N7 Nenagh to Limerick High Quality Dual Carriageway
Archaeological Resolution Project
E3530, Annaholty Site 8, Co. Tipperary

Final Archaeological Excavation Report

for

Limerick County Council

Kate Taylor and Nora Bermingham
TVAS Ireland Ltd

Job J06/15

NGR 168385 163535
Chainage 6780-6860

30th June 2013

Summary

Scheme name: N7 Nenagh to Limerick High Quality Dual Carriageway

Scheme number: A026/000

Site name: E3530, Annaholty Site 8, Co. Tipperary

Scheme sub number: N/A

Record number: E3530 & R70

Townland: Annaholty

Parish: Kilcomenty

Barony: Owney and Arra

County: Tipperary (NR)

NGR: 168385 163535

OS 6" Sheet No: Co. Tipperary (NR) Sheet 31

Chainage: 6780-6860

Client: Limerick County Council, Mid West National Road Design Office, Lissanalta House, Dooradoyle Road, Dooradoyle, Co. Limerick

Naturally occurring geology: Peat and sand deposits

TVAS Ireland Job No: J06/15

Licence Eligible Director: Kate Taylor

Report authors: Kate Taylor and Nora Bermingham

Site activity: Excavation

Site area: 1130m^2

Date of fieldwork: 25th June – 7th August 2007

Date of report: 30th June 2013

Summary of results: A substantial timber causeway (Road – Class 1 Togher) was discovered during monitoring of construction activity in Annaholty Bog (E3462). The site was pre-dated by two earlier trackway structures. Several wooden artefacts were recovered from within the structure. The causeway is dated by dendrochronology to the middle of the Iron Age (40 BC±9 yrs).

Monuments identified: Wooden causeway (Road – Class 1 Togher), roundwood and brushwood trackway (Road – Class 1 Togher) and small trackway (Road – Class 3 Togher)

Location and reference of archive: The primary records (written, drawn and photographic) are currently held at TVAS Ireland Ltd, Ahish, Ballinruan, Crusheen, Co. Clare.

Report edited/checked by: KT July 2013

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Introduction

This report documents the final results of the archaeological excavation of a wooden causeway (E3530) on the route of the N7 Nenagh to Limerick High Quality Dual Carriageway (HQDC), Annaholty Site 8, Co. Tipperary (NGR 168385 163535) (Fig. 1). The excavation described here forms part of the N7 Nenagh to Limerick HQDC Archaeological Resolution Contract.

A preliminary report on the excavation was produced in December 2010 (Taylor 2010).

The National Monuments Act 1930 (as amended) provides the legislative framework within which archaeological excavation can take place and the following government publications set out many of the procedures relating to planning/development and archaeology:

Framework and Principles for the Protection of the Archaeological Heritage (DAHGI 1999a)

Policy and Guidelines on Archaeological Excavation (DAHGI 1999b)

Code of Practice between the National Roads Authority and the Minister for Arts, Heritage, Gaeltacht and the Islands (NRA/MAHGI 2001)

The archaeological work was carried out following Ministerial Direction given under the National Monuments (Amendment) Act 2004.

Project background

The excavation was carried out on the route of the new N7 Nenagh to Limerick HQDC. The scheme starts at the existing Newport Junction in the townlands of Carrowkeel and Mountshannon, runs north-eastwards towards Nenagh (Carrigatogher) and continues to Ballintotty at the end of the Nenagh Bypass, which will be widened. The total length of the route is 35.7 km.

The archaeological work included assessment of sites previously recognised and prospection for sites without surface expression by means of mechanical test trenching. A number of archaeological sites were confirmed or recognised during this testing. As preservation *in situ* was not a reasonable option, the resolution strategy for these sites was preservation by record, i.e. full archaeological excavation.

The archaeological fieldwork and post-excavation work were funded by Limerick County Council through the National Roads Authority.

Location, topography and geology

Archaeological site E3530 was located at NGR 168385 163535 in Annaholty townland, parish of Kilcomenty, barony of Owney and Arra, Co. Tipperary (Figs 1 and 2).

The route of the new Nenagh to Limerick HQDC traverses a gently undulating landscape of lowland pasture broken only by a large area of peat basin that straddles the border between Counties Limerick

and Tipperary. The region is overlooked by the Silvermines Mountains to the east and the Arra Mountains to the north and west.

Annaholty Site 8 (E3530) was located in an area of fairly level raised bog, between two small sand and gravel islands within the peat. Toreheen Island is a large island that protrudes through the peat on the northern side of Annaholty Bog. The site lay immediately to the south-west tip of the island at approximately 45 m above Ordnance Datum (OD).

Archaeological and historical background

As part of the Environmental Impact Statement (EIS) for this road project, an Architectural, Archaeological and Cultural Heritage Report was commissioned (MGL 2003). This statement of archaeology and built/cultural heritage was based on a desktop study of published and unpublished documentary and cartographic sources, supported by a field inspection and aerial inspection of the proposed route. Information here is extracted from that report.

The Slieve Felim region was evidently an attractive choice for human settlement in the past. This fact is demonstrated by the monuments located on the lower slopes of the Arra and Silvermines-Keeper mountain ranges. Monuments and artefacts are also known from the low-lying areas, including marginal areas such as bogs. These monuments range in date from prehistoric to early medieval times. It was with this view in mind that Annaholty Bog was classified as an area with archaeological potential (ID No. 11). This potential derives not only from the proven assumption that marginal landscapes such as wetlands were attractive to human settlers, but also derives from the preservative nature of wetland environments, particularly in relation to organic artefacts.

Annaholty Bog is noteworthy for the discovery of a timber trackway or togher in Annaholty townland in 1950 (TN031:090). The bog is indicated on the Down Survey map, dated circa 1656, as ‘The Red Bog in Common’, with ‘A Causy way’ through its narrowest crossing, roughly following the line of the present N7 (presumed to overlie the recorded monument TN031:090). Evidence of reclamation of the bog margin is evident between the First (1841 Limerick and 1843 Tipperary) (Fig. 3) and 1938 revision Ordnance Survey (OS) 6" maps. A scrub covered dry-island in the bog is indicated in Annaholty on the First and revised OS maps for Tipperary. The island is named ‘Toreheen Island’ on both editions. Toreheen Island is considered to be significant as it is possible that the island acted as a focal point of archaeological activity in the past.

According to local twentieth century tradition the bog was known as ‘The Moving Bog’ (Tuohy 1997). The name derives from 1880 when uncut bog flowed forward as a result of the internal build up of water, burying existing cutaway bog. A report from the summer of 1924, one of the wettest on record, also claims that the bog flowed for a second time. On settling, harvesting of the turf would have commenced once more to produce the undulating vegetation and/or scrub covered cutaway bog that presently defines the bog.

The ancient association of Annaholty with wetland is preserved in the townland name which translates as *‘Eanach Abhlta’*, *Eanach* meaning ‘marsh’ or ‘fenland’ and *Abhlta* containing abh for ‘river’.

A number of sites are recorded for Annaholty townland in the Record of Monuments and Places. Already mentioned above is TN031:090 (togher) which was discovered and excavated during resurfacing of the Limerick-Dublin road in 1950 and is located approximately 1 km north-west of E3530. The togher is described as consisting of ‘whole trees or branches, 6 in to 1 ft (0.15-0.30 m) in diameter, laid side by side. The length of each unit varied from about 5 to 7 ft (1.50-2.10 m). The ends showed evidence of having been half cut with an axe-like instrument and then broken by bending. In some cases the ends were roughly pointed. In most instances the bark had been stripped or rotted away, but traces still adhered to a few of the smaller-diameter units. The timbers were soft and

waterlogged when removed and bore no discernible marks of wheels. A number of other small pieces of timber were removed including wedges and pegs…' (Hanrahan 1950).

TN031:049 (children's burial ground) and TN031:050 (rectangular enclosure) are located approximately 1.6 km north-east of E3530. Annaholty House is located approximately 1.3 km to the north-east.

The Topographic Files of the National Museum of Ireland contains records of finds from Annaholty townland. They include fragments of two stone axeheads (1944:257 and 258), a stone spearhead (1943:133), the blade of a bronze spearhead (1947:228) and a leather shoe (1941:1042). All of these finds were discovered in the course of turf cutting. The find spot of the bronze spearhead was recorded as Tooreen, thought to be Toreheen Island. The find spots of the other artefacts are unknown.

Property 13 (ID No. 10) is located approximately 1.5 km south-west of E3530 in Gardenhill townland. The property is an abandoned cottage that is not marked on either the 1844 or 1938 edition OS maps and was interpreted as a mid to later 20th century building.

Property 14 (ID No.12) is located north-east of E3530. This building consists of a 20th century dwelling which is not depicted on the revised 1938 edition OS map. Properties 15 and 16 (ID No.13) are also located north-east of the site. These properties do appear on the revised 1938 edition OS map but not on the 1843 edition OS map, and were interpreted as early 20th century in origin (O'Brien and Quinn 2006).

A detailed pre-construction archaeological assessment of Drominboy, Cappadine and Annaholty Bogs (Carter et al. 2006 and Timpany 2006) was undertaken examining borehole data and considered the potential of the wetland environment, highlighting particular areas such as gravel islands at Toreheen (Annaholty - chainage 6800-7200) as having high potential.

Archaeological test trenching by means of mechanically excavated centre-line and offset trenching along the route of the road project was undertaken by Aegis Archaeology Ltd and Judith Carroll and Company Ltd in early 2006. Areas of potential identified in the EIS were tested more intensively where possible and at this time the watercourses and townland boundaries were also examined. Further testing was undertaken by Headland Archaeology Ltd and TVAS (Ireland) Ltd in early 2007. This further testing was targeted on previous inaccessible areas i.e. under power lines etc. The results of the testing are not discussed except where archaeological deposits were encountered. Because of the depth of peat it was not possible to dig test trenches in most of Annaholty Bog and instead construction work was subject to archaeological monitoring.

One site was excavated by Headland Archaeology Ltd within 1 km of site E3530. Annaholty Site 7 (E2325) consisted of a *fulacht fia* with a trough. The burnt stone generating activity was dated to the Late Bronze Age and was cut by a 13th century pit (R O'Brien pers. comm.).

Earlier archaeological investigations

Site E3530 was identified during the monitoring of construction works in Annaholty Bog under licence number E3462 (McCooey et al. 2010). Peat was excavated by a large tracked machine and removed from site, to be replaced by stone to form a solid base for the construction of the new carriageway. This activity was monitored by an archaeologist.

In the particular location of the site (Ch 6825), machinery began operating without the knowledge of the monitoring archaeologists. A small road that traversed the bog was removed and the peat beneath excavated to the depth of the underlying mineral substrate to facilitate the deposition of a solid layer of stone. This is referred to below as haul road 2. In addition, a narrow trench was excavated perpendicular to haul road 2. These works resulted in the partial destruction of the causeway at this

time. The timber causeway was observed within the narrow trench and in section in haul road 2. The causeway appeared to be 3-4 m wide and constructed of two layers of large horizontal planks with occasional small vertical stakes or pegs.

An archaeological exclusion zone (Ch 6780-6860) was established around the archaeological deposits. The area was been fenced to protect it from surrounding construction works. Following the submission of a method statement the site was excavated under Ministerial Directions. Other archaeological deposits and artefacts revealed during monitoring of construction works were a number of pieces of worked wood, some of which were dated to the Iron Age, and a medieval leather shoe (McCooey et al. 2010).

Excavation Aims and Methodology

The aims of the excavation were to:

1) Preserve by record all archaeological deposits and features within the excavation area
2) Produce a high quality report of the findings

The fieldwork took place between 25th June and 7th August 2007 and was directed by Kate Taylor, supervised by Margaret McNamara, Edel Ruttle, Pawel Kolacz, Adrian McCarthy, Aisling Mulcahy and Astrid Nathan and assisted by Rafel Andryskowski, Therese Casey, Borbala Dios, Denise Hennessy, Jacek Kacprzak, Krzysztof Kacprzak, Mary-Clare Linnane, Fintan McCarthy, Adam Mrozowski, Carles Plana Lorenzo, Kamila Sliwka, Mara Tesorieri and Monika Widelka.

The excavation area was irregularly shaped, and measured a maximum 72 m by 22 m (1130 m^2). Before the excavation proper began a number of exposed oblique-running sections through the causeway were hand cleaned and recorded. The upper layer of peat overlaying the causeway was removed by a mechanical excavator fitted with a 7-foot (2 m) toothless grading bucket, operated under direct and continuous archaeological supervision, to a level of 0.10–0.20 m above the timbers. Topsoil was stripped above an area of dry ground at the western end of the site. The remaining peat was cleaned from the surface of the timbers by hand. The spoil was visually scanned for artefacts. A metal detector was also available for use to enhance artefact retrieval and spoil was metal detected under licence R70.

Due to the nature of the material excavated special facilities were made available. Timbers, once lifted from the site, were moved to a nearby processing area where they were washed, photographed and recorded. Suitable storage containers and packaging material for delicate and waterlogged objects were also made available.

As per the agreed method statement, large pieces of wood without tool marks (planks in this case) were sampled for species and age identification by sawing off a slice on site. Large pieces with tool marks restricted to one area were cut and the worked part retained for further analysis. The samples were wrapped and stored whilst the remainder was discarded.

A full written, drawn and photographic record was made according to the TVAS (Ireland) Ltd Field Recording Manual (First Edition 2003). The site was tied into the National Grid using a Global Positioning System (GPS) unit. The site was excavated with reference to the NRA ‘Guidelines for the Testing and Mitigation of the Wetland Archaeological Heritage for National Road Schemes’ (NRA 2005).

Excavation results (Figs 4-24, Plates 1-21)

The excavation has revealed evidence of a wooden causeway dated to the Iron Age. This causeway was preceded by a brushwood and roundwood trackway that occupied the same route across the bog between Toreheen Island and the gravel island in the west. The earliest activity within the excavation area was a short trackway situated on the edge of the western gravel island. All features and contexts are listed in Appendix 1.

The archaeological features had been truncated in several places (Figs 4-7). Peat cutting had removed part of the causeway just west of the centre of the excavation area. Two modern drains cut through the site, one in the east (1) and one in the west (2). Ground works associated with the road construction removed the archaeological deposits in several locations (Fig. 4). The scheme haul road truncated the site in the east while a newly dug access route (situated on the line of a modern bog road) bisected the middle of the excavation area presumably removing archaeological deposits on this line. This access route turned south-west and resulted in truncation of the site at its western end. Finally, a machine cut trench was excavated through the site's east end. The archaeological deposits survived in part between these areas of ground disturbance. The causeway and other archaeological deposits were located 0.40-0.80 m below the modern bog surface, and the level of preservation varied along its length. Preservation was variable between archaeological horizons.

The causeway was aligned approximately west-east between two gravel islands within the bog, essentially connecting two areas of dry ground; the largest of which is Toreheen Island. Unfortunately neither original end of the causeway was revealed, both having been destroyed by construction work. It is estimated that the causeway would have been 65-70 m long in order to reach dry ground at both ends. The surviving portion was 55 m long (with sections missing within this length). Excavation revealed three phases of archaeological activity which are described below in chronological sequence.

The environmental context of the archaeological deposits (Figs 8-9, Plates 1-3)

As stated above, the archaeological deposits at Annaholty were located between two areas of high ground formed by gravel islands within an extensive raised bog complex. The physical context for the archaeology is therefore largely peat which both sealed and underlay the archaeological deposits. The site stratigraphy was archaeologically recorded in two sections that ran obliquely to the line of the causeway. These sections resulted from truncation of the site due to modern ground works. Figure 8 shows the two opposing sections at the eastern end of the excavation. The sections were exposed in the machine cut trench and the stratigraphy in each corresponded. The stratigraphy is summarised in Table 1. Figure 9 shows a north-west-facing section through the peat and archaeological deposits in the west. The stratigraphy is summarised in Table 2. This is the more complex of the two sections and includes the bog-dryland margin and mineral substrate. The locations of two peat column samples are marked on Figures 8 and 9. Column 1 (Fig. 8) was subject to pollen analysis and is reported on below. Analysis also included lithostratigraphic and fungal spore analysis and this data has in part superseded the archaeological record in reconstructing the environmental context for the archaeology at Annaholty (Fig. 58). It should be noted however that the existing record provides limited but useful data on environmental change within the bog/mire itself.

Up to 1.0 m deep of peat was visible under the archaeological horizons recorded in the east (Fig. 8) The full depth of peat in this area is unknown. The evidence from the pollen and fungal spores suggests that the lowermost peat deposit represents fen carr peat (pollen zone AB1). Aquatic grasses such as *Phragmites* inhabited the fen and there were probably shallow water pools on the fen surface. Alder initially dominated the fen carr but was then succeeded by acid birch fen before the growth of the raised bog. Marginal or carr woodland may have occupied the margins of the later raised bog in this area.

Increases in *Calluna* heather pollen and a peak in *Sphagnum* moss spores occur within pollen zone AB2 (which lies within contexts 56/57). The pollen and spore record suggest incipient raised bog or

ombrotrophic bog growth. Within zone AB3 an acid bog surface is implied by the increased representation of *Calluna* heather pollen. *Sphagnum* spore representation has reduced suggesting somewhat drier acid conditions than present in AB2. A change to darker or black peat is clearly visible in the peat profile (Plate 2) and in the lithostratigraphy. These changes may be Late Bronze Age in date and most probably represent the fen-bog transition. That the peat here is black suggests highly decomposed peat that accumulated within different and probably drier conditions than previously.

This black band appears to be mire wide, it was identified in the west also but here displays greater internal variation with brighter horizons occurring inclusive in places of natural wood (contexts 63, 64, 65, 66, 67, 68 and 94). In the west there are also a series of shallow black layers in the south-west and lower part of the profile separated by shallow horizons of brighter mineral-rich peat (Plate 3). The stratigraphy here reflects fluctuating hydrological and conditions of preservation near the edge of the gravel island in the west. Here, the ground surface rises gently towards dry land, the peat deposits are shallower and the underlying mineral substrate has an irregular profile. This may be a product of erosion of the slope and loss of sediment deposited downslope within the bog.

Most archaeological deposits at Annaholty occurred within a 0.50-0.70 m thick band up to 0.80 m below the field surface. The archaeological stratigraphy here was complex, with peat, minerogenic and archaeological horizons occurring. Within the pollen and lithostratigraphic record this mixed horizon equates to zone AB4. Here, an acid bog environment is implied and increased *Sphagnum* spore and Fungal Type 18 suggest conditions had become wetter. Trackway construction may represent efforts to withstand increasingly wet conditions. It is unlikely that the raised bog is fully developed at this time as higher *Sphagnum* spore counts may be expected of a truly ombrotrophic (i.e. raised) mire. It is not known if this was the case elsewhere in the wider mire system. It is probable that ombrotrophy was attained earlier north and south of the study area and that the raised bog expanded into the narrow corridor across which trackways were built.

Silt and sand adhered to the archaeological wood located visible as a bright band of mineral-rich peat with wood in section. The inorganic element here was initially thought to represent a foundation layer, imported from the nearby dryland by the builders of the causeway (90/160). The minerogenic deposits appeared to be confined within the limits of the archaeological deposits. It is probable however that the mineral-rich peat resulted from the mixing of peat with silt, sand and sometimes gravel that was eroded into the bog from the nearby upland. The chopping down of trees for trackway construction may have been a contributory factor in the erosion. The pollen record implies increased woodland clearance during this period.

The peat overlying the trackway appears to have accumulated in conditions similar to AB3. Acid bog conditions dominated by *Calluna* heather are suggested in the pollen and fungal spore record. Up to 0.66 m of well-decomposed fibrous peat survived above the archaeological horizon. Wet or very wet mire surface conditions are not suggested although the record is limited to the extent to which bog surface wetness can be inferred.

The uppermost peat was overlain by topsoil or scraw (50) 0.22 m deep. The area had been cutover in recent decades and the depth or composition of the lost peat is unknown. A layer of redeposited natural (83), a modern event, covered in part the western end of the excavation area.

In summary, in the Early Bronze Age this part of Annaholty Bog was occupied by alder fen carr. At some point this was succeeded by acid-rich fen within and around which birch prevailed. The transition from fen to raised bog occurred in the Late Bronze Age. The causeway 90/160 was constructed during a period of increased wetness within an acid bog environment although the record suggests that full ombrotrophy, at least in the sense of mire dominated by *Sphagnum*, may not have been achieved in this part of Annaholty during the period of trackway construction. Review of the gross stratigraphy visible in photographs of the exposed sections suggests that the upper part of the profile comprised raised bog in which cotton grass and heathers were prominent.

Table 1: Stratigraphy of section in east (Fig. 8) with equivalent pollen and lithostratigraphic zone

Pollen/Lithostrat. Zone	Context No.	Description	Thickness (m)	Extent (in section) (m)
n/a	50	Topsoil / scraw	0.20	Site wide
AB5	51, 52	Mid to dark brown peat	0.75	9.10
AB4	53, 54, 55	Mid brown sandy peat	0.30	9.10
AB3	56	Dark brownish black peat	0.30	9.10
AB2	56/57	Dark blackish brown peat		9.10
AB1	57	Dark blackish brown peat	0.05	9.10

Table 2: Stratigraphy of the section in the west (Fig. 9) with equivalent pollen and lithostratigraphic zone. The mineral substrate is glacial and therefore unrelated to the pollen record. The relationship between the minerogenic horizons occupying the lower slope of the gravel island and the pollen record is unknown

Pollen/ Lithostrat. Zone	Context No.	Description	Thickness (m)	Extent (as seen in section) (m)	Comments
n/a	83	Dark grey sand	0.35	2.10	Modern dump
AB5	58	Mid brown peat	0.42-0.66	13.30	Equates to 51
AB4	59, 60, 61, 62, 63	Minerogenic peat	0.30-0.50	2.65	Same as 61
AB3	64, 65,66	Dark to mid brown peat including archaeological and natural wood	0.10-0.20	7.80	
AB2 and/or AB1	67	Black to dark brown peat	0.25	9.80	
AB1 or earlier	68, 69, 71, 73,74, 76, 80, 81, 82, 94	Peat horizons – composition and extent varied	0.47	various	
?	84	Dark grey clay	0.18	4.91	Minerogenic horizon
?	85	Grey sand mixed with wood	0.10	0.30	Minerogenic lens
?	86	Black clay	0.10	1.40	Minerogenic horizon
?	87	Whitish yellow clay	0.10	0.60	Minerogenic lens
?	88	Blue grey clay	0.13	0.55	Minerogenic lens
?	75	Lens of creamy white sand	0.04	0.46	Minerogenic horizon
n/a	77	Mottled black and white sandy silt	0.04-0.10	4.40	Mineral substrate
n/a	72	Whitish grey clayey sand with gravel	0.15	2.50	Mineral substrate
n/a	78	Creamy yellowish grey gravelly sand	0.25	12.23	Mineral substrate
n/a	79	Dark greyish yellow sand	0.08	6.27	Mineral substrate
n/a	89	Cream with pale brown patches clayey gravelly sand	0.50	6.50	Mineral substrate

Phase 1 (Figs 4-5 and 10-11, Plate 4)

Structure 298 (Figs 4-5 and 10-11, Plate 4)

Structure 298 was located on the edge of the western gravel island within peat. The structure consisted of a truncated linear deposit of roundwood, brushwood and some split timber including at least one plank (142 individual pieces in total). The overall alignment of the structure was approximately north-south and it extended for 9.1 m in length and 5.2 m in width. The structure occupied an elevated height of between 41.44 m OD and 41.96 m OD (averaging 41.55 m OD). Roundwoods were typically laid transversely, although not always perpendicular to the line of the site. The roundwoods were unevenly dispersed along the length of the structure. Nonetheless it was possible to discern a formal albeit somewhat casual ground plan. Brushwood was more common in the south and had been laid transversely and longitudinally and in small bunches.

The trackway was constructed using wood of hazel and oak, with hazel (n. 66) the more common (oak = n. 49). Minor taxa (<10) included willow, Pomoideae, birch, cherry-type and rowan/whitebeam. The wood was more than likely gathered locally with most probably gathered specifically for use in the construction of the site. A small number of poorly preserved split timbers and at least one burnt piece may indicate the presence of re-used timbers. Evidence for wood working was evident in the form of split wood and worked ends. Split wood and timber included half split, radial and tangentially split elements. Two small pieces of split wood represent wood working waste. Such waste may have been produced nearby and rather than discarded was incorporated into the body of the trackway. Chisel, pencil and wedge pointed worked ends occurred with most ends retaining chisel points. The points reflect chopping and/or cutting of branches for use in trackway construction. The points retained facets, marks left by the axe used to cut the branch, which were flat suggesting a flat blade was used.

One chisel pointed piece of brushwood (298:74) retained a spiralling indentation on its shaft. This may have been made by a creeper, such as honeysuckle, growing naturally around the branch. Examples where honeysuckle was trained to grow in this manner are known from elsewhere in Ireland (Moore 2008a, 8-9) and the inclusion of a natural equivalent within the trackway may hold some cultural significance. A hazel object, of unspecified function had been incorporated into the structure. The find (298:133) was a forked branch that had been shaped and rounded at one end with the tips of the fork worn (Plate 22).

This type of structure, a trackway, equates to a Road-Class 3 Togher defined by the Archaeological Survey of Ireland as follows: A short stretch of peatland trackway, constructed of wood, up to 15 m in length with a discernible orientation. It may not be possible to trace them beyond a single sighting. These have evidence of deliberate structure and are variously interpreted as laid down to cross a small area of bog or simply to access a bog. The trackway was not dated but an overlying site (297) returned an early first century BC date or later. Up to 0.20 m of peat separated structures 298 and 297 further demonstrating that the sites are not contemporary and are therefore unrelated.

Phase 2 (Figs 4-9 and 12-17, Plates 5-8)

The second phase of human activity at Annaholty appears to be represented by three wooden horizons or deposits. Deposit 297 was located in the western end of the excavation area while deposit 255 was situated in the east. Between these deposits was a larger and more extensive horizon of wood, 170 which also overlay deposit 297. These three deposits may represent different parts of a single wooden horizon or structure, possibly a trackway.

Deposit 297(Figs 4-5, 9, 12 and 17, Plate 5)

Deposit 297 was located at the west end of the excavation area, 0.20 m above trackway 298. This deposit consisted of 60 pieces of brushwood aligned roughly north-south and extending over an area 4.40 m (N-S) by 4.00 m (E-W) (Plate 5). The wood occupied an elevation of approximately 41.63 m

OD. Deposit 297 had been truncated at the north-west side by a machine cut (Fig. 12) and the relationship between this deposit and overlying archaeological horizons was at times unclear. The wooden horizon 170 overlay 297 and in this area, in section, both appear to have lain within deposit 62, mineral-rich peat up to 0.27 m deep. The latter represents mixed peat, sand and silt resulting from minerogenic inundation of the area. An oak timber from deposit 297 yielded a best estimated felling date of 84BC±9 years or later (Q11045). The seemingly casual and somewhat dispersed nature of the deposit is reminiscent of deposit 255.

Wood taxa represented within deposit 297 included oak, birch, hazel, rowan, ash, willow and Pomoideae. Oak (n. 39) dominated the assemblage with birch (n. 11) the next best represented taxon. The remaining taxa occurred in small amounts (≤ 4). The woodworking from this deposit was simple and mainly represented by small pieces of split brushwood and/or light roundwoods. The majority of elements were poorly preserved with only six pieces present recorded as "preservation good". Toolmarks occurred on three worked ends retrieved but otherwise were not present. The toolmarks retained flat facets.

Deposit 255 (Figs 4-5, 9, 13-14 and 17, Plates 6-7)

Deposit 255 occupied the edge of Toreheen Island at the east end of the excavation area (Figs 13-14, Plate 6) and comprised a series of roundwoods, brushwood, timber and split wood with 203 individual elements recorded. Aligned north-north-west by south-south-east the deposit measured 8.40 m (N-S) by 4.40 m (E-W) and up to 0.45 m thick and occupied an elevated height of 41.66 m OD to 42.02 m OD (averaging 41.80 m OD). The deposit sat within peat, had been truncated in the south-east by a machine cut and may have extended beyond the limit of excavation in the east, into the area truncated by the construction haul road. In plan the deposit curved slightly as if rounding the edge of Toreheen Island. An oak timber from deposit 255 yielded a best estimated felling date of 95BC±9 years or later (Q11043M). This timber, a plank, retained a joint (half-lap with socket) suggesting that it represents re-worked if not re-used element.

A possible cart fragment (find 255:1) made from alder and a dowelled willow roundwood (find 255:2) had been incorporated into the trackway (Plate 7). Both pieces represent parts of larger and perhaps complex objects. Their inclusion here may represent re-use of old, broken objects or represent deliberate, perhaps ritual deposits.

Oak was the dominant taxon recorded within deposit 255 (n. 81) with birch (n. 57) next followed by hazel (n. 33). Minor taxa included alder, ash, Pomoideae, rowan, willow, hawthorn, holly and wild cherry. This was the only occurrence of holly from throughout the excavation at Annaholty. Wood working was represented by worked ends, wood working waste and timber and split wood. Toolmarks were largely, but not wholly, restricted to worked ends rather than split elements. The majority of worked ends had been simply cut, using flat blade(s) with the number of facets ranging from one to eight depending on the type of point made. A range of converted timbers were present that included quarter, half, radial, tangential and irregularly split timbers. Five, four tangential and one radial split, can be regarded as planks or parts of planks. The majority of the split wood includes elements less than half a metre long and which were for the most part poorly preserved. The small number of woodworking waste pieces retrieved demonstrates that waste material was utilised as filler within the site (n. = 3) and might indicate wood was worked nearby. A single timber yielded evidence for joinery (255:5) suggesting re-used elements were present within the deposit.

