood (52 fragments), willow (44 fragments), blackthorn (26 fragments), ash (20 fragments), yew (15 fragments), birch (7 fragments), blackthorn/cherry (2 fragments) and holly (2 fragments). The weight and fragment count identified from each taxa type at each site is represented below in Chart 1 and Table 1. The level of preservation within the charcoal assemblage was good. Some of the charcoal flecks were tiny (notably in C32/S78 and C202/S114) and a considerable quantity of the charcoal came from twigs. No insect channels were noted on the identified material, suggesting that the wood was freshly cut.

Chart 1 All taxa identified from AR050/E2516 Sheepstown townland, Co. Kilkenny



Sample number	Feature/ Context	Feature Description	Identifications	Comment	Date
2	C19	Fill of sub-rectangular pit [C57].	Alder (0.2g*, 4f*); Oak (0.3g; 9f); Pomoideae (2.1g, 29f); Willow (0.8g, 7f); Blackthorn (0.2g, 3f); Ash (0.1g, 1f).	Twig material	1495-1391 cal. BC (barley seeds)
4	C38	Organic-rich clay lining on S side of [C39], a trough.	Alder (2.3g, 22f); Oak (0.1g, 3f); Hazel (0.3g, 3f); Blackthorn (0.1g, 2f); Yew (1.7g, 15f); Blackthorn/Cherry (0.1g, 1f).	Yew- 18 tree rings present	N/A
11	C55	Fill of [C56], a trough.	Oak (2.5g, 25f); Hazel (0.5g, 4f); Pomoideae (1.2g, 10f); Blackthorn (0.1g, 1f); Holly (0.01g, 2f).	Unidentified 10g	1409-1271 cal. BC (hazel charcoal).

Sample number	Feature/ Context	Feature Description	Identifications	Comment	Date
13	C48	Fill of pit [C49].	Oak (6.8g, 62f); Willow (0.1g, 1f); Blackthorn (0.2g, 1f).	Fast oak growth	1374-1130 cal. BC (oak charcoal).
19	C27	Fill of trough [C39].	Alder (1.5g, 13f); Oak (0.8g, 15f); Pomoideae (0.5g; 6f); Willow (1g, 8f); Blackthorn (1.1g, 2f); Ash (0.5g, 4f); Birch (0.1g, 1f).	Alder-10 tree rings present, Blackthorn 16 tree rings present.	N/A
23	C6	Main burnt mound material.	Hazel (6g, 50f).	Hazel 6-10 tree rings present	N/A
26	C23	Fill of trough [C30].	Oak (1g, 5f).	Small oak charcoal flecks. All identified	1499-1322 cal. BC (oak charcoal).
56	C36	Fill of pit [C113].	Ash (0.7g, 12f); Blackthorn (0.1g, 6f).	All identified	361-116 cal. BC (ash/blackthorn charcoal).
70	C127	Fill of trough [C141].	Alder (1.4g, 18f); Oak (0.2g, 5f); Willow (1.1g, 8f); Blackthorn (0.8g, 11f); Ash (0.1g, 1f).	Branch/twig material	N/A
78	C32	Fill of trough [C33].	Alder (0.1g, 2f); Oak (0.4g, 15f); Pomoideae (0.2f, 7f); Willow (0.5g, 20f); Ash (0.1g, 1f); Birch (0.4g, 6f); Blackthorn/cherry (0.1g, 1f).	Very small flecks-hard to id. Unidentified 15g	N/A

Sample number	Feature/ Context	Feature Description	Identifications	Comment	Date
107	C179	Fill of trough [C178].	Alder (70g, 100f).	Partially burnt alder wood.	381-168 cal. BC (alder charcoal).
114	C202	Fill of pit [C200].	Oak (1.2g, 15f); Ash (0.05g, 1f).	Tiny fragments of oak	N/A

Table 1 Wood taxa present in the charcoal assemblage from AR050/E2516 Sheepstown townland, Co. Kilkenny

g = weight in grammes *f = fragment count

9.1.5. Discussion of the charcoal assemblage

Aims of the study

1. To determine the types of wood selected for use either as fuel or as structural wood.
2. To re-construct the environment that the charcoal and wood was selected from.
3. To determine use and function of particular features and their associated charcoal through the identification of taxa types

Wood types identified from charcoal and wood assemblages

Botanical Name	Species
<i>Alnus glutinosa</i>	Alder
<i>Quercus</i> spp	Oak
<i>Corylus avellana</i>	Hazel
Pomoideae	Apple/pear/hawthorn/mountain ash or rowan

<i>Salix</i> spp	Willow
<i>Prunus spinosa</i>	Blackthorn
<i>Fraxinus excelsior</i>	Ash
<i>Taxus baccata</i>	Yew
<i>Betula</i> spp	Birch
<i>Prunus</i> spp	Blackthorn/cherry
<i>Ilex aquilifolium</i>	Holly

Table 2 Taxa types identified from the charcoal and wood assemblage from AR050/E2516, Sheepstown, Co. Kilkenny.

Five hundred and thirty eight charcoal fragments relating to the remains of a large burnt mound with associated features were analysed from excavations at AR050/E2516, Sheepstown townland, Co. Kilkenny, as part of the N9/N10 Kilcullen to Waterford Scheme. Charcoal was an important fuel as it could be obtained locally and it gave off a much better heat than wood and was therefore possibly used at the site for fuel. Charcoal was identified from twelve contexts; C19/S2/fill of sub-rectangular pit [C57]; C38/S4/fill of trough [C39]; C55/S11/ fill of trough [C56]; C48/S13/burnt mound type fill of pit [C49]; C27/S19/fill of trough [C39]; C6/S23/main burnt mound material; C23/S26/fill of trough [C30]; C36/S56/fill of pit [C113]; C127/S70/fill of trough [C141]; C32/S78/primary fill of trough [C33]; C179/S107/fill of trough [C178]; C202/S114/fill of pit [C200]. Charcoal was present in sufficient quantities to provide information on the type and species of wood selected for burning, as well as an indication of what was present in the local environment.

Radiocarbon dating of charcoal and seed fragments identified two distinct phases of activity within the study area. The earliest evidence was dated to the Middle Bronze Age, with a second phase occurring towards the later end of the Early Iron Age.

Alder was the dominant species identified (159 fragments from a total of 538), closely followed by oak (154 fragments), hazel (57 fragments), pomoideae/pomaceous fruitwood (52 fragments), willow (44 fragments), blackthorn (26 fragments), ash (20 fragments), yew (15 fragments), birch (7 fragments), blackthorn/cherry (2 fragments) and holly (2 fragments).

Alder accounted for 29.5% of the assemblage and was present in moderate quantities from S2, S4, S19, S70 and S78. It was the only taxon present in S107/C179 (fill of trough [C178]) and was identified as partially burned wood which returned a radiocarbon date of 381-168 BC. This may suggest that alder wood was used to line the trough. Alder is a widespread native tree and occupies wet habitats along stream and riverbanks. Though it thrives where its main roots are just above the water, alder is also tolerant of stagnant water. The wood of the

tree is white when growing, but when it is cut, turns red. It is soft, with short fibres, giving it a homogeneous texture and is of moderate density. It is a very durable wood and was specially selected for boat-making and for dug-out canoes, as it is an easily worked and split timber and therefore quite commonly manufactured into planks. Alder was used by the Romans for water-pipes, bridges and as a revetting timber for riverbanks. It loses about a third of its weight and a twelfth of its bulk in drying, but does not warp, so that it is suitable for wood-turning and is a common timber in barrel- and wheel-making. Alder has a lower calorific value than other woods, but for this reason, it is useful where a slow heat is required. For this reason it may have been deliberately selected for use at AR050. According to MacCoitir (2006, 38), in folklore, alder was associated with kingship, war and death. Because of its almost waterproof nature, wood and charcoal analysis has shown that alder wood was used to line troughs associated with burnt spread/*fulachta fiadh* sites. A large alder trunk was used to line the base of the trough associated with a *fulacht fiadh* dated to the Middle Bronze Age at Ballycorrick, Co. Clare (02E1186; O'Donnell 2005). The charcoal and partial remains of wood from [C178] at AR050 is likely to have been used for the same purpose. Alder was present during the both phases of activity at AR050.

Similar quantities of oak charcoal were recovered from AR050, accounting for 28.6% of the total assemblage. It was present in every context except for C179. The highest fragment count was recorded from C48/fill of pit (62 fragments). Although oak was present in the samples which were radiocarbon dated to the Middle Bronze Age, it was absent from the dated samples from the later assemblage. Oak charcoal was particularly important as it burned hotter and cleaner than wood and was considered superior to wood. Oak woods were valued for their natural resource of timber for many requirements including raw material for metalworking activities. Oak is a dense wood and is very suitable for charcoal production and metal working activities. It can burn for a considerable period of time and can reach extremely high temperatures necessary for the production of metal objects and smelting activities. It also makes good firewood when dried and will grow in wetter areas when other variable conditions are present. Oak has excellent properties of great durability and strength and was frequently used throughout the medieval period for the production of large timbers, for charcoal production and for activities associated with metal working. It is also frequently associated with ritual activity in the prehistoric period. Oak timbers are often used to line troughs at burnt mound sites. At the Late Bronze Age site of Cahiracon (02E0952), Co. Clare, radially-split oak timbers lined the trough (O'Donnell 2005). A *fulacht fiadh* at Fauleens townland, excavated as part of the N5 Charlestown Bypass in Co. Mayo, uncovered the well-preserved remains of an oak trough under the mound (O'Carroll 2007). Oak was also the dominant taxa identified at a burnt mound site at Urraghry, Co. Galway, which was dated to the Early Bronze Age (Drumm *et al* 2009).

Although commonly associated with assemblages from burnt mound sites, only 57 fragments of hazel (*Corylus avellana*) charcoal were identified from the samples analysed at AR050. It was present in the samples which were radiocarbon dated to the Middle Bronze Age and was absent from the dated samples from the later assemblage. It was likely to have been deliberately selected as part of the fuel collection policy at the site as it has a high calorific value and burns quickly. It was the only taxon present in the sample taken from the main burnt mound. Hazel is a native species and was very common up to the end of the 17th century. McCracken

(1971, 19) points out that 'it was once widespread to a degree that is hard to imagine today'. With the introduction of brick, steel and slate the crafts associated with hazel became obsolete and today the woods that supplied hazel have diminished rapidly. Hazel wood has been used for making furniture, fencing and wickerwork. It is normally only about 3-5m in height and is often found as an understory tree in broadleaf woods dominated by oak. It also occurs as pure copses on shallow soils over limestone, as seen today in The Burren in Co. Clare and survives for 30 to 50 years. Its main advantage is seen in the production of long flexible straight rods through the process known as coppicing. In early Irish law, hazel was considered one of the *airig fedo* or 'nobles of the wood'. It also played a central role in Irish mythology and was associated with wisdom, truth and kingship (MacCoitir 2006, 72-81). In folklore, it was used as a protection against evil (*ibid.*).

Pomoideae or pomaceous fruitwood includes apple, pear, hawthorn and mountain ash or rowan. It is impossible to distinguish these wood species anatomically but as wild pear is not native and crab apple is a rare native species in Ireland it is likely that the species identified from AR050 is either hawthorn or mountain ash (Nelson 1993, 194-200). Hawthorn (*Crataegus monogyna*) is a native species, and is found in many hedgerows throughout Ireland. Mountain ash (*Sorbus aucuparia*) is also a common tree in Ireland growing particularly well in rocky and hilly mountainous places. Both species produce a very hard close grained wood, suitable for small implements such as mallets and splitting wedges. Both also make excellent fuel. *C. monogyna* is noted for being the hottest firewood (Gannon in Taylor 2006, 7). Fragments of pomoideae charcoal were present in C19 (pit fill), C55 (fill of trough), C27 (fill of trough) and C32 (fill of trough). It was present in the samples which were radiocarbon dated to the Middle Bronze Age only and was absent from the dated samples from the later assemblage.

Willow is a very strong wood in tree form and is excellent for the use as posts. It is also a very flexible wood and was commonly used for the construction and weaving of baskets. It is a native species in Ireland and can be found in a tree and shrub form. According to Webb (1971, 160-2) thirteen species of willow are found growing wild in Ireland, of which eight are certainly native. The wood of *salix* trees and shrubs cannot be differentiated to species on the basis of anatomical features. Small quantities of willow charcoal were present in 5 of the 12 contexts sampled, which suggest that they were deliberately selected for fuel. All fragments came from the features with a high number of taxa present. It was present in the samples which were radiocarbon dated to the Middle Bronze Age and was absent from the dated samples from the later assemblage.

Blackthorn charcoal was also present in the samples submitted for analysis from Sheepstown. It was present in the samples dated to both the Middle Bronze Age and Early Iron Age. The sloe bush, as blackthorn is commonly referred to, is a very durable wood and is as strong as oak. It is a thorny shrub found in woods and scrubs on all soil types. In a woodland situation it is more likely to occur in clearings and at the woodland edges, where it forms dense thickets. Given the small quantities identified, it is likely that blackthorn was gathered as part of the fuel collection policy at the site, rather than have been used for structural purposes. It was present in C19, C38, C55, C48, C27, C36 and C127. It may also have been present in C32, but it was not possible to differentiate

between cherry and blackthorn in this case. Wild cherry (*Prunus padus*) and blackthorn are more common in Ireland than bird cherry (*Prunus avium*). There is very little archaeological evidence for the use of cherry wood in Ireland although the wild cherry tree is commonly found in many hedgerows (Nelson 1993, 167). Cherry stones were found during the excavation of a Late Bronze Age crannóg in Co. Offaly (Mac Coitir 2006, 51). Cherry may also have been present in C38.

Ash is a native species to Ireland preferring lime rich freely draining soils. It is not a very durable timber in waterlogged conditions but has a strong elastic nature and is easily worked. Ash appears to have colonised the open land after the first farmers removed much of the native woodland therefore it is frequently used as structural timber in the Later Bronze Age periods as at Clonfinlough in Co. Offaly (Moloney *et al*, 1993). It is abundant in native hedgerows and was quite common in the later historic period. It is a broad, spreading, deciduous tree growing at a fast rate to 25 metres in height by 20 metres spread. This rapid growth and the ability to re-sprout after being coppiced made ash a valuable renewable tree to the early Irish. Ash burns quickly, whether it has just been felled or is dead wood and for this reason it is likely to have been selected deliberately as fuel for the burnt mounds at Sheepstown. It was present in C19, C27, C36, C127, C32 and C202 and the highest quantity (12 fragments) was identified in S56/C36 (fill of pit). Ash was identified in the samples dated to both the Middle Bronze Age and Early Iron Age. Ash is one of the taxa most commonly associated with burnt spreads and was the dominant taxa identified at an Early Bronze Age *fulacht fiadh* at Cooltymurraghy, near Ballinasloe, Co. Galway (E2448; Drumm and Fallon 2009, 26).

Yew is a slow-growing conifer, which can live for as long as 1000 years and can reach a height of 20m. It is known for its strength and resistance to the cold. It is much less common in recent times because of overharvesting. Its hard, springy wood was the source of English longbows, as well as spears and staves during the medieval period. The evergreen needles are very broad, and the seeds are produced in red, berry-like cones. Yews can be found growing naturally in the understorey of deciduous woods where they are able to withstand very low light-levels. Very old specimens are also commonly found planted in churchyards. This practice dates back to medieval England when parishes were required to provide bows made of yew. Churchyards were commonly the only areas fenced off from grazing animals, which could be poisoned by feeding on yew leaves and berries. Yew is generally not identified in large counts from burnt mound sites therefore the presence of 15 fragments of yew may suggest an ancillary function to the burnt mound site and its associated features. Alternatively the yew may have simply been gathered for firewood at the site. Yew was not present in the samples sent for radiocarbon dating.

Seven fragments of birch charcoal were identified from the assemblage at AR050. It was present in C27 (1 fragment) and C32 (6 fragments). Hairy birch (*Betula pubescens Ehrh*) and silver birch (*Betula pendula Roth*) cannot be distinguished microscopically. Silver birch requires light and dry soil while hairy birch grows on wet-marginal areas. Birch more often occurs on wet marginal areas and is one of the first trees to establish itself on raised bogs. The wood from birch trees is strong but it rots quickly when exposed to outdoor conditions. Birch is

used as firewood due to its high calorific value per unit weight and volume. It burns well even when frozen or freshly hewn. The bark is also used to start fires, which will burn well, even when wet, because of the oils it contains. With care, the bark can be split into very thin sheets that will ignite from even the smallest of sparks. Birch was not present in the samples sent for radiocarbon dating.