Horizon 170 (Figs 4-5, 9 and 15-17, Plate 8)

The wood horizon 170 survived within both halves of the excavation area and had been truncated by the haul road and modern drains. In the western portion of the excavation area it survived for a length of 14.50 m and was up to 6.00 m wide. In the east, the horizon survived over 17 m long and 6 m wide. The scale and composition of 170 suggests it represents a trackway positioned between the gravel islands at Annaholty. The structure occupied an elevation of 41.52 m OD to 42.06 m OD (average

41.80 m OD) which is in keeping with the OD range for deposits 255 and 297. Deposit 297 underlay 170 and it is probable that the latter represents the lowermost part of a trackway formed by 170, 255 and 297 (see below). Little peat separated the two horizons which were primarily distinguished on the basis of the quantity of wood present which reduced with depth.

Horizon 170 comprised approximately 190 pieces of roundwood, brushwood and split wood and timber. The majority had been laid transversely, i.e. perpendicular to the overall line of the site. The east end was the least well preserved with fewer elements and large gaps present between transverses. The concentration of wood visible in the middle and west provides a better picture of the probable composition of the horizon. At the western end of the excavation two overlying deposits of roundwood and brushwood (281 and 295; Fig. 15) were situated immediately to the south and slightly below 170. It is probable that both can be associated with 170. Establishing the nature of the association was somewhat hindered by modern truncation of the deposits in this location. Trackway 170 lay within mineral rich peat and in places sand and silt adhered directly to the wooden elements suggesting that the wood was exposed when the sand and silt was deposited.

The range of wood taxa present is in keeping with taxa identified in deposits 255 and 297. Oak was the wood of choice (n. 103) followed by birch (n. 50) with small amounts of alder, hazel, Pomoideae, rowan, wild cherry, willow and ash occurring. The majority of surviving elements within 170 were unworked roundwoods and brushwood. Timbers displaying the same variety of conversions evident in deposits 295 and 297 were recorded; as was a similar range of split wood and worked ends. Eight timbers, mostly fragments or pieces of what were once larger elements, with inner tangential conversions can regarded as planks or parts of planks. Overall, however planks were an underused component within the trackway. Toolmarks were almost entirely restricted to worked ends with few surviving in good condition. Facet character suggests a flat bladed axe was used in producing these points.

Trackway 170/255/297(Figs 4-7 and 17)

It is likely that these horizons (170, 255 and 297) are parts of the same event or horizon. This is suggested firstly by their shared composition, scale and alignment. Each deposit comprises mainly transversely laid elements, mostly roundwood and brushwood with small amounts of timber present in each location. At each location, wood-working waste including split wood was incorporated into the body of the track. Although parts of the trackway reached up to 8.40 m wide, the average width was 4.70 m which provided a sizeable walking surface allowing for groups of people to use the trackway at any one time. Where overall preservation was generally good, individual elements are closely spaced and this would have provided a stable walking surface relative to the original bog surface. A straight line can be drawn between the three locations described above demonstrating another shared feature, i.e. they occupy the same routeway through the bog at Annaholty. The range of wood taxa and the proportions in which they occur further supports the suggestion that a single trackway is represented by 170, 255 and 297. At each location oak was the favoured wood species followed by birch. The same range of minor taxa occurred across the site with minor differences in species representation and distribution. Around twenty oak elements from 297 and 170 suggest the wood was felled in the late summer or early autumn supporting the suggestion that these deposits represent parts of the same event or structure. Two hazel heels, which may indicate that hazel was coppiced and possibly within managed woodland, were retrieved from 170 and 255. The wood may have originated from the same location and/or source.

Dendrochronological dates from 255 and 297 suggest the host trees date to the early first century BC or later. The suggested dates are potentially somewhat earlier than those returned for timbers from the oak plank trackway (90) (see below) built above 170. One sample from the lower trackway, (Q11043M, 225:5) is derived from a potentially re-used timber.

Phase 3: The causeway (Figs 4-7, 15-16 and 18-24, Plates 9-21)

Causeway substructure (160) (Figs 4-7, 15-16 and 18-19, Plates 9-10)

The substructure (160) of the causeway comprised longitudinally laid runners which served as supports for the overlying oak timber transverses (Figs 15-16 and 18-19). The runners were laid end to end and in parallel rows. In the east, three rows of runners were present (Plate 9). The outer runners were around 4.30 m apart with an intervening runner located just off centre. Smaller roundwoods provided additional longitudinal support in this area. In the centre of the excavation runners do not appear to have been greatly used. In the west, however, a series of runners were deposited (Plate 10) with the outer examples lying 5.0 m apart with internal elements deposited at regular intervals of around 1.30 m. In addition to runners, the substructure also included deposits of brushwood and roundwood with up to 57 individual elements recorded. These were typically but not always represented by groups and/or individual short longitudinal elements running parallel and/or close to the runners. The substructure (160) was within mineral-rich peat and sand and silt commonly adhered to the wood.

The substructure mainly comprised unworked roundwoods, roundwoods and brushwood retaining worked ends and a small number of split timbers of relatively small scale. The roundwoods ranged from less than 0.10 m to nearly 6 m in length and in diameter between 0.05 m and 0.20 m. The primary wood taxa used in the construction of the substructure were oak and birch with small amounts of hazel, rowan, ash, alder, Pomoideae also occurring.

Towards the centre of the excavation area, where the access road bisected the trackway, was a small deposit (97) of brushwood, many with worked ends, and wood working waste. This deposit occurred in an area devoid of runners and that had been truncated by the access road (Figs 18 and 21, Plate 11). A mix of wood taxa was present with alder, oak, willow, birch, hazel and rowan occurring in small amounts. Several artefacts were retrieved from within deposit 97. As this area was truncated it is not known if other artefacts had been lost or destroyed. The precise nature of the peat stratigraphy in this location was not recorded but may well have represented the location of a softer, possible wetter area. The artefacts and associated wood deposits from 97 may represent a pragmatic response to a construction problem and/or represent ritual deposition at this location. The recovered items include broken pieces from two tubs and pieces of what may be three other different vessels (Finds 97:1, 97:2, 97:18, 97:19 and 97:20). Deposit 97 was situated about 20 m from the surviving east end of the causeway. The causeway is estimated to have been between 65 m and 70 m long originally. Nonetheless, deposit 97 did not occupy a central position along the length of the causeway but was positioned east of centre.

A further two seemingly discreet and overlying deposits of wood were uncovered around 12 m from the east end of the causeway. The larger deposit, 262 extended for over 7.0 m long and 3.50 m wide and overlay a small bundle of split wooden elements forming 282 (Plates 12 and 13). The latter mainly comprised brushwood and roundwoods with worked ends with fragments of wood working waste occurring. Birch, hazel, oak and alder elements were present. These deposits underlay the causeway substructure 160. It is unclear if the deposits relate to the earlier trackway 170/255/297 or the construction of the causeway. Trackway 170/255/297 is underrepresented if not absent from this location. During the course of the excavation deposit 262 was jumbled and chaotic in comparison with 170 and appeared as if it had been informally deposited in order to fill a depression and/or fortify a softer area of ground. A single artefact, a carved perforated ash shaft that may be a flail handle (find 262:3) was recovered from within 262. The presence of the artefact could be a mundane occurrence or may have other, perhaps ritual connotations.

Superstructure (90)

The causeway superstructure (90) consisted of 278 individual wooden elements, the majority of which had been laid transversely (Figs 20-22, Plates 14-19). The causeway was least well preserved in the

west and the structure appeared less regular here. In contrast, the eastern end of the causeway suggests a level solid structure. The superstructure occupied an elevation between 41.04 m OD and 42.16 m OD (41.91 m OD on average) and was mainly composed of oak planks and other timbers. The longest planks reached up to 7.90 m long and gave the site its maximum overall width. The timbers were laid immediately adjacent to one another with gaps between planks filled by pieces of brushwood and roundwood. In places, planks were further supported by brushwood/roundwoods in order to achieve a level walking surface (e.g. deposit 167 under plank 90:104). White sand occurred frequently in and around the timbers (Plate 18). Planks were sometimes secured using pegs with pegs occupying mortises (sockets) in the ends of some planks (Plate 19) and others positioned at what would have been the ends of the planks. Rectangular-shaped but decayed notches at the ends of some planks suggest that they may once have held mortises and possibly pegs. Stakes were also placed between planks in order to secure and/or stabilise the planks in the bog. In one location some degraded longitudinal roundwoods lay (95) on top of the causeway timbers (Figs 21-22, Plate 20). They lay perpendicular to the causeway and may represent displaced elements or possible repair or refurbishment at this location. A small fire appears to have occurred within the confines of the causeway, possibly during its construction, as a small deposit of charcoal-rich peat (355) was recorded below plank 90:59.

The superstructural timbers were typically reasonably solid pieces of wood. Their upper surfaces however displayed a strong degree of wear. Individual timbers had rutted and broken surfaces with strips of wood missing either through wear or breakage in antiquity (Plate 17). The condition of the timbers suggests the causeway was subject to heavy wear presumably as result of frequent and repeated use of the routeway. This contrasts with Corlea 1, Co. Longford where the upper surface of the planks were at times pristine and clearly not subject to heavy or frequent use (Raftery 1996).

Oak was by far the dominant taxon present but other wood taxa namely birch, rowan, alder, willow, ash, Pomoideae and hazel also occurred, albeit typically in relation to smaller structural elements. The timber used to construct the causeway's walking surface displays a diverse range of conversions. The most common type of conversion were tangentially split timbers, mainly planks. Irregularly split timbers were the next most common type of converted timber. This is in some way explained by the poor preservation and relatively small size of individual elements within this category. Quarter split, half split and radially split timbers also occurred with planks represented within these categories. Rectangular and circular notches or mortises had been cut into the ends of some planks. One timber (90:114) retained two opposed semi-circular notches in one end while another (90:238) retained a possible bare-faced tenon on one end. The end of one roundwood (90:58) retained a notch which was hourglass in profile, suggesting it had been cut from opposite directions (Plate 21). These features suggest these timbers represent re-used timbers originally produced for use elsewhere.

Uprights and pegs

There were 103 uprights, i.e. stakes and pegs, recorded *in situ* in vertical or angled positions (Table 3). Occasionally the uprights were secured with small wooden wedges. Those uprights inserted in sockets in the ends of the planks served to peg the causeway timbers in position. Most uprights were located parallel to the line of the causeway at the ends of the timbers. The uprights represent superstructural building elements associated with the laying of the transverse planks and timbers. The possibility that some may have been added later when the causeway was in use cannot be discounted. In general however, there is little evidence that the causeway was subject to repair or refurbishment. This issue is returned to in the overall discussion below.

The uprights were typically represented by light brushwood in the round with wood working confined to the tips. Pencil pointed ends were the most common with wedge and chisel points also occurring. Toolmarks reviewed appear to have been made using a sharp flat bladed implement such as an axe. The diameters of the uprights ranged from 21 mm to 78 mm with the average diameter 40 mm. Hazel and oak were the most common wood taxa represented (n. 45 and n. 21 respectively). Other taxa

present included alder, ash, birch, Pomoideae, rowan, *Sorbus* sp., wild cherry and willow and these occurred in small amounts with between two and nine pieces of each occurring.

Table 3: Description of uprights

Find No.	Deposit	Description	Diameter (mm)	Species	Location
91:1	91	Post with pencil point	36	*Quercus* sp. (oak)	Adjacent to 90:66
92:1	92	Post with pencil point	62	*Corylus avellana* (hazel)	Recorded in section
93:1	93	Stake with wedge point	36	*Corylus avellana* (hazel)	Northern edge of trackway
96:1	96	Post with pencil point	60	*Sorbus* sp. (sorbus)	In 90:10
98:1	98	Stake with pencil point	-	*Corylus avellana* (hazel)	Southern edge of causeway
99:1	99	Post with pencil point	63	*Sorbus* sp. (rowan)	Between 90:34 & 90:37
150:1	150	Post with pencil point	32	Pomoideae spp. (pomaceous)	Between 90:34 & 90:35
151:1	151	Stake with wedge point	35	Pomoideae spp. (pomaceous)	Between 90:34 & 90:35
152:1	152	Stake with wedge point	36	*Corylus avellana* (hazel)	Northern edge of trackway
153:1	153	Post with pencil point	55	*Corylus avellana* (hazel)	Northern edge of trackway
154:1	154	Post with pencil point	50	*Corylus avellana* (hazel)	Adjacent to 90:89
154:2	154	Stake with pencil point	44	*Corylus avellana* (hazel)	Adjacent to 90:89
155:1	155	Stake with wedge point	30	*Quercus* sp. (oak)	Adjacent to 90:89
156:1	156	Stake with pencil point	31	*Corylus avellana* (hazel)	End of 90:89
157:1	157	Post with pencil point	61	*Corylus avellana* (hazel)	Adjacent to 90:46
157:2	157	Stake with wedge point	38	*Corylus avellana* (hazel)	Adjacent 90:46
158:1	158	Post with chisel point	-	*Quercus* sp. (oak)	End of 90:48
159:1	159	Stake with wedge point	40	*Betula* sp. (birch)	End of 90:48
161:1	161	Stake with pencil point	34	*Quercus* sp. (oak)	End of 90:56
162:1	162	Post with pencil point	22	*Corylus avellana* (hazel)	End of 90:56
163:1	163	Post with wedge point	52	*Quercus* sp. (oak)	Northern edge of trackway
164:1	164	Post with pencil point	58	Pomoideae spp. (pomaceous)	Northern edge of trackway
165:1	165	Post with pencil point	58	*Corylus avellana* (hazel)	Northern edge of trackway
166:1	166	Stake with chisel point	46	*Corylus avellana* (hazel)	Adjacent to 90:75
168:1	168	Post with pencil point	-	*Sorbus* sp. (rowan)	Adjacent to 90:116
169:1	169	Stake with pencil point	50	*Betula* sp. (birch)	Adjacent to 90:116
171:1	171	Stake with pencil point	-	*Betula* sp. (birch)	Southern edge of trackway
171:2	171	Stake with pencil point	56	*Quercus* sp. (oak)	Southern edge of trackway
172:1	172	Post with pencil point	56	*Quercus* sp. (oak)	Southern edge of trackway
173:1	173	Post with pencil point	50	*Sorbus* sp. (rowan)	Adjacent to 90:93
174:1	174	Post with pencil point	78	*Quercus* sp. (oak)	In 90:118
175:1	175	Stake with pencil point	50	*Quercus* sp. (oak)	Edge of 90:120
176:1	176	Stake with pencil point	45	*Corylus avellana* (hazel)	Northern edge of trackway
177:1	177	Stake with pencil point	46	*Betula* sp. (birch)	Under 90:106
178:1	178	Post with pencil point	49	*Prunus avium* (wild cherry)	Southern edge of trackway
180:1	180	Post with pencil point	56	*Sorbus* sp. (rowan)	Southern edge of trackway
181:1	181	Stake with wedge point	32	Pomoideae spp. (pomaceous)	Southern edge of trackway
182:1	182	Stake with chisel point	45	*Corylus avellana* (hazel)	Southern edge of trackway
183:1	183	Stake with chisel point	30	*Corylus avellana* (hazel)	Southern edge of trackway
184:1	184	Stake with pencil point	30	*Fraxinus excelsior* (ash)	Southern edge of trackway
185:1	185	Stake	39	*Fraxinus excelsior* (ash)	Southern edge of trackway
186:1	186	Stake with pencil point	35	*Corylus avellana* (hazel)	Southern edge of trackway
187:1	187	Chisel point	38	*Corylus avellana* (hazel)	Southern edge of trackway
188:1	188	Stake with chisel point	41	*Corylus avellana* (hazel)	Southern edge of trackway
190:1	190	Stake with wedge point	40	*Corylus avellana* (hazel)	Northern edge of trackway

Find No.	Deposit	Description	Diameter (mm)	Species	Location
191:1	191	Post with wedge point	65	*Corylus avellana* (hazel)	Between 90:4 & 90:67
192:1	192	Stake with wedge point	54	*Betula* sp. (birch)	Northern edge of trackway
193:1	193	Stake with pencil point	29	*Salix* sp. (willow)	Northern edge of trackway
193:2	193	Post with pencil point	60	*Corylus avellana* (hazel)	Northern edge of trackway
194:1	194	Stake with pencil point	45	*Alnus glutinous* (alder)	Northern edge of trackway
195:1	195	Stake	-	*Quercus* sp. (oak)	Northern edge of trackway
196:1	196	Post with chisel point	-	*Salix* sp. (willow)	Northern edge of trackway
197:1	197	Stake with chisel point	12 (radius)	*Corylus avellana* (hazel)	Northern edge of trackway
198:1	198	Stake tip	35	Pomoideae spp. (pomaceous)	Northern edge of trackway
199:1	199	Post with pencil point	50	*Corylus avellana* (hazel)	Northern edge of trackway
250:1	250	Stake tip	-	*Corylus avellana* (hazel)	Northern edge of trackway
251:1	251	Post with wedge point	56	*Quercus* sp. (oak)	Northern edge of trackway
252:1	252	Stake with wedge point	24 (radius)	*Corylus avellana* (hazel)	Northern edge of trackway
253:1	253	Stake with chisel point	38	*Corylus avellana* (hazel)	Southern edge of trackway
254:1	254	Stake with chisel point	27	*Corylus avellana* (hazel)	Southern edge of trackway
256:1	256	Post with pencil point	52	*Sorbus* sp. (sorbus)	Northern edge of trackway
257:1	257	Post with wedge point	39	*Alnus glutinous* (alder)	Northern edge of trackway
258:1	258	Post with wedge point	67	*Sorbus* sp. (rowan)	Northern edge of trackway
259:1	259	Post with chisel point	50	*Betula* sp. (birch)	Northern edge of trackway
260:1	260	Post with wedge point	51	*Quercus* sp. (oak)	Northern edge of trackway
261:1	261	Stake with pencil point	55	*Quercus* sp. (oak)	Northern edge of trackway
263:1	263	Stake	10 (radius)	*Corylus avellana* (hazel)	Southern edge of trackway
264:1	264	Stake with pencil point	42	*Corylus avellana* (hazel)	Southern edge of trackway
265:1	265	Stake with pencil point	32	*Corylus avellana* (hazel)	Southern edge of trackway
266:1	266	Stake with pencil point	31	*Corylus avellana* (hazel)	Southern edge of trackway
267:1	267	Post with pencil point	61	*Quercus* sp. (oak)	Northern edge of trackway
268:1	268	Stake with pencil point	28	*Corylus avellana* (hazel)	Adjacent to 90:219
269:1	269	Stake with pencil point	56	*Betula* sp. (birch)	Northern edge of trackway
270:1	270	Post with wedge point	52	*Quercus* sp. (oak)	Northern edge of trackway
271:1	271	Post with chisel point	33	*Betula* sp. (birch)	Southern edge of trackway
272:1	272	Post with chisel point	56	*Sorbus* sp. (sorbus)	Northern edge of trackway
273:1	273	Stake	26	Pomoideae spp. (pomaceous)	Northern edge of trackway
274:1	274	Stake with wedge point	35	*Corylus avellana* (hazel)	Southern edge of trackway
275:1	275	Stake tip	-	cf. *Quercus* sp. (oak)	Northern edge of trackway
276:1	276	Post with wedge point	64	*Sorbus* sp. (rowan)	Northern edge of trackway
277:1	277	Post with pencil point	57	*Corylus avellana* (hazel)	Northern edge of trackway
278:1	278	Stake with pencil point	24	*Quercus* sp. (oak)	Northern edge of trackway
279:1	279	Stake with pencil point	32	*Quercus* sp. (oak)	Northern edge of trackway
280:1	280	Stake with pencil point	28	*Quercus* sp. (oak)	Northern edge of trackway
283:1	283	Stake with chisel point	54	*Corylus avellana* (hazel)	Northern edge of trackway
284:1	284	Post with wedge point	39	*Quercus* sp. (oak)	Northern edge of trackway
285:1	285	Worked chisel	-	*Betula* sp. (birch)	Northern end of 170:71
286:1	286	Stake with wedge point	40	*Corylus avellana* (hazel)	Southern edge of trackway
287:1	287	Post with chisel point	50	*Corylus avellana* (hazel)	Southern edge of trackway
288:1	288	Post tip with pencil point	66	*Quercus* sp. (oak)	Southern edge of trackway
289:1	289	Stake tip	34	*Corylus avellana* (hazel)	Southern edge of trackway
290:1	290	Stake with pencil point	56	*Corylus avellana* (hazel)	Northern edge of trackway
291:1	291	Post with wedge point	50	*Corylus avellana* (hazel)	Northern edge of trackway
292:1	292	Stake with pencil point	30	*Corylus avellana* (hazel)	Northern edge of trackway

Find No.	Deposit	Description	Diameter (mm)	Species	Location
293:1	293	Post with pencil point	34	*Prunus avium* (wild cherry)	Northern edge of trackway
294:1	294	Pencil point (possible post)	29	Sorbus sp. (rowan)	Northern edge of trackway
296:1	296	Post with pencil point	56	Sorbus sp. (rowan)	Adjacent to 170:189-190
350:1	350	Chisel point	35	*Corylus avellana* (hazel)	Eastern edge of trackway
351:1	351	Chisel point	41	*Corylus avellana* (hazel)	Eastern edge of trackway
352:1	352	Wedge point	36	*Prunus avium* (wild cherry)	Northern edge of trackway
353:1	353	Chisel point	21	*Prunus avium* (wild cherry)	Northern edge of trackway
354:1	354	Pencil point	32	*Corylus avellana* (hazel)	Southern edge of trackway

Finds

All the finds from the site were wood (Appendix 2). A total of 1113 pieces of wood were recorded and lifted from the site. Of these, over 350 were obviously worked. The worked pieces included some of the planks that had sockets at the ends for the pegs, the pegs that had finely sharpened points, numerous cut branches and logs and fifteen wooden artefacts. The artefacts included several vessel fragments, a yoke and a number of larger items likely to include part of a cart.

Wood technology by Cathy Moore (Figs 25-42, Plates 22-57)

Introduction

This report details an assemblage of worked wood recovered during excavations at Annaholty Site 8, Co. Tipperary (E3530). The report comprises a description and discussion of the material and makes recommendations for potential further work.

Methodology

The wood assemblage from Annaholty E3530 comprised 1113 pieces of wood, including fifteen wooden artefacts all of which were lifted and recorded following a methodology devised by the author and site director. Given the large number of pieces involved, many of which were unworked, it was not deemed necessary that each piece of wood be retained for specialist examination. Thus it was agreed that every piece be numbered and given a basic record by the excavation crew using TVAS Timber Recording Sheets, these records focused on details of setting, orientation and size. In addition a record photograph was taken of each piece and all worked pieces were professionally illustrated. Elements with clear, well preserved wood working were retained for further analysis, as were the worked ends of the large timbers which formed the upper surface of the causeway. In total 321 pieces of worked wood and fifteen wooden artefacts were examined by the author.

The records taken by the excavation crew were generally good; however, there were occasional misuse of terminology and discrepancies of measurement. This should not be seen as criticism as such mistakes are commonly made by individuals inexperienced in such recording. Wherever possible mistakes have been rectified and any remaining difficulties with the record are discussed below. Detailed recording of wood working predominantly followed a methodology developed by Dr Aidan O'Sullivan for the recording of an assemblage from the Mountdillon Bogs, Co. Longford (O'Sullivan 1996, 291–357), which itself followed on from techniques developed in the Somerset Levels (Orme and Coles 1985, 25–50). These studies identified the key features necessary to record in order to identify tool types and understand wood working techniques of the past.

The first thing recorded on any piece of wood was diameter as the size of the wood to be cut has a direct relation to the amount of wood working necessary and, potentially to the quality of the toolmarks. This was followed by a record of the point shape with the three main categories being chisel, wedge and pencil points. In addition to point shape, the nature of the facets, the junctions between them and the angles at which they were cut were also recorded. Tool facets are the individual marks left on a piece of wood each time it is struck, and on large pieces of wood they can be strongly diagnostic as clear impressions of the tool, known as jam-curves, may be made. Several aspects of a facet are recorded in order to gauge the type of tool used. The width and length of a facet and the facet character i.e. flat, slightly concave or concave can all indicate the nature of the blade. Facet size demonstrates the ability of an axe to remove wood chips and so the largest facet on a worked end is measured as the best reflection of this. The junctions between each facet are also useful as they reflect the ability of the tool to cut through the fibre of the wood. Finally the cutting angles are also measured, which indicate the angle at which the blade was struck against the tree, with the shallowness of the angle finely reflecting the capability of the tool.

The conversion methods used to create split timbers were recorded from the sub-sampled ends of the large elements as was any evidence of surface treatment and joinery. Classification of some elements has been altered in accordance with terminology applied by the Irish Archaeological Wetland Unit (IAWU 2002a, 24) and agreed with the National Monuments Service. This specifically refers to the classification of stakes and posts which is based on the size of the element (see below) and its position. An overview of all examined samples is presented below in Table 5. Appendix 3 provides details and a description of the wood assemblage.

Table 5: Overview of examined wooden finds

Element Type	Number of pieces
Bark fragment	2
Wood working waste	26
Post	42
Stake	55
Split wood	128
Worked end	173
Split timber	259
Unworked wood	427
Wooden artefact	15

Report Structure

The following report focuses solely on the wood working techniques and tool evidence provided by the Annaholty E3530 assemblage. The examined material is presented on the basis of element type with each element characterised and discussed in broad terms such as size, condition and toolmarks. Reference to individual pieces of wood and specific wood working evidence is made where relevant. This is followed by a discussion of the wood working techniques evident, with reference to parallels and likely tools. Artefacts are presented in catalogue format which includes measurements and a description of each find. This is also followed by a discussion which deals with wood working techniques, tool evidence and known parallels. Wood species identification of the artefacts was kindly provided by Susan Lyons MSc.

The report concludes with a summary of results and makes recommendations for further work. Appendix 3 at the rear of the report details every piece of wood recovered on site and indicates those examined in detail by the author. Table 9 (below) provides a brief description of the artefacts.

Conventions used in this report

All measurements are in centimetres (cm) except for occasional reference to tool signatures which are given in millimetres (mm)
L = Length
W = Width
D = Depth
Diam. = Diameter
Wood examined by the author is marked 'Y' in the column labelled CMM.

Results (Figs 25-42, Plates 22-35)

A total of 1113 pieces of worked wood were recovered from Annaholty E3530. The condition of these pieces (not inclusive of artefacts) is outlined below in Table 6 and these figures give a good indication of the condition of the wood which had been negatively impacted upon by drainage and bog roads in the vicinity of the site (Taylor 2008, 55).

Table 6: Overview of condition of the assemblage

Condition	Number of pieces
Poor	448
Good	375
Moderate	175
Very poor	82
Excellent	16
Very good	16

Split timbers (Figs 25-26)

A split timber is defined as a piece of wood converted from the round (IAWU 2002a, 24) and can be created using a variety of methods. In the case of Annaholty E3530 a distinction based on size was made between split timbers and split wood, (see below). Split timbers comprised 259 pieces of the assemblage and their condition ranged from very poor to very good with the majority (139) being in very poor or poor condition. The timbers ranged from 17.70–670 cm in length and had widths and depths of 3.40–51 cm and 2–29 cm respectively. Most of them formed part of the upper surface of the causeway, although some of the smaller examples may have been used in the foundation layers. One hundred and seven timbers were tangentially converted with inner, outer and trimmed tangentials present. In marked contrast, half, quarter and radial splits were much less frequent and together comprised only 70 pieces. The remaining split timbers (81) were classified as irregular splits whereby the splitting technique did not conform to usual methods or as in many cases, could not be ascertained due to poor condition. A single timber was a boxed heart conversion. Forty-one split timbers or their sub-sampled worked ends were examined by the author. Many of the examined pieces were heavily eroded and their surfaces were grooved and striated which caused some difficulties in the identification of conversion method. Inconsistencies in the records taken by the excavation team suggest that some of the recorded conversions are inaccurate. Finally, burning or charring was noted on fourteen split timbers.

Twelve of the examined split timbers had evidence of joinery and a further three had possible joints (Figs 25-26). The simplest were sockets cut through the ends of the timbers in order to receive posts or stakes. Rectangular sockets, several of which were worn, damaged and incomplete were present on six timbers (90:2, 90:9, 90:30, 90:116, 90:117, 97:12 & 170:176); these were quite large, 11–25 cm long and averaged 14 cm wide. Circular sockets of 9 and 13 cm in diameter were present on finds 90:3 and 90:118 respectively, and were again quite worn. A pair of opposing semi-circular notches was cut onto the edges of find 90:114 and a single example was recorded on one end of find 90:116. The most complex joint in the assemblage was that on the northern end of find 255:5 which had a halved lap

joint into one side of which was cut a square socket (Fig. 26). The remaining timbers with evidence of joinery include find 90:238 at the northern end of which was the remains of a possible bare faced tenon. Find 262:15 was a small chunk of a radial timber with the partial remains of what was either a socket or may have been a bare faced tenon.