Holly is a shrub found quite commonly in hedgerows alongside blackthorn and gorse and in the understory of oak woods. The *Bretha Comaithchesa* (Laws of Neighbourhood), which are listed in the ancient Irish law tracts, records holly as one of the five 'nobles of the wood' namely for its use in the construction of cart-shafts and its leaves were valuable as cattle fodder during the winter months (Nelson 1993, 43). Although it is associated with Christmas, when it is used to decorate houses and protect them from evil during the festive season, holly was also historically associated with the festival of Lughnasa, the time of chariot races (Mac Coitir 2006, 66, 71). Its use as a raw material for tool-making also links it to this time of year, when a flail traditionally made with a holly handle was used in threshing. Holly features in many of the early mythologies, where various types of weapons were fashioned from its wood. In the *Táin Bó Cuailgne*, Cúchulainn is attacked by a warrior called Náth, who fires twenty seven spears made from sharpened and charred holly at him. It has been suggested that Cúchulainn's name is derived from the Irish name for holly, *cuileann* (*ibid.*, 69). Two fragments of holly charcoal were present in C55, which was dated to 1409-1271 cal. BC..

The taxa identified at AR050 may be taken as an indication of aspects of the local landscape during the time the features were in use. What is clear is that area surrounding Sheepstown supported mixed woodlands. The wood identified from the analysed features could have originated from scrubland areas (blackthorn, pomoideae, holly) or from mixed woodlands (ash, oak and hazel) nearby. Willow, birch and alder prefer wetter ground. Yew can be found growing naturally in the understorey of deciduous woods where they are able to withstand very low light-levels. The primary woodland trees and scrub type trees would most likely have grown in woods on the nearby dryland margins, with alder and willow in the marshier areas.

The results from AR050/E2516 may reflect a general pattern, where a range of wood types was selected for their heat-producing or calorific qualities. There is also evidence to suggest that alder was selected for its waterproof qualities, as it was used to line the trough [C178].

Based on the dated samples, there is clear evidence to suggest that alder, ash and blackthorn were almost certainly present in the landscape during both the Middle Bronze Age and Early Iron Age. However, it is important to note that the absence of certain taxa from either assemblage is more likely to reflect a bias in the sampling strategy rather than an accurate picture of the surrounding environment.

9.1.6 Comparative Material

The analysis completed for the Sheepstown area of Co. Kilkenny adds to the growing amount of information obtained from the analysis of wood and charcoal from burnt mounds/*fulachta fiadh* excavated in Ireland and in

particular in Co. Kilkenny. Charcoal analysis from *fulachta fiadh* has shown that a range of species were gathered as firewood, particularly alder (*Alnus glutinosa*), hazel (*Corylus avellana*), oak (*Quercus* spp.) and ash (*Fraxinus excelsior*), all of which were present in the assemblage from AR050. Although a watery location is central to the function of these burnt mounds, comparative analysis shows that it was not only wetland species available in the immediate environment, such as alder, birch and willow, which were exploited. The presence of trees that generally prefer dryland conditions, such as hazel, indicates that firewood was also collected from drier areas, or that the site was located at the interface between a dryland and wetland environment. The taxa identified at AR050 also indicates a policy of deliberate selection, in some cases, which may also support the interpretation of this site as an industrial one. Alder, for example, is a wood which produces a slow, steady heat and is one which may be used when a degree of control over temperature is required. Hazel and ash, on the other hand, are taxa that produce heat very quickly, as they have a high calorific value.

Charcoal analysis from AR050/E2516 produced evidence for the presence of alder, oak, hazel, pomoideae, willow, blackthorn, ash, yew, birch, blackthorn/cherry and holly in Sheepstown townland during the Middle Bronze Age. It is likely that a supply of such material was available in the area, which was selected mainly for use as firewood. At nearby AR049 in Glebe townland, two burnt mounds with associated features produced evidence for ash, alder, oak, hazel, elm, pomoideae and blackthorn and ash was the dominant taxon (O Carroll 2009d). AR050/E2516 can also be compared to a burnt mound excavated in Cooltymurraghy townland, near Ballinasloe, Co. Galway, where ash was identified as the dominant taxa, comprising almost 40% of the total assemblage, followed by alder (22%), oak (18.5%), hazel (16%), holly (2.47%) and pomoideae (1.23%; Dillon in Drumm and Fallon 2009). The site was dated to the Early Bronze Age. Interestingly, two further burnt mounds in adjacent townlands (Urraghry and Barnacragh) produced different results. At Urraghry (E2449), oak accounted for 34% of the total sample, followed by ash (29%), hazel (20.7%), alder (15%) and diffuse porous wood (0.7%; Dillon in Drumm *et al* 2009a). At Barnacragh (E2446), approximately 1km to the east, 49% of the charcoal assemblage was identified as hazel, 33% as ash, 15% as alder and 3% was oak (Dillon in Drumm *et al*, 2009b). Comparative analysis shows that the same or similar woods were deliberately selected for use at burnt mound sites, probably for their calorific value.

Charcoal analysed from excavated *fulachta fiadh* sites along the N11 Wicklow By-pass (A022-46, 41, 43 and 45) produced a similar array of taxa. Alder occurred more frequently than ash, oak or hazel at these sites (O Carroll 2007). Willow, holly, birch and pomaceous fruitwood were also present. In Charlesland, Co. Wicklow, charcoal and wood were analysed from four *fulachta fiadh* dating from the Early to the Late Bronze Age. The charcoal assemblage was dominated by ash, alder, willow and hazel. The wood from two of the *fulachta fiadh* sites was mainly alder with some hazel fragments also present.

Comparative analysis with pits and associated features related to possible industrial activity dated to the Early Iron Age shows that the results from AR050 are somewhat unusual, as oak is almost invariably the dominant taxon at industrial-type sites. At AR36, Borris townland, the excavation of an industrial site found during work on

the M8/N8 Road Improvement Scheme, showed that oak was the preferred taxon (O Carroll 2009d). At Moycarkey townland, Co. Tipperary, a possible industrial site excavated as part of the M8/N8 Road Improvement Scheme (AR15/E2367), showed that charcoal sampled from the site was exclusively oak (O Carroll 2009e). Analysis of charcoal from an industrial area excavated in Lowpark townland during the construction of the N5 Charlestown By-pass showed that oak was also specifically selected for charcoal production and metalworking activities there (O Carroll 2007). Oak was also the dominant taxon associated with iron working sites at Ballydavid, Co. Tipperary (O Carroll 2009f). However, At AR003-005/E2499, Milltown townland, Co. Kilkenny, excavated as part of this same road scheme, a wide variety of taxa was identified from samples analysed, comprising oak, birch, pomoideae, hazel, alder, blackthorn, ash, *Prunus* spp and spindle (OCarroll 2009e). The site was dated to between 210 BC and 220 AD.

9.1.7 Summary and conclusions on the charcoal assemblage

Five hundred and thirty eight charcoal fragments relating to the remains of a large, 'comma-shaped' burnt mound, which overlay 15 troughs/pits, two hearths and a series of postholes and stakeholes were analysed from excavations at AR050/E2516, Sheepstown townland, Co. Kilkenny, as part of the N9/N10 Kilcullen to Waterford Road Scheme. The troughs/pits were mainly located on the eastern side of the site, and the post- and stakeholes occurred mainly in the west. Excavation showed some evidence for the reuse of some features, indicating at least two phases of activity. This evidence was corroborated by a series of radiocarbon dates, which indicate that the site was first occupied during the Middle Bronze Age, with a second phase of activity occurring towards the later end of the Early Iron Age.

A wide variety of native taxa was identified, comprising alder, oak, hazel, pomoideae, willow, blackthorn, blackthorn/cherry, ash, birch, holly and yew. The charcoal is mainly representative of fuel collection policies at the site and is likely to have been used and selected from near to the burnt mound site. Some of the wood types may have been selected because of its calorific value. The results from AR050 may reflect a general pattern, where a variety of wood types were collected, as part of the fuel collection policy at the site. The charcoal identifications are comparable with assemblages analysed from similar sites around the country. There also is evidence to suggest that a trough may have been lined with alder wood. The identification of 15 fragments of yew may be significant in terms of function at the site as yew is rarely identified in such large quantities from burnt mound activities. The yew may have been associated with industrial activities at the site as shown by the presence of slag.

The taxa identified at AR050 may be taken as an indication of aspects of the local landscape during the period of time the site was in use. It is likely that area surrounding AR050 supported mixed woodlands over a considerable period of time and was also located at the interface of a dryland and wetland environment as evidenced by the presence of both dryland and wetland type trees. The wood identified from the analysed features could have originated from scrubland (blackthorn, pomoideae, holly, cherry) or from mixed woodlands (ash, oak and hazel)

nearby. Willow, birch and alder prefer wetter ground. Yew can be found growing naturally in the understorey of deciduous woods where they are able to withstand very low light-levels. The primary woodland trees and scrub type trees would most likely have grown in woods on the nearby dryland margins, with alder, willow and possibly birch in the marshier areas, perhaps adjacent to the stream which flows along the boundary of the site.

9.1.8 Acknowledgements

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9.2 Analysis of non-wood plant macro-remains by Dr. Meriel McClatchie

9.2.1 Introduction

Seven deposits associated with a burnt mound were submitted for archaeobotanical analysis. Four of the seven deposits contained small quantities of charred archaeobotanical material suitable for radiocarbon dating (Table 3).

9.2.2 Archaeobotanical material extracted

Context no.	Cut no.	Sample no.	Soil volume	Material Extracted
19	57	2	4 litres	2 <i>Hordeum</i> sp. (Barley) grains
27	39	3 (wet)	4 litres	1 <i>Hordeum</i> sp. (Barley) grain
27	39	19 (dry)	4 litres	1 <i>Triticum</i> sp. (Wheat) grain;

				2 <i>Corylus avellana</i> L. (Hazelnut) shell fragments
38	39	4	3 litres	1 <i>Hordeum</i> sp. (Barley) grain
48	...	13	6 litres	...
179	...	108	3 litres	...
201	...	113	4.5 litres	...

Table 3: Charred archaeobotanical material extracted for AMS radiocarbon dating

9.2.3 Other archaeobotanical material present

A small quantity of waterlogged remains – including shell fragments of *Corylus avellana* L. (hazelnut), and seeds of *Sambucus nigra* L. (elder) and *Rubus* spp. (bramble) – was also recorded.

9.2.4 Discussion of archaeobotanical material extracted

9.2.4.1 Cereals

Barley and wheat grains are regularly recovered from many archaeological sites dating to the prehistoric and historic periods in Ireland, but it should be noted that cereal remains are very often absent from burnt mound sites (McClatchie *et al.* 2007). The presence of cereal grains at Site AR50 is therefore rather unusual. A recent study of *fulachta fiadh* suggested that these sites may have been the locations of beer production (Quinn and Moore 2007), which would have required large quantities of cereals, but this suggestion has been contested (McClatchie *et al.* 2007). If cereal-based activities were regularly taking place at AR50, it is very likely that a greater quantity of cereal remains would have been recorded, given the possibility for charring of cereals during the malting and mashing stages of brewing. It is therefore suggested that cereal-based activities were not a major component of activities at this site. The presence of a small number of cereal grains does indicate that the inhabitants of this site had access to cereals, but it seems very unlikely that any large-scale processing of cereals and/or preparation of cereal-based foodstuffs/drinks was taking place in this location.

9.2.4.2 Hazelnut

Hazelnuts may have been collected by the site's inhabitants for consumption, in order to provide a nutritious foodstuff. Alternatively, hazelnuts may have been inadvertently introduced to the site along with hazel wood, which could have been used as fuel at the site. Hazelnut collection is more regularly associated with prehistoric sites in Ireland (McComb and Simpson 1999), but documentary evidence also exists to demonstrate the continued collection of hazelnuts throughout the historic period (for example, Kelly 1997, 306).

9.2.5 References

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McClatchie, M., Brewer, A., Dillon, M., Johnston, P., Lyons, S., Monk, M., Stewart, K. and Timpany, S. 2007. Letters from our readers: Brewing and *fulachta fiadh*. *Archaeology Ireland* 21(4), 46.

McComb, A.M.G. and Simpson, D., 1999. The wild bunch: exploitation of the hazel in prehistoric Ireland, *Ulster Journal of Archaeology* 58, 1-16.

Quinn, B. and Moore, D. 2007. Ale, brewing and *fulachta fiadh*. *Archaeology Ireland* 21(3), 8-11.

9.3 Faunal Remains by Karin Svensson

9.3.1 Introduction

The site uncovered a burnt mound with 15 pits or troughs. The animal bone material consisted of 587.5 g of bone, which was retrieved from four different contexts.

9.3.2 Methodology

The identification of the bones was done mainly with help from written sources and pictures of bones (Schmid 1972, Prummel 1988). Every fragment of bone was recorded to species, bone type, side, zone, sex, age, tooth wear, measurements and weight where possible. Whether the bone was gnawed, butchered, worked or with a pathology was also noted. The zoning of the bones was done according to Serjeantson (1996).

9.3.3 Results

Context 19

C19 was the single fill of a pit. It contained what was interpreted on site as the remains of two antlers (E2516:9 & E2516:10) (see plate 7). The two might originate from the same antler, the smaller one being the terminal tines of the larger one. The antler has been shed and then deposited whole in the pit.

Context 20

C20 was the single fill of another pit. Four bones were recovered, one being a fragment from a right humerus of cattle (E2516:19). The other three fragments were unidentified.

Context 109

C109 was the single fill of yet another pit, producing 19 bone fragments. One of them was a fragment of a cattle tooth, all the others were unidentified.

Context 6

C6 was the main deposit of burnt mound material. It produced 26 fragments of bone. None of them could be identified.

9.3.4 References

Prummel 1988. *Distinguishing features on postcranial skeletal elements of cattle, Bos primigenius f. taurus, and red deer, Cervus elaphus*. Schriften aus der Archäologisch-Zoologischen Arbeitsgruppe Schleswig-Kiel. Heft 12. Kiel.

Schmid 1972. *Atlas of Animal Bones*. Elsevier, Amsterdam.

Serjeantson 1996. The animal bones. In: *Refuse and disposal at Area 16 east Runnymede. Runnymede Bridge research excavations Vol 2*, eds. Needham & Spence, London

9.4 Radiocarbon Dating by The Chrono Centre, Queens University Belfast

9.4.1 Results

Samples for radiocarbon dating revealed the site to have at least two phases. Calibration was carried out by the Chrono Centre, Queens University Belfast. The results from calibration of radiocarbon dates are given in Table 4. Given are intervals of calendar age, where the true ages of the samples encompass with the probability of c.68% and c.95%. The calibration was made with the Ox Cal software.

AR50							
Lab Code	Sample No	Context No	Description	Material Dated	Radiocarbon Age	Calibrated Age 69.2% probability	Calibrated Age 95.4% probability
UBA-14009	2	[c19]	Fill of pit [c57] which contained deer antler	Charred cereal grain (barley)	3153±27 BP	1487 - 1485 cal BC 1453 - 1407 cal BC	1495 - 1391 cal BC

UBA-14010	11	[c55]	Secondary fill of trough [c56]	Hazel charcoal	3741±21 BP	1391 - 1368 cal BC 1360 - 1314 cal BC	1409 - 1291 cal BC 1279 - 1271 cal BC
UBA-14011	13	[c48]	Fill of pit [c49]	Oak charcoal	3002±27 BP	1310 – 1209 cal BC 1137 – 1135 cal BC	1374 – 1340 cal BC 1319 – 1187 cal BC 1183 – 1154 cal BC 1145 – 1130 cal BC
UBA-14012	26	[c23]	Primary fill of pit c30, under [c22]	Oak charcoal	3151±34 BP	1489 - 1481 cal BC 1455 - 1401 cal BC	1499 - 1379 cal BC 1336 - 1322 cal BC
UBA-14013	56	[c36]	Fill of pit [c113]	Ash / Blackthorn charcoal	2170±29 BP	351 - 297 cal BC 228 - 221 cal BC 210 - 175 cal BC	361 - 271 cal BC 264 - 158 cal BC 134 - 116 cal BC
UBA-14014	107	[c179]	Trough fill [c178]	Alder charcoal	2192±34 BP	357 – 282 cal BC 257 – 245 cal BC 235 – 198 cal BC	381 – 168 cal BC

Table 4: Calibrated Radiocarbon Determinations (after Reimer *et al* 2004; OxCal v3.10 Bronk Ramsey (2001);
 cub r:5 sd:12 prob usp[chron])

9.4.2 References

Reimer, PJ, MGL Baillie, E Bard, A Bayliss, JW Beck, CJH Bertrand, PG Blackwell, CE Buck, GS Burr, KB Cutler, PE Damon, RL Edwards, RG Fairbanks, M Friedrich, TP Guilderson, AG Hogg, KA Hughen, B Kromer, G McCormac, S Manning, C Bronk Ramsey, RW Reimer, S Remmele, JR Southon, M Stuiver, S Talamo, FW Taylor, J van der Plicht and CE Weyhenmeyer, 2004, IntCal04 terrestrial radiocarbon age calibration, 0-26 cal kyr BP, *Radiocarbon*, 46 (3) 1029 – 1058

Bronk Ramsey, C, 2001, Development of the radiocarbon calibration program OxCal, *Radiocarbon*, 43 (2A) 355-36

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Radiocarbon Date Certificate

Laboratory Identification: UBA-14014
Date of Measurement: 2010-02-05
Site: Site 50, E2516
Sample ID: s107c179
Material Dated: charcoal
Pretreatment: AAA
Submitted by: VJK Ltd

¹⁴C Date: 2192±38

AMS δ¹³C: -26.4

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Radiocarbon Date Certificate

Laboratory Identification: UBA-14013
Date of Measurement: 2010-02-05
Site: Site 50, E2516
Sample ID: s56c36
Material Dated: charcoal
Pretreatment: AAA
Submitted by: VJK Ltd

¹⁴C Date: 2170±29
AMS δ¹³C: -26.0

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Radiocarbon Date Certificate

Laboratory Identification: UBA-14012
Date of Measurement: 2010-02-05
Site: Site 50, E2516
Sample ID: s26c23
Material Dated: charcoal
Pretreatment: AAA
Submitted by: VJK Ltd

¹⁴C Date: 3151±34

AMS $\delta^{13}\text{C}$: -25.4

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Radiocarbon Date Certificate

Laboratory Identification: UBA-14009
Date of Measurement: 2010-02-05
Site: Site 50, E2516
Sample ID: s2c19
Material Dated: charred seed or nutshell
Pretreatment: Acid Only
Submitted by: VJK Ltd

¹⁴C Date: 3153±27

AMS δ¹³C: -26.2

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Radiocarbon Date Certificate

Laboratory Identification: UBA-14010
Date of Measurement: 2010-02-10
Site: Site 50, E2516
Sample ID: s11c55
Material Dated: charcoal
Pretreatment: AAA
Submitted by: VJK Ltd

¹⁴C Date: 3069±21
AMS δ¹³C: -28.3

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Radiocarbon Date Certificate

Laboratory Identification: UBA-14011
Date of Measurement: 2010-02-10
Site: Site 50, E2516
Sample ID: s13c48
Material Dated: charcoal
Pretreatment: AAA
Submitted by: VJK Ltd

¹⁴C Date: 3002±27
AMS δ¹³C: -26.0

APPENDIX A: LIST OF CONTEXTS

C #	Type	Interpretation	Description	Dimensions
1	Deposit	Topsoil	Mid orange brown sandy silt	Over entire site
2	Deposit	Re-deposited natural, probably washed down slope	Moderately compact mid grey yellow sandy silt with occasional inclusions of gravel	Found on W and SW of site
3	Deposit	Natural peat formation on the marshy edge of an old river bed, lake or pond	Dark brown, soft, moist and spongy silty clay that contained fragments of wood and roots-becoming peat	Found in middle of Northern end of site
4	Deposit	Natural geological deposit	Mixed yellow & grey soft clayey sand and silt with frequent small to medium sized stones	Over the NW edge of the site
5	Deposit	Base of an old lake or slow running stream	Soft, dark, yellow grey silty sand and gravel that contained very small and small rounded gravel particles	NE edge of site and to the far east side, beyond the ditch
6	Deposit	Main deposit of burnt mound material	Loose, dark brown black, med to fine silty sand with 50-60% burnt angular stone fragments. A moderate amount of charcoal and roots found.	L=23.50m W=17m D=0.40m
7	Deposit	Natural shoreline on former water's edge, possibly due to flooding	Light, creamy grey marl that contained very little gravel or pebbles	Found mid centre on the N end of site, separating c4 & c5
8	Cut	Modern field drain containing plastic pipe & c9	Linear, straight sided stone filled drain with plastic pipe	Length of site W= 0.40m D=0.50m
9	Fill	Fill of modern field drain in c8	Loose, pea sized limestone gravel	Length of site W=0.40m D= 0.50m
10	Cut	Relatively modern drain with fill c11	Linear though slightly irregular in parts with generally straight sides and a flat base. Likely to be hand dug by shovel	Length of site W= 0.30m D= 0.50m
11	Fill	Stone filling drain c10	Limestone ranging from 3 to 4 stones wide	Length of site W= 0.30m D= 0.50m
12	Cut	Relatively modern drain	Linear cut with moderately straight sides and flat base. Slightly more rudimentary (and therefore likely older) than drains c8 & c10. Filled with c13	Length of site, W= 0.30m D= 0.45m
13	Fill	Fill of drain c12	Mostly yellow silt with small pebbles of sandstone and limestone. Contained dark brown burnt mound deposit in places	Length of site, 0.30m wide 0.45m deep
14	Deposit	Dark black charcoal rich burnt mound deposit, found under c6. Intense concentration	Dark brown black coarse sandy silt with a high stone content making up approx 80% of the deposit. The stones were small to medium burnt angular pieces of sandstone and some limestone	L= 5m W= 3m D=0.30m
15	Deposit	Re-deposited natural, probably the up cast material from digging a nearby pit (possibly c33)	Compact, yellow brown sandy silt with occasional small, sub-angular burnt stone fragments and charcoal.	L=0.76m W= 0.44m
16	deposit	May have been a deposit of ash mixed with topsoil. Thin deposit	Mid grey brown, loose ashy silt. Did not contain burnt stone fragments	L=5.50m W=2.50m D=0.03m
17	Fill	Fill of shallow pit c34	Dark grey black, loosely compacted coarse sandy silt. Contained frequent small to medium stones and occasional large ones. Stone was heat shattered. Also contained frequent charcoal	L=2.50m W=1.77m D=0.28m

C #	Type	Interpretation	Description	Dimensions
18	Fill	Fill of pit c65	Dark brown black, moderately compact clay and silt fill. It contained about 75% burnt stone and frequent charcoal	L=1.60m W=1.40m D=0.15m
19	Fill	Fill of pit c57 which contained deer antler	Loose, moist peat, dark grey black in colour. It contained about 40% burnt stone. Amount of stone increased nearer bottom of fill	L=1.10m W=0.85m D=0.30m
20	Fill	Fill of pit c134	Dark grey black, moderately compacted silty clay. Included frequent small and medium burnt stone and charcoal. Waterlogged near base	L=1.50m W=1.25m D=0.30m - 0.57m
21	Deposit	Burnt mound deposit, same as c6	Firm, brown black sandy silt that contained approx 40% heat shattered stones. Occasional charcoal flecks	L=2.34m W=2m D=0.04m
22	Fill	Secondary fill of pit c30,	Black, friable sandy silt comprised of approx 40% burnt stone fragments and occasional charcoal. Contained some iron slag and some straight sided, unburnt limestone rocks which may be whetstones or involved in grinding. burnt mound material, probably backfilled	L=2.34m W=2.25m D=0.52m
23	Fill	Primary fill of pit c30, under c22	Dark grey brown, friable sandy silt, similar to c22 but lighter in colour and slightly stonier (approx 50% heat shattered stone included). Found predominantly in the S half of pit c30	L=1.62m W=1.05 D=0.30m
24	Deposit	C6 within natural depression	Same as c6-double numbered	N/A
25	Fill	Fill of trough c56.	Dark grey, loose and fine clayey silt made up of approx 40% heat shattered stones. Frequent charcoal flecks and staining. Upper fill of trough c56. The SW corner had a layer of oxidisation, c35, above it so trough probably backfilled and reused after as a hearth	L=3.80m W=2.30m D=0.35m
26	Deposit	C6 within natural depression	Same as c6-double numbered	N/A
27	Fill	Secondary and main fill of pit c39, probably backfilled	Dark grey black, loose and sticky sandy clay. It contained a lot of organic material.	L=2.30m W=1.75m D=0.16-0.26m
28	Deposit	Burnt mound material	Same as c62, double numbered and similar to c6. Dark grey black, moderately loose silty sand with approx 50% burnt stone fragments. Occasional charcoal. Context washed down hill and filled a hollow at the waters edge	N/A
29	Deposit	Same as c6	Double numbered	N/A
30	Cut	Trough, similar to c178 in shape, however, c30 is deeper. Its main fill c22 had some iron slag in it	Large circular pit or trough with a bulbous protrusion on the N side. It had near vertical sides all around. The base was flat but irregular, rising up to meet the S edge where it had less depth	L=2.54m W=2.25m D=0.52m
31	Fill	Last fill of burnt mound material in pit c33, probable backfill	Black, loosely compacted silty clay and approx 80% heat shattered stone. Frequent charcoal flecking. Similar to c22	Diameter=1.50m D= 0.30m
32	Fill	Primary fill of pit c33.	Mid grey, loosely compacted silty clay with a high burnt stone content. This fill was wet and appeared to be under the water table. A piece of struck flint was found at the bottom, find #11	Diameter=1.39m D=0.30m

C #	Type	Interpretation	Description	Dimensions
33	Cut	Large pit or trough	Sub rectangular in shape with a sharp break of slope all around and vertical sides. The base was flat and under the water table. After heavy rains the pit filled and the water never subsided. Contained 2 fills of burnt mound material, c31 & c32	L=1.50m W=0.90m D=0.50m
34	Cut	Large, shallow pit filled with one fill, c17	Sub rectangular in shape with a sharp break of slope leading to straight sides and a flat base which gently slopes down to the W. It held water well after rains had subsided	L=2.50m W=1.48-1.77m D= 0.28m
35	Deposit	Thin deposit of oxidised clay	Bright orange but moderately soft and wet silty clay with occasional flecks of charcoal and small burnt stones. It was covered over by c14, a rich concentrated black burnt mound deposit. Later than the last use of pit c56. Surrounded by small stakeholes over the SW end of a backfilled trough c56	L=1.65m W=1.40m D=0.05m
36	Fill	Fill of pit c113	Dark grey brown, damp and compact silty clay. It was made up of approx 30% burnt stone and occasional charcoal. Similar to c37, found in pit c114 beside it (South) Below clay platform c60. One of the earliest pits	L=0.72m W=0.57m D=0.33m
37	Fill	Fill of pit or posthole c114,	Light brown, loose, silty clay with occasional burnt stones	Diameter=0.34m D=0.08m
38	Fill	A clay lining on the side of pit c39,	A dark grey, loose, fine sandy sticky clay that contained about 30% decaying fragments of wood and vegetation including burnt hazelnut shell. Occasional small pebbles included. Only in the S part of pit c39. Context re-cut an earlier trough, c141. Under organic rich fill c27	0.10m thick
39	Cut	A rectangular trough	Rectangular with 2 small rounded pits in the N part separated by natural. Base was flat and sides mostly concave but near vertical on the W part. Contained 2 organic rich fills, c27 & c38	L=2.50m W=1.75m D=0.26m
40	Fill	Fill of posthole c41	Mid black brown sandy silt of moderate compaction which contained some small stones	Diameter=0.16m D=0.23m
41	Cut	Posthole	Circular with vertical sides and a concave base. Located to the SE of pit c43. Possibly related to posthole c45	Diameter=0.16m D=0.23m
42	Fill	Secondary fill of pit c43,	Similar to c6, burnt mound material. Dark black brown silty sand with frequent burnt stone fragments	Diameter=0.67m D=0.20m
43	Cut	Pit	Circular pit with near vertical sides and a slightly concave base Located to the far W of site 50, contained 2 fills, c42 & c67	Diameter=0.67m D=0.35m
44	Fill	Fill of stake or posthole c45	Mid black brown sandy silt of moderate compaction. It had a moderate amount of burnt stone fragments and charcoal	Diameter=0.13m D=0.20m
45	Cut	Stake or posthole	Circular with vertical sides and a rounded, concave base	Diameter=0.13m D=0.20m
46	Fill	Upper fill of posthole c47,	Dark brown silty clay of moderate compaction with occasional small burnt stone fragments	Diameter=0.27m D=0.22m

C #	Type	Interpretation	Description	Dimensions
47	Cut	Posthole	Circular in shape with almost vertical sides and a slightly concave base	Diameter=0.27m D=0.30m
48	Fill	Fill of pit c49	Dark black brown, moderately compact sandy silt with a lot of burnt stone and charcoal. Contained a yellow lens of clay in the centre, perhaps collapsed clay roof. Burnt mound type	L=1.31m W=0.75m D=0.36m
49	Cut	Pit	Sub rectangular pit with a gradual break of slope on all sides except the S & SW. The sides were concave and the base flat and sloping gently to the NW. Found below a channel leading down slope from hearth, c50	L=1.31m W=0.75m D=0.36m
50	Deposit	Deposit of burnt earth.	Soft, bright orange sandy silt containing some clay that baked hard after dry weather within a shallow channel, 0.72m long, leads down slope into pit c49.	L=1.35m W=1m D=0.02m
51	Fill	Fill of posthole c52	Dark, brown grey silt-clay. Made up of about 30% burnt stone	L=0.26m W=0.21m D=0.36m
52	Cut	Vertical posthole	Oval with straight sides and a flat base that rose gently to the E. Filled with c51	L=0.26m W=0.21m D=0.36m
53	Fill	Upper fill of posthole c54,	Dark black grey, moderately loose sandy silt that contained frequent burnt stones and charcoal.	Diameter=0.30m D= 0.15m
54	Cut	Posthole	Circular with vertical sides and a flat base. Similar in size to c52 & c47	Diameter=0.30m W=0.27m
55	Fill	Secondary fill of trough c56	Light grey yellow, loose clayey sand with occasional burnt stone and charcoal flecks. Found under c25	L=3.80m W=2.30m D=0.20m
56	Cut	Large trough	Rectangular shaped trough, rounded and shallower on the NW side and it rose up to form a shallow platform on the SE edge. Sides were vertical except for the more gradual W edge. Base was flat but slightly undulating, it ran gently downslope from SW to NE. Similar in plan to c141, possible channel connecting the two cutting through c60. Series of post and stakeholes are found around c56 possibly supporting a roof or fencing	L=5.60m W=2.25m D=0.35m
57	Cut	Pit	Sub rectangular pit with gradually sloping sides onto a slightly concave base. About 0.02m immediately W of pit c65. Contained 2 deer antlers, finds 9 & 10	L=1.10m W=0.85m D=0.30m
58	Fill	Fill of stakehole c59	Loose, light brown grey sandy silt.	Diameter=0.09m D=0.09m deep
59	Cut	Vertical stakehole	Oval with straight sides and tapered base. NW of post c54. Filled by c58	Diameter=0.09m D=0.09m