The remaining three timbers had features which may be the remains of joints but were in a very poor condition making them difficult to assess. Find 90:2 had the remains of a possible rectangular socket which was also the case with the southern end of find 90:116. Find 298:14 had a possible semi-circular notch in one edge. Further joinery was present on two large roundwoods classified as worked ends (see below).

The condition of the Annaholty E3530 timbers meant that there were very few well preserved toolmarks and only two partial jam-curves were recorded. These occurred on finds 90:237 and 282:2 with the former indicating a blade with a straight blade edge and a 90° corner, while the latter was made by a tool with a minimum width of 5.20 cm and a rounded blade and corner. The final feature of note on a split timber was the presence of a v-shaped notch on find 90:275 which may be a hewing notch and is discussed further below.

Worked ends (Figs 27-28, Plates 21-24)

A worked end is a piece of wood still in the round which has had one or both ends cut. Worked ends are found in a horizontal or close to horizontal position; making them distinct from stakes, posts and pegs and at Annaholty E3530 they were recovered from all levels of the causeway. One hundred and seventy three worked ends were present in the Annaholty E3530 assemblage, 153 of which were examined by the author. Their condition varied from very poor or poor (45) to moderate (27) and good or very good (101), and in length they ranged from 6.50–418 cm and in diameter from 1–30 cm. The simplest form of worked end is a torn end, only one of which was encountered. The vast majority (103) were cut to chisel points with one or two flat facets (Fig. 27). They were cut at angles of 4–90° but the majority were cut at very shallow (0–20°) or shallow (21–40°) angles. After chisel points, wedge points were the most common worked end with 27 examples present (Fig. 27). These were again quite simply worked with flat facets and were generally cut at shallow to medium angles. Twenty-two worked ends were cut into pencil points (Fig. 28) which were much more extensively worked and in most cases are likely to originally have been used or intended for use as posts and stakes (see below). The majority of these pieces were cut at very shallow angles of less than 10°. The remaining worked ends (20) consisted of pieces on which the worked portion was damaged and could not be classified, or where the wood working took the form of branch trimming along the length or on forked ends of the piece.

Toolmarks of note within the worked ends include eight pieces which had jam-curves. Find 255:41 in particular had a complete jam-curve of an axe, width 5 cm, with a quite straight blade edge and sides and sharp 90° corners. A much larger blade was indicated by the toolmarks on find 255:23 which was cut to a wedge point and had a partial jam-curve of a blade, minimum width 4.60 cm, with a straight edge and side. Adjacent to this was a facet of width 8 cm on which the corners of the tool were not visible. The remaining partial jam-curves on the worked ends all measured 4–5.50 cm in width and indicated tools with straight blade edges and sharp 90° corners. Raised tool signatures were present on finds 55:24, 255:23 and 255:199, with those on the latter two being quite faint. Only one worked end, find 255:119 had tool facets which were slightly concave in nature. Where junctions between facets were recorded they were either clean, stepped or most commonly a combination of both.

Only two worked ends retained any evidence of joinery, find 90:58 was cut at one end to a chisel point adjacent to which was roughly triangular socket, open at one side and with an hourglass shaped profile (Fig. 27, Plate 21). Find 90:62 had a worn halved lap joint at its northern end. These and several of the larger worked ends were clearly used as large structural components of the causeway.

Split wood

The term split wood was used for pieces within the Annaholty E3530 assemblage which were too small in size and irregular in form to warrant classification as timbers. These comprised 128 pieces in total, 87 of which were in a very poor or poor condition; only five pieces of split wood were examined by the author. The split wood ranged in length from 3.80–63 cm and from 1.50–21 cm and 0.10–13 cm in width and depth respectively. In terms of conversion 35 pieces were tangentially converted (including inner, outer and trimmed examples), and 32 were half, quarter and radial splits. The remaining 61 pieces of split wood were recorded as having irregular conversions, which in most cases was due a deteriorated condition. Two pieces of split wood displayed evidence of wood working. Find 160:20 had the possible remains of a degraded toolmark while find 255:174 was a chunk of very worn wood with the possible remains of socket.

Stakes (Fig. 29, Plates 25-28)

A stake is defined as an upright piece of brushwood (diameter 1–5.50 cm) usually worked at its lower end (IAWU 2002a, 25). Fifty-five stakes were recovered during the excavation at Annaholty E3530, all of these were analysed by the author and the majority (40) were in moderate to very good condition. The stakes measured 7–92 cm in length and had diameters from 2–5.50 cm. With 27 examples, pencil points were the predominant point type and all were cut at very shallow angles. They were also the most extensively worked stakes with a maximum of 99 facets recorded on find 177:1. Wedge points were the second most common point type and numbered 13, the majority of which were also cut at very shallow angles. The wedge points were less heavily worked than the pencil points with a maximum of 10 facets recorded on an individual example. Chisel points comprised nine of the stakes and were quite simply worked at shallow to medium angles of 19–50°. The remaining six stakes included one with a chop and tear mark and five of which only the tip remained and so the exact original form could not be ascertained.

Although some of the stakes were quite extensively worked, few features of note such as jam-curves were present, due mainly to their small size. Signatures were present on six examples with those on finds 269:1 (Plate 27) and 274:1 being particularly heavy. Except for find 253:1 on which slightly concave facets were noted, all of the recorded facets were flat and the junctions were either clean, stepped or a combination of both.

Posts (Figs 30-31, Plates 29-34)

Posts are defined as roundwoods (>5.50 cm in diameter) or split timbers driven into the ground vertically or at an angle (*ibid*, 24). Forty-two posts were recovered at Annaholty E3530, and while a small number were poorly preserved the vast majority (31) were recorded as being in a good, very good or excellent condition. A total of 40 posts were examined by the author. The posts ranged from 14–152 cm in length and had diameters of 5.60–10 cm. Twenty-six posts were cut to pencil points with 3–10 faces and up to 145 facets recorded on a single example. They were all cut at shallow angles of 2–34° and in form were identical to the pencil points classified as stakes and worked ends. Ten of the posts were cut to wedge points, and while some were quite simple with as few as three facets several had been extensively worked and a maximum of 21 facets were noted on one example. The wedge points were cut at shallow to medium angles of 12–42° with the most heavily worked examples falling at the lower end of that scale. The remaining six posts were cut to chisel points which although quite simply worked had up to 14 individual facets. The chisel points were cut at angles of 8–35°.

Partial jam-curves were present on three posts, the largest of which occurred on find 272:1 (Fig. 31) and indicated a tool with a minimum width of 4.70 cm and a flat blade edge and a sharp 90° corner. A similar blade was represented by three partial jam-curves on find 267:1 (Plate 30) while the small toolmark on find 259:1 suggested a blade with a slightly more rounded corner. Tool signatures were noted on nine posts with those on find 163:1 being the heaviest and indicating quite a flawed blade edge. With the exception of find 267:1 on which slightly concave facets were recorded, all of the

recorded facets were flat and those on find 276:1 were notably large (Plate 32). As with the other worked wood from Annaholty E3530 the junctions between the facets were both clean and stepped.

Wood working waste (Fig. 32, Plate 35)

Twenty-six pieces from the Annaholty E3530 assemblage were classified as wood working waste, 25 of which were examined by the author. With the exception of one roundwood, all were split (using a variety of methods) but ranged from thin pieces of 1 cm deep to chunks of wood 13 cm deep, lengths varied from 6–49 cm. Almost all were worked on both ends and many had additional trimming on edges or surfaces, the recorded cutting angles were generally quite steep. In essence these pieces appear to be wood chips or waste material. Although the condition of the wood working waste was generally good many pieces appeared to have suffered wear or exposure and clean, clear tool facets were rare. Exceptions to this were finds 262:18 and 298:126 (Fig. 32) both of which had partial jam-curves of widths 2.10 and 5.30 cm respectively, of tools with a slightly curved blade edge and a 90° corner. Additional tool evidence was also provided by find 262:8 a roundwood worked at both ends to a shallow chisel point (Plate 35). At one end two partial jam-curves of a tool, minimum width 5 cm, indicated a flat blade edge with a 90° corner, however, a complete jam-curve at the opposite end was of a different tool. This tool was 3.70 cm wide and had a straight blade edge and 90° corners. In addition to the complete jam-curve were eight partial jam-curves of the same tool and signatures on all facets signified that it was heavily flawed. Find 262:8 was additionally worked along its length where it had been trimmed flat for a length of 20 cm. Finally, find 90:15 was a small chunk of roundwood, cut or split on five faces which may be the remains of a post tip.

Unworked wood

A total of 427 pieces of unworked wood were used in the causeway at Annaholty E3530 and while most appear to have formed part of the foundation layer of the site, some are recorded as having been used as ‘crossbeams’. The unworked pieces ranged from a twig of length 5 cm and diameter 1 cm to a roundwood of length 660 cm and diameter 6–16 cm. A great many of these pieces were quite gnarly, forked and knotty and in some may have been pieces of root. The condition of the unworked material ranged from very poor to very good, however, over half (241) were recorded as being in a poor or very poor state. Eleven of the unworked pieces had been burnt or charred to some degree.

Bark

Two small fragments of unworked bark in a moderate and good condition were recovered at Annaholty E3530. It is likely that these fell away from branches used in the causeway.

Discussion

The following section discusses wood working, tool evidence and parallels for the Annaholty E3530 wood assemblage. As there is much overlap, particularly amongst pieces still in the round, the discussion is divided between wood converted from the round (split timbers & split wood) and wood still in the round (worked ends, stakes & posts). A brief comment is also made on the presence of wood working waste. This is followed by a discussion of the artefacts with reference to manufacture and parallels.

Converted wood and joinery

A total of 387 pieces of wood recovered at Annaholty E3530 were converted from the round. These were divided on the basis of size into split timbers and split wood. They were converted using a variety of methods summarised in Table 7 below.

Table 7: Timber conversion methods used at Annaholty E3530

Conversion method	Number of pieces
Tangential	30
Tangential-inner	81
Tangential-inner halved	7
Tangential-outer	19
Tangential-outer halved	4
Tangential-trimmed	1
Half-split	42
Quarter split	42
Radial split	18
Boxed heart	1
Irregular split	142

Allowing for the fact that most of the split pieces recorded as irregular were in too poor a condition to ascertain their conversion, tangential splitting, followed by half and quarter splitting were the most common techniques used. The easiest method of splitting a trunk is to first split it in half after which a variety of smaller timber types can then be made. First the ends of the trunk are cut flat in order to expose the rings and medullary rays. Medullary rays extend radially from the centre of the tree to its outer edge, and their function is to carry water and nutrients through the tree. They create natural planes of weakness in the wood and splitting a tree along these lines is an effective and relatively easy method of creating planks. Once a suitable plane has been selected wooden wedges are driven into the flat end of the trunk to open a crack and begin the splitting process. From this point further wedges are driven along the length of the trunk until it splits in half. To create quarter or radial splits more wedges are driven into the half-split along the medullary rays. This method has the advantage of allowing the production of a high number of thin planks, but its disadvantage is that they can only be as wide as the radius of the tree.

Tangential splitting involves driving wedges horizontally across the grain of the wood and requires far greater skill. The advantage of tangential splitting is that very wide planks with a maximum width of the diameter of the tree are produced. Outer tangential splits, as the name suggests, are taken from the outer part of the tree and retain a natural rounded surface. Inner tangential splits are pieces closer to the centre of the tree and have two split surfaces. The dominance of tangentially split planks in the assemblage indicates not only good wood working skill, but also reflects a preference for creating planks of the maximum possible width, not surprising given the scale of the causeway. In contrast the Iron Age causeway of Corlea 1 was built largely using half-splits (O'Sullivan 1996, 327).

One timber, find 90:275 displayed slightly different evidence for splitting in the form of a large v-shaped notch cut into its side. This is the result of a method in which the wood worker cuts notches at regular intervals into the side of a trunk and then rapidly cleaves away the intervening wood creating a flat, split surface which may then be further split or trimmed. The nature of this method means that once it has been executed all evidence of it (i.e. the notches), is removed and lost. A small number of timbers from Corlea 1 had the remains of shallow notches interpreted as evidence of this wood working method (*ibid*, 338).

Many of the tangential splits at Annaholty E3530 had been further trimmed or halved, in the case of the latter it is important to note that the centre of a tangential split is its weakest point where it will break very easily, and it is likely that some of those pieces recorded as halved inner tangentials are a result of this. This report does not discuss anatomical aspects of the trees used in the causeway; however, the width of radial and inner tangential timbers does indicate the use of some sizeable trees. Finds 90:73 and 90:27 were radial splits of widths 22 and 38 cm respectively, indicating trees of 44 and 76 cm in diameter. Finds 90:49 and 90:59 were inner tangentials of widths 39 and 48 cm respectively, equal to the diameter of the tree. One timber, find 90:3, was a boxed heart conversion

meaning the outer rounded surfaces had been trimmed off leaving just the heartwood and a square cross-section.

Definite sockets were cut through nine timbers in the assemblage, some of which were found with a post or stake *in situ*. These were rectangular (5), circular (3), and square (1). The rectangular sockets were all cut lengthwise with the grain of the wood and were roughly centrally placed. All were heavily worn and eroded with only one (find 90:9) having any remaining toolmarks. Of the five, finds 90:9, 90:30 and 90:117 appeared to be 'open-ended'; however, this may be due to damage and wear rather than design. Several timbers in the Iron Age causeway Corlea 1 were similarly shaped at the ends (Raftery 1996, foldout 2 i.e. timbers 166, 181 & 184). It should, however, be noted that timbers from Neolithic and Bronze Age causeways in the Somerset Levels had similar features recorded as open-ended notches (Orme and Coles 1983, 36). Circular sockets were present on finds 90:3 and 90:118, this is slightly unusual as circular sockets are generally ascribed to the Neolithic period (*ibid*, 40). All of the various sockets recorded were very heavily worn and tool evidence was largely absent. The inner surfaces were reasonably straight which would suggest that they were cut through from one side only, a technique also used on the Corlea 1 assemblage (O'Sullivan 1996, 327).

Two opposing semi-circular notches were cut into the edge of find 90:114, both were heavily worn but their hourglass-shaped profile indicates that they were cut through the timber from both sides. The largest of these was 12 cm in diameter and could easily have been created with an axe, the second was more oblong shaped and measured length 8.50 cm and width 6.50–8.50 cm, it may also have been cut with an axe but would have required greater care and skill. A single semi-circular notch of 12 cm in diameter was present on find 90:116 and a possible notch of only 5 cm in diameter was recorded on find 298:14. The small size of the latter renders it somewhat doubtful and it may be a worn knothole, however, the practice of utilising natural growth patterns and forms in wood has been documented in Europe from the Neolithic period onwards (Earwood 1993, 145–9), and a knothole may have been utilised to position a peg. Interestingly, rounded side notches were recorded on Neolithic and Bronze Age material from the Somerset Levels (Orme and Coles 1983, 36). Only one triangular notch was present in the Annaholty E3530 assemblage, it was recorded on the end of worked end find 90:58, and although very worn had an hourglass-shaped profile (Plate 21). This means that it was cut in from both sides of the roundwood making it different to the v-shaped notches created for splitting (see above). Triangular notches were recorded on several timbers from Corlea 1 (O'Sullivan 1996, 340).

Half-lap joints were recorded on one timber find 255:5 and one large worked end find 90:62. A lap joint is a joint whereby one timber is applied to the surface of another, and a half-lap is when one or both timbers are reduced in thickness (Alcock et al. 1996, G9). The earliest examples of lap-joints from Ireland date from the Bronze Age and were the timbers of a *fulacht fia* trough from Killoran, Co. Tipperary (O'Néill 2005, 332). Of Iron Age date, a small number of half-lap joints were recorded in the Corlea 1 assemblage (O'Sullivan 1996, 327). The only other evidence of joinery was the possible bare-faced tenon on find 90:238. A tenon is 'a rectangular projection from the end of a piece of timber' and a bare faced tenon is one 'which retains one or more of the original sides of the timber contrasted to a central tenon' (Alcock et al. 1996, G9). The term tenon should technically only be used with regard to medieval material as it specifically refers to a type of joint (mortice and tenon), introduced by the Normans (Milne 1992, 15), however, in the absence of a suitable alternative it is being applied in this context. Tenons are created to fit into mortises and the only other known Iron Age example is again from Corlea 1 where a possible bare faced tenon, referred to as a single shouldered tenon, was recorded. The joints on the Annaholty E3530 assemblage appear not have been utilised within the causeway and so must have been re-used from elsewhere. This seems particularly likely for finds 97:12 and 262:15, both small chunks of radially split timbers with the remains of joints. What use these timbers had prior to their inclusion in the causeway is unknown; however, their large size suggests they formed part of a reasonably big structure. The possibility of re-use is also suggested by the very heavy wear on the joints, although this could have occurred through use of the causeway which was certainly large enough to have accommodated wheeled vehicles (Taylor 2008, 55). The presence of charring on several timbers may also indicate re-use and it could be hypothesised that some of the pieces used in the causeway were part of a structure subjected to burning.

Very little direct tool evidence was provided by the split timber assemblage, with only two partial jam-curves noted. These indicated two different shaped axes, one with a straight blade edge and one with a slightly rounded blade edge. The axes in use during this period, of which there are relatively few finds, are unlooped socketed axes such as that from Feerwore, Co. Galway and shafthole axes of which there are three examples from Kilbeg, Co. Westmeath (Raftery 1994, 118). The Feerwore example is quite small with a cutting edge of 4.50 cm, while the Kilbeg axes are slightly larger with convex blade edges (Raftery 1984, 240). The split timbers indirectly indicate the use of wooden wedges and mallets or clubs. Wooden mallets of Iron Age date have been recovered from causeways at Corlea (Raftery 1996, 247) and more recently at Edercloon, Co. Longford (Moore 2008a, 10).

The assemblage of split wood from Annaholty E3530 consisted of quite small pieces in a poor condition. Some of these pieces are likely to represent waste and small off-cuts produced during the splitting of trunks. The highly irregular shape and conversion of many of the pieces, however, suggests that they broke away from the larger timbers which would easily occur during the use and lifespan of the causeway.

Worked ends, stakes and posts

Two hundred and seventy pieces of wood from Annaholty E3530 were still in the round and worked at one or both ends, or along their length. As has been explained above they were classified by the author as worked ends, stakes and posts. These pieces were further categorised by the shape to which they had been trimmed, the results of which are summarised below in Table 8.

Table 8: Worked ends used at Annaholty E3530

Point Shape	Number of pieces
Chisel	118
Pencil	75
Wedge	50
Other i.e. branch-trimming or degraded and broken ends	25
Chop & tear	1
Tear	1

The simplest of these was find 170:83 which had been torn away from a larger branch or stem. Torn ends are found in wooden archaeological assemblages dating from the Neolithic onwards and given how easily they are created it is somewhat surprising that only one such piece was encountered. One step up from torn ends in terms of wood working, are ends which have a chop and tear mark. A single stake find 273:1 was worked in this way which involves cutting into the branch on one side and then tearing it away from the stem (O'Sullivan 1996, 315). This results in a toolmark which culminates in a long strip of torn wood.

Chisel points:
The most common point type encountered in the Annaholty E3530 assemblage was the chisel point of which 118 occurred. A chisel point is defined as a worked end which is cut down one surface of the stem only (*ibid*, 293). They are a very simple, straightforward form of wood working and in many cases are likely to be the result of the blow/s that cut the branch from the tree or larger stem. In most of the Annaholty E3530 examples the chisel points were quite simply worked with 1–3 facets. The facets were, with two exceptions, flat and had mainly clean but some stepped junctions. The cutting angles on these pieces were almost all under 40°. These features point to the use of very sharp blades, capable of cutting through wood at shallow angles and which rarely became stuck or lodged in the wood. The simplicity of most of the chisel points ties in with the fact that of the 118 only 15 were used in upright positions (6 posts and 9 stakes). The working on these 15 samples broadly followed the same form as described above, however, the number of facets was between 3–14 and the cutting

angles were almost all under 25°. Thus these samples were more sharply pointed, at shallow angles in order to be driven into the ground.

Jam-curves were present on eight of the chisel points, however, on finds 90:166 and 90:229 they were cracked and no real measurements were available. The remaining jam-curves included one complete example on find 255:41, which indicated a blade of 5 cm in width with a straight blade edge and sharp 90° corners. Similar shaped blades were indicated by incomplete jam-curves on finds 255:51 and 262:19. A slight deviation in blade shape was seen on finds 255:99 and 259:1 where partial jam-curves of widths 2.10–5 cm indicated a slightly rounded blade edge and corner. It is notable that the chisel points with jam-curves were all roundwoods i.e.>5.50 cm in diameter, a pattern that is repeated throughout the assemblage and discussed further below.

A final chisel point worthy of note is find 298:74 a piece of knotty brushwood with a damaged chisel point at one end and a tear at the opposite (Plate 22). Around the length of this piece is a spiralling indentation created by a creeper like plant such as honeysuckle (Dr Ingelise Stuijts pers comm.). Excavation of causeways of Bronze and Iron Age date at Edercloon Co. Longford recovered six pieces of hazel brushwood of similar form, which had been artificially trained to grow in this manner (Moore 2008a, 8–9). These are currently interpreted as decorative pieces, possibly used as walking sticks or staffs, and likely inspired by naturally occurring parallels. While find 298:74 was created by natural processes, its inclusion in a causeway of the same period is significant and the possibility that these pieces of wood were of particular significance or prized in some way should be considered.

Pencil points:
The second most common point type found in the Annaholty E3530 assemblage were pencil points which comprised 75 of the 270 pieces of wood still in the round. A pencil point is worked on three or more faces, with a typical pencil point worked completely around the diameter of the trunk (O'Sullivan 1996). Many of them were quite extensively worked with a maximum of 145 facets recorded on find 154:1. On average, however, they had 15–20 facets with a typical individual length of 7 cm. Stepped junctions were present but the majority were clean or a mixture of clean and stepped. The average diameter of the pencil points was 5 cm but more than half of them measured over this. This partially explains the high number of facets as the greater the size of the wood the more wood working necessary. Find 267:1 was the only pencil point with partial jam-curves, indicating a tool of 4.30 cm minimum width, with sharp 90°corners and a straight blade edge. Raised signatures were present on 11 examples. The most striking aspect of the pencil points was their distinctive elongated shape due to having been cut at very shallow angles. This feature, coupled with the large facets, lack of jam-curves and only occasional signatures, points to the use of very well maintained, sharp and effective axes which rarely became stuck in the wood and were capable of use at acute angles.

It is not surprising that of the 75 pencil points, 53 were found in upright positions indicating that these pieces were specifically created in order to be easily driven into the ground. Although pencil points can be created in a matter of minutes, they do indicate a greater amount of work than say a chisel point, and on archaeological sites are very commonly found in upright positions. The analysis of the upright elements from Corlea 1 found that the majority (46%) were cut to pencil points (*ibid*, 326) at very shallow cutting angles. Of the 22 pencil points not found in upright positions, ten were noted by the author as having the same distinctive elongated shape. It is probable that these pieces were either found in secondary positions or were surplus to requirements during the construction of the site and so were used as part of the transverse structure.

Wedge points:
Wedge points have two cut faces which are opposing or adjacent (*ibid*, 293), and 50 examples, 44 of which were examined by the author, were excavated at Annaholty E3530. The wedge points were notably less well preserved, possibly due to the fact that over half were found in horizontal positions, and so did not have the advantage of being as well submerged in the peat as the upright elements. They were also quite simply worked and many examples had two faces, each a single facet. The facets were all flat and the junctions were a mixture of clean or clean and stepped. As with the pencil and

chisel points the cutting angles were all shallow or very shallow. Jam-curves were recorded on two examples both indicating a blade over 4 cm wide with a straight edge and a 90° corner. A facet on find 255:23, however, measured 8.20 cm long; 8 cm wide and those on find 276:1 were also slightly larger than average. In keeping with the rest of the assemblage, signatures were only present on three wedge points.

Twenty-three of the wedge points were found in upright positions, classified as stakes or posts. While many of these were quite simply worked, several had a high number of facets and were cut to the same elongated type of point which characterised the pencil points. Thus it would appear that the individual or individuals who created these pieces had a very clear design in mind, determined by the need for long shallow points suitable for driving into the ground.

Summary and overview:
The 270 pieces of worked wood still in the round from Annaholty E3530 represent fairly simple wood working involving the removal of branches from trees and larger stems, and the additional sharpening and shaping where necessary. The toolmarks were dominated by flat facets and shallow cutting angles indicative of sharp, effective blades and the almost total absence of jam-curves and tool signatures is very rare. Tool signatures are raised or incised lines across a facet created by small flaws in the blade edge and with detailed study they can be traced across an archaeological site and used to build associations and aid in phasing (Sands 1997). In comparison, a recent study of toolmarks from causeways at Edercloon, Co. Longford was based primarily on the presence of tool signatures which were abundant in an assemblage of comparable date and size (Moore 2008b). This lack of signatures indicates high quality and very well maintained sharp blades, it also points to wood workers with the skill and strength to prevent regular jams and damage to their tools.

The small number of partial jam-curves present were mostly made by axes with straight blade edges and sharp 90° corners, consistent with those on the split timbers and axes such as that from Feerwore, Co. Galway. The few occurrences of very wide facets and jam-curves, however, appear to have been made with very broad bladed tools, as large as the axes from Kilbeg Co. Westmeath and in the case of find 255:23 even bigger. In 2008 the author examined an assemblage of worked wood from Annaholty E3462 (Moore 2008c); some of this material is likely to have formed part of the E3530 causeway but was disturbed by construction work. Several pieces within the Annaholty E3462 assemblage had very large facets. In addition a number of pieces were cut to pencil and wedge points with the same narrow, elongated form described above and were probably originally used in upright positions in Annaholty E3530.

Wood working waste

Twenty-six pieces of wood were classified as wood working waste. Almost all were worked at both ends and had the appearance of being small off-cuts and refuse material. Partial jam-curves on finds 262:18 and 298:126 both indicated tools with a slightly curved or convex blade edge, with that on the latter measuring a minimum of 5.30 cm in width. The most interesting piece within this group was find 262:8 which had been cut at one end with a tool of at least 5 cm wide (Plate 35). The opposite end was worked with a different tool, indicated by numerous facets with a very heavy raised signature pattern. One of these was a complete jam-curve and showed the blade to be only 3.70 cm wide with a straight edge and sharp corners. This shape and size is consistent with a small wood working tool such as a chisel or gouge. There are very few Irish finds of smaller Iron Age wood working tools, although wooden artefact assemblages attest to the presence of such. The use of such a tool on this piece could indicate that it is waste material produced during artefact manufacture. The inclusion of wood chips and other pieces of waste material in a large causeway such as Annaholty E3530 is not surprising. The small amount, however, does suggest that initial splitting and primary wood working was carried out off-site.

Artefacts (Figs 33-42, Plates 36-57)

Fifteen individual artefacts were recovered during the excavation at Annaholty E3530, in two instances fragments of wooden vessels could be pieced together and so there are only thirteen entries in the catalogue below. Each object was examined and recorded by the author and is described in detail below and discussed in the relevant section of the report. Artefacts are listed in Table 9.

Find No.: 55: 10
Dimensions: L29.50; W7–9.10; D2.50–8 cm
Species: Alder
Vessel fragment (Fig. 33, Plates 36-37)
Fragment of a wooden vessel, likely a trough or losset, consisting of a portion of the vessel end. The external base of the vessel (D2.50 cm) is flat and quite heavily charred, however, approximately 12 oblong/sub-square, concave toolmarks (average L2; W1.50 cm) are visible to one side. From the base the vessel walls extend upwards at a 50–60° angle and are covered in similar, slightly more angular toolmarks. The walls measure 5.30 and 8 cm in height and culminate in a flat rim of approximately 1 cm width. The rim is heavily damaged but a portion 15.40 cm long survives. The internal surfaces of the vessel walls and the small portion of the base is quite worn, however, several toolmarks are visible on one side. These consist of a series of partial jam-curves (W1.80 cm) of a tool with a slightly rounded corner and edge. Overall this object is quite crudely worked and heavily damaged.

Find No.: 55:22
Dimensions: L16.10; Diam. 2.10–3.20 cm
Species: Hazel
Dressed peg (Fig. 34, Plate 38)
A carved and dressed peg the head of which (Diam. 3.20 cm) is cut to a shallow pencil point with 5–6 faces, each a single flat facet. From the head the length of the peg is very unevenly trimmed on 10–11 faces (average W6 cm). All the faces are quite flat but individual facets are not present. The peg is warped and split, particularly towards the tip, which is compressed and broken (W2.10; D1.40 cm). There is also minor damage to one side of the head. The wood is dark brown and overall the condition is good.

Find No.: 90:247
Dimensions: L61.50; Diam. 7.80–9.70 cm
Species: Ash
Yoke fragment (Fig. 35, Plate 39)
Fragment of a yoke broken in two pieces and at each end. It has been carved from a larger piece of wood/branch and is circular in cross-section. At one end (Diam. 8 cm) is the partial remains of a (approximately ¼ present; W2.10 cm) horizontal perforation with a very smooth inner surface. From this end the diameter gradually increases (Diam. 9.70 cm) and 24 cm from the end is an intact collar (L18 cm) the surface of which is very rounded through use. There is a possible dowel or pin set into one side of the collar. It appears as a piece of sub-rectangular wood (L0.80; W0.50 cm) of distinctly darker colour. Beyond the collar, for a length of 9.60 cm the diameter narrows again, whereby there begins a second collar of which only L8.20 cm remains. All of the surfaces on this object are very smooth and no toolmarks remain. Although broken at each end and in two pieces it is in very good condition, yellow/brown in colour and quite hard with a clear grain pattern.