C #	Type	Interpretation	Description	Dimensions
60	Deposit	A deposit of clay deliberate surface	Mid yellow grey sandy clay. Quite sticky and compact. It was comprised of approx 20% burnt stone and 10% charcoal. If one was to stand on c60 all the troughs would be reachable from it. Covered over earlier pits c113, c114 and c200. Believed to be an intentionally lain layer of clay in order to build up the natural ground level which created a drier, work surface in centre of troughs	L=12m W=7m D=0.02 – 0.20m
61	Deposit	Deposit of silted burnt mound material mixed with natural gravel c5	Brown rusty and gravelly burnt mound material. Same as c62, just lighter in colour	N/A
62	Deposit	=c28=c6	Dark grey black silty sand with approx 50% burnt stone	N/A
63	VOID	VOID	VOID	VOID
64	Fill	Lower fill of post c47. Probable packing fill	Mid grey brown, moderately compact silty clay. Contained small burnt sub-angular stones	Diameter=0.15m D= 0.08m
65	Cut	Shallow trough	Sub rectangular shaped cut with an indented SE corner. Steep sides and a slightly concave base. Found 0.02m E of pit c57 which contained antler. Similar in shape and size to pits c134 & c33, just much shallower. Filled with c18	L=1.60m W=1.40m D=0.15m
66	Fill	Lower fill of post c54.	Mid yellow grey silty clay of moderate compaction. Contained a moderate to frequent amount of charcoal. Probable packing fill	Diameter=0.26m D=0.10m/0.26m
67	Fill	Basal fill of pit c43.	Yellow brown, loosely compacted sandy clay with occasional to moderate charcoal flecks. Same as natural c4 except for charcoal inclusions. May be washed in natural	Diameter=0.50m D=0.20m
68	Cut	Shallow pit	Circular in shape with gently sloping sides and a slightly concave base	L=0.62m W=0.58m D=0.15m
69	Fill	Fill of shallow pit c68	Mid black brown sandy silt of moderate compaction with occasional charcoal flecks and burnt stone Fill c69 is probably same as c6. Possibly a natural hollow	L=0.62m W=0.58m D=0.15m
70	Fill	Top fill of post c71	Dark black brown, loose sandy silt. Contained a lot of burnt angular stone fragments and charcoal	Diameter=0.29m D=0.15m
71	Cut	Posthole	Circular posthole that leant slightly E ward towards pit c30. Filled with c70 & c72	Diameter=0.29m D=0.36m
72	Fill	Lower fill of post c71	Loose, grey clay with some sand and silt inclusions. Contained a lot of burnt stone. Charcoal found at base. Probable packing fill	Diameter=0.29m D=0.20m
73	Fill	Fill of posthole c74	Dark grey brown, loose sandy clay. Contained some stone	L=0.37m W=0.32m D=0.18m
74	Cut	Posthole	Sub rectangular shaped posthole with vertical sides and a slightly concave base. Lots of small stakeholes found immediately E of c74. Filled with [c73]	L=0.37m W=0.32m D=0.18m
75	Cut	Stakehole	Stakehole filled with c76	Diameter=0.14m D=0.04m

C #	Type	Interpretation	Description	Dimensions
76	Fill	Stake fill	Fill of stakehole c75	Diameter=0.14m D= 0.04m
77	Cut	Stakehole	Tiny stakehole filled with c78	Diameter=0.04m D=0.04m
78	Fill	Stake fill	Fill of stakehole c77	Diameter=0.04m D=0.04m
79	Fill	Fill of stakehole c80	Dark brown, loose, silty clay with some stones	Diameter=0.10m D=0.18m
80	Cut	Cut of stakehole	Circular with vertical sides and a pointed taper	Diameter=0.10m D=0.18m
81	Cut	Stakehole	Tiny stakehole filled with c82	Diameter=0.04m D=0.04m
82	Fill	Stake fill	Fill of stakehole c81	Diameter=0.04m D=0.04m
83	Cut	Stakehole	Tiny stakehole filled with c84	Diameter=0.04m D=0.04m
84	Fill	Stake fill	Fill of stakehole c83	Diameter=0.04m D=0.04m
85	Cut	Stakehole	Tiny stakehole filled with c86	Diameter=0.04m D=0.04m
86	Fill	Stake fill	Fill of stakehole c85	Diameter=0.04m D=0.04m
87	Cut	Stakehole	Tiny stakehole filled with c88	Diameter=0.04m D=0.04m
88	Fill	Stake fill	Fill of stakehole c87	Diameter=0.04m D=0.04m
89	Cut	Stakehole	Tiny stakehole filled with c90	Diameter=0.04m D=0.04m
90	Fill	Stake fill	Fill of stakehole c89	Diameter=0.04m D=0.04m
91	Cut	Posthole	Cut of posthole similar to c47, c52 & c54, filled with c92	Diameter=0.25m
92	Fill	Posthole fill	Fill of posthole c91	Diameter=0.25m
93	Deposit	Stockpile of unburnt limestone	Found in the NW edge of trough c56. A layer of unburnt stone, no structural layout. The fact that they were on one edge indicates they were likely a reserve of stones to be used in the hearth	L=1.55m W=0.80m D=0.15m
94	Cut	Possible posthole	Circular with gradually sloping sides and a flat, slightly irregular base. In section it looks more like a little pit, the sides do not look straight enough to support a post. May be the base of a post and due to fill being similar to c6 it could have been overcut without noticing any difference in fills	L=0.26m W=0.19m D=0.11m
95	Fill	Fill of possible posthole c94	Dark grey friable sandy silt and approx 55% burnt stone. Small amount of charcoal flecking	L=0.26m W=0.19m D=0.11m

C #	Type	Interpretation	Description	Dimensions
96	Cut	Small posthole	Circular with steeply sloping sides and a concave base. Contained one fill, c97	Diameter=0.16m D=0.14m
97	Fill	Fill of posthole c96	Black, loosely compacted silty clay and contained small burnt stone fragments and occasional charcoal	Diameter=0.16m D=0.14m
98	Cut	Stakehole	Oval with steeply sloping sides and a concave base. Filled with c99	L=0.08m W=0.06m D=0.10m
99	Fill	Fill of stakehole c98	Dark grey, loose, silty sand with occasional charcoal flecking	L=0.08m W=0.06m D=0.10m
100	Cut	Stakehole	Circular with moderately steep sides leading to a tapered flat base. Situated 0.45m NW of post c102, slanted towards it. May have acted as a support for c102	Diameter=0.14m D=0.27m
101	Fill	Fill of stakehole c100	Dark grey black, loosely compact, silty clay with frequent stone and occasional charcoal	Diameter=0.14m D=0.27m
102	Cut	Posthole	Sub circular with vertical sides and a concave base filled with c103	L=0.35m W=0.26m D=0.26m
103	Fill	Post fill	Dark grey, moderately sticky clayey silt with frequent charcoal flecks and burnt stone fragments. Fill of post c102	L=0.35m W=0.26m D=0.26m
104	Cut	Probable root activity	Linear little cut that was thought to be a possible slot for a light hut. Found near stakeholes c83 and c85. Possibly just from root action	L=0.80m W=0.09m D=0.03m
105	Fill	Probable root activity	Dark grey, loose, silty clay with less than 2% charcoal. Fill of c104	L=0.80m W=0.09m D=0.03m
106	Cut	Posthole	Oval shaped, near vertical sided with a flat and stony base. Filled with c107	L=0.34m W=0.30m D=0.22m
107	Fill	Post fill	Dark grey silt, slightly gritty and about 60% burnt stone	L=0.34 W=0.30m D=0.22m
108	Cut	Pit	Sub rectangular with steep W & S sides but more gradual N & E sides. The base slopes gently to the W. Filled with c109	L=1.70m W=1.20m D=0.62m
109	Fill	Pit fill	Dark brownish grey, firm and sticky silty clay with 35-40% stone. Fill was quite wet. Fill of pit c108	L=1.70m W=1.20m D=0.62m
110	Fill	Secondary post fill	Mid black brown, firm, sticky, silty clay with burnt stone and charcoal flecks. Fill of post c112	Diameter=0.26m D= 0.15m deep
111	Fill	Primary post fill	Light black brown, firm, sticky, silty clay with charcoal flecks. Fill of post c112	Diameter=0.17m D=0.13-0.17m
112	Cut	Posthole	Circular with quite vertical sides and a concave base. Filled with c110 and c111	L=0.36m W=0.31m D=0.29m
113	Cut	Pit	Oval shaped pit with vertical sides leading to a flat base. Filled with c36	L=0.72m W=0.57m D=0.33m

C #	Type	Interpretation	Description	Dimensions
114	Cut	Pit or small posthole	Circular with moderately sloping sides and a flattish base. Filled with c37	L=0.34m W=0.33m D=0.08m
115	Cut	Posthole	Circular with vertical sides leading to a flat base. Filled with c116	Diameter=0.10m D=0.26m
116	Fill	Post fill	Dark grey, loosely compacted, sticky clay. Contained a small amount of charcoal and small pebbles	Diameter=0.10m D=0.26m deep
117	Cut	Stakehole	Circular, with very sharp vertical sides that lead down to a V shaped taper at the bottom. Angled at approx 40-45° towards trough c56. Filled with c118	L=0.065m W=0.06m D=0.12m
118	Fill	Stake fill	Light grey silt and mottled with yellow clay. Friable with a small amount of burnt stone and charcoal inclusions	L=0.065m W=0.06m D=0.12m
119	Cut	Stakehole	Circular with near vertical sides and a pointed taper at the bottom. Filled with c120	L=0.06m W=0.05m D=0.09m
120	Fill	Stake fill	Loose, black, sandy silt and approx 25% charcoal. First 3-4 cm almost entirely charcoal. Maybe burnt in situ or driven through charcoal rich c14 from above	L=0.06m W=0.05m D=0.09m
121	Cut	Stakehole	Circular, wider at the top than at the bottom, possibly from stake removal. Quite vertical sides with a rounded point at the base. Filled with c122	L=0.09m W=0.07m D=0.28m
122	Fill	Stake fill	Black, loosely compacted, 90% silty clay with 5% charcoal and 5% burnt stone fragments	L=0.09m W=0.07m D=0.28m
123	Cut	Stakehole	Oval with near vertical sides and a slightly concave base. Not tapered. Angled slightly Northward. Filled with c124	L=0.055m W=0.045m D=0.06m
124	Fill	Stake fill	A mottled, light grey friable sandy silt with frequent charcoal flecks and small burnt stone fragments	L=0.055m W=0.045m D=0.06m
125	Cut	Possible stakehole	Oval with almost vertical sides and a tapered concave base. Angled slightly toward the NE. Filled with c126	L=0.07m W=0.05m D=0.13m
126	Fill	Possible stake fill	Mid grey, loose silty clay without inclusions. Possible packing stones to the South but may just be part of the natural c4 as on the wrong side	L=0.07m W=0.05m D=0.13m
127	Fill	Trough fill	Dark grey with flecks of black and yellow, loose, sticky sandy clay and 40% burnt stone. Contained approx 15% charcoal chunks and 5% decayed vegetation. Very wet fill. Cut by trough c39. Contained burnt bone and hazelnut fragments	L=3.70m W=1.75m D=0.55m
128	Cut	Stakehole	Sub circular with near vertical sides and a pointed tapered base. Filled with c129	L=0.05m W=0.04m D=0.08m
129	Fill	Stake fill	Black, loose, sandy silt with frequent charcoal flecks which may be the remnants of the former stake.	L=0.05m W=0.04m D=0.08m

C #	Type	Interpretation	Description	Dimensions
130	Cut	Stakehole	Circular with near vertical sides and a pointed tapered V shaped base. Filled with c131	Diameter=0.05m D= 0.10m
131	Fill	Stake fill	A mottled, light grey friable sandy silt with frequent charcoal flecks and small burnt stone fragments	Diameter=0.05m D= 0.10m
132	Cut	Stakehole	Circular with near vertical sides and a pointed, tapered base. Filled with c133	Diameter=0.05m D=0.07m
133	Fill	Stake fill	Dark grey, loose sandy silt with occasional charcoal flecks	Diameter=0.05m D= 0.07m deep
134	Cut	Trough	Circular with moderately steep sides and a flat, slightly concave base. Filled with c20	L=1.5m W=1.25m D= 0.55m
135	Cut	Posthole	Circular with vertical sides and a gently tapering bottom with a concave base. Contained fill c136	L=0.16m W=0.12m D= 0.22m
136	Fill	Post fill	Mid orange grey, sticky, silty clay with burnt stone and moderate charcoal. Same as the upper fill of post c112 and due to their proximity, may have been open at the same time	L=0.16m W=0.12m D= 0.22m
137	Cut	Stakehole	Small, circular stakehole SW of trough c56	Diameter= 0.06m D=0.08m
138	Fill	Stake fill	Fill of c137	Diameter=0.06m D= 0.08m
139	Cut	Stakehole	Sub circular with near vertical sides and a pointed tapered V shaped base. Filled with c140	L=0.06m W=0.05m D=0.12m
140	Fill	Stake fill	Black, loose, sandy silt with frequent charcoal flecks	L=0.06m W=0.05m D=0.12m
141	Cut	Trough	A rectilinear shaped trough with a raised circular shaped platform on its SE side. Sides were gradually sloping except for the S where it was vertical. The base was quite flat and the feature was orientated NW-SE. The corners of c141 were rounded/bowl shaped with concentrations of charcoal in each. Possibly for holding a lining in situ?	L=3.70m W=1.75m D=0.55m
142	Cut	Stakehole	Circular with near vertical sides and a tapered, pointed base. Contained fill c143	Diameter=0.04m D= 0.09m
143	Fill	Stake fill	Black, loose, sandy silt with frequent charcoal flecks	Diameter=0.04m D=0.09m
144	Cut	Stakehole	Circular with near vertical sides and a pointed base. Contained fill c145	Diameter=0.05m D=0.12m
145	Fill	Stake fill	Black, loose, sandy silt with frequent charcoal flecks	Diameter=0.05m D=0.12m
146	Cut	Stakehole	Circular with near vertical sides and a pointed base. Contained fill c147	Diameter=0.04m D=0.05m
147	Fill	Stake fill	Black, loose, sandy silt with frequent charcoal flecks	Diameter=0.04m D=0.05m
148	Cut	Stakehole	Circular with near vertical sides and a rounded tapered base. Slightly angled NE towards trough c56. Contained c149	Diameter=0.06m D=0.15m

C #	Type	Interpretation	Description	Dimensions
149	Fill	Stake fill	Black, loose, sandy silt with frequent charcoal flecks	Diameter=0.06m D= 0.15m
150	Cut	Stakehole	Circular with near vertical sides and a pointed tapered base. Contained fill c151	L=0.06m W=0.05m D=0.14m
151	Fill	Stake fill	Dark grey, loose, sandy silt with occasional charcoal flecks	L=0.06m W=0.05m D=0.14m
152	Cut	Stakehole	Circular with near vertical sides and a pointed, tapered base. Filled with c153	Diameter=0.05m D=0.12m
153	Fill	Stake fill	Black, loose, sandy silt with frequent charcoal flecks and occasional small burnt stones	Diameter=0.05m D=0.12m
154	Cut	Stakehole	Circular with near vertical sides and a pointed V shaped base. Filled with c155	L=0.06m W=0.05m D=0.13m
155	Fill	Stake fill	Black, loose, sandy silt with frequent charcoal flecks	L=0.06m W=0.05m D=0.13m
156	Cut	Posthole	Circular with smooth vertical sides and a flat base. Filled with c157	Diameter=0.1m D= 0.14m
157	Fill	Post fill	Mid black, loosely compacted silty clay with a small amount of burnt stone fragments	Diameter=0.1m D=0.14m
158	Cut	Stakehole	Circular with near vertical sides leading to a tapered pointed base. Filled with c159	Diameter=0.07m D=0.12m
159	Fill	Stake fill	Black, loose, sandy silt with frequent charcoal flecks	Diameter=0.07m D=0.12m
160	Cut	Stakehole	Sub circular with near vertical sides and a pointed, tapered base. Filled with c161	L=0.05m W=0.04m D=0.09m
161	Fill	Stake fill	Mid grey, loose sticky, clayey silt with occasional charcoal flecks	L=0.05m W=0.04m D=0.09m
162	Cut	Stakehole	Sub circular with near vertical sides and a pointed tapered base. Filled with c163	L=0.05m W=0.04m D=0.09m
163	Fill	Stake fill	Mid grey, loose, sticky, clayey silt with occasional charcoal flecks	L=0.05m W=0.04m D=0.09m
164	Fill	Stake fill	Dark brown, loose, silty sand with about 10% small, angular burnt stone fragments and moderate charcoal	L=0.12m W=0.10
165	Cut	Stakehole	Circular with sharp vertical sides and a slightly rounded taper at the base	L=0.12m W=0.10
166	Cut	Possible posthole	Circular with smooth vertical sides and a flat base. Had a root cutting into the E side. Filled with c167	Diameter=0.08m D=0.10m
167	Fill	Possible post fill	Dark grey, loosely compacted, silty clay with occasional small pebbles. No charcoal present and was disturbed by root activity on the E side	Diameter=0.08m D= 0.10m
168	Cut	Stakehole	Circular and V shaped. Angled approx 25° towards the E. Filled with c169	L=0.04m W=0.03m D=0.08m