Table 9: Overview of wooden artefacts from Annaholty E3530

Find No.	Description	Species	Condition	L (cm)	W (cm)	D (cm)	Diam. (cm)	Conserve	Photograph	Draw
55:10	Fragment of a wooden vessel, likely a trough or losset	Alder	Moderate	29.50	7-9.10	2.5-80	N/A	Y	Y	Y
55:22	A dressed peg	Hazel	Good	16.10	N/A	N/A	2.10-3.20	Y	Y	Y
90:247	Fragment of an animal yoke	Ash	Very good	61.50	N/A	N/A	7.80-9.70	Y	Y	Y
97:1 & 97:2	Two fragments of a wooden tub which fit together and comprises part of the vessel wall and a carved handle	Alder	Very good	12.60	8.10	0.90-2.80	N/A	Y	Y	Y
97:18	Fragment of a wooden vessel comprising part of the vessel wall and a carved handle	Alder	Very good	10.50	4	0.90-2.70	N/A	Y	Y	Y
97:19 & 97:20	Two fragments of a wooden tub which join together and a short section of the croze	Alder	Very good	19.50	10.80	0.80-2.20	N/A	Y	Y	Y
97:21	A small fragment of split wood, possibly part of a wooden vessel	Alder	Good	5.10	2.60	0.40	N/A	Y	Y	Y
97:22	A small fragment of split wood, possibly part of a wooden vessel	Alder	Good	6.10	2.30	0.50	N/A	Y	Y	Y
189:1	Portion of a wooden vessel comprising a long, narrow section of the vessel wall with an intact rim and base	Alder	Excellent	76.10	8.10-8.80	1.60-4.20	N/A	Y	Y	Y
255:1	Possible cart fragment	Timber: Alder Dowel: Ash	Poor	55.20	5.50-6	8.20-8.50	N/A	Y	Y	Y
255:2	Wooden object with 3 dowels/dowel holes	Roundwood: Willow Dowels: Hazel	Moderate	150.50	N/A	N/A	6.20-7.50	Y	Y	Y
262:3	Wooden object with a carved shaft and perforated head	Ash	Good	40	5	4	N/A	Y	Y	Y
298:133	Wooden object consisting of a forked branch with carved termini	Hazel	Moderate	13	7	2.50-3.90	N/A	Y	Y	Y

Find Nos.: 97:1 & 97:2
Dimensions: L12.60; W8.10; D0.90–2.80 cm
Species: Alder
Vessel fragments (Fig. 36, Plates 40-42)
Two fragments of a wooden vessel given individual numbers but on detailed examination were found to join together and are described below as a single find. This is a portion of a wooden tub broken in two and comprising part of the vessel wall and a carved vertical lug handle. Only a small part of the vessel wall is present and it is slightly curved or bowed. It has a minimum depth of 0.90 cm which gradually increases towards the handle where it is a maximum of 1.80 cm deep. Directly above this, into the outer side of the vessel wall is cut a small step (W0.10 cm), from which extends vertically the lug handle.

The lug handle (H3.20; W7.20 cm) has an everted rounded rim of 2.50–2.80 cm thick. Below this it narrows to 1.40 cm in thickness and through this part is cut a circular perforation (Diam. 2 cm), incomplete due to damage. One edge of the handle is intact and is finished with a bevelled edge of 0.70 cm wide, the opposite edge is damaged. The inner surface of the handle and the perforation is very smooth. The inner surface of the vessel wall is covered in faint toolmarks consisting of lines 0.30–0.40 cm apart and a maximum of 3.10 cm long, these run transversely across the vessel wall. In addition are two very fine incised lines of 1.40 cm long. The outer surface of the both the handle and wall are slightly worn and no toolmarks remain. The wood is a dark brown/black colour and although broken this artefact is in an excellent condition.

Find No.: 97:18
Dimensions: L10.50; W4; D0.90–2.70cm
Species: Alder
Vessel fragment (Fig. 36, Plate 43)
Fragment of a wooden vessel consisting of approximately half a vertical lug handle and a small portion of the vessel wall. The vessel wall is slightly bowed and has a minimum depth of 0.90 cm which gradually increases to the base of the handle where it is 2.10 cm deep. At the junction between the vessel wall and the base of the handle is a small step of 1.20 cm wide.

Approximately half of the handle is present (H3.60; W4 cm minimum) and consists of a lug with an everted rounded rim of 2.70 cm thick. Beneath this the handle narrows to 1.30 cm in thickness and through this part is approximately half of a circular perforation (Diam. approximately 1.50 cm), the inner surface of which is very smooth. The inner surface of the vessel is covered in toolmarks represented as parallel rounded, oblong grooves internal to which are consecutive incised lines spaced 0.30-0.40 mm apart. The outer surface of the vessel wall and the handle is worn and smooth with some very faint possible toolmarks. The wood is a light brown colour and overall the condition is excellent.

Find No.: 97:19 & 97:20
Dimensions: L19.50; W10.80; D0.80–2.20 cm
Species: Alder
Vessel fragments (Fig. 37, Plates 44-45)
Two fragments of a wooden vessel given individual numbers but on detailed examination were found to join together and are described below as a single find. Find 97:19 is a single piece, find 97:20 is in three pieces.

A portion of a wooden tub comprising part of the vessel wall and a short section of a croze, a groove cut around the inner wall to receive a separate base. A short portion of the wall base (L4.60; W0.90 cm) is intact and is smooth and rounded. Above this is the croze (H0.70; D0.60 cm) which is heavily damaged but retains occasional toolmarks of a sharp, straight bladed tool. Directly above the croze the wood expands to a maximum of 2.20 cm in thickness above which extends the vessel wall. The vessel wall (L9.30–19.50; D0.80–0.90 cm) is slightly curved or bowed, does not extend to the upper rim and so the original height is unknown.

The internal surface is smooth and quite worn with only occasional very fine transverse and diagonal incised lines (L0.90–3; W <0.10 cm). Faint partial jam-curves (W0.90 cm) of a tool with a straight blade edge and sharp 90° corner are visible on one fragment (97:19). The external surface is very smooth with occasional compression marks. The wood is dark brown and although broken this artefact is in excellent condition.

Find No.: 97:21
Dimensions: L5.10; W2.60; D0.40 cm
Species: Alder
Possible vessel fragment
A small fragment of split wood, the ends and edges of which are broken and ragged. Both surfaces are very smooth and on one are visible very faint incised lines of <0.10 cm wide. This was found very close to find 97:20 and appears to be of the same wood, possibly a fragment of a vessel wall.

Find No.: 97:22
Dimensions: L6.10; W2.30; D0.50 cm
Species: Alder
Possible vessel fragment
A small fragment of split wood the ends and edges of which are broken and ragged. Both surfaces are very smooth. This was found close to find 97:20 and appears to be the same wood, possibly a fragment of the vessel wall.

Find No.: 189:1
Dimensions: L76.70; W8.10–8.80; D1.60–4.20 cm
Species: Alder
Vessel fragment (Fig. 38, Plates 46-47)
Portion of a wooden vessel comprising a long, narrow section of the vessel wall with an intact rim and base. The base (W2.90 cm) is rounded and slightly damaged, 1.80 cm above it is a croze (H1.40; D1.60 cm), rectangular in profile. Directly above the croze is the thickest part of the vessel (D4.20 cm) above which the vessel wall tapers to a consistent 1.60 cm deep. Towards the rim of the vessel the wood gradually thickens and at the rim is 2.10 cm deep. The rim curves inwards and has been trimmed with a flat edge of W1.40 cm.

The inner surface of the vessel wall is exceptionally smooth with very occasional faint incised lines which may be due to compression rather than wood working. Towards the rim are approximately five parallel, diagonal lines, average L10 cm set 0.30–0.60 cm apart, these are quite rounded and worn.

The outer surface of this artefact is exceptional. It is completely covered in small (average L1.10; W0.60 cm) very shallow sub-oval toolmarks which create a pattern similar to fish scales. At the base of the vessel, around the croze, are a series of transverse incised lines (W<0.10 cm) spaced 0.50–2 cm apart. These are criss-crossed by three similar lines cut diagonally. Running lengthways down the length of the artefact s a large crack or flaw L39; W2.10 cm, which appears to be a flaw in the wood. Above this close to the rim, are two small areas of damage. The wood is dark brown and very hard and this artefact is in excellent condition.

Find No.: 255:1
Dimensions: L55.20; W5.50–6; D8.20–8.50 cm
Species: Timber: Alder
Dowel: Ash
Possible cart fragment (Fig. 39, Plate 48-51)
Possible cart fragment consisting of a piece of wood, rectangular in shape and irregularly converted from the round, either a trimmed radial or tangential. One end of the artefact appears to be intact and is cut flat, the opposite is broken. There is a circular dowel hole (Diam. 3.50 cm) 4.90 cm from the intact end which penetrates the full depth of the timber. A broken dowel (L3.30; W2.20 cm) remains *in situ*

and although quite worn it appears to be trimmed on 6–7 faces. One end of the dowel protrudes out of the dowel hole by 4.50 cm but the opposite end is broken flush with the timber. Thus a minimum length of the dowel is 12.70 cm (Depth of timber 8.20 cm plus 4.50 cm).

Three cm from the dowel hole is the start of a centrally placed linear slot or mortice (L22; W1.40–1.50 cm), cut through the full depth of the timber. The ends of this are rounded and the inner surfaces are cut quite flat. Toolmarks just visible on one of the inner surfaces consist of 7–8 slightly rounded, parallel linear grooves of 0.60 cm wide. Running at right angles through the mortice is a circular perforation (Diam. 2.50 cm).

At the broken end of the artefact (15.30 cm from the end of the central groove) is a semi-circular groove which penetrates the full depth of the timber. This could be either the start of a second linear mortice or half of another dowel hole. The inner surface of this is covered with toolmarks showing a rounded blade edge. This artefact is in a very poor condition, the wood is heavily waterlogged, very soft and quite damaged. In addition all surfaces show signs of heavy wear.

Find No.: 255:2
Dimensions: L150.50; Diam. 6.20–7.50 cm
Species: Roundwood: Willow; **Dowels:** Hazel
Perforated and doweled shaft (Fig. 40, Plate 52)
A roundwood broken in two, which is widest at each end (Diam. 7.50 cm) but tapers in the centre (Diam. 6.20 cm). It is forked at one end but both branches have been cut off, evidenced by flat toolmarks between which are stepped junctions, the opposite end is broken. There is a dowel hole (Diam. 2.60 cm) 37.50 cm from the trimmed end. Within the dowel hole is a tiny circular dowel (Diam. 1.60 cm) made from a piece of light brushwood trimmed at the end. It was not possible to remove the dowel for a full examination. The dowel is held in place by a semi-circular wedge (L1.60; W0.70 cm) made from a piece of half-split light brushwood. 35 cm from this, at the point where the object is broken, is a second dowel hole (Diam. 3.20; D3.20 cm) but no dowel remains *in situ*. The inner surface of the dowel hole is damaged but faint toolmarks in the form of parallel lines are visible.

A third and final dowel hole (Diam. 2.60; D3.20 cm) is located 43.20 cm from this with a dowel and wedge *in situ*, very firmly pressed together. The dowel (L3.60; Diam. 1.50 cm) is made from a piece of light brushwood with approximately 40% bark intact, one end is cut to a small chisel point at 30°. The wedge (L4.40; W1–1.80; D0.20–1.10 cm) appears to be made from a light brushwood split in half and trimmed to a tapering point.

The dowels/dowel holes are all cut into one side of the object and none penetrate its full diameter, the opposite side is almost entirely covered in bark. The wood is a very red colour and overall the condition is moderate, the broken end is quite soft. Two small fragments (L10 & 15 cm) of wood may have formed part of this object but can no longer be joined together due to their poor condition.

Find No.: 262:3
Dimensions: L40; W5; D4.50 cm
Species: Ash
Carved perforated shaft (Fig. 41, Plates 53-55)
A carved wooden object broken in two and incomplete, consisting of a shaft at one end of which is a differentiated and perforated head. The head is circular (Diam. 4.50 cm) with a flat top and at the point where it meets the shaft has a circular perforation (Diam. 1.60 cm) the inner surface of which is quite smooth. Adjacent to this, at the junction of the head and shaft the head is stepped on one side and the shaft becomes oval (L5; W4.20 cm) in cross-section.

There are two distinct sides to this object, one is worn almost completely smooth and has no toolmarks. On this side, 2.50 cm from the head are a pair of parallel lines 0.90 cm apart which run around approximately half the circumference of the shaft. These are not carved but rather appear to be

impressions in the wood. Similar pairs of lines are visible along the entire length of the shaft but apart from a pair located 9.50 cm from the broken end, they are all very faint.

The opposite side of the object is much less worn, particularly towards the broken end where the remains of surface dressing is visible. This takes the form of shallow, linear toolmarks which run longitudinally along the shaft. The carved head is also quite rounded and worn in appearance, overall the condition is good.

Find No.: 298:133
Dimensions: L13; W7; D2.50–3.90 cm
Species: Hazel
Wooden object (Fig. 42, Plates 56-57)
The end of a forked branch, which was sampled on site but appears to have been deliberately shaped and rounded. It is broken at the point where the branches join and measures W7; D3.90 cm, this area is very rounded and worn. From this point the branches fork outwards and the maximum distance between them is 5.50 cm. The branches (L10.60–13; W2.50–3 cm) are oval in cross-section and taper towards the tips. Both of the tips are worn and quite rounded although there is possibly a worn, shallow toolmark on the longer example. This object is in a moderate condition, very worn and slightly degraded.

Discussion

The artefact assemblage from Annaholty E3530 was quite varied and of high quality. Wooden objects rarely survive in the archaeological record and so this assemblage makes a significant contribution to the corpus of prehistoric wooden objects from Ireland. These objects all indicate a high level of skill in wood working and carving, and the use of small tools such as chisels, gouges and knives. Large saws were not commonly used for wood working until the later medieval period, however, small craft saws such as one found at Glastonbury Lake Village (Minnit and Coles 1996, 34) were in existence and were likely used in object manufacture. The selection of specific species of wood also indicates knowledge of the various properties of different tree.

The discussion below deals with each artefact individually, however, as most of the wooden vessels were of the same manufacture they are discussed together.

Wooden vessels: Seven definite wooden vessel fragments (find nos.: 55:10; 97:1-2, 97:18, 97:19-20 and 189:1) were recovered from Annaholty E3530, as were a further two possible vessel fragments (find nos. 97:21 and 97:22). All of the vessels were identified as alder (S. Lyons pers comm.) which is quite typical. Alder wood is relatively soft and easy to carve, it is also extremely durable in damp conditions (Earwood 1993, 163). For this reason it is commonly used in the manufacture of vessels, especially those designed to hold liquid. Recent excavations at Edercloon, Co. Longford have yielded the remains of eight vessels of alder wood, several of which date to the Iron Age (Moore 2008a, 8).

Portion of trough or losset: Find no. 55:10 is an end portion of what appears to have been a fairly crude single piece wooden vessel, probably sub-rectangular in shape. Toolmarks on its outer surface, which was also charred, were concave and likely made with a gouge. On the outer surface were partial jam-curves of a tool with a straight edge, probably a small chisel. This artefact may be part of a part of a losset, a board used to knead dough. Lossets were used in Ireland until recent centuries and consist of a board with a flat rectangular base and three or four low sides. This suggestion is based on its similarity to previous finds of lossets, in particular that recovered during the excavation of the Iron Age togher at Corlea, Co. Longford (Raftery 1996, 266). The Corlea example, although broken, was complete and larger in size, but its ends were of similar form to find no. 55:10. Another similar vessel of more comparable size was found at Rath, Co. Meath during excavations in advance of the N2 Finglas-Ashbourne Road Scheme. Like find no. 55:10 the Rath vessel was made from alder and had a charred inner surface (Moore 2006). While the small size of find no. 55:10 means that its exact original form cannot be ascertained it seems very likely that it was part of quite roughly made object,

either a losset or shallow trough. A sub-rectangular trough of alder recovered at Edercloon, Co. Longford, which although of Bronze Age date, was similarly crudely worked (Moore 2007a, 484). An alternative suggestion is that find no. 55:10 represents the remains of a rough-out for a vessel which was never finished and could account for its crude nature. The scorched and worn surfaces of find no. 55:10, however, suggest that it was used and this damage could account for its inclusion within the causeway.

Vessel fragments: Several pieces could be fitted together and it seems likely that find nos. 97:1-2, 97:18, 97:19-20 were originally part of the same vessel. All were made of alder and are portions of a carved two-piece container, the basic form of which is known to have been used in Ireland since the Late Bronze Age (Williams 1983, 150–1). The term two piece container is being used as there was no evidence of a lid, however, tubs of this type have been found with separate lids. These containers are made by carving a portion of a tree trunk into a hollow cylinder. Close to the base of the cylinder on the inner surface, a recess or croze is cut, into which a separate disc base may be fitted. Prior to inserting the base the cylinder is soaked to allow expansion and facilitate the base fitting over the step of wood beneath the croze. Find nos. 97:19 and 20 are portions of the slightly curved vessel wall 0.80–0.90 cm thick, at the base of which is a section of the croze designed to hold a base of *circa* 0.70 cm thick. Occasional toolmarks on the inner surface indicate the use of a tool (minimum 9 cm wide) with a straight blade edge, probably a chisel or shallow gouge used to finish the inner walls of the container. Find nos. 97:1 and 2 and 97:18 are two fragmentary vertical lug handles with everted rounded rims and central circular perforations, both also include a small portion of the vessel wall 0.90 cm thick. They are of identical manufacture and approximately the same size, although the point where the handle meets the wall on find no. 97:18 is slightly thicker.

Extensive research into this vessel form has been carried out by Caroline Earwood whose 1993 *Domestic wooden artefacts in Britain and Ireland from Neolithic to Viking Times* carries a cover photograph of a two-piece tub with vertical perforated handles from Rosmoylan, Co. Roscommon. Two-piece containers with slightly curved walls and vertical perforated handles such as the Annaholty E3530 finds are a style developed in the Late Iron Age (Earwood 1997, 28) and are often found containing bog butter. Although no lid was found, the perforated handles suggest that this vessel was originally lidded as these perforations are cut to receive a rod which holds the lid in position. The size, in particular the thickness of the wall portions, would suggest that find nos. 97:1-2, 97:18 and 97:19-20 were all originally part of the same vessel. Find nos. 97:21 and 97:22 were found close to find no. 97:20 although somewhat smaller in depth, are fragments of split alder with smooth surfaces and also appear to be part of this container. The original height of this vessel is unknown, but the curvature and thickness of the walls would suggest that it was not of very great height, probably less than 50 cm. This exact vessel type is known to date from the Iron Age (*ibid*, 27) and fragments of at least eight such vessels (although no handles were found) were recovered from Corlea 1 (Raftery 1996, 263–6). More recently an almost intact and exquisitely preserved tub of this type was recovered by Bord na Mona workers at Clonad Bog, Co. Offaly (Moore et al. 2003, 123–8).

Find No. 189:1 is also part of a wooden vessel of the type described above type, however, measuring 76.70 cm long and on average 1.60 cm thick it is part of a much larger and heavier vessel. A portion of both the upper and basal rims are present and so this piece represents the full length of the vessel walls. There is quite a distinctive curvature on this piece indicating that the rim was narrower than the body. The croze is also much larger and is carved to accept a base of 1.40 cm thick. The outer surface of find 189:1 is exquisite being completely covered with tiny shallow, oval toolmarks giving it a highly finished surface reminiscent of a fish-scale pattern. These marks were created with a very sharp, fine tool probably a knife, used by someone highly skilled in wood working. Such well preserved and fine wood working on a prehistoric object is rare, and find 189:1 represents the remains of a very high quality, large wooden vessel. There are several containers of this scale from both Ireland and Scotland, including one from Feddancoyle, Co. Wicklow recorded as having a rim narrower than its base (Earwood 1997, 28). A final comment on find no. 189:1 is the presence of a large crack or flaw which runs lengthways down the outer surface. This is quite worn and appears to have occurred in antiquity, possibly rendering the vessel useless.

Wooden objects: The remaining artefacts from Annaholty E3530 consist of a collection of wooden objects, only some of which can be definitively classified.

Find no. 55:22 is a dressed wooden peg which was carved from a larger branch or stem as opposed to being a piece of dressed or whittled brushwood. The head of the peg is cut to a shallow pencil point and the length is trimmed along 10–11 faces. Individual facets are not present, however, it was probably made quite simply by paring the wood with a small knife. Pegs of this type are made in order to secure two or more pieces of wood together. They are commonly found in medieval wooden assemblages where they were used in timber frame buildings. The Iron Age date of Annaholty E3530 makes this an unlikely function for find no. 55:22, however, it is reasonably similar to the dowel *in situ* in find no. 255:1 (see below) and may have formed part of this composite wooden artefact.

Find no. 90:247 is part of an animal yoke carved from ash, broken at both ends and incomplete. It consists of a circular shaft at one end of which is the remains of a perforation. There is one intact collar of 18 cm long, 9.60 cm from which is the partial remains of a second. The close spacing of the collars and the small size of the intact example suggest that this is part of a head yoke. A head yoke usually sits behind the horns of the animal, attached by means of straps and requires that the animals lower their heads and push forward using their head and horns (Conroy 2004, 3). Head yokes may date from as early as 2000 BC in mainland Europe and are likely to be amongst the earliest devices created to use animals for draught (Fenton 1986, 37). The original full length or number of collars on find no. 90:247 are unknown, however, some tentative suggestions can be made. At one end of find 90:247 are the closely spaced collars, indicating two animals in close proximity. When ploughing with four oxen it was common to place the animals side by side but not quite abreast and two separate yokes of different lengths were used, a short yoke for the central pair and a longer yoke for the outer two. Thus the Annaholty yoke may represent a short yoke for two animals. The broken horizontal perforation may have held a pulling rope or strap of some kind. All of the surfaces of this artefact are worn smooth and it would seem to have been well used prior to its deposition in the causeway. No toolmarks remained however, it would have been manufactured by splitting a suitable log and then further trimming it down using an axe. Final finishing and fine wood working and carving of the required shape were likely done with smaller tools such as chisels and gouges. Several animal yokes have been found in Irish bogs including one from Erriff Bog, Co. Mayo which is of suggested Iron Age date (*ibid* 43). In 2001 a yoke of Late Bronze Age date was found in a bog at Toberdaly, Co. Offaly (Stanley et al. 2003) and was also made of ash. Ash is easily worked and is strong and elastic (Nelson and Walsh 1993, 140-1), qualities which make it a good choice for an object subject to movement during its use.

Find no. 255:1 is part of a composite wooden object consisting of a rectangular timber of alder perforated by an *in situ* dowel of ash, a rectangular slot or mortice is cut through the central portion and crossed, at right angles by a circular dowel hole. At the broken end of the object is the remains of either a dowel hole or a second mortice. While ultimately there will remain some question over the function of this object it is clear that it formed part of a complex wooden object. The *in situ* dowel indicates that this end was attached at one or both sides to another piece/s of wood. This is also indicated by the linear mortice which appears to be made to receive a plank or board, secured in position with a transverse dowel.

This artefact bears remarkable similarity to an object from Corlea 1 (Raftery 1996, 273–5) consisting of a rectangular shaft through which were cut three rectangular mortises, two of which contained split boards. Two dowels were inserted through the length of the shaft with a third set adjacent to one of the boards. Although longer than find 255:1, the Corlea object is overall of lighter and smaller scale, the similarities, however, are striking. Raftery interpreted the Corlea find as part of a cart and it seems likely that find no. 255:1 may have had the same function. A suggested arrangement for find no. 255:1 is that it sat on its narrow edge and had a parallel counterpart, each forming the sides of a cart. These sides would have been secured to a separate frame by way of wooden dowels and may have had several mortises containing vertical boards dowelled in place. An alternate suggestion is that it sat on

its wider side and formed one side of a frame with horizontal boards set through the mortises. This type of construction could be used for the base of a cart or slipe, a simple sled composed of a rectangular platform supported by two runners (Evans 1957, 172). Until recent times slipes were used on farms to transport all manner of materials such as turf, stone or potatoes (*ibid*).

The initial splitting and trimming of the timber to create find no. 255:1 was likely done with axes and adzes, however all of the outer surfaces are worn and no evidence of these remains. Toolmarks on the object indicate the use of a small gouge or chisel to hollow out the mortice which was probably also used on the dowel hole. It was not possible to examine the *in situ* dowel in great detail however, its manufacture would have been quite straightforward and similar to that described above for find no. 55:22. The erosion of the outer surfaces on find no. 255:1 suggests heavy wear and use which would be consistent with a function as part of a cart or slipe. The choice of alder for a cart part (if indeed it is a cart portion) may be related to the use of alder in the manufacture of wheels. A pair of Iron Age block wheels from Doogarymore Co. Roscommon (Waddell 2000, 274), and a Bronze Age example from Edercloon Co. Longford (Moore 2007a, 482) were all carved from alder. Find no. 55:22 is a small wooden peg, not dissimilar to the *in situ* dowel in find no. 255:1 and it may originally have formed part of the composite wooden object, this is also true of find no. 262:3 a finely carved, perforated shaft discussed below.

Find no. 255:2 is a willow roundwood into one side of which are cut three dowel holes, two with hazel dowels *in situ*, held in position with tiny wooden wedges. It is a curious object, being quite crude and poorly finished with a forked end and large amount of intact bark, yet the dowels and wedges are very small and quite fine. It is clear that it formed part of a composite wooden object, as evidenced by the two dowels and dowel hole, however, the form of such an object is unknown. The dowels are quite small (Diam. 1.50–2.60 cm) and widely spaced (35–43.20 cm apart) but the addition of wedges indicates that care was taken to ensure they remained in position. Furthermore, the function of a dowel is to pin two pieces of wood together, however, neither of the two *in situ* dowels protrude beyond the dowel holes. This suggests that they were cut while *in situ* and that the composite wooden object, of which this find was part, was quite roughly dismantled.

There are no known direct parallels for this object, however, carved wooden shafts and roundwoods with various perforations and dowels have been found previously in midland raised bogs. The dowels indicate that at least three pieces of wood, either roundwoods or split pieces, were attached to it at right angles possibly forming a frame of some kind. Early slide cars, suggested by Evans to be of ‘high antiquity’, were used in Ireland until the early modern period and consist of two parallel runners fastened together by cross-pieces which form a carrying platform (Evans 1957, 173). A carved wooden object of unknown date excavated at Edercloon in 2006 has been suggested as the runner from a slide car (Moore 2007a, 35). Alternatively find 255:2 could have formed part of a structure such as a roof or door. Illustrations in O’Reillys *Living under thatch* demonstrate the use in vernacular houses of very crudely cut timbers with rudimentary trimming and shaping (O’Reilly 2004, 16 & 24). It is unlikely that the original function of this find will ever be clear, however, it does indicate the use of quite fine joinery during the period.

Find no. 262:3 is wooden shaft with a differentiated head through which is cut a circular perforation. It has been carved from a larger ash roundwood and as such represents a deliberate and careful piece of wood working. There was very little tool evidence on find no. 262: 3, initial splitting and trimming of the wood was likely carried out with axes and with the finer carving done using a small knife, the perforation was probably made using a gouge. A clear parallel for find 262:3 is unknown and coupled with the fact that it is incomplete, interpretation is difficult. The perforated head suggests that it may have been attached to something, perhaps a composite wooden object. A suggested use would be as a peg, inserted through one or more pieces of wood, further secured with a rod or rope through the perforation. Such an arrangement could be part of a cart, a loom or a piece of furniture. An alternative suggestion for this is that it is part of a flail. Flails were used to thresh grain and consist of a helve or hand staff usually made of ash, to which was attached a freely swinging stick or beater of hazel or holly (Evans 1957, 213). The method of attaching the two pieces often required a thong to be passed

through a hole in one or both (*ibid*). Find no. 262:3 appears to be too fine to have been made or used for such a rudimentary purpose, however, a similar object interpreted as a possible flail was excavated at Flag Fen (Pryor 2001, 218). It is interesting to note that a second similar object found at Flag Fen was suggested to be part of a yoke. The pairs of impressed lines along the length of the shaft appear to be the result of pressure and could represent points where the wood was in contact with another surface, i.e. where it was inserted through carved holes. Alternatively they may be the result of something wrapped or tied around shaft, possibly leather straps, cord or yarn.

Find no. 298:133 is the end of a forked hazel branch which appears to have been deliberately shaped and both ends of the fork and the point where they join are very rounded. Wood working evidence is scant and consists only of a possible toolmark on the end of one fork. Nonetheless this object does appear to have been modified and subsequently heavily worn and used. The reason for this is unclear and a definite function or classification for this object is unknown. It is likely to have been part of quite a simple object, possibly a walking stick or staff, chosen for its particular shape. A very similar object also of hazel but of medieval or later date was recovered from Daingean (South) Bog in Co. Offaly (IAWU 2002b, 35).

Conclusions

The Annaholty E3530 worked wood assemblage compares well with contemporary material and has added to the knowledge of wood working techniques and object manufacture in Iron Age Ireland. The techniques evidenced in the production of timbers, posts, stakes etc were not out of the ordinary, however, the tools used were of very high quality and those using them were highly skilled. The wooden artefact assemblage was also of very high quality and indicates a people skilled in the manufacture of such items and with knowledge and understanding of the properties of various wood species. These objects make a very significant contribution to our knowledge of vessel manufacture, and offer suggestions and possibilities for the early use of draught animals, wheeled or possibly un-wheeled vehicles.