C #	Type	Interpretation	Description	Dimensions
169	Fill	Stake fill	Light grey, sandy silt with occasional charcoal flecks	L=0.04m W= 0.03m D=0.08m
170	Cut	Stakehole	Oval, near vertical but sloping approx 20° to E. Base is quite flat and gently tapered. Filled by c171	L=0.06m W=0.045m D=0.07m
171	Fill	Stake fill	Smooth, black silt with frequent charcoal. Slightly gritty	L=0.06m W=0.045m D= 0.07m
172	Cut	Stakehole	Circular with near vertical sides and a V shaped tapered base. Root disturbance to the NE side. Quite deep and narrow. Filled with c173	L=0.08m W=0.07m D=0.14m
173	Fill	Stake fill	Black, gritty silt with very frequent charcoal and burnt stone	L=0.08m W=0.07m D=0.14m
174	Cut	Stakehole	Circular with near vertical sides and a narrow, tapered, V shaped base. Filled with c175	L=0.05m W=0.045m D=0.13m
175	Fill	Stake fill	Black, gritty silt with very frequent charcoal and burnt stone	L=0.05m W=0.045m D=0.13m
176	Cut	Stakehole	Circular with near vertical sides and tapers to a rounded base. Shallower and wider than other stakes around it. Filled with c177	L=0.06m W=0.05m D=0.08m
177	Fill	Stake fill	Black, gritty silt with very frequent charcoal and burnt stone	L=0.06m W=0.05m D=0.08m
178	Cut	Trough	Circular with a small, circular, bulbous protrusion on the NW edge. It had quite steeply sloping sides with a flat base that sloped down slightly from the N to the S. Filled with c179	L=2.30m W=2m D= 0.26m
179	Fill	Trough fill	Dark, loose, grey black, sticky, sandy clay and approx 40% burnt stone fragments. A very high percentage of charcoal found in it, and some decayed wood. Contained a fragment of burnt bone	L=2.30m W=2m D=0.26m
180	Cut	Stakehole	Oval with a straight E edge with approx a 35° angled slope to the E. Quite shallow with a fairly narrow taper towards the rounded base. Filled with c181	L=0.06m W=0.045m D=0.08m
181	Fill	Stake fill	Black, smooth, silt with very frequent charcoal. Slightly gritty in texture	L=0.06m W=0.045m D=0.08m
182	Cut	Stakehole	Circular, small little stake with near vertical sides and a round, pointed base. Filled with c183	Diameter=0.05m D=0.05m
183	Fill	Stake fill	Black, loose, sandy silt with occasional charcoal flecks	Diameter=0.05m D=0.05m
184	Cut	Stakehole	Sub circular with near vertical sides and a pointed base. Filled with c185	L=0.05m W=0.04m D=0.04m
185	Fill	Stake fill	Black, loose, sandy silt with occasional charcoal flecks	L=0.05m W=0.04m D=0.04m

C #	Type	Interpretation	Description	Dimensions
186	Cut	Stakehole	Sub circular with sharp, near vertical sides and a pointed base. Filled with c187	L=0.05m W=0.04m D=0.04m
187	Fill	Stake fill	Black, loose, sandy silt with occasional charcoal flecks	L=0.05m W=0.04m D=0.04m
188	Cut	Stakehole	Circular with near vertical sides leading to a pointed base. Filled with c189	Diameter=0.05m D= 0.08m
189	Fill	Stake fill	Black, loose, sandy silt with occasional charcoal flecks	Diameter=0.05m D=0.08m
190	Cut	Stakehole	Sub circular with sharp, near vertical sides and a deep, pointed base. Filled with c191	L=0.07m W=0.05m D=0.09m
191	Fill	Stake fill	Black, loose, sandy silt with occasional charcoal flecks	L=0.07m W=0.05m D=0.09m
192	Cut	Stakehole	Sub circular with near vertical sides and a pointed base. Filled with c193	L=0.06m W=0.05m D=0.10m
193	Fill	Stake fill	Mid grey, loose, sticky, clayey silt with occasional charcoal flecks	L=0.06m W= 0.05m D=0.10m
194	Cut	Stakehole	Circular with near vertical sides leading to a pointed base. Filled with c195	Diameter=0.05m D=0.11m
195	Fill	Stake fill	Mid grey, loose, sticky, clayey silt with occasional charcoal flecks	Diameter=0.05m D=0.11m
196	Cut	Stakehole	Sub circular with near vertical sides and a pointed base. Very shallow but very real looking. Possibly just the very bottom of it. Filled with c197	L=0.06m W= 0.05m D=0.05m
197	Fill	Stake fill	Black, loose, sandy silt with frequent charcoal flecks	L=0.06m W= 0.05m D=0.05m
198	Cut	Stakehole	Circular with near vertical sides and a tapered, pointed base. Filled with c199	Diameter=0.08m D=0.08m
199	Fill	Stake fill	Black silt with very frequent charcoal and occasional burnt stone fragments	Diameter=0.08m D=0.08m
200	Cut	Pit	Oval with quite steep sides all around except for the SW which is more gradual before leading to a sharper drop. The base is flat with a lining of stone, some of which are burnt, c206. Filled with c201, c202 & c206	L=1.10m W= 0.80m D= 0.30m
201	Fill	Secondary fill of pit [c200]	Dark grey, loose, silty clay with approx 5% charcoal and burnt angular stones. Particles of yellow clay present	L=1.10m W= 0.80m D=0.15m -0.30m
202	Fill	Tertiary fill of [c200]	Mid grey, loose, silty clay with approx 2% charcoal and occasional burnt and unburnt stone	D=0.15m – 0.29m
203	Deposit	Redeposited natural	Mottled grey and yellow, sticky and moderately compact, sandy clay with approx 20% burnt stone and occasional charcoal flecks	L=2m W=2m D= 0.20m
204	Deposit	Redeposited natural	Yellowy, moderately compact silty clay containing occasional to moderate sand and larger stones	L=2.60m D=0.20m

C #	Type	Interpretation	Description	Dimensions
205	Deposit	Possibly washed out burnt mound material	Grey black, compact silty sand and gravel and approx 60% burnt stone fragments. It contained frequent charcoal and roots	L=2.40m D=0.18m
206	Fill	Stone lining found at the base of pit c200.	Medium and smaller sized stones that were a mix of burnt and unburnt, lining the bottom of pit c200. Fill c201 was found between and above the stone base	L=0.75m W=0.60m D=0.04m
207	Cut	Cut of 8 stakeholes	Cut for 8 stakeholes all pretty much the same size and shape. Their fill, c208 was the same in each. They have not been recorded individually because time was not allowed to do so. They all tilted slightly toward the S, away from burnt hearth c35	Diameter=0.035m D=0.05m
208	Fill	Fill of 8 stakeholes	Dark, black, clayey silt with frequent charcoal and occasional tiny, burnt stone fragments	Diameter=0.035m D=0.05m

APPENDIX B: LIST OF FINDS

Artefact No.	Area	Fill #	Cut #	Material	Type	Description
E2516:1	50	C1	Topsoil	Metal	Iron	Thick iron hinge with holes, probably for 19 th C fireplaces
E2516:2	50	C1	Topsoil	Metal	Iron	Piece of pony shoe
E2516:3	50	C5	Natural	Stone	Lithic	Flint flake
E2516:4	50	C6	Mound	Stone	Lithic	Struck flint
E2516:5	50	C6	Mound	Metal	Iron	3 pieces of iron pipe-modern
E2516:6	50	C6	Mound	Stone	Lithic	Possible whetstone (Non arch)
E2516:7	50	C14	Mound	Stone	Lithic	Possible whetstone/Polishing stone (Non arch)
E2516:8	50	C14	Mound	Bone	Burnt	4 small burnt stone fragments
E2516:9	50	C19	Pit C57	Bone	Antler	Whole naturally shed deer antler (1 of 2)
E2516:10	50	C19	Pit C57	Bone	Antler	Partial deer antler (part 2 of 2)
E2516:11	50	C32	Pit C33	Stone	Lithic	Struck flint
E2516:12	50	C6	Mound	Stone	Lithic	Possible whetstone (Non arch)
E2516:13	50	C14	Mound	Stone	Lithic	Possible whetstone (Non arch)
E2516:14	50	C11	Drain C10	Stone	Fossil	Possible worm cast or small stone ring (Non arch)
E2516:15	50	C22	Pit C30	Stone	Lithic	Possible whetstone/grinding stone (Non arch)
E2516:16	50	C4	Drain C12	Stone	Lithic	Possible hammerstone/grinding stone (Non arch)
E2516:17	50	C60	Layer	Stone	Lithic	Possible broken stone axe (Non arch)
E2516:18	50	C4	Beside Stake c81	Stone	Lithic	Chert end scraper
E2516:19	50	C20	Trough C134	Bone	Unburnt	Partial animal cattle leg bone,
E2516:20	50	C202	Pit C200	Stone	Lithic	Flint fragment
E2516:21	50	C22	C30	Stone	Lithic	Possible whetstone (Non arch)

APPENDIX C: LIST OF SAMPLES

Sample	Area	Context	Type	Specialist analysis	No of bags	Feature Type
1	50	c14	Soil	c14, finds & environment	1	Dark, black burnt mound material
2	50	c19	Soil	c14 & bone retrieval	1	Pit fill that contained antler and burnt mound material
3	50	c27	Soil	c14 & environment	1	Organic rich clay with burnt mound material. Same as samples # 3 & 19
4	50	c38	Soil	c14 & environment	1	Organic rich clay lining on S edge of pit c39
5	50	c40	Soil	c14 & lithics	1	Fill of posthole c41
6	50	c44	Soil	c14 & lithics	1	Fill of posthole c45
7	50	c51	Soil	c14 & lithics	1	Fill of posthole c52
8	50	c17	Soil	c14, finds & environment	1	Fill of pit c34
9	50	c31	Soil	c14 & wood Id	1	Fill of pit c33, secondary
10	50	c25	Soil	c14 & environment	1	Burnt mound type fill of pit c56
11	50	c55	Soil	c14 & environment	1	Burnt mound type fill of pit c56
12	50	c46	Soil	c14 & lithics	1	Fill of posthole c47
13	50	c48	Soil	c14, finds & environment	1	Burnt mound type fill of pit c49
14	50	c42	Soil	Finds	1	Upper fill of pit c43
15	50	c58	Soil	c14 & lithics	1	Fill of stakehole c59
16	50	c53	Soil	c14 & lithics	1	Fill of posthole c54
17	50	c64	Soil	c14 & lithics	1	Fill of posthole c47, primary fill
18	50	c15	Soil	Finds	1	Redeposited natural over c60
19	50	c27	Soil	c14, finds & environment	1	Northern part of pit c39, main fill Also sample #3 & 38
20	50	c67	Soil	c14 & lithics	1	Fill of pit c43, primary fill
21	50	c66	Soil	c14 & lithics	1	Fill of posthole c54, primary fill
22	50	c21/c6	Soil	c14 & lithics	1	Originally thought to be a pit fill but turned out to be c6.
23	50	c6	Charcoal	c14 & wood Id	1	From main burnt mound deposit c6
24	50	c35	Burnt Clay	c14 & environment	1	Oxidised natural, base of hearth
25	50	c22	Burnt Clay	c14 & finds	1	Burnt mound type fill of pit c30, secondary fill
26	50	c23	Burnt Clay	c14, finds & environment	1	Fill of pit c30, primary fill
27	50	c27	Bone	Bone Id	1	Burnt Bone fragment
28	50	c27	Wood	Wood Id	1	Wood fragment
29	50	c38	Hazel nut	c14 & Id	1	Burnt half of a hazelnut shell
30	50	c6	Possible thread but probable root	Identification	1	Non archaeological
31	50	c61	Soil	c14, finds & environment	1	Burnt mound washdown
32	50	c62	Soil	c14, finds & environment	1	Burnt mound washdown
33	50	c69	Soil	c14 & lithics	1	Fill of shallow pit c68
34	50	c70	Soil	c14 & lithics	1	Fill of posthole c71, secondary fill
35	50	c72	Soil	c14 & lithics	1	Fill of posthole c71, primary fill
36	50	c73	Soil	c14 & lithics	1	Fill of posthole c74

Sample	Area	Context	Type	Specialist analysis	No of bags	Feature Type
37	50	c79	Soil	c14 & wood Id	1	Fill of stakehole c80
38	50	c27	Soil	c14, finds & environment	1	Main burnt mound type fill of pit c39, from the mid W edge. Also sample #3 & 19
39	50	c76	Soil	c14 & wood Id	1	Fill of stakehole c75
40	50	c78	Soil	c14 & wood Id	1	Fill of stakehole c77
41	50	c82	Soil	c14 & wood Id	1	Fill of stakehole c81
42	50	c84	Soil	c14 & wood Id	1	Fill of stakehole c83
43	50	c86	Soil	c14 & wood Id	1	Fill of stakehole c85
44	50	c88	Soil	c14 & wood Id	1	Fill of stakehole c87
45	50	c90	Soil	c14 & wood Id	1	Fill of stakehole c89
46	50	c92	Soil	c14 & wood Id	1	Fill of posthole c91
47	50	c95	Soil	c14 & wood Id	1	Fill of posthole c94
48	50	c99	Soil	c14 & wood Id	1	Fill of stakehole c98
49	50	c4	Wood	Wood Id	1	Small piece of wood found on the natural near where the antlers were found
50	50	c101	Soil	c14 & wood Id	1	Fill of stakehole c100
51	50	c96	Soil	c14, finds & wood Id	1	Fill of possible posthole c96
52	50	c103	Soil	c14 & wood Id	1	Fill of posthole c102
53	50	c105	Soil	c14 & wood Id	1	Fill of linear cut c104, probably root action
54	50	c107	Soil	c14 & wood Id	1	Fill of posthole c106
55	50	c109	Wood	Wood Id	1	Wood sample #59 also taken
56	50	c36	Soil	c14 & lithics	1	Fill of pit c113. Oldest feature on E end of site where trough activity took place
57	50	c37	Soil	c14 & lithics	1	Fill of pit c114. Oldest feature on E end of site where trough activity took place
58	50	c116	Soil	c14 & lithics	1	Fill of posthole c115
59	50	c109	Wood	Wood Id	1	From pit c108. Wood sample #55 also taken
60	50	c109	Bone	Bone Id	1	Fragments of unburnt bone from pit c108
61	50	c109	Soil	c14, finds & environment	1	Fill of pit c108
62	50	c110	Soil	c14 & wood Id	1	Fill of posthole c112, secondary fill
63	50	c111	Soil	c14, finds & environment	1	Fill of posthole c112, primary fill
64	50	c118	Soil	c14 & wood Id	1 small	Fill of stakehole c117
65	50	c120	Soil	c14 & wood Id	1 small	Fill of stakehole c119
66	50	c124	Soil	c14 & wood Id	1 small	Fill of stakehole c123
67	50	c126	Soil	c14 & wood Id	1 small	Fill of possible stakehole c125
68	50	c121	Soil	c14 & wood Id	1 small	Fill of possible stakehole c121
69	50	c60	Soil	c14, finds & environment	1	Clay layer in the midst of all the troughs. Earlier than all the troughs Environmental sample very important for landscape picture. Also sample #91
70	50	c127	Soil	c14, finds & environment	2	Organic rich clay with burnt mound material in pit c141. Similar to c27 in pit c39 above it
71	50	c129	Soil	c14 & wood Id	1 small	Fill of stakehole c128
72	50	c131	Soil	c14 & wood Id	1 small	Fill of stakehole c130
73	50	c133	Soil	c14 & wood Id	1 small	Fill of stakehole c132
74	50	c136	Soil	c14 & wood Id	1	Fill of posthole c135
75	50	c20	Soil	c14, finds & environment	1	Fill of pit c134, primary fill

Sample	Area	Context	Type	Specialist analysis	No of bags	Feature Type
76	50	c140	Soil	c14 & wood Id	1 small	Fill of stakehole c139
77	50	c137	Soil	c14 & wood Id	1 small	Fill of stake c137
78	50	c32	Soil	c14, finds & environment	1	Fill of pit c33, primary fill
79	50	c143	Soil	c14 & wood Id	1 small	Fill of stakehole c142
80	50	c145	Soil	c14 & wood Id	1 small	Fill of stakehole c144
81	50	c147	Soil	c14 & wood Id	1 small	Fill of stakehole c146
82	50	c149	Soil	c14 & wood Id	1 small	Fill of stakehole c148
83	50	c151	Soil	c14 & wood Id	1 small	Fill of stakehole c150
84	50	c22	Metal	Analysis	1	5 pieces of iron slag from pit c30
85	50	c60	Metal	Analysis	1	2 pieces of iron slag found on clean back of clay platform c60, beside pit c30
86	50	c6	Bone	Bone Id	1	Fragments of unburnt bone found in main burnt mound deposit c6
87	50	c22	Wood	Wood Id	1	Fragment of wood from pit c30
88	50	c153	Soil	c14 & wood Id	1 small	Fill of stakehole c152
89	50	c155	Soil	c14 & wood Id	1 small	Fill of stakehole c154
90	50	c4	Soil	Lipid analysis	1 small	Taken from base and sides of pit c134.
91	50	c60	Soil	c14, finds & environment	1	Sample #69 also taken. This was the ground surface beside (W of) cut c141
92	50	c157	Soil	c14 & wood Id	1 small	Fill of stakehole c156
93	50	c159	Soil	c14 & wood Id	1 small	Fill of stakehole c158
94	50	c161	Soil	c14 & wood Id	1 small	Fill of stakehole c160
95	50	c163	Soil	c14 & wood Id	1 small	Fill of stakehole c162
96	50	c164	Soil	c14 & wood Id	1 small	Fill of stakehole c165
97	50	c167	Soil	c14 & wood Id	1 small	Fill of possible posthole c166
98	50	c179	Bone	Bone Id	1 small	1 small fragment of burnt bone from pit c178
99	50	c169	Soil	c14 & wood Id	1 small	Fill of stakehole c168
100	50	c171	Soil	c14 & wood Id	1 small	Fill of stakehole c170
101	50	c173	Soil	c14 & wood Id	1 small	Fill of stakehole c172
102	50	c174	Soil	c14 & wood Id	1 small	Fill of stakehole c174
103	50	c175	Soil	c14 & wood Id	1 small	Fill of stakehole c176
104	50	c193	Soil	c14 & wood Id	1 small	Fill of stakehole c192
105	50	c195	Soil	c14 & wood Id	1 small	Fill of stakehole c 194
106	50	c197	Soil	c14 & wood Id	1 small	Fill of stakehole c196
107	50	c179	Wood	c14 & wood Id	1 big	Wood fragment from pit c178
108	50	c179	Soil	c14, finds & environment	1 big	Fill of pit c178
109	50	c4/c178	Soil	Lipid analysis	1 big	Taken from base and sides of pit c178.
110	50	c199	Soil	c14 & wood Id	1 small	Fill of stakehole c198
111	50	c181	Soil	c14 & wood Id	1 small	Fill of stakehole c180
112	50	c202	Soil	c14, finds & environment	1	Fill of pit c200. Earliest feature on the E end of site as it is under a layer which all of the troughs cut. Date and environmental important. Also sample #114
113	50	c201	Soil	c14, finds & environment	1	Fill of pit c200. Earliest feature on the E end of site as it is under a layer which all of the troughs cut. Date and environmental important
114	50	c202	Soil	c14, finds & environment	1	Fill of pit c200. Same as sample #112
115	50	c208	Soil	c14 & wood Id	1	Fill of 8 stakeholes making up cluster c207

APPENDIX D: SITE MATRIX

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PLATES



Plate 1: AR050 South facing overview. The yellow raised area in the background is the area that burnt mound [c6] was spread over. Centre and foreground is the former waters edge. Facing south



Plate 2: Post-excavation shot of trough [c56] with limestone stockpile [c93] in background and oxidised patch [c35] to the left centre, facing northwest



Plate 3: Post-excavation view of trough [c56] with 3 post-holes forming a triangular shape around the southern & western edge. They may be in place for a structural purpose or they may be part of a fence running from the western edge of the site. Orange hearth [c35] surrounded by stakes visible in the centre. Facing east



Plate 4: Post-excavation shot of pit [c33] which cuts layer [c60], surrounding it. Facing west



Plate 5: Post-excavation aerial view of AR050 showing the curvilinear fence line made with post-holes. Pit [c43] visible in the centre foreground, pit [c108] to the left centre, pit [c49] in centre and trough [c56] visible in the background (all filled with water). Facing east



Plate 6: Mid-excavation shot of pit [c134] with fill [c20]. The pit is cut on its eastern side by a modern field drain. Facing northwest



Plate 7: Antler from pit [c57], E2516:19:9 left, E2516:19:10 to right. The two might originate from the same antler, the smaller one being the terminal tines of the larger one. The antler has been shed and then deposited whole in the pit



Plate 8: Grey clay platform [c60] in the centre of all pits and troughs on the eastern edge of site AR050. Note after heavy rains how it stays dry and is raised while all the pits and troughs flood. Facing southeast



Plate 9: Mid-excitation shot of pit [c114] with fill [c37] on left and pit [c113] with fill [c36] on the right (earliest pits on the eastern side of AR050). South-eastern edge of pit [c30] is visible on the far right. Facing west-southwest



Plate 10: Pre-excavation shot of hearth [c50] and pit [c49], southwest facing



Plate 11: Mid-excavation shot of pit [c49] showing fill [c48] with hearth [c50] in the background. Facing southwest

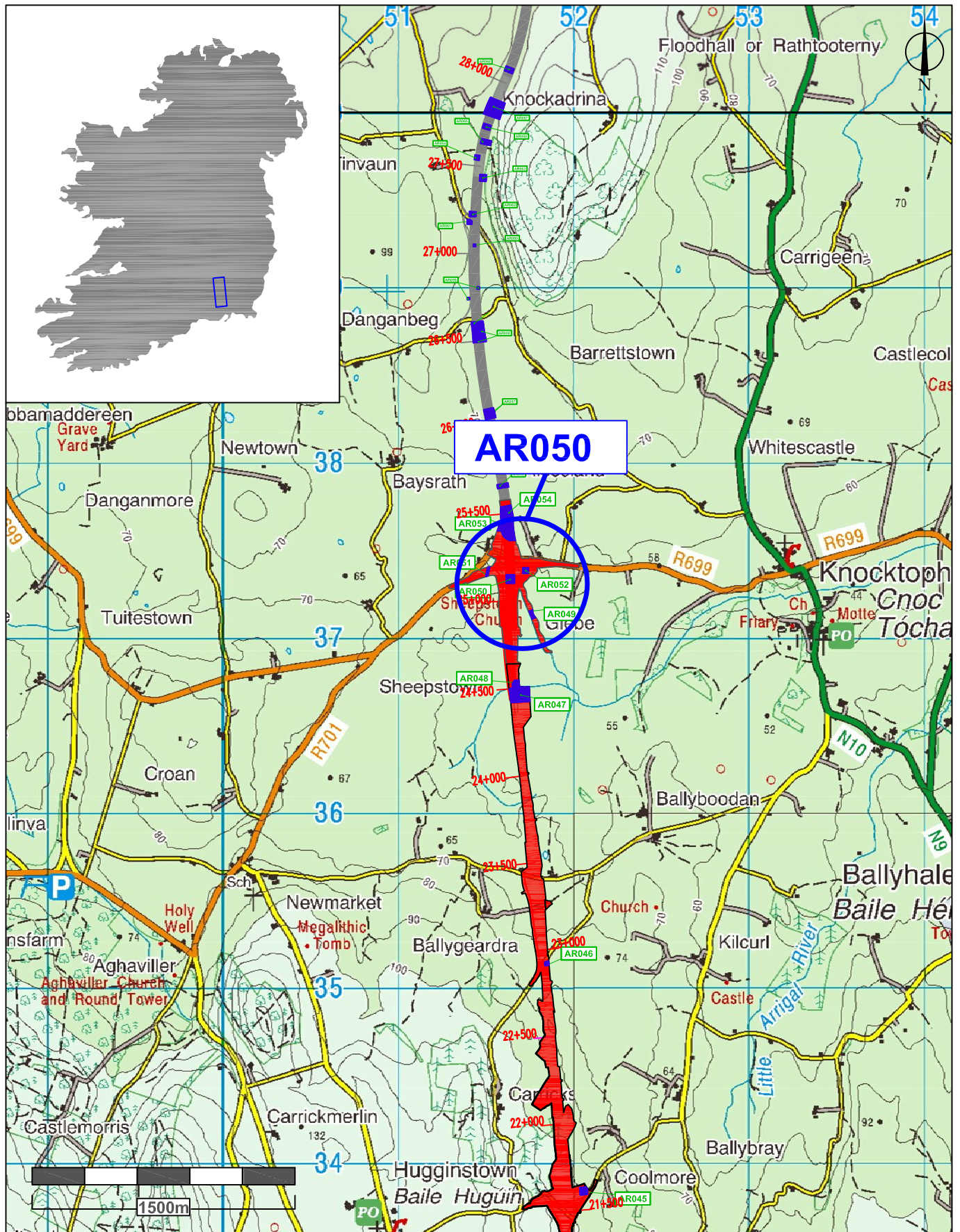


Plate 12: Post-excavation of stakeholes surrounding hearth [c35]. The photo is facing southwest and there are more stakes on this side, it may be a wind break. Note the rectangular shape made by slightly

bigger stakes



Plate 13: Post-excitation aerial view showing the water filled troughs and pits on the eastern side of AR050. Note the near symmetrical shaped features in plan. Facing east



Title
Location of AR050 on Discovery Series mapping.

Notes



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Client
Kilkenny County Council

Works No.
A032/000
E2516

Drawn by
BOF

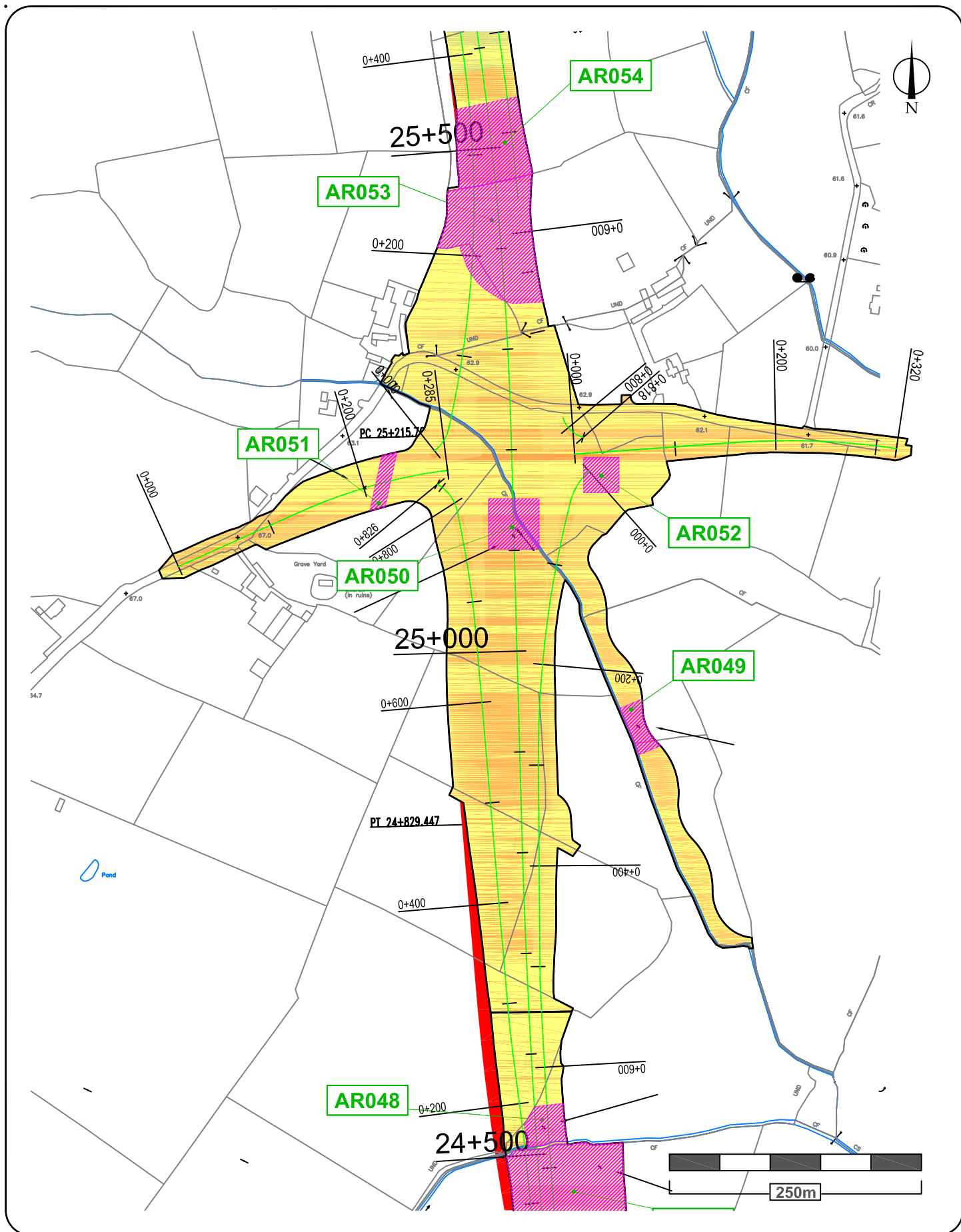
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Date
May 10

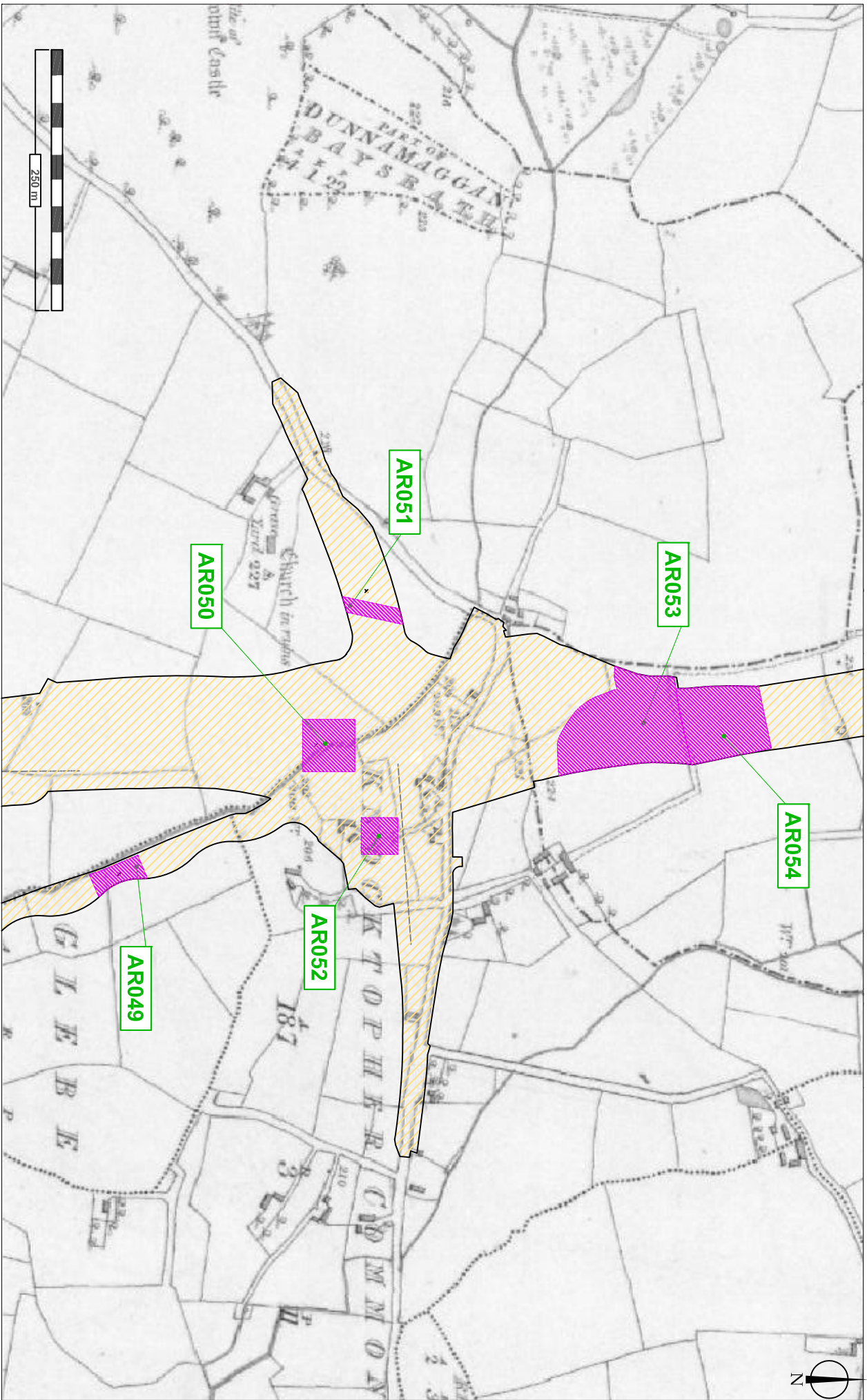
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Drawing No.
Figure 1