Further work

The worked wooden assemblage from Annaholty E3530 has been fully recorded and each piece has been professionally illustrated and had a record photograph taken. This has resulted in a comprehensive and high quality paper record. In addition each piece has been identified as to species by Susan Lyons MSc.

Conservation

All of the wooden artefacts from Annaholty E3530 should be professionally conserved. During the recording process 26 pieces were selected as possible candidates for conservation. These were mainly stakes and posts of high quality preservation and were deemed to best represent the assemblage and characterise the various types of wood working evident. Due to their generally degraded nature, no split timbers or pieces of split wood were selected. Any programme of conservation should be fully discussed in advance with the National Museum of Ireland. The pieces selected for potential conservation are listed in Table 10.

Table 10: Worked wood, stakes and posts selected for conservation

Find No.	Classification	Point Type	Note
92:1	Post	Pencil	
93:1	Stake	Wedge	
150:1	Post	Pencil	
154:1	Post	Pencil	
157:1	Post	Pencil	
158:1	Post	Chisel	High number of facets for a chisel point
166:1	Stake	Chisel	Signatures

Find No.	Classification	Point Type	Note
168:1	Post	Pencil	Signatures
172:1	Post	Pencil	
174:1	Post	Pencil	
180:1	Post	Pencil	
184:1	Stake	Pencil	
193:2	Post	Pencil	Signatures
194:1	Stake	Pencil	
255:30	Worked end	Pencil	
256:1	Post	Pencil	
262:8	Wood working waste	N/A	Several tools evident, signatures, jam-curve
267:1	Post	Pencil	Jam-curve & slightly concave facets
269:1	Stake	Pencil	Signatures
270:1	Post	Wedge	
276:1	Post	Wedge	Slightly large facets
277:1	Post	Pencil	Signatures
291:1	Post	Wedge	
298:26	Worked end	Wedge	
298:74	Worked end	Chisel	Spiralling indentation around length
354:1	Stake	Pencil	

Photography

The conservation process reduces the visibility of fine wood working in particular and so it is strongly recommended that professional photography of all artefacts and worked pieces be undertaken prior to conservation.

Wood species analysis by Susan Lyons (Figs 43-56, Plates 58-65)

Introduction

This report presents the results of the wood identification and analysis carried out on a wooden causeway excavated at Annaholty Site 8, Co. Tipperary (NGR 168385 163535). Dendrochronological dating of the oak timbers from the structure revealed that this causeway is likely to have been constructed from trees felled about 40 BC or slightly later (Brown 2008 (see below)). The structure ranged in form from split timbers and large roundwood elements, to lighter brushwood scatters and arrangements of small and medium roundwoods. The causeway was aligned south-west to north-east between two gravel islands within the bog, possibly connecting the two areas of dry ground. The structure is likely to have initially been approx 65-70 m long, but as a result of truncation and ground works the excavated portion was 55 m in length.

Scope of wood analysis

The overall aim of the wood study from Annaholty Site 8 was to provide a sufficient record of the wood species selected for the construction of the wooden causeway recorded at the site. The wood results would also give information on the species composition of the marginal woodland and perhaps some indication of the wider wooded landscape. The wood analysis would also serve to identify if woodland management or a selection process was employed at the site by studying the size (diameter), age ranges and growth ring patterns of the material.

While this analysis also contains the wood species identification of all wooden artefacts recorded at the site, the wood technology analysis was carried out by Cathy Moore and these results are discussed in a separate report (Moore 2009 (see above)).

This report will discuss the wood assemblage identified at Annaholty Site 8 and include the following:

- the total results of wood identifications and analysis from sampled elements
- discussion of the wood species from each of the three construction phases recorded at the site
- the age profile and size of the wood identified will help highlight evidence for possible woodland management and selection at the site
- re-constructing the local woodland environment that surrounded Annaholty during the Iron Age and potentially the wider wooded landscape
- comparisons with other similar Iron Age wood assemblages excavated from Irish wetland sites

Sampling strategy

A comprehensive wood sampling strategy was devised and implemented on site by Cathy Moore and TVAS (Ireland) Ltd. A total of 1113 wooden elements were sampled, 350 of which displayed evidence for wood working techniques. In addition, 15 wooden artefacts were also recovered from the site, which included several vessel fragments, a barrel stave, the remains of an animal yoke and a number of larger items likely to include part of a cart.

Timbers, once lifted from the site, were moved to a nearby processing area where they were washed, photographed and recorded in detail. Suitable storage containers and packaging material for delicate and waterlogged objects were also made available.

In line with the method statement designed for the site, large pieces of wood void of any tool markings or tool technology were sampled for species and age identification by sawing off a slice on site. Large pieces with tool marks restricted to one area were cut and the worked part retained for further analysis. The samples selected for wood analysis were wrapped appropriately and stored whilst the remainder was discarded.

Each wood element sampled was given an individual wood number and, in most cases, assigned a separate sample number.

Methodology

The wood samples were washed and prepared for analysis by post-excavation staff at the TVAS (Ireland) Ltd post-excavation facility located at Ahish, Ballinruan, Co. Clare. The individual worked and unworked wooden elements along with the wooden artefacts recorded were unwrapped, cleaned and visually examined for the presence of bark, buds and any other obvious external features which would aid wood species identification or general interpretation.

Wood identification

Wood species identifications were undertaken in accordance with Section 25 of the National Monuments Act 1930, as amended by Section 20 of the National Monuments Amendment Act 1994, to alter an archaeological object. A portion of each wooden element was sawn off to reveal an unexposed surface. Exposing a fresh surface would rid the wood of any degradation or possible fungal attack which may hinder species identification. Thin slivers were cut with a razor blade to obtain the three sectional planes (transverse, radial and tangential sections) necessary for microscopic wood identification (Fig. 43). The thin sections were mounted onto a glass slide with a temporary water medium and sealed with a cover slip. Identifications were conducted under a transcident light microscope at magnifications of 4x to 40x where applicable. Wood species identifications are made using wood reference slides and wood keys devised by Brazier and Franklin (1961), Schweingruber (1978), Hather (2000) and the International Association of Wood Anatomists (IAWA) wood identification manuals and database (www.lib.ncsu/edu/insidewood) by Wheeler, Bass and Gasson (1989).

Wood size

Each wood piece chosen for analysis was also measured along the cross section (mm) to determine the size of the element, which would be useful with interpreting if a selection process based on physical size was being used at the site. The wood elements were categorised into those that were identified as timbers (split radially or tangentially) and roundwoods. Due to the large number of roundwood elements from the assemblage, this category was further divided into sub-categories of small roundwoods (<25 mm), medium roundwoods (26-60 mm) and large roundwoods (61-100 mm) (Moloney et al. 1993). Irregular fragments, which were not classified as split timbers or roundwoods were not included as it was difficult to ascertain the original size of these elements.

Growth ring count and ring width analysis

Where possible each of the wood pieces selected for species identification were also studied for growth ring count and ring width analysis (Plate 58) in order to determine an age profile for the wood and evidence for possible woodland management, in the form of coppicing. Measuring the ring width can also provide information on the growing conditions and potentially the season in which the tree was felled, if the bark was present. This was undertaken by using a calibrated graticule located in the eyepiece of a stereoscopic microscope.

Results

A total of 1117 wood identifications were undertaken from the Annaholty Site 8 wood assemblage (Table 11). These included all wooden sub-samples, wood working samples and wooden artefacts that were sampled as part of the project. Eleven wood samples were deemed missing or could not be accounted for and will not be included as part of this report. These missing wood pieces included – 90:138, 90:182, 90:251, 90:253, 170:101, 170:151, 255:10, 255:84, 255:168, 255:169 and 255:191.

It is possible that some of these missing samples were bagged together with known samples as two identifications were carried out from wood numbers 90:13, 90:129, 90:141, 90:233, 90:257, 160:10, 170:81, 170:120, 170:121, 297:58 and 298:28. In the case of 90:13, 90:233 and 170:120, the two wood elements recorded are likely to have derived from the same piece based on identification, size and form.

Table 11: The number of identified wood samples per context

Phase	Context	Number of wood samples	Number of wood samples identified/analysed	Number of missing samples
Phase 1	298	142	141	1
Phase 2	170	190	188	2
	255	203	198	5
	282	8	8	0
	295	9	9	0
	297	60	60	0
Phase 3	90	278	274	4
	95	4	4	0
	97	22	22	0
	160	57	57	0
	179	1	1	0
	262	19	19	0
	282	8	8	0
	Individual stakes	136	136	

Twelve wood taxa totalling 1117 identifications were recorded from Annaholty Site 8, Co. Tipperary. The majority of the wood samples were in a very good state of preservation and most had traces of bark still attached. There was no obvious knarled or knotty wood recorded from the assemblage, which implies that some degree of consideration was used when choosing the woods to construct the causeway. Most of the wood was free of any obvious insect damage and this suggests that the wood used in the structure may have been felled just before use and deposited or utilised soon after. Approximately 6% of the wood assemblage analysed was degraded and showed signs of rot and insect damage, which may indicate that some woods were lying exposed or used for other purposes prior to being utilised in the structure.

Results of the wood identification and analysis (Fig. 44)

The majority of the wood elements were in a relatively good state of preservation and identifications could be made to genus level for the most part, i.e. *Quercus* (oak), *Betula* (birch), *Salix* (willow) and *Rhamnus* sp. (buckthorn) and species level i.e. *Ilex aquifolium* (holly). In cases where the species was considered to be the most likely represented, these included *Alnus glutinous* (alder/black alder), *Fraxinus excelsior* (ash) and *Corylus avellana* (hazel). A more comprehensive account of all species identified is discussed below in *Characteristics of wood species*.

The identification of the Pomoideae (Maloideae) wood group proved more difficult to separate. The pomaceous fruit wood species includes the genera *Malus* (apple), *Pyrus* (pear), *Sorbus* (rowan or whitebeam) and *Crataegus* (hawthorn). They are anatomically very similar and in the absence of bark, buds and leaves cannot be differentiated between each other very often. In the case of the Annaholty assemblage, bark was present from some of the Pomoideae identified woods and this proved useful in distinguishing between species.

Sorbus (rowan or whitebeam) bark is smooth and silver/brown in colour in young trees, becoming scaly and fissured in older tress (Plate 59) *Crataegus* (hawthorn) bark is also smooth in young tress, but develops into shallow longitudinal fissures with narrow ridges in older trees (Plate 60). Similarly, *Prunus* sp. (cherry-type), which was also identified from the assemblage, can prove difficult to identify to species level, however *Prunus avium* (wild cherry) was the most notable species of this genus recorded from the site.

Oak (*Quercus* sp.) was by far the most dominant wood species recorded from the study, accounting for 50% of the identifiable material. Birch (*Betula* sp.) was the second most significant wood type making up 20%, with hazel (*Corylus avellana)* accounting for 17% of the assemblage. Equal quantities of alder (*Alnus glutinous)* and rowan/whitebeam (*Sorbus* sp.) were recorded at 4% each, while just 2% of willow (*Salix* sp.) was identified. Ash (*Fraxinus excelsior)*, pomaceous woods (*Pomoideae* spp.), hawthorn (*Crataegus* sp.), wild cherry (*Prunus avium*), holly (*Ilex aquifolium*) and buckthorn (*Rhamnus* sp.) accounted for just 1% or less of the total woods identified at the site.

Results for wood size (Fig. 45)

The majority of the wood analysed from Annaholty was made up of split timbers/split roundwoods which accounted for 37% of the assemblage most notably from Phase 2 (255) and Phase 3 (90) of the Annaholty structure. Larger roundwoods (61 mm - 100 mm), which were most prominent from Phase 3 (90 and 160) accounted for 26% of the material. Wood elements classified as medium roundwoods (26 mm – 60 mm) made up 24% of the identifiable material, while small roundwoods (<25 mm diameter width) made up 13% of the assemblage. The majority of the medium roundwoods were recorded from Phase 2 (255), while the highest number of small roundwoods was identified from Phase 1 (298).

Results for growth ring count and ring width analysis (Figs 46-47)

Where possible, the number of growth rings was recorded from each of the roundwood elements. A total of 919 roundwoods or split roundwoods proved suitable for growth rings counts. The assemblage was made up of relatively equal proportions of younger and more mature woods.

Up to 51% of the analysed wood elements were less than 30 years old – 25% was aged to between 11 and 20 years, 19% were between 21-30 years, with 7% less than 10 years. Up to 24% of the wood identified was aged between 30-50 years, with a notable percentage (20%) aged between 50-80 years and 5% aged older, some over 100 years.

The growth ring widths from 826 of the wood samples were measured using a calibrated graticule. Since many wood samples contained more than 50 growth rings, approximately 10% of the growth rings from each sample were measured as a representative proportion for this study. Annual growth rings in wood species growing in temperate climates can be affected by a number of different factors (Briffa et al. 2002).

- If spring-time temperatures start early then the growing season can be longer causing a wider ring
- Lower spring-time temperatures will shorten the growing season and produce a narrow ring
- Abundant rainfall can increase growth causing a wide ring
- Drought decreases growth and produces a narrow ring
- Different taxa will respond differently to changes in precipitation, ground water flow and temperature that can alter the length of the growing season
- Overcrowding from neighbouring trees in dense woodlands can result in narrow rings
- A series of narrow rings followed by wide rings can mean that an encroaching neighbour has died or has been removed

With just 10% of the wood assemblage portraying annual growth rings of <1 mm in width, it is therefore unlikely that the wood selected in the construction of the Annaholty causeway was growing in stressful or less than optimum conditions. The majority (56%) of the growth rings from the Annaholty assemblage were relatively consistent and measured to between 1 and 2 mm in width, which suggests even growth and relatively favourable conditions for the growth of these species, possibly reflecting open or marginal areas. Birch, hazel, willow and the pomoideae woods are all light loving species and as such would thrive well in clearances, away from larger woodland cover. Oak too may have been growing in more open areas rather than in crowded dense woodlands, where its growth patterns would have become stunted. With 34% of the assemblage displaying very wide growth rings (min 2 mm; max 9 mm), this could represent an unusually early spring growing season, or, as previously mentioned that there was an increase in local rainfall.

In some very specific cases, it was possible to determine the felling season of some of the timbers identified at Annaholty Site 8. This technique is not suitable in all cases as the bark/sapwood would need to be intact and is most noticeable in ring porous species, such as oak, ash and elm. A dark band of compact thick-walled cells, which form during the later part of the growing season (latewood) were noted from approximately 20 oak wood elements associated with samples from 170 and 297 within the Annaholty assemblage. This coupled with good bark and sapwood preservation shows that these trees were probably felled in late summer or early autumn. This is a tentative interpretation and more samples would need to be available for any definitive interpretations to be put forward.

Characteristics of wood species

Quercus sp. (oak)

Oak is a tall deciduous woodland tree, often growing in association with hazel and ash. Most oak species prefer damp non-calcareous soils on lowland or montane sites at altitudes up to 4,000 m (Gale and Cutler 2000). It is a tall deciduous woodland tree, often growing in association with hazel and ash. Oaks can reach a height of 40 metres and live for 1,000 years or more (Hickie 2002, 60). Of the 27 European species, pedunculate oak (*Quercus robur)* and sessile oak (*Quercus petraea)* are native to Ireland. Pedunculate oak is common on heavy clay and lowland soils whereas sessile oak thrives on the lighter loams characteristic of higher ground (Gale and Cutler 2000). The two native Irish oaks are usually distinguished by their acorns: the sessile oak has acorns with no stalks, while the pedunculate oak has acorns with long stalks (peduncles). The wood is easy to cleave both radially and tangentially and has provided one of the most important building materials since the prehistoric period (ibid). The heartwood timber is renowned for its durability but the paler sapwood is susceptible to beetle and fungal attack. The strength of the timber depends on the species and is influenced by climatic and edaphic factors (Edlin 1951). When burnt, oak charcoal, particularly the dense heartwood, has higher calorific values than most European woods and this can make for good long-lasting fuel (Gale and Cutler 2000).

Corylus avellana L. (hazel)

Hazel woodlands replaced birch in the early post-glacial forests and remains on some shallow limestone soils to the present day (Pilcher and Hall 2001). The species can tolerate most soil types, but not waterlogged conditions and forms a small deciduous tree or shrub. It commonly occurs in the understorey of oak and/or ash woodlands, where it may grow to a height of 10 m or more. In open areas or woodland glades hazel grows as a shrub. Hazel is a common species recorded from Irish archaeological sites and its widespread presence is highlighted in pollen diagrams from the Neolithic to the medieval period (Caseldine and Hatton 1996). It produces good firewood and is a suitable wood for kindling. The wood is soft enough to be split yet flexible and strong enough to be used in rope making and basketry. It has also proved a useful resource in the construction of hurdles, wattling, palisades and trackways from prehistoric times (Pilcher and Hall 2001).

Betula spp. (birches)

Birch was one of the first tress to arrive to Ireland after the end of the last glaciation. The two species common to this genus are silver birch (*Betula pendula*) and hairy birch (*Betula pubescens*), however it is difficult to distinguish them anatomically. Birch grows as trees or shrubs with a preference for light and thrives on non-calcareous soils. It is often associated with heathland and successional oak woods, but can rapidly form secondary woodland in cleared areas and on abandoned peat cuttings. Birch species are generally short-lived, although some examples have known to reach ages of up to 70 and 80 years. Through most of its woodland history, birch played a minor role since its timber was too weak for structural purposes and rots easily outdoors and therefore not greatly valued, when kept dry however it is as durable as ash. Birch wood however, makes a hot but short-lived fuel and produces high quality charcoal (Lines cited in Gale and Cutler 2000). It is best suited in the manufacturing of fine objects, such as furniture, bowls and tool handles. Birch bark has also been used as insulation, in making shoes and roofs and in the production of dyes, tanning and oil extraction (Edlin 1951). Birch twigs are used in thatching and making brooms, ropes and hurdles (ibid).

Alnus glutinous L. Gärtner (alder or black alder)

Alder is usually found growing close to running water, rivers or in damp woodland, in the latter often with oak (Orme and Coles 1985; Rackham 1995). In marshland alder grows as a shrub frequently mixed with willow and alder buckthorn to form alder carr (Gale and Cutler 2000). It can also grow well in and on fen peat. Germination and early growth of alders requires a constant supply of water, however once the tree reaches maturity its root system makes the tree less dependent on high water levels (Stuijts 2005). Alders commonly produce root nodules which contain nitrogen-fixing bacteria, known as *Schinzia alni* which enables alder to enrich soils through its fallen leaves hence allowing the tree to survive in poorer soil conditions (Milner 1992 (cited in Gale and Cutler 2000); van der Meiden

cited in Stuijts 2005). In suitable conditions alder growth is fast, usually reaching a height of 25 m with a maximum girth of 1 m and can grow to an age of sixty to one hundred years (Stortelder et al. cited in Stuijts 2005). While alder makes for poor fuel, it produces good quality charcoal (Edlin 1951). The wood can quickly turn a reddish colour after cutting and once dry it is water resistant and does not split easily. Once in a waterlogged state, alder is very durable and is often used in the construction of underwater bridge piles, houses, boats, fish-traps and scaffolding (Gale and Cutler 2000). Alder is traditionally used in the making of smaller objects such as bowls, bucket staves, handles, plough parts and broomsticks and its bark can be used in the tanning of leather (Rackham 1980).

Fraxinus excelsior L. (ash)

Ash is a wood that thrives well on nutrient-rich soils but is also a common woodland species and grows in mixed woodland with oak on damp, slightly acidic soils (Gale and Cutler 2000). It generally avoids very wet environments although where soils are mineral-rich, it can sometimes be found in marginal forests and on stream beds. While ash is a light-loving species, the seedlings prefer shaded areas to grow. It can grow up to 45 m in height and can reach an age of 150 years. It produces very good firewood and its timber is valued for its durability and elasticity and is commonly used in making furniture, shafts, spears, handles and agricultural equipment. Upon exposure, ash is prone to rotting. Pollen analysis indicates that ash became more common in the pollen record from the Neolithic period onwards (Mitchell 1953/4). This could be as a result of more clearance due to agricultural practices at the time, where ash was able to germinate and grow more vigorously as secondary woodland and in marginal areas and hedges (Kelly 1976).

Salix spp. (willows)

There are a number of different species of willow which cannot be differentiated through wood anatomy. The main Irish native willows are grey willow (*Salix cinera*), goat willow (*Salix caprea*) and eared willow (*Salix aurita*). They grow rapidly, and can be easily propagated from cuttings. General comments only about the genus can be made, as there are different varieties of it. They are not naturally a woodland species, although shrubby growth may occur under light woodland cover. All willows appear to favour wet conditions, and it may be a pioneer species on wet soils. The use of willow depends on the species concerned, for some grow as shrubs and others as trees, and a species may be particularly suited to some purpose. In general, the flexibility of willow shoots has led to coppicing or pollarding to produce the raw materials for baskets, frames, hurdling etc. (Orme and Coles 1985). On the continent, willows were being cultivated by the Iron Age for use in hurdle construction and as stakes and pegs (Caseldine and Hatton 1996).

Pomoideae spp. (pomaceous fruit woods) (includes *Sorbus* and *Crataegus)*

The Pomoideae (Maloideae) woods are pomaceous fruit wood species which includes the genera *Malus* (apple), *Pyrus* (pear), *Sorbus* (rowan or whitebeam) and *Crataegus* (hawthorn). They are anatomically very similar and in the absence of bark, buds and leaves cannot be differentiated between each other very often. The pomaceous wood types are small deciduous trees or shrubs and are common to the scrub margins of woodlands and hedgerows (Gale and Cutler 2000). The apple species, often crab apple (*Malus sylvertris*) in woodlands, is a light-demanding tree and is often found in open oak woods. When dry, crab apple makes for good firewood. While its wood is durable and tough, its crooked trunks and small branches make this species unsuitable for most construction works and instead it is used in making small implements, such as tool handles, bodkins and screws.

Pear, grown as wild pear (*Pyrus pyraster*), is good as fuel. The wood is smooth, fine-grained and also suitable for turnery, household utensils, instruments and small decorative woodwork. Rowan/whitebeam (*Sorbus*) grows well in light soils and avoids clays and limestone. It can be found growing close to oak, hornbeam and hazel in Britain (Rackham 1995). This species produces the hardest wood and was used in Europe to make cogs for machine wheels until the introduction of cast iron (Gale and Cutler 2000). Coppiced shoots were used as hoops and crates and the bark was

commonly used as animal fodder (ibid, 184). Hawthorn is shade-tolerant and forms understorey in ash and hazel woodland and was commonly planted as a hedge or boundary marker. It was also used in the production of small woodworkings, turnery and is ideal for carving and engraving. Both hawthorn and apple-type (*Malus* sp.) produce edible fruits which would have been gathered as a foodstuff from the prehistoric period (Greig 1991). These wood types burn slow and steady and provide excellent heat with minimal smoke (Gale and Cutler 2000).

Ilex aquifolium L. (holly)

Holly is an evergreen tree which grows on almost any soil type and can tolerate heavy shade, sometimes growing as understorey in oak or beech woodlands. It dislikes very wet soils and can thrive well in abandoned agricultural clearings (ibid, 139). Holly produces good firewood. The fine-grained nature of the wood makes it suitable for carving and turning (Orme and Coles 1985). It can distort when drying and as such is usually used in small pieces and is not suited for outdoor use. It is traditionally used for walking sticks and can be easily coppiced and pollarded (ibid). Holly was seen to have held magical and protective powers with some cultures from prehistoric times and was therefore held in high esteem (Gale and Cutler 2000, 139). With many others it is also reputed to bring bad luck (Rackham 1980). Holly artefacts are generally rare, perhaps reflecting the superstitions attached to the tree or the difficulty with working the wood (Gale and Cutler 2000, 139).

Prunus avium/padus L. (wild cherry/bird cherry)

These species are difficult to distinguish in the absence of bark, buds and leaves. Wild cherry (*P. avium)* is a medium to tall tree, common to woodlands and hedges on light, well-drained soils. It produces inferior firewood. The timber is a red colour and although tough and hard is unsuitable for outdoor use as it decayed easily (Gale and Cutler 2000). Bird cherry (*P. padus)* is a smaller tree and less common than wild cherry. It grows in marginal woodland as a solitary tree and can live for up to eighty years (Rackham 1980). The wood has an unpleasant odour and is of no real economical value, although has been used in barrel production (Gale and Cutler 2000). Both species are used in the production of ornamental or culinary objects (ibid).

In the case of the *Prunus* sp. identified from Annaholty, the good preservation of the material allowed for further identification work to be carried out. The ray width, exclusive of uniseriate rays, was on average three cells wide and this together with the presence of fiber tracheids, are anatomical characteristic of *Prunus avium.*

Rhamnus sp (buckthorn)

Buckthorn is a small tree of woodland margins. Two species common to Ireland are the purging or common buckthorn (*Rhamnus cathartica*) and alder buckthorn (*Frangula alnus*). Alder buckthorn is common to wet heathlands or as a straggling plant in acidic woodlands (Gale and Cutler 2000). This species provides good charcoal and is durable once waterlogged.

Distribution of the wood species: Phase 1 to Phase 3

The distribution of the wood assemblage is discussed in line with the stratigraphical or phasing assigned to the structure. The wood identification and analysis results are also presented to reflect this in Appendices 4-15. Individual worked wood elements and artefacts associated with these stratigraphical layers are also grouped accordingly.

Individual worked elements, such as uprights (stakes/pegs), which could not be placed into any stratigraphical sequence, are presented together in Appendix 16.

Phase 1 (Fig.48)

The earliest construction phase at Annaholty was represented by deposit 298, which was a group of 142 timbers located at the south-western end of the site. The deposit consisted of split wood, brushwood, roundwood and one worked piece (find 298:133). The timbers were orientated south to north and south-west to north-east.

Hazel was the dominated wood species within this context accounting for 66 of the identifications, most notably from small to medium roundwoods, especially from the southern extent of the structure. Oak accounted for 49 identifications, which were larger roundwood and split timber/roundwood elements. Less than ten identifications of willow, pomaceous woods, birch, cherry-type and rowan/whitebeam were also recorded within this layer (Appendix 4).

Phase 2 (Fig. 49)

Deposit 170 seems to be the initial laying of a causeway and was recorded in the western portion of the site. This layer was composed of 190 pieces of split timbers, brushwood and roundwood. The orientation was mainly south to north. Deposit 179 was a small patch of wood either broken off deposit 170 or deposit 90, and was located around stake 178:1 along the southern edge of the most western part of 170. A total of 188 wood samples were identified from deposit 170. Two wood elements were deemed missing - 170:101 and 170:151.

Oak dominated the assemblage from 170 accounting for 103 identifications. Birch made up 50 identifications, followed by alder (x13), hazel (x10), pomaceous woods (x5), rowan (x3), wild cherry (x1), willow (x1) and ash (x1) (Appendix 5).

Deposit 255 was located at the north-eastern end of the site. This deposit consisted of 203 pieces of split timbers, brushwood, roundwood and two worked pieces (finds 255:1-2). This timber layer was orientated south to north and was composed of two ‘levels’. Of the 203 wood elements samples, 198 were identified and analysed. Missing samples included - 255:10, 255:84, 255:168, 255:169 and 255:191.

Oak made up 81 identifications, birch 57 and hazel 33. Much lesser alder (x10), rowan (x4), ash (x4), pomaceous woods (x4), willow (x3), hawthorn (x1) and wild cherry (x1) were also identified from the assemblage. The only evidence for holly (x1) was recorded from 255. Two wood species were identified from Find 255:1. The larger element was made from alder, while an associated dowel was identified as ash. Two wood species were also identified from Find 255:2 – the long wooden object was manufactured from willow, while the associated dowels (x2) were identified as hazel (Appendix 6).

Deposit 295 was a layer of nine timbers located at the far south-west of the main body of the causeway. The timbers were orientated south to north and west to east. Although somewhat separate from the causeway and as a result of truncation it is difficult to phase these deposits accurately. Oak (x5), rowan (x2) and birch (x2) were all identified from 295 (Appendix 7).

Deposit 297 was a layer of brushwood that overlay deposit 298. This layer contained 60 pieces of brushwood orientated south to north and south-west to north-east. Oak dominated the assemblage (x39), followed by birch (x11), with lesser hazel (x4), rowan (x3), ash (x1), willow (x1) and pomaceous woods (x1) also identified (Appendix 8).

Phase 3 (Fig. 50)

Deposit 90 consisted of 278 timbers orientated south to north and formed the main body and upper level of the causeway. The timbers were long narrow planks, reaching a maximum length of 7.90 m, and brushwood and roundwood, some of which were inserted as fillers between the planks. In some

places pegs were also seen holding down the ends of the planks. Deposit 167 was a localised concentration of brushwood located under plank 90:104 probably used to prop the plank up in a wet area.

A total of 274 wood samples were identified from deposit 90. Four samples were deemed missing - 90:138, 90:182, 90:251 and 90:253. In the case of 90:129 and 90:141 two different identifications took place as there was more than one wood piece bagged together. Oak and birch were identified from 90:129, while pomaceous wood and birch were recorded from 90:141.