Project
N9 / N10 Dunkitt to Sheepstown Resolution Contract



Title Location of AR050 on OS mapping.			Notes  Site Extents			 Brehon House Kilkenny Road Castletomer Co. Kilkenny. Tel: (+353) 056 4440236 Fax: (+353) 056 4440237 Email: vjk@vjk.ie Website: www.vjk.ie	
Works No. A032/000 E2516	Drawn by BOF	CAD reference 1265-06-400/TERA3	Date May 10	Scale 1:5000	Drawing No. Figure 2	Client Kilkenny County Council	
Project N9 / N10 Dunkitt to Sheepstown Resolution Contract							



Title
1st edition Ordnance Survey map

Notes



Site Extents

Job/Enc No.
A032/000
E2516

Date
May 10

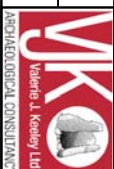
Compiled by
GW

Scale
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CAD reference
1265-06-400/TERRA3
Drawing No.
Figure 3

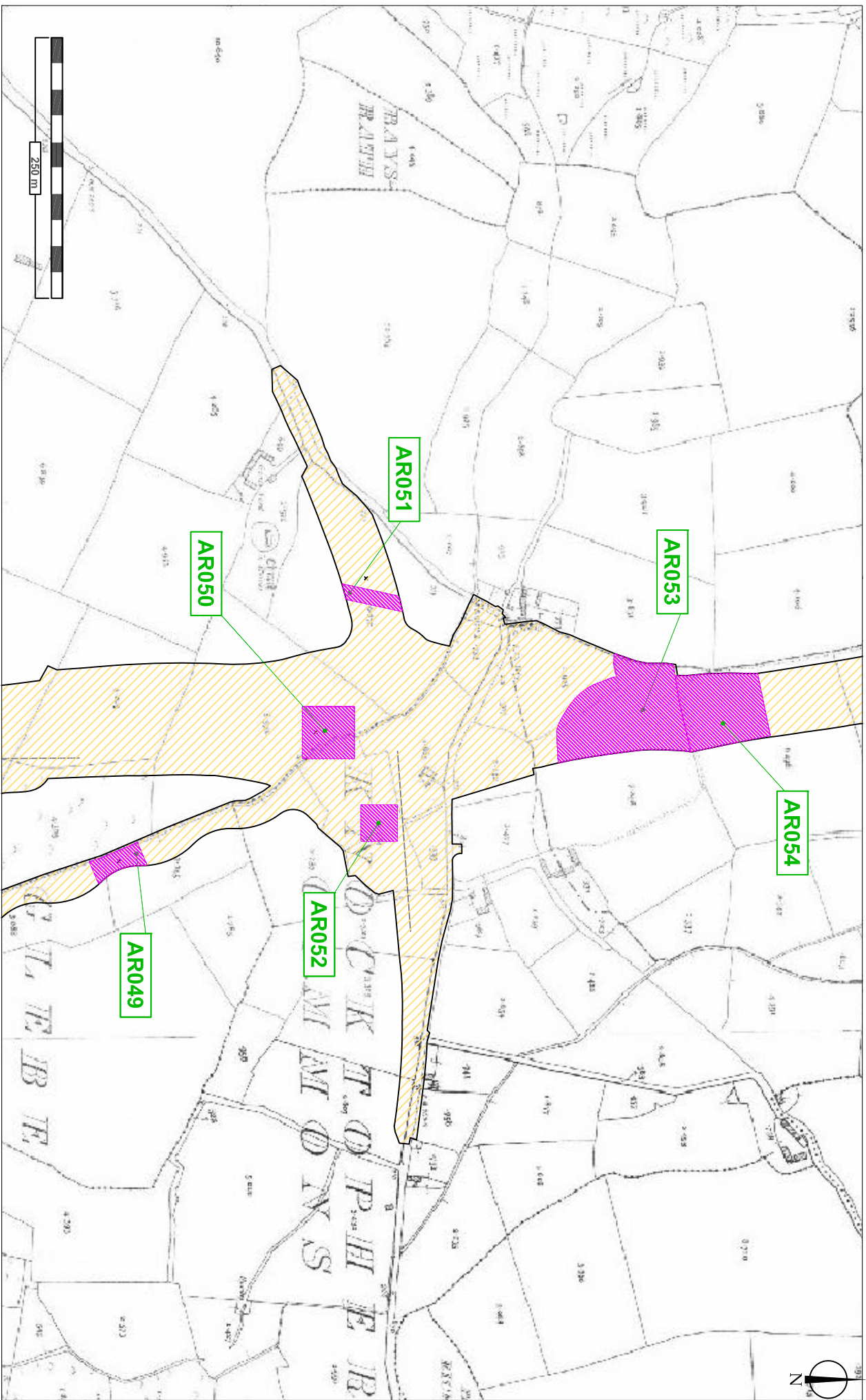
Client
Kilkenny County Council

Project
NS/N10 Dunkitt to Sheepstown Resolution Contract



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Title
2nd edition Ordnance Survey map

Notes



Site Extents

Job/Enc No.
A032/000
E2516

Compiled by
GW

CAD reference
1265-06-400/TERRA3

Client
Kilkenny County Council

Project
N9/N10 Dunkitt to Sheepstown Resolution Contract



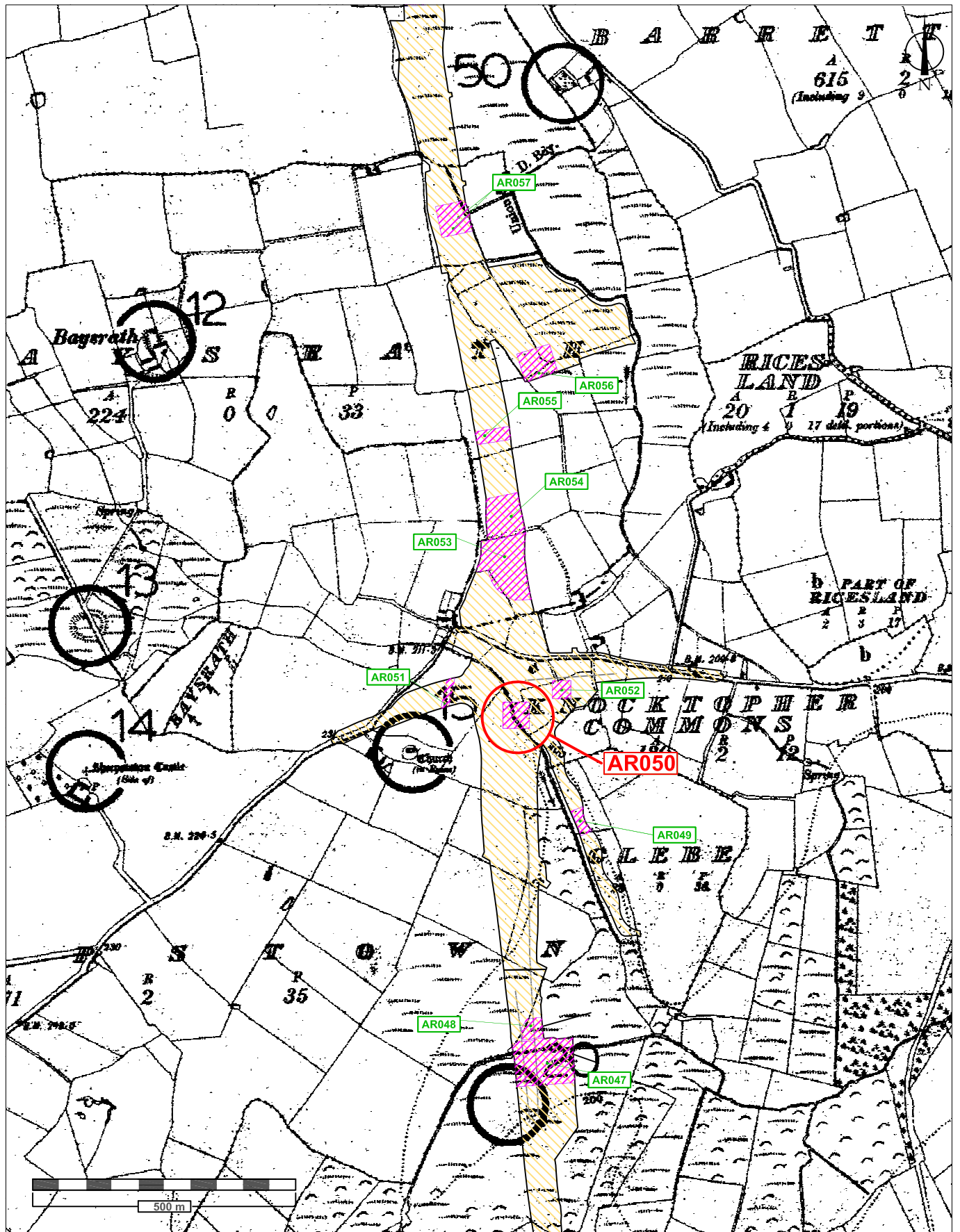
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Co. Kilkenny.



Tel: (+353) 066 4440236
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Email: vk@vk.ie
Website: www.vk.ie

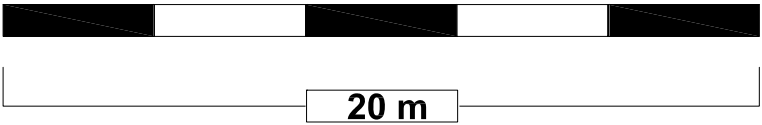
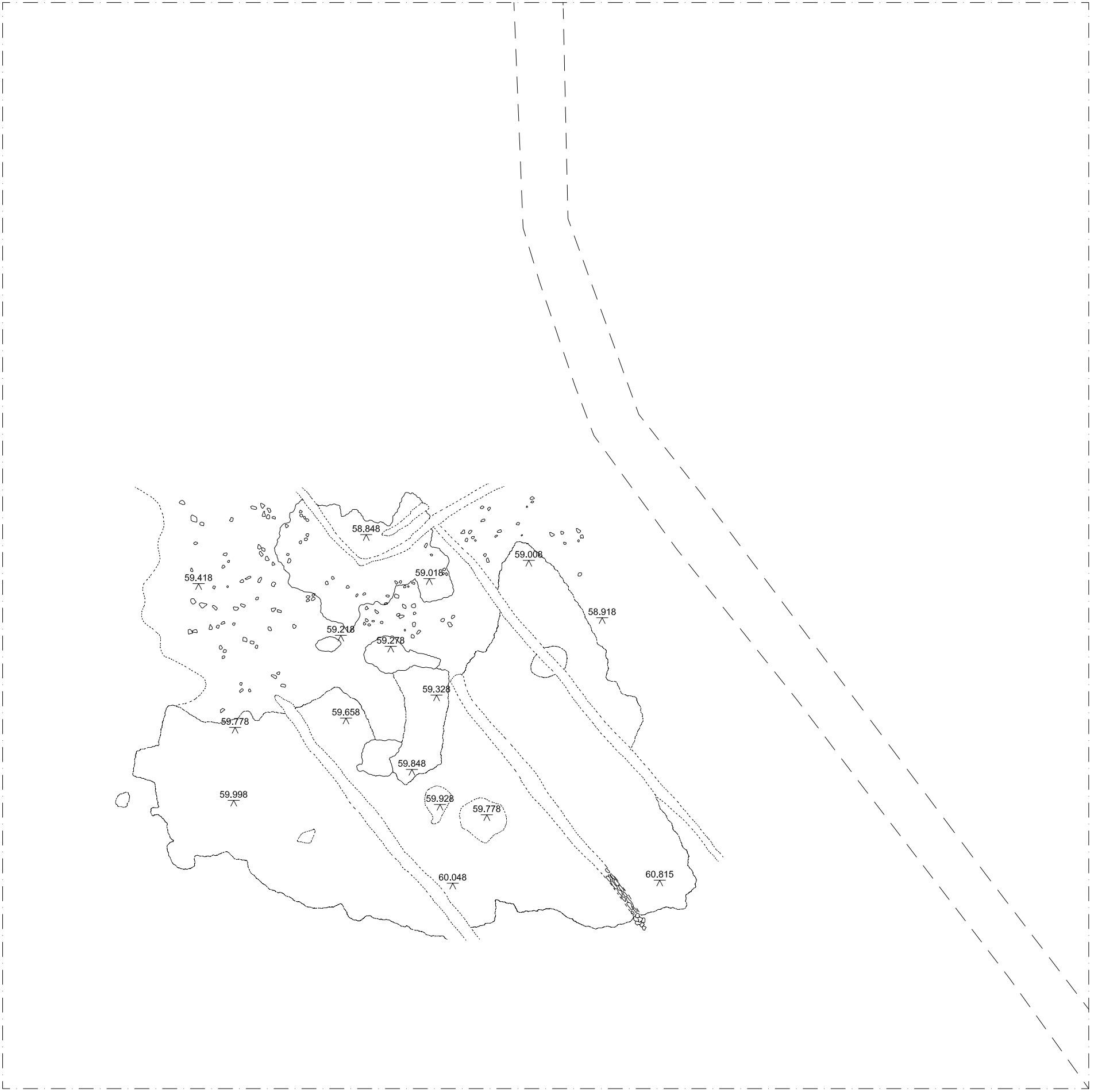
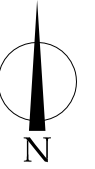
Date
May 10


Scale
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Drawing No.
Figure 4

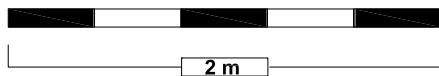
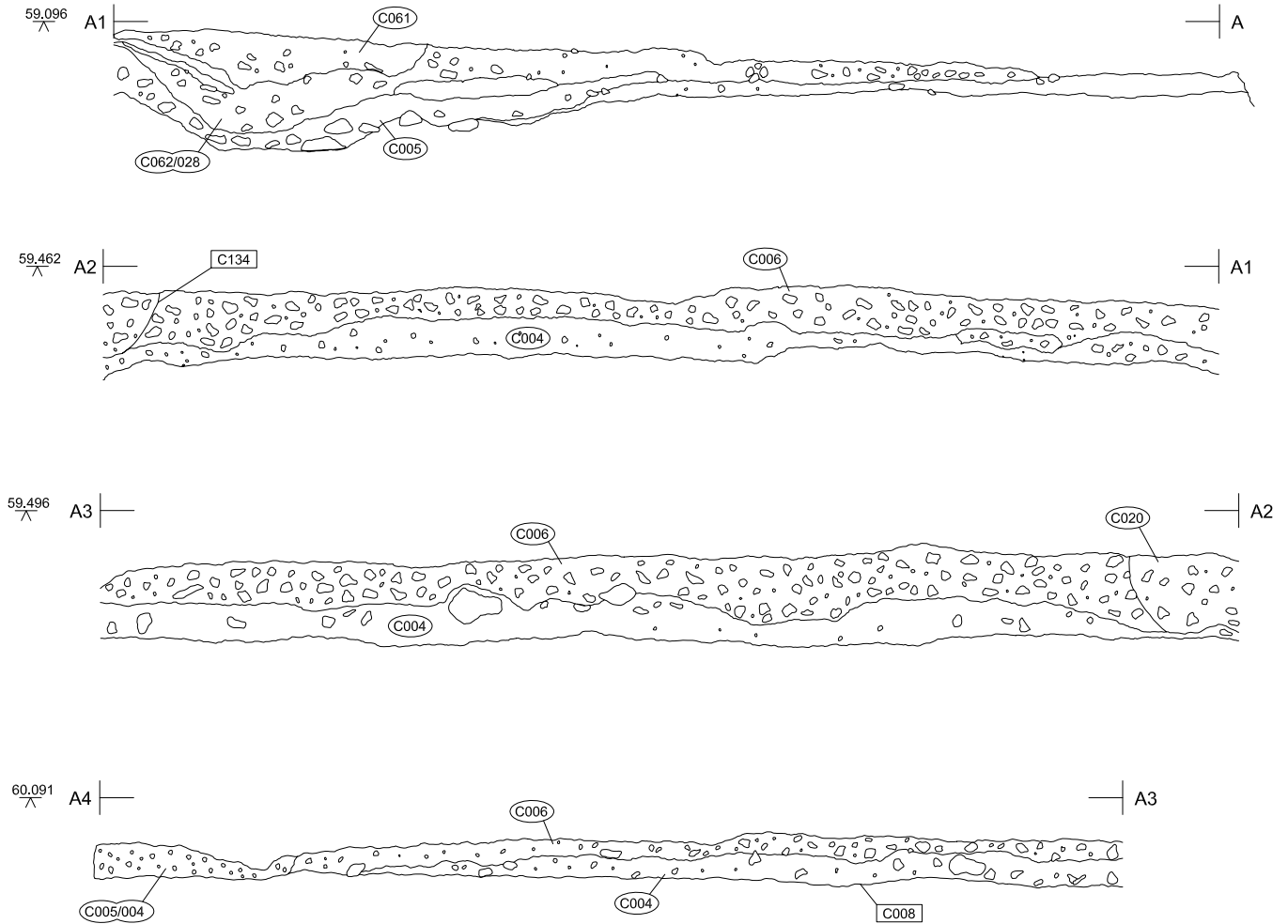



Title RMP map showing site location			Notes  Site Extents			 Brehon House Kilkenny Road Castlecomer Co. Kilkenny. Tel: (+353) 056 4440236 Fax: (+353) 056 4440237 Email: vjk@vjk.ie Website: www.vjk.ie Client Kilkenny County Council	
Job No. A032/000 E2516	Drawn by GW	CAD reference 1265-06-400/TERA3	Date May 10	Scale 1:10000	Drawing No. Figure 5	Project N9/N10 Dunkitt to Sheepstown Resolution Contract	

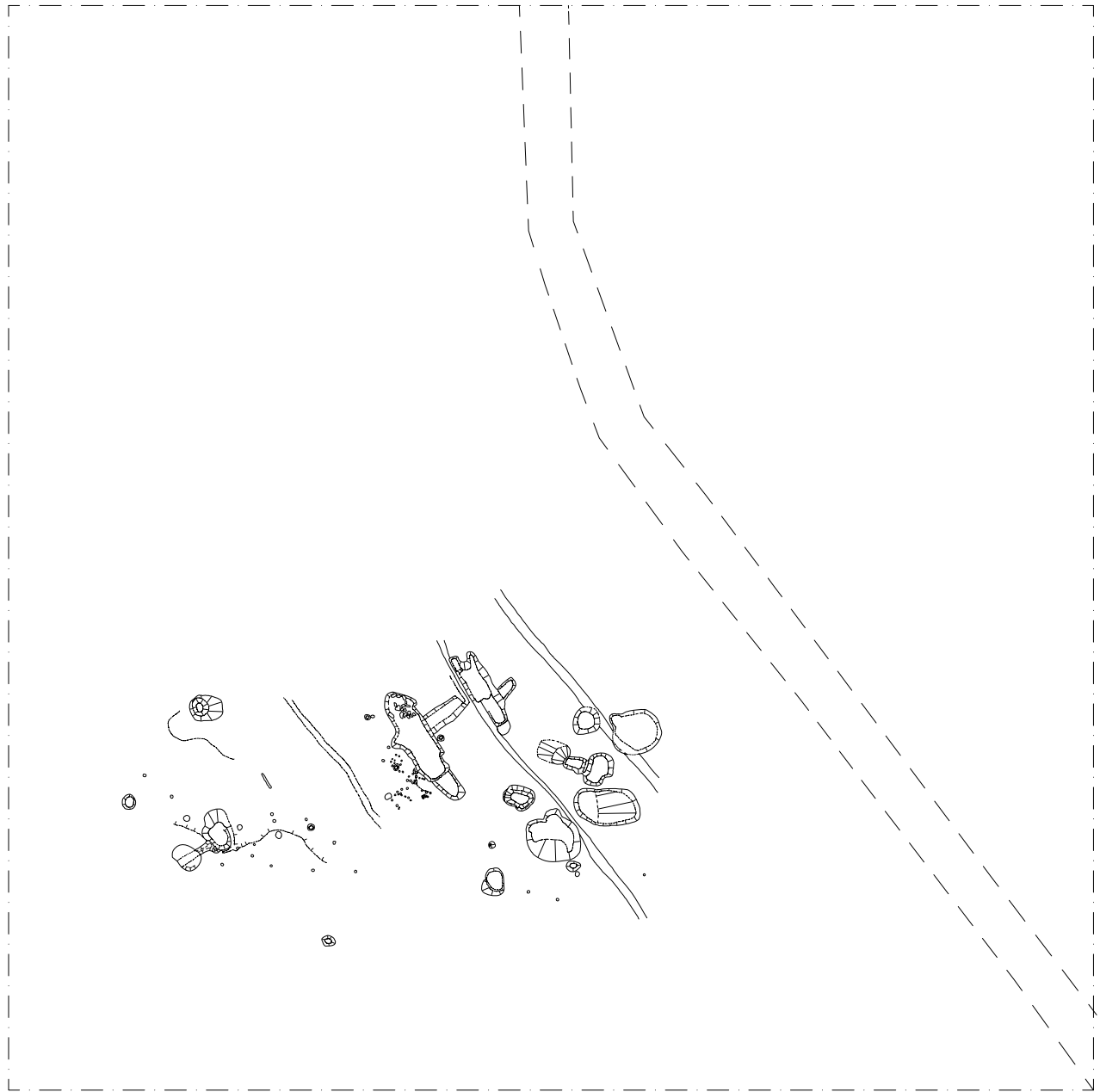



Title Pre-excavation Plan of AR050.			Notes			 <div>Client Kilkenny County Council</div>	<div>Brehon House Kilkenny Road Castlecomer Co. Kilkenny.</div> <div>Tel: (+353) 056 4440236 Fax: (+353) 056 4440237 Email: vjk@vjk.ie Website: www.vjk.ie</div>
Works No. A032/000 E2516	Drawn by BOF	CAD reference 1265-06-400/TERA3	Date May 10	Scale 1:200	Drawing No. Figure 6		

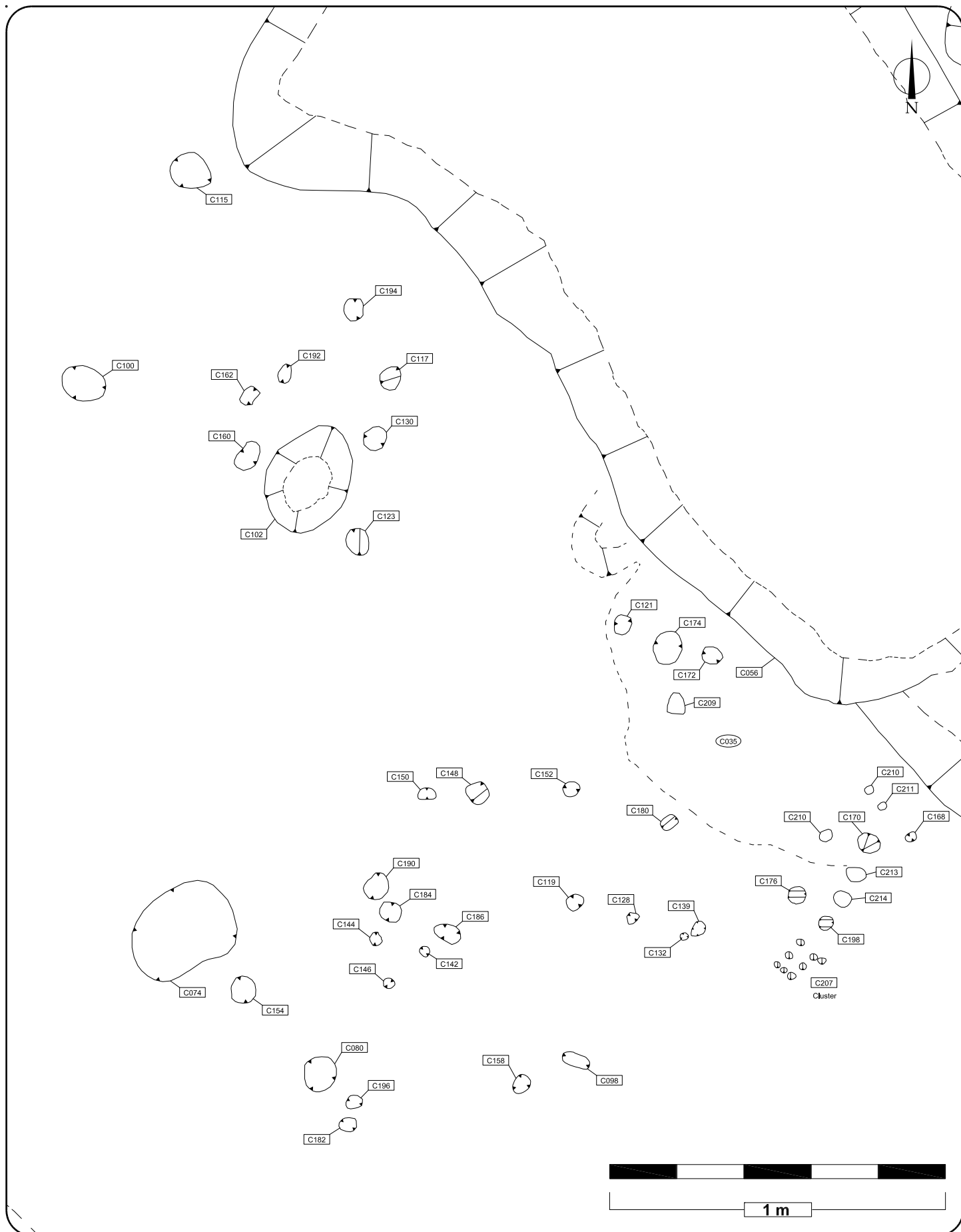
Northeast Facing Section




Title Post-excavation Plan of AR050.			Notes			 <div>Brehon House Kilkenny Road Castlecomer Co. Kilkenny.</div> <div>Tel: (+353) 056 4440236 Fax: (+353) 056 4440237 Email: vjk@vjk.ie Website: www.vjk.ie</div>			
							Client Kilkenny County Council		
Works No. A032/000 E2516	Drawn by B0F	CAD reference 1265-06-400/TERA3					Date May 10	Scale 1:35	Drawing No. Figure 8



Title Post-excavation Plan of AR050 showing full extent of site.			Notes		
Works No. A032/000 E2516			Drawn by B0F	CAD reference 1265-06-400/TERA3	Date May 10
Scale 1:300			Drawing No. Figure 9		
Project N9 / N10 Dunkitt to Sheepstown Resolution Contract			 <div>Brehon House Kilkenny Road Castlecramer Co. Kilkenny.</div> <div>Tel: (+353) 056 4440236 Fax: (+353) 056 4440237 Email: vjk@vjk.ie Website: www.vjk.ie</div> <div>Client Kilkenny County Council</div>		



Title Post-excavation Plan of hearth C035 with stakeholes. AR050 - close up.			Notes			 Client Kilkenny County Council	Brehon House Kilkenny Road Castlecomer Co. Kilkenny. Tel: (+353) 056 4440236 Fax: (+353) 056 4440237 Email: vjk@vjk.ie Website: www.vjk.ie
Works No. A032/000 E2516	Drawn by B0F	CAD reference 1265-06-400/TERA3	Date May 10	Scale 1:15	Drawing No. Figure 11		

Project
N9 / N10 Dunkitt to Sheepstown Resolution Contract

NRA DATABASE CONTENTS SHEET

Database entry	Comment
Excavation number	Ministerial Direction: A032/000 Registration No.: E2516
Townland	Sheepstown
Site name	AR 50
County	Kilkenny
Project reference	N9/N10 Kilcullen to Waterford Road Improvement Scheme: Waterford to Knocktopher – Phase 2
Year of excavation	2006
Grid reference (Easting)	251635E
Grid reference (Northing)	137332N
OD Height (m)	OD
Landscape setting	Near the base of the eastern slope of a hill approx 1.5 km west of the village of Knocktopher
Project Archaeologist	James Eogan
Site Director	J. Lehané
Archaeological consultancy	Valerie J. Keeley Ltd
Identification technique	Test Trenching (MGL 2005)
Site type	Burnt Mound Activity
Site activity	Pyrolithic technology
Dating period	Middle Bronze Age
Radiocarbon dates (2 Sigma Cal BC)	1495 - 1391 cal BC (UBA-14009) 1409 - 1271 cal BC (UBA-14010) 1374 - 1130 cal BC (UBA-14011) 1499 - 1322 cal BC (UBA-14012)
Dendro-chronological dates	N/A
Descriptions	The site revealed a large burnt mound associated with multiple troughs and stakehole features.
Artefacts	A number of lithic artefacts were identified including a flint core and flakes, a quartzite hammerstone and a finely worked chert end scraper
Environmental evidence	Archaeobotanical study of the charcoal revealed that alder, ash, oak, hazel, elm, pomoideae and blackthorn were used as fuel for the burnt mound. Hazelnuts and carbonised cereal grains were also identified on site.
Additional information	N/A
Publication	Excavations Bulletin 2006.

NRA DATABASE CONTENTS SHEET

Database entry	Comment
Excavation number	Ministerial Direction: A032/000 Registration No.: E2516
Townland	Sheepstown
Site name	AR 50
County	Kilkenny
Project reference	N9/N10 Kilcullen to Waterford Road Improvement Scheme: Waterford to Knocktopher – Phase 2
Year of excavation	2006
Grid reference (Easting)	251635E
Grid reference (Northing)	137332N
OD Height (m)	OD
Landscape setting	Near the base of the eastern slope of a hill approx 1.5 km west of the village of Knocktopher
Project Archaeologist	James Eogan
Site Director	J. Lehane
Archaeological consultancy	Valerie J. Keeley Ltd
Identification technique	Test Trenching (MGL 2005)
Site type	Burnt Mound Activity
Site activity	Pyrolithic technology
Dating period	Early Iron Age
Radiocarbon dates (2 Sigma Cal BC)	361 – 116 cal BC (UBA-14013) 381 – 168 cal BC (UBA-14014)
Dendro-chronological dates	N/A
Descriptions	The site revealed a large burnt mound associated with multiple troughs and stakehole features.
Artefacts	A number of lithic artefacts were identified including a flint core and flakes, a quartzite hammerstone and a finely worked chert end scraper
Environmental evidence	Archaeobotanical study of the charcoal revealed that alder, ash, oak, hazel, elm, pomoideae and blackthorn were used as fuel for the burnt mound. Hazelnuts and carbonised cereal grains were also identified on site.
Additional information	N/A
Publication	Excavations Bulletin 2006.