Oak was the most prominent species identified from deposit 90, accounting for 213 of the identifications. Although in much lower numbers, birch (x40) was the second most common species recorded. Much lower occurrences of rowan (x8), alder (x5), willow (x4), ash (x2), pomaceous woods (x2) and hazel (x2) were also present from 90 (Appendix 9).

Deposit 95 was four pieces of degraded wood and one pencil point lying on top of the main body of the causeway. All the pieces ran perpendicular to the causeway timbers but despite their position their function in the causeway is unclear. They may have become broken and displaced from their original position in the causeway or that they were used for repair or maintain the structure.

Birch (x2), oak (x2) and alder (x1) were recorded from deposit 95 (Appendix 10).

Deposit 97 was an area of brushwood under layer 90 in a location where there were 160 runners, and was seen along the eastern edge of the machine cut road. Despite the truncation, worked pieces of wood were retrieved from the deposit. These included broken pieces from two tubs and possibly three other different vessels (Finds: 97:1, 97:2, 97:18, 97:19, 97:20, 97:21 and 97:22).

Twenty two wood samples were identified. Alder (x8), oak (5), willow (x3), birch (x3), hazel (x2) and rowan (x1) were identified from 97 (Table 10). Interestingly the vessel/tub fragments recovered from deposit 97 (Finds: 97:1, 97:2, 97:18, 97:19, 97:20, 97:21 and 97:22) were all identified as alder. Alder was not a prominent species identified within the Annaholty structure, but the use of this timber in the manufacturing of such a vessel suggests that it was selected specifically for it. Wooden tub/vessel fragments recorded from the Iron Age site at Corlea 1, Co. Longford, were also identified as alder (Raftery 1996, 264), as well as bowls and tubs recovered from Edercloon, Co. Longford (Moore 2007b, 20). Also, at Derryfadda 17 in Derryville Bog, Co. Tipperary (O'Neill 2005, 316) a Late Bronze Age dated bucket fragment was identified as alder. Alder is known for its durability, specifically in wet conditions and this may have been one attribute when choosing it in manufacturing such vessels.

Deposit 160 was composed of timber runners, orientated west to east, acting as a support for the structural planks making up the main body of the causeway, deposit 90. The runners were recorded on the western and eastern areas of the site. There were a total of 57 roundwood and brushwood timbers in deposit 160.

Oak (x28) and birch (x21) dominated the assemblage from deposit 160. Much lower incidences of hazel (x3), rowan (x2), ash (x1), alder (x1) and pomaceous woods (x1) were also identified (Appendix 12).

Only one oak wood identification was made from deposit 179 (Appendix 13).

Deposit 262 may have replaced 170 and overlay deposit 282. The composition of this deposit differed from others as it was composed mostly of worked brushwood, wood working waste and had one worked peg (Find 262:3). Just 19 wood samples were recorded from 262. Birch accounted for nine of the identifications, followed by hazel (x4), oak (x4), alder (x1) and Find 262:3, which was identified as ash (x1) (Appendix 14).

Deposit 282 lay to the east of deposit 255 and was truncated by a modern drain. The deposit was composed of eight timbers aligned south to north. Oak (x5), birch (x2) and alder (x1) were recorded (Appendix 15).

Discussion of the wood distribution from Phase 1 to Phase 3

The wood species identified from the known phases recorded as part of the Annaholty structure are presented in Figure 51 and help to highlight any changes in wood use during the life of the causeway.

While there are some very slight shifts in some woods used in the construction of the Annaholty causeway, the composition of the wood species generally stays relatively uniform from phase to phase. Oak, which was the main structural component of the Annaholty causeway, was the dominant species recorded from all phases within the structure, especially split timbers and large roundwoods. This species is at its lowest values however from Phase 1 (298), which may imply that oak was not the wood of choice in the construction of this layer. Many of the oak wood samples from 298 were also quite degraded or display signs of insect damage which may also suggest that these elements were either re-used timbers or lying exposed for some time prior to use.

Oak was a very common species used in construction during the prehistoric period due to its strength, workability and durability. Oak was also the major component in the Iron Age wooden structures at Corlea 1, Co. Longford (Moloney 1996, 350), Derraghan More, Co. Longford (ibid, 447) and Clancy Barracks, Co. Dublin (O'Donnell pers. comm.). It is generally surmised that large timbers used in construction works are obtained as close to the site as possible to avoid transportation and preparation problems. Despite oak being available in the local woodland of a site, it often played a minor role in the construction of wooden trackways, like at Newrath, Co. Kilkenny (Lyons and O'Donnell 2007), where alder dominated. Oak too was under-represented from Iron Age structures at Derryville Bog, Co. Tipperary (Stuijts 2005, 182) and from the Edercloon wood assemblage (Stuijts pers. comm.). In these cases, it was interpreted that oak may have been best used for other purposes on the dryland. At Annaholty, the use of primarily oak suggests it may have been sourced specifically for the site, which would have required planning and organisation. The results of the wood technology from the assemblage suggests high quality woodmanship and wood working knowledge (Moore 2009 (see above)), which reflects the effort and time put into constructing such a structure. This could therefore highlight the importance of the Annaholty causeway to local communities, where the need for sustainability was a significant factor in the construction of the causeway.

Phase 1 (298) contained the highest number of hazel wood elements, but very low birch wood. While birch becomes a notable species in Phases 2 and 3 of the construction, the number of hazel wood elements declines at the same time. This reduction in the use of hazel is more likely to be a reflection of how hazel wood was used within the structure rather than a decline in the availability of this species. Many of the individual stakes or uprights recorded from the Annaholty causeway (Appendix 16) were identified as hazel (Fig. 52) and this highlights a selective process by which wood was used at the site. Traditionally hazel is a common species used in rods, sails, pegs and stakes (Gale and Cutler 2000, 89), and this trend is also the case at Annaholty. The majority of the hazel wood identified at the site was small and medium roundwoods (<60 mm diameter) and is likely to have been brought to the site as brushwood. This species also displayed evidence for woodland management, which is discussed in detail in a later section.

Birch was the second most dominate species recorded from the Annaholty causeway, most notably from Phase 2 (170 and 255) and Phase 3 (90), accounting for 20% of the overall identified wood. The use of birch at the site certainly highlights that this species was growing in plentiful supply in and around the site and as such would have been frequently exploited, similar to Derryville Bog, Co. Tipperary (Stuijts 2005, 183). Since all categories of woods (timbers, large, medium and small roundwoods) were represented by birch, it reaffirms the availability of this wood species close to the site as all various sizes of the tree were potentially used in constructing or maintaining the structure.

The scrubby wood species of the pomaceous woods (including rowan and hawthorn) and wild cherry are present in very low numbers from the site. In later prehistoric periods, pomaceous woods are more prevalent in the landscape, perhaps as a result of more opening up of larger areas of land or the fencing off of certain areas (Stuijts 2003/4, 20). The wood species that were recorded at 1% or less from the assemblage (pomaceous woods, ash, hawthorn, wild cherry, holly and buckthorn) did not form a major part of any construction phases of the Annaholty causeway. It is probable therefore that they were brought to the site as clear-fell remains, i.e. they were growing as isolated trees in the woodland area that provided the wood for the trackway but were not selected purposely for construction works. These species may have also been gathered to help maintain or repair the structure during its use.

An interesting observation is the low values for ash at the site, which was a prominent species recorded from other Iron Age trackways, such as Derryville Bog, Co. Tipperary (Stuijts 2005, 137), Corlea 1, Co. Longford (Moloney 1996), Derraghan More (ibid) and Edercloon, Co. Longford (Stuijts pers. comm.) Alder, which is a common species of wet or damp environments, was also under-represented at Annaholty, but a dominant species recorded from Derryville Bog (Stuijts 2005, 182), Newrath, Co. Kilkenny (Lyons and O'Donnell 2007) and Clancy Barracks, Dublin (O'Donnell pers. comm.). The use of alder and ash in the manufacturing of some the artefacts however suggests that they were being sourced specifically as a viable raw material for domestic/industrial objects. The low occurrence of these species within the structure may also reflect the wood selection at the site rather than the composition of the local woodland during the Iron Age.

The measurements taken from the diameter of the roundwood samples revealed that smaller and medium roundwoods (<25 mm diameter) were commonly used in the construction of the Annaholty causeway during the earlier phases of the structure (Phase 1 and 2) (Fig. 53). These were dominated by hazel and birch, with some oak also recorded and is likely to represent the build-up of foundational layers for the causeway or form part of the underlying substructure. It is also possible that these layers were deposited initially to form a smaller, lighter brushwood structure, which may have been used prior to the construction of the larger split-timber layers (170 and 90). If the site became increasing waterlogged over time or experienced periods of flash-flooding, these earlier layers may have become incorporated into the construction of a more substantial superstructure, where larger oak timber elements and roundwoods were used (Phase 3). The build-up of silt and peat deposits between some of the layers representing Phase 2 and Phase 3 may also help to validate the latter interpretation and highlight period of use and re-use at the site.

When the age profiles of these woods were recorded, an interesting trend seemed to develop (Fig. 54). It may be expected that the brushwood recorded at Annaholty, i.e. less than 60 mm in diameter (Moloney et al. 1993) would be quite young in age. However, when the ages of the material are compared to the diameters of the wood, age appears to be the discriminatory factor, i.e. pieces aged less than 20 years that measure up to 60 mm in diameter. There is a general trend that larger pieces tend to be older, but in all, it seems that most of the brushwood selected was based more on age than on size. The majority of the wood analysed was less that 30 years old at the time of felling and represents younger woodland. There is a distinct use of older oak timbers however within the latter phase of the construction (90), where woods up to 80 years old and even older than 100 years were used.

The decision to construct such wooden structures would have required a great deal of organisation and effort, especially with using larger roundwoods and timbers. These elements would need to have been felled, perhaps stripped of branches and twigs and, if timbers, split and possibly worked around the edges. Most tracks or wooden structures are constructed to enable easy access across a bog or area of intense waterlogging. The construction methods and natural material used in the Annaholty causeway suggests that this structure needed to be strong enough to withstand a constant flow of traffic or weight, perhaps for transporting animals for grazing from one dry area to another. The consistent use of such a track would have also required regular maintenance and repair, which could account for some of the mixed wood species recorded from the assemblage. This activity may also account for the

wood working waste debris identified from deposit 262, where on-site repair would have been a common occurrence.

Age profile of the timbers/woodland management

Woodmanship involves the management of woodlands for the production of timber, firewood and rods for assorted uses (Tierney 1998). Coppicing is a one of the oldest and most common forms of woodland management. The word is thought to originate in France from the word '*couper'* – to cut, and refers to the regular harvesting of brushwood and lighter roundwoods from managed strands (Rackham 1980). Pollarding is similar to coppicing, but the trunk is cut some 2 to 3 m above the ground to prevent browsing (Moloney et al. 1993). The need for a regular timber supply was paramount to the daily needs of prehistoric communities and this necessitated the need for long-term woodland management.

Species such as oak, willow, hazel, perhaps birch and some species of the Pomoideae family (Gale and Cutler 2000) have a history of being coppiced. Hazel is one of the most suitable species for coppicing as it produces numerous straight brushwood rods ideal for hurdle and wattle making. Hazel and willow can yield such rods in about 4 to 7 years, while birch is about 7 to 10 years and oak eleven years (Coles et al. 1978) and perhaps up to twenty-five years (Morgan 1988). Evidence for coppiced woodlands can be dated back to the 3rd millennium BC in Britain from trackways at Walton Heath in the Somerset Levels (Orme and Coles 1983). In Ireland, evidence of this type of woodland management has been found from the Early Bronze Age in Derryville Bog, Co. Tipperary (Stuijts 2005).

Coppicing works when young stems are cut down to a low level, or sometimes right down to the ground. When let grow for some years, the sucker or shoot produces many long straight poles, which can be better worked and manipulated. Over a number of years the cycle begins again and the coppiced tree or stool is ready to be harvested again (Fig. 55). Frequently there may be remains of heels, i.e. the join between the stump or stool and the rod, which is generally a good indication of coppicing at a site. At Annaholty Site 8 two hazel heels were recorded from 170:84 and 255:31 (Plate 61).

When trees are coppiced, often their first one to three rings are fast growing displaying wide growth rings probably as a result of increased space for growth. The following years can show slower growth and so the annual rings are narrower. Subsequent extreme regularity in the growth ring pattern is another indicator of the uniform conditions of coppiced growth. While the main species identified from Annaholty Site 8 was oak followed by birch and hazel, the latter is most commonly suitable for coppicing.

To determine if there was a selection pattern based on the age at Annaholty, the age profiles of oak, birch and hazel roundwoods less than 30 years old, of which there were 304 elements, were plotted to identify possible woodland management or selection at the site (Fig. 56). The results show that there is a notable number of hazel roundwoods aged between 6-18 years, the majority of which are aged 12 years. Young oak wood aged 6-8 years is present within the assemblage however the majority of the younger oak is aged 11 years, 18 years, 21 years and 28 years. While some birch roundwoods display young ages (6-10 years), there is a rise in the number of birch aged from 11 years through to 29 years. A notable peak in birch aged 18 years is also noted from this assemblage.

While hazel displayed the youngest woods from this assemblage, based on size coupled with age profile, ring formation and straightness of the material, it is likely that this species may represent coppiced rods and therefore managed woodland. The majority of the ages for birch and oak however were more varied with ages ranging from 6-30 years, more notably from 18 years to about 28/29 years. Based on the young ages from many of this material, it is possible that these species were also coppiced or indeed managed to a degree.

An interesting observation is the diameter size of the roundwoods studied. The majority of these elements, regardless of age had a diameter size of between 20 mm and 60 mm. For example hazel wood, which was less than 10 years old, ranged in size from 16 mm to 30 mm, while birch wood of 11 years and less was between 11 mm and 46 mm. As discussed, many of the species displayed very fast growth, which was evident from the wide growth rings recorded. This would therefore account for the larger diameter sizes noted from many of the birch and oak wood samples. Fast growing oak is more dense than slow growing oak (Damian Goodburn pers. comm.) and this may have proved more desirable when choosing the elements for the Annaholty causeway.

This would suggest that potentially managed woods were selected primarily for size rather than age, as previously suggested. If this is the case, then clear-felling is the most likely method being applied when collecting wood for constructing the Annaholty causeway. Clear-felling is the complete clearance of stools from coppiced strands (Rackham 1977). This would result in crops or rods of uniform age but of varying diameter size due to the varying growth rate of the stems (ibid). The Iron Age dated wooden structures recorded from Killoran 75 and Killoran 314 at Derryville Bog, Co. Tipperary (Stuijts 2005, 151-157) also displayed evidence for clear-felling and like Annaholty, was not confined to just one species.

Local woodland environment

The wood species recorded at Annaholty represented two types of woodland; species common to the bog margins, scrub and open clearances, which can thrive in poorer soils and those that grow in well aerated soils on the drier woodlands.

Birch quickly colonises dry bog (Plate 62) and peatlands and would have been common to the margins of the bog and therefore readily available to use within the structures. Hazel does not like wet environments, but drier clearances and would have been found in the transitional zones between the bog and the denser woodland (Plate 63). The pomaceous woods, sorbus, cherry-type are more shrubby trees would have been found growing along the fringes of the larger woodland. Oak is common to drier woodland and, based on the ring width analysis as previously discussed the oak recorded from Annaholty may have grown in a more open spacious environment.

An interesting observation is the low ash, alder and willow recorded compared to sites like the Mountdillon Bogs in Co. Longford (Moloney 1996), Derryville Bog, Co. Tipperary (Stuijts 2005), Newrath, Co. Kilkenny (Lyons and O'Donnell 2007) and Edercloon, Co. Longford (Stuijts pers comm.). Wet environments can help to facilitate the growth of carr woodland (Plate 64), where alder and willow can commonly grow and survive in waterlogged conditions. The low alder and willow from the assemblage further suggests that the site was not very waterlogged or contained just pockets of wetland, which may account for their absence in the local vicinity. All in all the site, which was located in a lowlying peat basin, is likely to have been in a clearance, perhaps flanked by scrubby or marginal wood species, but with access to larger woodland species (Plate 65).

Conclusions

The Annaholty causeway was constructed of predominantly oak (timbers and large roundwoods), birch (medium and large roundwoods) and hazel (small to medium roundwoods). Low occurrences of ash, alder, willow, rowan, hawthorn, holly, buckthorn, wild cherry and other pomaceous wood species were also identified at the site, although are probably species which were collected or felled to supplement wood for repairing and maintaining the causeway from time to time. A premise of wood analysis from archaeological sites is the theory that structural wood will probably be gathered from as near to the site as possible, for convenience. The weight and density of large trees would have prohibited them being carried long distances, presuming there was suitable material in the local vicinity. The use of oak, coupled with the high quality of woodworking recorded from the assemblage suggests that the Annaholty causeway held significant value to the local Iron Age community and was a necessary means to access areas of dryland. Oak is a very valuable resource and would have been

selected for its strength and durability. Whether locally sourced, or otherwise, the local community realised the value of oak, which formed the main component of the Annaholty causeway.

The composition and distribution of the wood from the Annaholty track suggests that the structure was constructed over a short period of time, using the same woods, but in different ways. The earliest level (298) was composed of mostly hazel brushwood, which may have formed the foundational or substructure layer for the later superstructure in Phase 2 (170) and Phase 3 (90). It was also possible that 298 was the remnants of a lighter structure in its own right, used as a temporary track or short bridge. Subsequently, this structure seems to have increased in size and developed into a substantial causeway, constructed of mostly oak timbers and supplemented with birch, which would have been sourced from the margins of the peat basin and scrubby drier zones. Hazelwood, which is likely to have been sourced from managed woodlands, was the wood of choice for many of the stakes and pegs used to keep the track secure. Managed woodlands also reflect an organised community. The use of such managed woods in the causeway is further justification of the attention given to the construction and maintenance of the structure during its lifetime.

The wood species recorded at the site also helps to understand the local woodland in the area. The use of birch at the site certainly highlights that this species was growing in plentiful supply in and around the site. Hazel and oak are also likely to have been easily accessed in drier areas, with pomaceous woods (rowan and hawthorn) found in more open clearances. Managed woodlands are likely to have been fenced off, for security and to keep animals out, and these may have been located closer to settlement sites or in more controlled areas. While the wood assemblage depicts a generally dry, young woodland, the ring width analysis (wide rings >2 mm) could also signify higher levels of rainfall. The construction of the causeway at the site is likely to be a response to waterlogged, flooding or a higher water-table in the area as a result of local climate change. This is obviously a localised interpretation and more comparative studies would need to be carried out to make any definitive assumptions.

Throughout this report the composition of wood use from other Iron Age sites has been seen to differ dramatically. Oak is not always the wood of choice used in these trackways, as alder and ash can also dominant such assemblages. Hazel is the most consistent species used from the majority of the sites, while birch varies significantly from site to site. While the Annaholty assemblage adds to the overall understanding of wood use during the Iron Age period in Ireland, it highlights the exploitation of local species, which was also the case from the Mountdillon Bogs, Co. Longford (Moloney 1996), Derryville Bog, Co. Tipperary (Stuijts 2005), Newrath, Co. Kilkenny (Lyons and O'Donnell 2007) and more recently Edercloon, Co. Longford and Clancy Barracks, Dublin.

Acknowledgements

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Samples

A total of 851 samples were taken, comprising 841 wood find samples (which are discussed in more detail above), seven soil samples and three columns. A catalogue of samples and results is given as Appendix 17.

Dendrochronological report on the oak wood samples by David Brown (Fig. 57)

Introduction

On the 21st August 2008 the Palaeoecology Centre, Queen's University Belfast, received six oak wood samples from a set of causeway timbers. These were either split or roundwood oak timbers. Our reference numbers for these samples are Q11040 to Q11045. Initial examination of the samples indicated that all the samples would be suitable for dendrochronological analysis. Table 12 below gives our reference number and the finds identification number.

Table 12: Palaeoecology Centre's sample numbers

QUB number	Find number
Q11040	90:60
Q11041	90:117
Q11042	90:131
Q11043	255:5 (re-used timber)
Q11044	282:7
Q11045	297:33

Methodology

Methods at Queens University Belfast dendrochronology laboratory in general follow those described by Baillie (1982) and English Heritage (1998). Details of the exact methods used are described below.

Wood was removed from the sample to expose the tree-ring pattern using a scalpel blade. Where the wood sample was soft or needed to be made clearer a razor blade was used. Finely ground chalk was spread and rubbed onto the prepared surface. This was to define the annual tree-ring boundaries more clearly for measurement.

The tree-ring patterns on the samples were measured to an accuracy of 0.01 mm using a microcomputer based travelling stage. The tree-ring series obtained for each sample was plotted onto graph paper to facilitate visual comparison. In addition cross-correlation algorithm CROS84 (Munro 1984) and Cros73 (Baillie and Pilcher 1973) was employed to search for positions where the tree-ring series were highly correlated. These positions were then checked visually using the plotted graphs. All the measured sequences were compared with each other and any found to match would be combined to form a site master chronology. These and any remaining unmatched tree-ring series were tested against a range of regional and local chronologies using the matching criteria: high t – values, replicated values against a range of chronologies at the same position, and satisfactory visual matching. Where such positions are found these provide calendar dates for the tree-ring sequence.

The tree-rings dates produced by this process initially only date the measured tree-rings present in the timber. The interpretation of these dates relies on the condition of the final rings in the sequence. If the samples end in the heartwood of the tree then a *terminus post quem* date is indicated by the date of the last ring plus an addition of the minimum expected number of sapwood rings which are missing. Where some sapwood or the heartwood-sapwood boundary is present, then a death date range can be calculated using the maximum and minimum number of sapwood rings likely to have been present. The sapwood estimates are a minimum of 10 and a maximum of 46 annual rings, where these figures indicated the 95% confidence limits of the range. These figures are applicable to oaks from Britain and Ireland. In the Belfast laboratory we us an empirical estimated sapwood range of 32 ± 9 years. If the bark edge survives then a death date can be directly obtained from the date of the last ring.

Results

Sample Q11040 (90:60)
This sample yielded 155 annual growth rings when measured. There is no sapwood or heartwood-sapwood boundary present on the sample. The centre or pith of the tree is not present. This tree-ring series was then compared with a suite of site and regional tree-ring chronologies from Ireland. Significant and consistent correlation values (t = 4.75* *cf.* Corlea, Co. Longford and t = 4.54* *cf.* Dorsey, Co. Armagh*)* were found. These and other results indicate that the measured tree-ring series dates from 255BC to 101BC. The best estimated felling date range for the tree from which this timber came will be 69BC ± 9 years or later.

Sample Q11041 (90:117)
This sample yielded 152 annual growth rings when measured. There is no sapwood or heartwood-sapwood boundary present on the sample. The centre or pith of the tree is not present. This tree-ring series was then compared with a suite of site and regional tree-ring chronologies from Ireland. Non-significant and consistent correlation values (t = 4.66nsm *cf.* Corlea, Co. Longford and t = 3.66nsm *cf.* Dorsey, Co. Armagh*)* were found. These and other results indicate that the measured tree-ring series dates from 251BC to 100BC. The best estimated felling date range for the tree from which this timber came will be 68BC ± 9 years or later.

Sample Q11042 (90:131)
This sample yielded 103 annual growth rings when measured. There are possibility three slightly crushed sapwood rings present on the sample. The centre or pith of the tree is not present. This tree-ring series was then compared with an early version of the Annaholty master chronology. This produced an extremely significant value (t = 7.74*** *cf.* Annaholty, Co. Tipperary). This result indicates that the measured tree-ring series dates from 171BC to 69BC. The best estimated felling date range for the tree from which this timber came will be 40BC ± 9 years.

Sample Q11043M (255:5)
This three measurement mean sample yielded 151 annual growth rings when the three measured radii were averaged together. There is no sapwood or heartwood-sapwood boundary present on the sample. The centre or pith of the tree is not present. This tree-ring series was then compared with a suite of site and regional tree-ring chronologies from Ireland. Extremely significant and consistent correlation values (t = 6.09*** *cf.* Corlea, Co. Longford, t = 6.56*** *cf.* Navan, Co. Armagh) were found. These and other results indicate that the measured tree-ring series dates from 277BC to 127BC. The best estimated felling date range for the tree from which this timber came will be 95BC ± 9 years or later.

Sample Q11044 (282:7)
This sample yielded 132 annual growth rings when measured. There is no sapwood or heartwood-sapwood boundary present on the sample. The centre or pith of the tree is present. This tree-ring series was then compared with a suite of site and regional tree-ring chronologies from Ireland. Significant and consistent correlation values (t = 3.17nsm *cf.* Corlea, Co. Longford and t = 3.90* *cf.* Annaholty, Co. Tipperary) were found. These and other results indicate that the measured tree-ring series dates from 233BC to 92BC. The best estimated felling date range for the tree from which this timber came will be 60BC ± 9 years or later.

Sample Q11045 (297:33)
This sample yielded 87 annual growth rings when measured. There is no sapwood or heartwood-sapwood boundary present on the sample. The centre or pith of the tree is present. This tree-ring series was then compared with an early version of the Annaholty master chronology. This produced a significant correlation value (t = 4.89* *cf.* Annaholty, Co. Tipperary). This result indicates that the measured tree-ring series dates from 202BC to 116BC. The best estimated felling date range for the tree from which this timber came will be 84BC ± 9 years or later.

Figure 57 indicates the absolute dates of the samples with reference to the Irish tree-ring chronology and relative position of the samples to each other. The dark area indicates sapwood. The cross indicates the estimated felling date range of samples with the heartwood-sapwood boundary present and the crosses with an arrow indicate samples without sapwood and with heartwood rings missing.

Conclusions

The samples submitted did not have any sapwood or heartwood-sapwood boundary present except for sample Q11042. This sample has possibly three crushed sapwood rings present. The estimated felling date range for the tree from which this timber was taken is based on the sapwood being present. If these annual growth rings are not sapwood rings then the estimated felling date range will be later than 40BC. Two samples Q11040 and Q11041 give a Student 't' correlation value of 10 with each other. This result and visual examination of the tree-ring patterns indicates that these two samples are from the same tree. Sample Q11043M is an average of three measurements. This was to gain the maximum numbers of annual growth rings from the sample.

The Annaholty site chronology is constructed from six samples; it is 209 years in length and dates from 277BC to 69BC. It gives very significant and consistent correlation values with many of the other prehistoric dendrochronological dated sites from Ireland. Table 13 below is a summary of the dates obtained from Annaholty, Co. Tipperary. This includes our QUB number; find number; the number of rings; the start date and end date of the measured tree-ring series and the felling date or estimated felling date range.

Table 13: Summary of dendrochronological dates from Annaholty

QUB no.	Find No.	No. of rings	Start year	End year	Felling date range
Q11040	90:60	155	255BC	101BC	After 69BC
Q11041	90:117	152	251BC	100BC	After 68BC
Q11042	90:131	103	171BC	69BC	40BC ± 9 years
Q11043	255:5	151	277BC	127BC	After 95BC
Q11044	282:7	132	233BC	92BC	After 60BC
Q11045	297:33	87	202BC	116BC	After 84BC

Interpretation

The lack of sapwood or even the heartwood-sapwood boundary on the samples mean that the precision that dendrochronology can provide is lacking. The best interpretation of the dendrochronological dating provided by the samples is a causeway structure most likely to have been constructed from trees felled about 40BC or slightly later. This makes it the latest dendrochronological dated causeway in the prehistoric period.

Pollen analysis by Charlotte O'Brien (Fig. 58, Plate 66)

Summary

Rich assemblages of woodland and herb pollen are recorded in the section. The early Bronze Age landscape was dominated by mixed deciduous woodland, which was followed by an episode of climatic deterioration to wetter conditions. A subsequent drier climate resulted in the expansion of heather and hazel. Indications of human activity are noted, particularly at the level of the timber trackway. The pollen assemblage suggests an open landscape with pastoral and arable agriculture taking place. Episodes of burning are noted throughout the section.

Project location and background

This report presents the results of pollen analysis of 96 samples from a peat section, sampled during the excavation by TVAS Ireland of the Iron Age trackway at Annaholty Bog, Co. Tipperary, Ireland. Annaholty Bog is an extensive raised mire located just east of the town of Castleconnell in Co. Tipperary, Ireland. The bog contains Holocene sediments in excess of 10 m. The present N7 roadway passes the north-west corner of the bog. The line of the new N7 from the Limerick Southern Ring Road to the west end of the Nenagh Bypass crosses the deep wetland sediment accumulations of Annaholty.

A 2 m column sample was taken from a section of peat (Plate 66) which spans the timber trackway, the construction of which has been dendrochronologically dated to the Iron Age (around 40BC). This report presents the result of pollen analysis undertaken at 2cm intervals through the column sample.

Further comment was sought in March 2012 with regard to the on-site vegetation record contained within the pollen record. This information has been added at the end of this report.

Objective

The objective was to undertake pollen analysis of a column sample in order to provide information about the local land use and palaeoenvironment of the site.

Dates

Samples were submitted to Archaeological Services on 15th September 2009. Analysis and report preparation was conducted between September 2009 and February 2010.

Personnel

The samples were processed by Dr Charlotte Henderson. Plant macrofossils for radiocarbon dating were selected and identified by Dr Charlotte O'Brien. Pollen analysis and report preparation were undertaken by Mairead Rutherford.

Archive

The licence number is E3530. The monolith section and prepared pollen samples are currently held in the Environmental Laboratory at Archaeological Services awaiting collection or return.

Methods

The monolith section was subsampled at 2 cm intervals. Pollen was extracted from one ml of each subsample, using standard techniques of sodium hydroxide digestion and acetolysis, followed by heavy liquid separation. A *Lycopodium* spore tablet was added in order to facilitate calculation of total pollen concentrations. The pollen was mounted in silicone fluid and scanned at high magnification. Identification of pollen and spores was undertaken by comparison with modern reference material, using Moore et al. (1991) as a guide. Plant taxonomic nomenclature follows Stace (1997). AMS radiocarbon analysis was undertaken at the laboratory at East Kilbride, Scotland.

Results

Pollen preservation is good and counts of 500 total land pollen have been achieved for most levels. A pollen diagram has been plotted using Tilia and Tilia Graph (Fig. 58). In addition to the total land pollen, aquatic indicators, spores and fungal spores were counted. Data are presented as percentages of total land pollen. The pollen diagram has been zoned to indicate changes in assemblage, interpreted as being indicative of either varying palaeoenvironmental conditions or attributed to human impact on

the environment. Five local pollen assemblage zones (LPAZ) were identified (AB1-5), and are described in Table 14.

Suitable terrestrial plant macrofossils were selected from the top and base of the monolith section, avoiding the extreme top and base which had been disturbed. At 1 cm depth, an indeterminate twig was selected which was dated to 890-1120 2 sigma cal AD. At 189 cm depth, a birch twig produced a date of 2300-2040 2 sigma cal BC. Full details are presented in Table 15.

Table 14: LPAZs from the pollen section

LPAZ	Depth	Description
AB1	71-0 cm	*Corylus* 20-40%. *Calluna* increases to 40-60%. Poaceae 15%
AB2	83–71 cm	Diverse herb flora represented. Increase in Poaceae to 20-30%. Decreases in *Calluna* to 15-20%
AB3	111–83 cm	Arboreal pollen 20-30%. *Calluna* and *Corylus* abundant. Poaceae 10%.
AB4	125-111 cm	Arboreal pollen 40%, with a significant decrease in *Betula* to <10%. *Calluna* 25%. *Sphagnum* 30%. Poaceae 20-40%. Cyperaceae increases towards the end of the zone
AB5	190-125 cm	Arboreal pollen 60-80%, dominated by *Betula* 20-40%, *Quercus* 20% and *Alnus* 10-20%. Poaceae 20-30%

Table 15: Radiocarbon dating results

Laboratory Code	Material	Species	Depth	Radiocarbon Age BP	Calibrated date	
					68.2% Probability	95.4% Probability
SUERC-26436 (GU-20139)	Twig	Indeterminate	1cm	1035 ± 35	975AD (68.2%) 1025AD	890AD (94.0%) 1050AD 1100AD (1.4%) 1120AD
SUERC-26437 (GU-20140)	Twig	Birch	189cm	3775 ± 35	2280BC (16.7%) 2250BC 2230BC (4.4%) 2220BC 2210BC (47.2%) 2130BC	2300BC (87.6%) 2120BC 2100BC (7.8%) 2040BC

Discussion

The results of the radiocarbon analysis indicates that the section spans approximately 3000 years of vegetation history commencing in the Early Bronze Age, with data for the last millennium missing due to peat cutting of the bog surface.

At the base of the section (AB1), the pollen indicates a mixed woodland environment at the site, dominated by birch, oak and alder. Lesser concentrations of ash, elm and pine were recorded which may derive from small local stands of these trees, or woodland at some distance from the site. There are sporadic occurrences of cereal-type pollen which may reflect some localised arable farming, but the high percentages of arboreal pollen suggests that large areas of woodland were not being cleared for farming at this time.

At 125 cm (AB2), the pollen suggests a shift to wetter conditions, shown by a significant reduction in woodland cover and expansion of wetland taxa. In this zone, sedges begin to rise, there is a peak in *Sphagnum* (bog moss) and grasses form a significant component of the more open local environment. Human activity may have contributed to the decline in woodland, and there is an increase in the

pastoral-indicating herb *Plantago lanceolata* (ribwort plantain), although cereal-type pollen is absent from this zone.

The overlying assemblage zone (AB3) shows a return to drier conditions with dominance of hazel and heather, although sedges continue to be an important component of the local vegetation. Increases in the fungal spores of *Meliola* reflect the local presence of *Calluna vulgaris* (heather). There are few indications of farming activity in this zone, and there is evidence in other areas of Ireland (for example at Emlagh Bog, Co. Meath), for a reduction in farming in the early Iron Age which resulted in a regeneration of woody vegetation, particularly hazel (Newman et al. 2007).

There is a significant lithostratigraphical change at 83 cm from the underlying very dark brown fibrous peat to a mid-brown organic mud containing coarse sand. This is the location of the trackway, and is coincidental with changes in the pollen assemblage which are indicative of human activity. Zone AB4 shows an expansion of herb taxa including increases in grass pollen and a variety of meadow types including *Plantago lanceolata*, *Potentilla*-type (cinquefoils), *Lathyrus*-type (vetchling), *Ranunculus*-type (buttercups), *Succisa* (devil's bit scabious), *Taraxacum*-type (dandelions) and *Rumex* (docks). By contrast, there are significant reductions in heather pollen. Elevated grass pollen, concurrent with reductions in heather, has been noted during episodes of Landnam (initial Norse settlement) in North Atlantic regions (Edwards et al. 2005), and are considered to reflect expansion of grass following grazing of heather shrubs. Many of the herbaceous taxa such as *Plantago lanceolata*, *Ranunculus*-type and *Succisa* are associated with pasture (Behre 1986), and spores of *Podospora* (fungi which are obligate parasites on dung), again are likely to reflect grazing animals. Manure would have resulted in a high nitrogen environment, which is indicated by the presence of Chenopodiaceae (goosefoot). A few cereal-type pollen grains were also recorded in this zone which may indicate that arable agriculture was also practised near the site. Sustained and intensive farming was recorded from 300BC to AD20 at Emlagh Bog, and this was also considered to be mainly pastoral, but included some arable farming (Newman et al. 2007). Elevated levels of fungal spore type18 reflect a wet local depositional environment (Blackford et al. 2006).

The overlying zone (AB5) shows continuation of drier conditions with consistent counts for hazel, and a recovery of heather communities. In the first half of the zone, cereal-type pollen grains are absent and other farming indicators are sparse. This may indicate that the Late Iron Age Lull (a reduction in farming noted at several sites in Ireland including Littleton Bog, Co. Tipperary – Mitchell 1965), also took place at Annaholty Bog. Later in AB5, there are sporadic increases in herb taxa which may reflect episodes of human activity and management of the landscape.

Microcharcoal is present in fairly low concentrations throughout the section, showing slightly higher abundances in spot samples within zone AB5. Fungal types *Gelasinospora* spp. have been linked to burnt ground (Blackford et al. 2006), and pollen of both hazel and heather (*Calluna vulgaris*) have a history related to fire, frequently expanding in fire-affected communities (ibid.).

Local on-site vegetation development

The evidence from the pollen and spores suggests that the lower section of the sequence (AB1) was deposited in an open fen carr environment, rather than there having been an ombrotrophic peatbog at the site during the Early Bronze Age. The high Poaceae pollen curve may reflect the presence of *Phragmites* or other aquatic grasses in the fen (although grassland around the site is probably also contributing to this). There may well have been shallow pools of water (reflected by the Charophytes, fungal spore type 18 and *Mougeotia* algal spores). The presence of the birch twig at 189 cm and the high birch pollen count indicates the local presence of birch trees. At the base of the sequence, the alder frequency is higher than later in the profile. This may reflect a more eutrophic fen environment before the succession to acid birch fen. The fungal spores *Coniochaeta* cf. *lignaria* and *Kretzschmaria deusta* are wood rot fungi.

In AB2 there is an increase in *Calluna* heather pollen and peak in *Sphagnum* moss spores, with a further increase in *Calluna* in AB3, and *Calluna* and sedges remain relatively high through zone AB5. A lithostratigraphic change to darker peat was noted at the start of AB3. These changes are probably reflecting the onset of peat growth at the site which would be in line with the Late Bronze Age peat growth initiation seen at sites across north-west Europe. Higher *Sphagnum* spore counts may be expected of a truly ombrotrophic peat bog, and therefore the bog reflected in the upper half of the profile may be better described as a 'lower raised bog'. An ombrotrophic raised bog may have subsequently developed at the site, but this cannot be determined due to the removal of the upper section by peat cutting. The presence of low numbers of pollen grains of the aquatic plant *Myriophyllum alterniflorum* suggests the bog surface was wet enough to support some pools.

The trackway (AB4) may well have been constructed as a response to the increasingly boggy conditions at the site (although the fen would have also been very wet, the presence of fallen branches and vegetation clumps may have made it easier to get across). The increased sand component in the layer associated with the trackway reflects the disturbance/erosion caused by the increased human activity. Alteration of carr woodland surrounding the bog could have caused increased erosion.

Discussion (Fig. 59, Plates 67-69)

The archaeological sites investigated at Annaholty were located between two areas of high ground situated within a large raised bog complex. Despite truncation of the archaeological deposits it is clear that the largely plank-built causeway (90/160) and the earlier roundwood and brushwood trackway (170/255/297) both originally crossed what was a relatively narrow part of the bog. Both can be classified as a Road-Class 1 Toghers, i.e. toghers or trackways designed to cross an area of bog rather than simply providing access to the bog. The term causeway has been adopted here to describe the plank-built structure and helps to distinguish this site from the earlier trackway 170/255/297. Similarly, the term causeway has been used to describe a large-scale trackway Cooleeny 31 excavated at Lisheen, Co. Tipperary. Here, the term was used to distinguish those structures 'that bridged a bog system, crossing from one dry land margin to another' (Gowen et al. 2005, 209). In addition, the Irish word *tóchar* means causeway, although it is used generally to describe all structures, both wooden and stone.

As stated above, both trackway 170/255/297 and the causeway were built to traverse the bog. Each was presumably built from the east as Toreheen Island represents the larger and more accessible of the two islands within Annaholty. Both islands may have served as sources of timber and wood for the construction of trackways within the bog. Deeper and perhaps wetter and softer peat towards the middle of the bog necessitated infilling of small areas with jumbled deposits of roundwood, brushwood and broken objects. The causeway appears to have dipped in the middle before rising in the direction of the small gravel island in the west (Plate 67).

Comparative structures

The most widely known and most extensively excavated trackway recorded in Ireland is in Corlea, Mountdillion Bog, Co. Longford, first discovered in 1984 and subsequently excavated by Barry Raftery (1996). Corlea 1 was dated to 148 BC and a total of 120 m of the trackway was examined (ibid., 7-54). The superstructure was composed of oak planks 2.50-4.20 m long and 0.20-0.60 m wide, and the substructure was of roundwood runners. Socketed ends were observed on several planks with pegs inserted through some but many other pegs were used to secure the runners into position. Brushwood, branches and waste wood was used to further stabilise wetter areas beneath the trackway and broken wooden artefacts were also deposited in these wet spots.

Another significant trackway was recorded in Mountdillion Bog at Derraghan More by Etienne Rynne in 1957 and was then revisited by Raftery (ibid., 94-104). This trackway was similar to the construction of the Corlea 1 trackway consisting of planks on roundwood runners underlain with brushwood in places. The dendrochronological dating for this site was less secure than that for Corlea 1 but it was likely built a few year earlier, perhaps around 170-150 BC.

Further investigations at Mountdillion Bog in 2001-2002 uncovered an additional fourteen Iron Age sites at Derrycolumb and Begnagh; six toghers, seven platforms and one platform with associated toghers (Whitaker 2009). These sites were smaller examples than those excavated by the Irish Archaeological Wetland Unit and were mostly constructed of roundwood and brushwood producing dates ranging from approximately 400 to 200 BC.

Two causeways were excavated in Derryville Bog, Co. Tipperary as part of the Lisheen Mine project, one of which was Iron Age in date. Cooleeny 31 is dated to 778-423 BC and is further classified as a 'corduroy road' (Gowen et al. 2005, 224-226). Corduroy roads have a transverse wood structure and can have a longitudinal substructure. Cooleeny 31 crosses the southern part of Derryville Bog and bridges the mouth of Cooleeny Bog running from one glacial ridge to another. The causeway was constructed in four phases; firstly brushwood was laid down to level the area, then three lines of pegs marked out the route, sand was used to level the area once again before roundwood and planks were laid transversely. Other Iron Age sites recorded in Derryville Bog include fifteen trackways, three platforms, a roundhouse, a destroyed structure, stake row and archaeological wood. At Derryfadda 13

trackway the excavator suggests that artefacts were intentionally deposited within the structure, even though it was not a substantial structure it formed part of the Iron Age route through the bog (ibid, 229-231).

The structure of the Annaholty causeway also resembles the construction techniques of northern European examples in Dievenmoor/ Schweger Moor, Germany, dated to 190-170 BC, and The Valtherbrug, the Netherlands, dated to 345±50 BC (Raftery 1996, 224-6).

At nearly 8 m wide the Annaholty causeway is exceptionally large. A 1998 review of dated trackways (Brindley and Lanting 1998) noted three examples 6-8 m wide: an undated trackway at Derryarroge, Co. Kildare (inspected by J Raftery in 1972, unpublished), a 4th-2nd century BC track at Leigh Co. Tipperary (Rynne 1965) and Cooleeny 31, Co. Tipperary, mentioned above (Gowen et al. 2005, 224-226). The latter site had a wide substructure but the upper surface of the causeway itself was narrower, with a minimum width of 4.5 m. It has been suggested that the width of Cooleeny 31 at least was directly related to the environmental condition as it was constructed in an unstable area of bog and in fact it is thought that the construction of the causeway itself caused further instability as it damned the bog outflow and led to a bog burst.

Local environment and resources

Annaholty Bog is wide-ranging raised mire and although it has been subjected to cutting it still retains much of its natural form and extent (Carter et al. 2006). The mire evolved from a pre-existing fen that was surrounded by gravel slopes covered with woodland at Ch 5200-6200 to the south-west of E3530. A ridge projects into the northern side of the bog and breaks into three islands; Toreheen Island and two smaller ones (Fig. 59). This is also the location of the narrowest crossing to Gooig.

The pollen record from Annaholty suggests that the archaeological sites were built during a period of grass expansion, specifically pasture (Fig. 58, pollen zone AB4). The representation of oak and ash decline during this period and the tree pollen is dominated by local trees such as hazel, alder and birch; some of which could have grown on or near the bog. The wood taxa represented in the pollen record compliments the range of wood taxa used the trackway and causeway construction, confirming the availability of these wood types locally. Elm occurs in the pollen record but is absent from the on-site wood species list. A wider range of trees is represented in the wood used in both the manufacture of artefacts and site construction. Buckthorn, hawthorn, holly, poplar/willow, rowan, *Sorbus* sp., wild cherry and willow all feature in small amounts but are absent from the pollen record for the period in which the sites were constructed.

The people who built the crossings at Annaholty most probably accessed the wood locally, and may well have sourced wood from Toreheen Island as well as the nearby smaller gravel island. Lyons (above) has identified that two groups of wood species are represented, i.e. species common to the bog margins, scrub and open clearances and those that grow in well aerated soils within drier woodland. There is some evidence to suggest that hazel and possibly oak woodland was managed with hazel probably coppiced on twelve year cycle. Managed woodland is a feature of well-organised and structured community and this has implications for our understanding of how, why and by whom the crossings at Annaholty were constructed.

In the pollen record the combination of herbaceous taxa represented during this time suggests grazing animals lived locally. Cereal pollen also featured during this period, albeit in small amounts, suggesting that locally at least, arable farming was small scale and of secondary importance to the pastoral economy. Spores associated with dung parasites also occurred within this zone raising the possibility that animals (e.g. cattle and/or horses) crossed from Toreheen Island to the gravel island in the west using the trackway and/or causeway.

The land clearance implied in the pollen record may explain the presence of minerogenic deposits within the peat horizons associated with both trackway and causeway construction. The silty and

sandy peat within which the archaeological deposits were mainly located is most probably the result of inorganic inwash from the nearby gravel islands. Woodland clearance and grazing may have destabilised the local soil cover and at times of high rainfall (e.g. in winter or in storms) soil may have been washed into the bog. It is worth noting however, that sand has been found in association with trackway timbers excavated elsewhere (Raftery 1996; Gowen et al. 2005, 224-226) and its presence has not yet been satisfactorily explained. It may represent a minor ingredient in construction; perhaps one offering the wood additional purchase on the bog surface.

Dating

The six samples dated by dendrochronology produced a date range 209 years in length ranging from 277 to 69 BC. The dates are significant and correlate with dendrochronological dates from Corlea, Co. Longford, Dorsey and Navan, Co. Armagh. The dates also correspond with the site stratigraphy. Trees from Trackway 170/255/297 were felled after 95 BC and 84 BC, and trees used in the causeway (90) were felled after 69-68 BC and in 40±9 BC. This suggests that there was a short gap between the construction of the trackway and the later causeway. They do however appear to have been constructed within a generation or two of each other. One of the dates from trackway 170/255/290 derives from a re-used timber. The date from this timber does not differ greatly from the others suggesting that the structure in which the timber had been used cannot have stood for very long before being dismantled and the timber reused. The date of 40 BC makes Annaholty causeway the latest Irish dendrochronologically dated causeway in the prehistoric period.

Other sites in Annaholty Bog

The group of sites excavated at Annaholty Site 8 are not the only wooden structures known in Annaholty Bog. An undated trackway was discovered during works on the Limerick-Dublin road in 1950 (SMR TN031:090, Hanrahan 1950), approximately 1 km to the north-west. Also an assemblage of worked wood, probably a collapsed trackway or platform, was recovered during monitoring of construction works 425 m to the north of the site. Two of these pieces of wood have been dated to the fourth to first centuries BC, earlier than the Annaholty Site 8 timbers but still within the Iron Age (McCooey et al. 2010). A medieval leather shoe was also recovered from the same location, indicating that there was probably a crossing point in the same area over a considerable period of time. Excavations and surveys in Ireland's raised bogs have repeatedly shown that within the vicinity of a large structure there are almost always other sites of similar dates (Bermingham 2006, 117; Raftery 1996).

Purpose of the causeway

As the entire Annaholty causeway lay within the excavated area and as investigations were confined within the limits of the road footprint it is not clear whether the causeway (and earlier trackway) were part of a wider road network through the bog that used gravel islands as 'stepping stones'. Each structure may have merely connected Toreheen Island with the smaller gravel island in the west from where other roads access the wider bog. The western side of this island was not investigated but an existing modern bog road (replaced within the excavation area by the access road) may occupy the line of an earlier routeway extending from the gravel island to the south-west.

It is possible that the small island was the intended sole destination for the crossings at Annaholty despite the apparent absence of other archaeological features on the gravel island itself. The trackway and causeway suggest increased activity in the area in the later part of the first century BC. Unrelated discoveries of artefacts from the Toreheen Island area indicate that the area was a focus of activity earlier in the prehistoric period and it could well have been occupied during the Iron Age. Human interest in the small gravel island is suggested by the small roundwood trackway (298) that represents the earliest, albeit, undated phase of human activity located between the dryland islands.

The small gravel island was evidently visible from the larger Toreheen Island and its position less than 100 m from high ground may have encouraged attempts at accessing the smaller outcrop. If the trackway and causeway were constructed specifically to reach this island then the island presumably retained a certain status or purpose. Approximately half of the smaller island was stripped of topsoil during road construction but no evidence of any archaeological features was seen and outside the excavated area there are no visible above-ground features.

The precise motive for the construction of the causeway (and earlier trackway), be it pragmatic or otherwise, is unknown, but their substantial size, particularly in the case of the causeway, indicates the organized effort of a community or a localised power directing the labour (Plates 68-69). This powerbase also had access to managed woodland and prime timber resources. These resources may have been called upon for very specific local reasons. Both the trackway and the causeway were sufficiently wide to have allowed two vehicles, such as carts, to pass comfortably or a large herd of cattle to be driven with ease. The pollen record suggests the presence of grazing animals locally and the island may have served as a safe place for cattle affording a herd with some protection from potential rustlers or raiders. The causeway timbers were heavily worn through use. Wheeled vehicles or large mammals such as horses or cattle could have eroded the surface. The trackway 170/255/297 although wide would not have provided animals with as safe or easy passage across the bog. The causeway in particular may also have served more abstract purposes. Its construction may have been in part at least, an ostentatious expression of power.

Artefact deposition

Wooden artefacts were a feature of each site construction phase revealed at Annaholty. Where finds were made, they occurred either as single deposits (find no. 55:10, 55:22, 90:247, 189:1 and 262:13), paired (255:1 and 2) or in a group (97:1 and 2, 97:18, 19, 20, 21 and 22). The paired finds derived from the trackway 170/255/297. It is unclear with which phase of construction the grouped finds and the isolated find from 262 can be associated. These finds derived from what may have been softer wetter areas that required infilling prior to either trackway or causeway construction. The remaining individual finds relate to the construction of the causeway.

The types of objects found among the structural wood are diverse. Most, if not all seem relatively mundane objects. Parts of vessels and tubs, perforated shafts, possibly handles or parts of larger items of furniture, part of an animal yoke and a fragment of losset or a tray used in kneading dough. The possible cart fragment has added resonance given carts could have perhaps crossed trackway 170/255/297 and the later causeway. Moore (see above) has shown that the objects were made by skilled craftsmen who produced them for use within domestic, transport and agricultural life.

The significance of the deposition of the artefacts within toghers is not clear. It is not uncommon for wooden artefacts to be deposited in this fashion in platforms and trackways, but there is little agreement as to the relevance of this practice. The artefacts found in these circumstances are, as was the case at Annaholty, almost always broken and could have simply been regarded as waste and used along with other scrap wood, however it is equally possible that they had residual meaning carried over from their former functions in the home or the field and were placed as, for example, foundation deposits. Given the recognised practice of depositing precious items of stone or metal in watery and wetland environments throughout prehistory, it should not be surprising that wooden objects might have been used in a similar manner. At the time of excavation the vessels and cart fragment at Corlea were interpreted as discarded waste material (Raftery 1996) but recent work at Edercloon, Co. Longford (Moore 2008a; McDermott et al. 2009, 54-8) has shown that at that site the artefacts were not distributed randomly, suggesting that there was careful thought about their positioning. At Annaholty, with the exception of the finds from the short trackway 298 located in the west, all other artefacts were retrieved from the eastern side of the excavation area. This may however be a product of preservation given that the centre of trackway 170/255/297 and the causeway were destroyed prior to excavation. Alternatively, artefact deposition may have been intentionally greater in the east for reasons unknown.

Archaeological potential off the road CPO

The causeway excavated at E3530, Annaholty Site 8 was located entirely within the boundaries of the CPO. It is possible that associated sub-surface archaeological features are preserved on Toreheen Island and the dry island to the west of the site. It is also possible that the causeway excavated here formed part of a wider network of trackways across the bog and that the route continues to either side.

Recommendations and further work

Fieldwork

This site has been fully excavated within the confines of the CPO and no further fieldwork is required.

Post-excavation

The conserved finds will be properly packed and deposited with the National Museum of Ireland in accordance with *Advice Notes for Excavators* (NMI 2010).

A summary of the findings of the excavation has been submitted to *Excavations 2007.*

An accessible archive of primary records (Appendix 18) will be prepared for long term storage and will be kept at the offices of TVAS (Ireland) Ltd until its deposition with the State archive repository.

Record of Monuments and Places

There is no direct evidence that any part of this site remains to be entered into the RMP for County Tipperary, however it would be prudent to assume that the routeway indicated by the excavated causeway continues to the west. The excavated site should be entered into the Sites and Monuments Record (SMR)

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Kate Taylor and Nora Bermingham
TVAS Ireland Ltd
30th June 2013

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Appendix 1: Catalogue of features and deposits

Cut	Deposit	Type	Finds	Samples	Comments	Phase
1-49		Not used				
-	50	Topsoil / scraw	-	1		-
-	51	Mid brown peat layer	-	1		Above causeway
-	52	Dark brown peat layer	-	1		Above causeway
-	53	Sandy peat layer	-	1		3
-	54	Sand layer	54:1-3	1, 74		3
-	55	Sandy silt layer	55:1-24	1, 75		3
-	56	Black peat layer	56:1-2	1		Below causeway
-	57	Brown peat layer	-	1		Below causeway
-	58	Mid brown peat layer	-	2		Above causeway
-	59	Sandy clay layer	-	73	Same as deposit 61	3
-	60	Loose black peat layer	-	-		2
-	61	Sandy clay layer	-	148	Same as deposit 59	3
-	62	Sandy clayey silt layer	62:1	2		2
-	63	Dark brown peat layer	-	-		2
-	64	Mid brown peat layer	-	2, 288, 292		Below causeway
-	65	Peat layer with timber	-	2, 289	Same as deposit 66	Below causeway
-	66	Peat layer with timber	-	292	Same as deposit 65	Below causeway
-	67	Dark brown peat layer	-	2, 292		Below causeway
-	68	Dark brown peat layer	-	-		Below causeway
-	69	Dark brown peat layer	-	-		Below causeway
-	70	Black peat layer	-	-		Below causeway
-	71	Dark brown peat layer	-	-	Same as deposit 74	Below causeway
-	72	White clayey sand layer	-	2		Below causeway
-	73	Light brown peaty layer	-	292		Below causeway
-	74	Black layer	-	292	Same as deposit 70	Below causeway
-	75	Lens of white sand	-	-		Below causeway
-	76	Sandy silty peat layer	-	292		Below causeway
-	77	Black sandy silt layer	-	292		Below causeway
-	78	Natural gravelly sand	-	2, 292		Below causeway
-	79	Natural sand	-	292		Below causeway
-	80	Black peat layer	-	2		Below causeway
-	81	Reddish black peat layer	-	2	Same as deposit 94	Below causeway

Cut	Deposit	Type	Finds	Samples	Comments	Phase
-	82	Black reddish peat layer	-	2		Below causeway
-	83	Sand layer	-	-		Above causeway
-	84	Clay layer	-	-		Below causeway
-	85	Mix of sand and wood	-	-		Below causeway
-	86	Black clay layer	-	-		Below causeway
-	87	Whitish yellow clay	-	-		Below causeway
-	88	Bluish grey clay	-	-		Below causeway
-	89	Clayey gravelly sand layer	-	-		Below causeway
-	90	Final construction phase (Phase 4), upper level and main body of the causeway, planks, roundwood & brushwood	90:1-278	3-4, 7-47, 50-72, 76-78, 81-82, 84-85, 87-97, 99-113, 115-136, 166-171, 173-174, 177, 179-183, 187-189, 191-193, 195, 197-204, 208, 213-216, 218-219, 221-223, 225, 228, 231, 233, 235-240, 242-243, 245, 249-251, 255, 257, 263, 266, 268, 272-274, 276-281, 283-287, 290-291, 326-350, 391-392, 399, 451-452, 482, 485-486, 524-525, 534-536, 539-549, 570-582, 843-844	Orientated north-south	3
-	91	Post	91:1	-	Adjacent 90:66	3
-	92	Post	92:1	-	Recorded in section	3
-	93	Stake	93:1	-	Northern edge of trackway	3
-	94	Reddish black peat layer	-	2	Same deposit 81	Below causeway
-	95	5 pieces of wood	95:1-5	5-6, 48-49, 114	On top of the main body of the causeway 90	3
-	96	Post	96:1	-	In 90:10	3
-	97	Area of brushwood	97:1-22	79-80	Under the main body of the causeway 90	2/3
-	98	Stake	98:1	-	Southern edge of causeway	3?
-	99	Post	99:1	-	Between 90:34 & 90:37	3
100-149		Not used				

Cut	Deposit	Type	Finds	Samples	Comments	Phase
-	150	Post	150:1	-	Between 90:34 & 90:35	3
-	151	Stake	151:1	-	Between 90:34 & 90:35	3
-	152	Stake	152:1	-	Northern edge of trackway	3
-	153	Post	153:1	-	Northern edge of trackway	3
-	154	Post & stake	154:1-2	-	Adjacent to 90:89	3
-	155	Stake	155:1	-	Adjacent to 90:89	3
-	156	Stake	156:1	-	End of 90:89	3
-	157	Post & stake	157:1-2	-	Adjacent to 90:46	3
-	158	Post	158:1	-	End of 90:48	3
-	159	Stake	159:1	-	End of 90:48	3
-	160	Runners supporting the main body of the causeway 90, roundwood & brushwood	160:1-57	137-140, 147, 172, 190, 194, 209, 211-212, 217, 220, 224, 226-227, 229, 232, 234, 241, 259, 271, 293, 318-325, 401, 437, 446, 457-458, 483-484, 537-538, 624-634, 840-842	Orientated east-west	3
-	161	Stake	161:1	-	End of 90:56	3
-	162	Post	162:1	-	End of 90:56	3
-	163	Post	163:1	-	Northern edge of trackway	3
-	164	Post	164:1	-	Northern edge of trackway	3
-	165	Post	165:1	-	Northern edge of trackway	3
-	166	Stake	166:1	-	Adjacent to 90:75	3
-	167	Brushwood under 90:104	167:1	83		3
-	168	Post	168:1	-	Adjacent to 90:116	3
-	169	Stake	169:1	-	Adjacent to 90:116	3

Cut	Deposit	Type	Finds	Samples	Comments	Phase
-	170	Phase 2 construction, planks, roundwood & brushwood, beneath 160	170:1-190	86, 98, 141, 143-146, 149-165, 175-176, 178, 184-186, 196, 205-207, 210, 244, 246-248, 252, 254, 256, 258, 260-262, 264-265, 267, 269-270, 275, 282, 294-298, 355-380, 386-388, 393-394, 425-430, 438-441, 447, 450, 465-480, 526-533, 583-623, 827-831	Orientated north-south	2
-	171	Stakes	171:1-2	-	Southern edge of trackway	3
-	172	Post	172:1	-	Southern edge of trackway	3
-	173	Post	173:1	-	Adjacent to 90:93	3
-	174	Post	174:1	-	In 90:118	3
-	175	Stake	175:1	-	Edge of 90:120	3
-	176	Stake	176:1	-	Northern edge of trackway	3
-	177	Stake	177:1	-	Under 90:106	3
-	178	Post	178:1	-	Southern edge of trackway	3
-	179	Patch of wood	-	142	Around post 178:1	2
-	180	Post	180:1	-	Southern edge of trackway	3
-	181	Stake	181:1	-	Southern edge of trackway	3
-	182	Stake	182:1	-	Southern edge of trackway	3
-	183	Stake	183:1	-	Southern edge of trackway	3
-	184	Stake	184:1	-	Southern edge of trackway	3
-	185	Stake	185:1	-	Southern edge of trackway	3
-	186	Stake	186:1	-	Southern edge of trackway	3
-	187	Worked end	187:1	-	Southern edge of trackway	3
-	188	Stake	188:1	-	Southern edge of trackway	3
-	189	Grassy peat	189:1	-		Below causeway
-	190	Stake	190:1	-	Northern edge of trackway	3
-	191	Post	191:1	-	Between 90:4 & 90:67	3
-	192	Stake	192:1	-	Northern edge of trackway	3
-	193	Stake & post	193:1-2	-	Northern edge of trackway	3
-	194	Stake	194:1	-	Northern edge of trackway	3
-	195	Stake tip	195:1	-	Northern edge of trackway	3

Cut	Deposit	Type	Finds	Samples	Comments	Phase
-	196	Post	196:1	-	Northern edge of trackway	3
-	197	Stake	197:1	-	Northern edge of trackway	3
-	198	Stake tip	198:1	-	Northern edge of trackway	3
-	199	Post	199:1	-	Northern edge of trackway	3
200-249		Not used				
-	250	Post	250:1	-	Northern edge of trackway	3
-	251	Post	251:1	-	Northern edge of trackway	3
-	252	Stake	252:1	-	Northern edge of trackway	3
-	253	Stake	253:1	-	Southern edge of trackway	3
-	254	Stake	254:1	-	Southern edge of trackway	3
-	255	Phase 2 construction, planks, brushwood & roundwood, beneath 170	255:1-203	308, 381-384, 389-390, 414-422, 431-434, 487-523, 709-778, 803-826	Orientated north-south	2
-	256	Post	256:1	-	Northern edge of trackway	3
-	257	Post	257:1	-	Northern edge of trackway	3
-	258	Post	258:1	-	Northern edge of trackway	3
-	259	Post	259:1	-	Northern edge of trackway	3
-	260	Post	260:1	-	Northern edge of trackway	3
-	261	Stake	261:1	-	Northern edge of trackway	3
-	262	Phase 2/3 construction, planks, brushwood & roundwood, beneath 160	262:1-19	-		2/3
-	263	Stake	263:1	-	Southern edge of trackway	3
-	264	Stake	264:1	-	Southern edge of trackway	3
-	265	Stake	265:1	-	Southern edge of trackway	3
-	266	Stake	266:1	-	Southern edge of trackway	3
-	267	Post	267:1	-	Northern edge of trackway	3
-	268	Stake	268:1	-	Adjacent to 90:219	3
-	269	Stake	269:1	-	Northern edge of trackway	3
-	270	Post	270:1	-	Northern edge of trackway	3
-	271	Post	271:1	-	Southern edge of trackway	3
-	272	Post	272:1	-	Northern edge of trackway	3
-	273	Stake	273:1	-	Northern edge of trackway	3
-	274	Stake	274:1	-	Southern edge of trackway	3
-	275	Stake tip	275:1	-	Northern edge of trackway	3

Cut	Deposit	Type	Finds	Samples	Comments	Phase
-	276	Post	276:1	-	Northern edge of trackway	3
-	277	Post	277:1	-	Northern edge of trackway	3
-	278	Stake	278:1	-	Northern edge of trackway	3
-	279	Stake	279:1	-	Northern edge of trackway	3
-	280	Stake	280:1	-	Northern edge of trackway	3
-	281	Wood layer	281:1-2	351-352	South-west of causeway	2
-	282	Phase 2/3 construction, split timber, brushwood & roundwood beneath 262	282:1-8	230, 253, 435-436, 448-449, 464, 845	Aligned north-south	2/3
-	283	Stake	283:1	-	Northern edge of trackway	3
-	284	Post	284:1	-	Northern edge of trackway	3
-	285	Worked end	285:1	-	Northern end of 170:71	3
-	286	Stake	286:1	-	Southern edge of trackway	3
-	287	Post	287:1	-	Southern edge of trackway	3
-	288	Post	288:1	-	Southern edge of trackway	3
-	289	Stake tip	289:1	-	Southern edge of trackway	3
-	290	Stake	290:1	-	Northern edge of trackway	3
-	291	Post	291:1	-	Northern edge of trackway	3
-	292	Stake	292:1	-	Northern edge of trackway	3
-	293	Post tip	293:1	-	Northern edge of trackway	3
-	294	Worked end	294:1	-	Northern edge of trackway	3
-	295	Brushwood branches & split wood under 281	295:1-9	353-354, 400, 442-443, 846, 848, 849	South-west of causeway	2
-	296	Post	296:1	-	Adjacent to 170:189-190	3
-	297	Phase 2 construction of split wood, brushwood & roundwood	297:1-60	299-301, 303-307, 309-317, 395-398, 402-411, 444-445, 453-456, 550-551, 635-642, 832-839, 850		2
-	298	Phase 1 construction of split wood, brushwood & roundwood	298:1-142	385, 412-413, 423-424, 459-463, 552-569, 643-708, 779-802, 847		1
-	299	Peat within 255	-	302		2
300-349		Not used				
-	350	Worked end	350:1	-	Eastern edge of trackway	3

Cut	Deposit	Type	Finds	Samples	Comments	Phase
-	351	Worked end	351:1	-	Eastern edge of trackway	3
-	352	Stake	352:1	-	Northern edge of trackway	3
-	353	Stake	353:1	-	Northern edge of trackway	3
-	354	Stake	354:1	-	Southern edge of trackway	3
-	355	Peat containing charcoal below 90:95	-	851		3

Appendix 2: Catalogue of finds

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
54:1	-	54	-	Wood	Wood working waste	1	
54:2	-	54	-	Wood	Twig with worked end	1	
54:3	-	54	-	Wood	Unworked twig	1	
55:1	-	55	-	Wood	Damaged chisel point	1	
55:2	-	55	-	Wood	Wood working waste	1	
55:3	-	55	-	Wood	Wood working waste	1	
55:4	-	55	-	Wood	Chisel point	1	
55:5	-	55	-	Wood	Wood working waste	1	
55:6	-	55	-	Wood	Wood working waste	1	
55:7	-	55	-	Wood	Brushwood, possibly worked	1	
55:8	-	55	-	Wood	Unworked brushwood	1	
55:9	-	55	-	Wood	Degraded chisel	1	
55:10	-	55	-	Wood	Fragment of a wooden vessel, likely a trough or losset	1	Conserved
55:11	-	55	-	Wood	Degraded chisel	1	
55:12	-	55	-	Wood	Wood working waste	1	
55:13	-	55	-	Wood	Wedge point	1	
55:14	-	55	-	Wood	Wedge point	1	
55:15	-	55	-	Wood	Pencil point	1	
55:16	-	55	-	Wood	Damaged chisel point	1	
55:17	-	55	-	Wood	Tip of worked end	1	
55:18	-	55	-	Wood	One end cut to wedge, the other to chisel point	1	
55:19	-	55	-	Wood	Unworked wood	1	
55:20	-	55	-	Wood	Wood working waste	1	
55:21	-	55	-	Wood	Wood working waste	1	
55:22	-	55	-	Wood	A dressed peg	1	Conserved
55:23	-	55	-	Wood	Wood working waste	1	
55:24	-	55	-	Wood	Pencil point	1	
56:1	-	56	-	Wood	Chisel point	1	
56:2	-	56	-	Wood	Wedge point	1	
62:1	-	62	-	Wood	Chisel point	1	
90:1	-	90	4	Wood	Split timber	1	
90:2	-	90	56	Wood	Split timber	1	
90:3	-	90	52	Wood	Split timber	1	
90:4	-	90	69	Wood	Split timber	1	
90:5	-	90	29	Wood	Split timber	1	
90:6	-	90	11	Wood	Split timber	1	
90:7	-	90	10	Wood	Split timber	1	
90:8	-	90	60	Wood	Split timber	1	
90:9	-	90	67	Wood	Split timber	1	
90:10	-	90	30	Wood	Split timber	1	
90:11	-	90	19	Wood	Split timber	1	
90:12	-	90	20	Wood	Split timber	1	
90:13	-	90	21, 169	Wood	Split timber	1	
90:14	-	90	22	Wood	Split timber	1	
90:15	-	90	68	Wood	Split timber	1	
90:16	-	90	53	Wood	Split timber	1	
90:17	-	90	23	Wood	Split timber	1	
90:18	-	90	24	Wood	Unworked roundwood	1	
90:19	-	90	-	Wood	Worked brushwood	1	
90:20	-	90	25	Wood	Split timber	1	
90:21	-	90	26	Wood	Split timber	1	
90:22	-	90	27	Wood	Split timber	1	
90:23	-	90	28	Wood	Split timber	1	
90:24	-	90	70	Wood	Split timber	1	
90:25	-	90	33	Wood	Unworked roundwood	1	
90:26	-	90	-	Wood	Roundwood with a chisel point at one end and a degraded wedge point at the other	1	
90:27	-	90	54	Wood	Split timber	1	
90:28	-	90	45	Wood	Split timber	1	
90:29	-	90	31	Wood	Split timber	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
90:30	-	90	57	Wood	Split timber	1	
90:31	-	90	13	Wood	Split timber	1	
90:32	-	90	12	Wood	Split timber	1	
90:33	-	90	55	Wood	Worked roundwood	1	
90:34	-	90	7	Wood	Split timber	1	
90:35	-	90	9	Wood	Split timber	1	
90:36	-	90	14	Wood	Split timber	1	
90:37	-	90	61	Wood	Split timber	1	
90:38	-	90	-	Wood	Wood working waste	1	
90:39	-	90	32	Wood	Split timber	1	
90:40	-	90	8	Wood	Split timber	1	
90:41	-	90	200	Wood	Split timber	1	
90:42	-	90	46	Wood	Split timber	1	
90:43	-	90	62	Wood	Split timber	1	
90:44	-	90	47	Wood	Split timber	1	
90:45	-	90	93	Wood	Split timber	1	
90:46	-	90	326	Wood	Split timber	1	
90:47	-	90	50	Wood	Split timber	1	
90:48	-	90	216	Wood	Unworked roundwood	1	
90:49	-	90	214	Wood	Split timber	1	
90:50	-	90	76	Wood	Split timber	1	
90:51	-	90	115	Wood	Split timber	1	
90:52	-	90	236	Wood	Split timber	1	
90:53	-	90	116	Wood	Split timber	1	
90:54	-	90	250	Wood	Split timber	1	
90:55	-	90	63	Wood	Split timber	1	
90:56	-	90	117	Wood	Split timber	1	
90:57	-	90	539	Wood	Split timber	1	
90:58	-	90	94	Wood	Degraded chisel point	1	
90:59	-	90	327	Wood	Split timber	1	
90:60	-	90	535	Wood	Split timber	1	
90:61	-	90	97	Wood	Split timber	1	
90:62	-	90	71	Wood	Lap joint and wedge point	1	
90:63	-	90	15	Wood	Split timber	1	
90:64	-	90	16	Wood	Split timber	1	
90:65	-	90	34	Wood	Split timber	1	
90:66	-	90	3	Wood	Split timber	1	
90:67	-	90	17	Wood	Split timber	1	
90:68	-	90	18	Wood	Split timber	1	
90:69	-	90	-	Wood	Wedge point	1	
90:70	-	90	51	Wood	Unworked roundwood	1	
90:71	-	90	534	Wood	Split timber	1	
90:72	-	90	37	Wood	Split timber	1	
90:73	-	90	35	Wood	Split timber	1	
90:74	-	90	36	Wood	Unworked brushwood	1	
90:75	-	90	-	Wood	Split timber	1	
90:76	-	90	38	Wood	Split timber	1	
90:77	-	90	58	Wood	Worked roundwood	1	
90:78	-	90	59	Wood	Split timber	1	
90:79	-	90	39	Wood	Split timber	1	
90:80	-	90	40	Wood	Split timber	1	
90:81	-	90	41	Wood	Worked roundwood	1	
90:82	-	90	42	Wood	Split timber	1	
90:83	-	90	43	Wood	Split timber	1	
90:84	-	90	44	Wood	Split timber	1	
90:85	-	90	64	Wood	Worked brushwood	1	
90:86	-	90	118	Wood	Split timber	1	
90:87	-	90	72	Wood	Split timber	1	
90:88	-	90	119	Wood	Unworked roundwood	1	
90:89	-	90	219	Wood	Split timber	1	
90:90	-	90	120	Wood	Split timber	1	
90:91	-	90	65	Wood	Chisel point	1	
90:92	-	90	95	Wood	Unworked roundwood	1	
90:93	-	90	96	Wood	Split timber	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
90:94	-	90	231	Wood	Split timber	1	
90:95	-	90	66	Wood	Split timber	1	
90:96	-	90	77	Wood	Split timber	1	
90:97	-	90	78	Wood	Split timber	1	
90:98	-	90	121	Wood	Split timber	1	
90:99	-	90	-	Wood	Wood working waste	1	
90:100	-	90	225	Wood	Split timber	1	
90:101	-	90	122	Wood	Split timber	1	
90:102	-	90	123	Wood	Split timber	1	
90:103	-	90	124	Wood	Split timber	1	
90:104	-	90	82	Wood	Split timber	1	
90:105	-	90	125	Wood	Split timber	1	
90:106	-	90	92	Wood	Split timber	1	
90:107	-	90	81	Wood	Split timber	1	
90:108	-	90	221	Wood	Split timber	1	
90:109	-	90	201	Wood	Split timber	1	
90:110	-	90	126	Wood	Unworked roundwood	1	
90:111	-	90	204	Wood	Split timber	1	
90:112	-	90	183	Wood	Split timber	1	
90:113	-	90	281	Wood	Split timber	1	
90:114	-	90	328	Wood	Split timber	1	
90:115	-	90	278	Wood	Unworked roundwood	1	
90:116	-	90	329	Wood	Split timber	1	
90:117	-	90	286	Wood	Split timber	1	
90:118	-	90	287	Wood	Split timber	1	
90:119	-	90	127	Wood	Split timber	1	
90:120	-	90	290	Wood	Split timber	1	
90:121	-	90	291	Wood	Split timber	1	
90:122	-	90	277	Wood	Split timber	1	
90:123	-	90	202	Wood	Split timber	1	
90:124	-	90	170	Wood	Split timber	1	
90:125	-	90	330	Wood	Split timber	1	
90:126	-	90	-	Wood	Split timber	1	
90:127	-	90	84	Wood	Split timber	1	
90:128	-	90	331	Wood	Split timber	1	
90:129	-	90	223, 843	Wood	Split timber	1	
90:130	-	90	128	Wood	Split timber	1	
90:131	-	90	536	Wood	Unworked roundwood	1	
90:132	-	90	332	Wood	Split timber	1	
90:133	-	90	215	Wood	Unworked wood	1	
90:134	-	90	239	Wood	Unworked roundwood	1	
90:135	-	90	333	Wood	Worked roundwood	1	
90:136	-	90	222	Wood	Unworked roundwood	1	
90:137	-	90	85	Wood	Split wood	1	
90:138	-	90	-	Wood	Split timber	1	
90:139	-	90	87	Wood	Unworked wood	1	
90:140	-	90	88	Wood	Unworked wood	1	
90:141	-	90	89, 255	Wood	Unworked roundwood	1	
90:142	-	90	90	Wood	Split timber	1	
90:143	-	90	129	Wood	Split timber	1	
90:144	-	90	334	Wood	Unworked roundwood	1	
90:145	-	90	130	Wood	Split timber	1	
90:146	-	90	99	Wood	Unworked roundwood	1	
90:147	-	90	100	Wood	Split timber	1	
90:148	-	90	101	Wood	Split timber	1	
90:149	-	90	285	Wood	Unworked roundwood	1	
90:150	-	90	102	Wood	Unworked roundwood	1	
90:151	-	90	103	Wood	Unworked roundwood	1	
90:152	-	90	104	Wood	Split timber	1	
90:153	-	90	105	Wood	Split timber	1	
90:154	-	90	106	Wood	Split timber	1	
90:155	-	90	107	Wood	Split timber	1	
90:156	-	90	108	Wood	Split wood	1	
90:157	-	90	109	Wood	Split timber	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
90:158	-	90	110	Wood	Split timber	1	
90:159	-	90	131	Wood	Split timber	1	
90:160	-	90	132	Wood	Split timber	1	
90:161	-	90	335	Wood	Worked roundwood	1	
90:162	-	90	111	Wood	Split timber	1	
90:163	-	90	112	Wood	Split timber	1	
90:164	-	90	113	Wood	Split timber	1	
90:165	-	90	91	Wood	Unworked roundwood	1	
90:166	-	90	391	Wood	Chisel point	1	
90:167	-	90	570	Wood	Worked branch	1	
90:168	-	90	133	Wood	Split wood	1	
90:169	-	90	134	Wood	unworked wood	1	
90:170	-	90	336	Wood	Split timber	1	
90:171	-	90	233	Wood	Split timber	1	
90:172	-	90	-	Wood	Chisel point	1	
90:173	-	90	242	Wood	Split timber	1	
90:174	-	90	135	Wood	Unworked brushwood	1	
90:175	-	90	571	Wood	Split timber	1	
90:176	-	90	189	Wood	Split timber	1	
90:177	-	90	179	Wood	Split timber	1	
90:178	-	90	136	Wood	Split timber	1	
90:179	-	90	237	Wood	Unworked roundwood	1	
90:180	-	90	-	Wood	Split timber	1	
90:181	-	90	197	Wood	Unworked brushwood	1	
90:182	-	90	-	Wood	unworked wood	1	
90:183	-	90	337	Wood	Split timber	1	
90:184	-	90	173	Wood	Split timber	1	
90:185	-	90	203	Wood	Split timber	1	
90:186	-	90	280	Wood	Split timber	1	
90:187	-	90	572	Wood	Split timber	1	
90:188	-	90	251	Wood	Unworked roundwood	1	
90:189	-	90	213	Wood	Split timber	1	
90:190	-	90	338	Wood	Split timber	1	
90:191	-	90	171	Wood	Split timber	1	
90:192	-	90	485	Wood	Unworked roundwood	1	
90:193	-	90	195	Wood	Chisel point	1	
90:194	-	90	339	Wood	Split timber	1	
90:195	-	90	573	Wood	Split wood	1	
90:196	-	90	208	Wood	Chisel point	1	
90:197	-	90	399	Wood	Split timber	1	
90:198	-	90	340	Wood	Chisel point	1	
90:199	-	90	574	Wood	Split timber	1	
90:200	-	90	228	Wood	Unworked brushwood	1	
90:201	-	90	167	Wood	Split timber	1	
90:202	-	90	181	Wood	Split timber	1	
90:203	-	90	235	Wood	Split timber	1	
90:204	-	90	174	Wood	Split timber	1	
90:205	-	90	540	Wood	Split timber	1	
90:206	-	90	341	Wood	Split timber	1	
90:207	-	90	541	Wood	Split timber	1	
90:208	-	90	542	Wood	Split timber	1	
90:209	-	90	-	Wood	Chisel point	1	
90:210	-	90	-	Wood	Split timber	1	
90:211	-	90	238	Wood	Split timber	1	
90:212	-	90	187	Wood	Split timber	1	
90:213	-	90	482	Wood	Unworked brushwood	1	
90:214	-	90	342	Wood	Split timber	1	
90:215	-	90	543	Wood	Split timber	1	
90:216	-	90	575	Wood	Unworked brushwood	1	
90:217	-	90	257	Wood	Unworked roundwood	1	
90:218	-	90	192	Wood	Unworked roundwood	1	
90:219	-	90	343	Wood	Unworked roundwood	1	
90:220	-	90	193	Wood	Split timber	1	
90:221	-	90	268	Wood	Split timber	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
90:222	-	90	486	Wood	Split timber	1	
90:223	-	90	524	Wood	Unworked brushwood	1	
90:224	-	90	-	Wood	Split timber	1	
90:225	-	90	544	Wood	Unworked roundwood	1	
90:226	-	90	263	Wood	Split timber	1	
90:227	-	90	576	Wood	Chisel point	1	
90:228	-	90	177	Wood	Split timber	1	
90:229	-	90	-	Wood	Chisel point	1	
90:230	-	90	545	Wood	Split timber	1	
90:231	-	90	577	Wood	Split timber	1	
90:232	-	90	-	Wood	Chisel point	1	
90:233	-	90	180, 191	Wood	Split timber	1	
90:234	-	90	546	Wood	Split timber	1	
90:235	-	90	344	Wood	Split timber	1	
90:236	-	90	168	Wood	Split timber	1	
90:237	-	90	-	Wood	Split timber	1	
90:238	-	90	345	Wood	Split timber	1	
90:239	-	90	578	Wood	Split timber	1	
90:240	-	90	452	Wood	Unworked roundwood	1	
90:241	-	90	-	Wood	Unworked roundwood	1	
90:242	-	90	166	Wood	Split timber	1	
90:243	-	90	274	Wood	Split timber	1	
90:244	-	90	283	Wood	Split timber	1	
90:245	-	90	346	Wood	Wedge or possible pencil point	1	
90:246	-	90	218	Wood	Split timber	1	
90:247	-	90	-	Wood	Fragment of an animal yoke	1	Conserved
90:248	-	90	451	Wood	Unworked wood	1	
90:249	-	90	273	Wood	Split timber	1	
90:250	-	90	272	Wood	Split timber	1	
90:251	-	90	-	Wood	Split timber	1	
90:252	-	90	279	Wood	Split timber	1	
90:253	-	90	-	Wood	Split timber	1	
90:254	-	90	245	Wood	Worked roundwood	1	
90:255	-	90	284	Wood	Split timber	1	
90:256	-	90	347	Wood	Split timber	1	
90:257	-	90	240, 249	Wood	Split timber	1	
90:258	-	90	199	Wood	Split timber	1	
90:259	-	90	348	Wood	Split timber	1	
90:260	-	90	579	Wood	Unworked roundwood	1	
90:261	-	90	266	Wood	Split timber	1	
90:262	-	90	580	Wood	Unworked brushwood	1	
90:263	-	90	581	Wood	Split timber	1	
90:264	-	90	582	Wood	Chisel point	1	
90:265	-	90	844	Wood	Split wood	1	
90:266	-	90	276	Wood	Chisel point	1	
90:267	-	90	243	Wood	Unworked roundwood	1	
90:268	-	90	182	Wood	Split timber	1	
90:269	-	90	549	Wood	Split wood	1	
90:270	-	90	349	Wood	Split timber	1	
90:271	-	90	392	Wood	Split timber	1	
90:272	-	90	547	Wood	Split wood	1	
90:273	-	90	548	Wood	Split timber	1	
90:274	-	90	188	Wood	Split timber	1	
90:275	-	90	-	Wood	Split timber	1	
90:276	-	90	350	Wood	Unworked roundwood	1	
90:277	-	90	525	Wood	Split wood	1	
90:278	-	90	198	Wood	Split timber	1	
91:1	-	91	-	Wood	Post with pencil point	1	
92:1	-	92	-	Wood	Post with pencil point	1	Conserved
93:1	-	93	-	Wood	Stake with wedge point	1	Conserved
95:1	-	95	5	Wood	Unworked wood	1	
95:2	-	95	6	Wood	Unworked wood	1	
95:3	-	95	48	Wood	Worked roundwood	1	
95:4	-	95	49	Wood	Pencil point	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
95:5	-	95	114	Wood	Unworked roundwood	1	
96:1	-	96	-	Wood	Post with pencil point	1	
97:1	-	97	-	Wood	Fragment of a wooden tub, joins with 97:2 and comprises part of the vessel wall and a carved handle	1	Conserved
97:2	-	97	-	Wood	Fragment of a wooden tub, joins with 97:1 and comprises part of the vessel wall and a carved handle	1	Conserved
97:3	-	97	-	Wood	Wedge point	1	
97:4	-	97	79	Wood	Chisel point	1	
97:5	-	97	-	Wood	Chisel point	1	
97:6	-	97	-	Wood	Branch with pencil points both ends	1	
97:7	-	97	-	Wood	Branch with pencil point & wedge or chisel points	1	
97:8	-	97	-	Wood	Wood working waste	1	
97:9	-	97	-	Wood	Chisel point	1	
97:10	-	97	-	Wood	Chisel point	1	
97:11	-	97	-	Wood	Wood working waste	1	
97:12	-	97	-	Wood	Split timber	1	
97:13	-	97	-	Wood	Wood working waste	1	
97:14	-	97	-	Wood	Wood working waste	1	
97:15	-	97	-	Wood	Wood working waste	1	
97:16	-	97	-	Wood	Wedge point	1	
97:17	-	97	-	Wood	Chisel point	1	
97:18	-	97	-	Wood	Fragment of a wooden vessel comprising part of the vessel wall and a carved handle	1	Conserved
97:19	-	97	-	Wood	Fragment of a wooden tub, which joins with 97:20, a short section of the croze	1	Conserved
97:20	-	97	-	Wood	Fragment of a wooden tub, which joins with 97:19, a short section of the croze	1	Conserved
97:21	-	97	-	Wood	A small fragment of split wood, possibly part of a wooden vessel	1	Conserved
97:22	-	97	-	Wood	A small fragment of split wood, possibly part of a wooden vessel	1	Conserved
98:1	-	98	-	Wood	Stake with pencil point	1	
99:1	-	99	-	Wood	Post with pencil point	1	
150:1	-	150	-	Wood	Post with pencil point	1	Conserved
151:1	-	151	-	Wood	Stake with wedge point	1	
152:1	-	152	-	Wood	Stake with wedge point	1	
153:1	-	153	-	Wood	Post with pencil point	1	
154:1	-	154	-	Wood	Post with pencil point	1	Conserved
154:2	-	154	-	Wood	Stake of pencil point	1	
155:1	-	155	-	Wood	Stake with wedge point	1	
156:1	-	156	-	Wood	Stake with pencil point	1	
157:1	-	157	-	Wood	Post with pencil point	1	Conserved
157:2	-	157	-	Wood	Stake with wedge point	1	
158:1	-	158	-	Wood	Post with chisel point	1	Conserved
159:1	-	159	-	Wood	Stake with wedge point	1	
160:1	-	160	320	Wood	Unworked roundwood	1	
160:2	-	160	227	Wood	Unworked roundwood	1	
160:3	-	160	224	Wood	Unworked roundwood	1	
160:4	-	160	232	Wood	Unworked roundwood	1	
160:5	-	160	220	Wood	Unworked roundwood	1	
160:6	-	160	226	Wood	Unworked roundwood	1	
160:7	-	160	137	Wood	Unworked brushwood	1	
160:8	-	160	138	Wood	Unworked brushwood	1	
160:9	-	160	624	Wood	Unworked wood	1	
160:10	-	160	194, 211	Wood	Unworked roundwood	1	
160:11	-	160	241	Wood	Unworked roundwood	1	
160:12	-	160	139	Wood	Unworked roundwood	1	
160:13	-	160	321	Wood	Unworked roundwood	1	
160:14	-	160	625	Wood	Unworked brushwood	1	
160:15	-	160	217	Wood	Split timber	1	
160:16	-	160	626	Wood	Split timber	1	
160:17	-	160	318	Wood	Unworked roundwood	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
160:18	-	160	140	Wood	Unworked wood	1	
160:19	-	160	627	Wood	Unworked wood	1	
160:20	-	160	190	Wood	Split wood	1	
160:21	-	160	212	Wood	Unworked roundwood	1	
160:22	-	160	259	Wood	Split wood	1	
160:23	-	160	628	Wood	Split wood	1	
160:24	-	160	-	Wood	Roundwood with wedge point	1	
160:25	-	160	457	Wood	Unworked roundwood	1	
160:26	-	160	446	Wood	Unworked roundwood	1	
160:27	-	160	271	Wood	Unworked roundwood	1	
160:28	-	160	322	Wood	Split timber	1	
160:29	-	160	323	Wood	Unworked wood	1	
160:30	-	160	629	Wood	Unworked wood	1	
160:31	-	160	458	Wood	Unworked brushwood	1	
160:32	-	160	324	Wood	Split timber	1	
160:33	-	160	209	Wood	Split timber	1	
160:34	-	160	630	Wood	Unworked roundwood	1	
160:35	-	160	537	Wood	Unworked roundwood	1	
160:36	-	160	840	Wood	Unworked roundwood	1	
160:37	-	160	841	Wood	Unworked roundwood	1	
160:38	-	160	325	Wood	Split timber	1	
160:39	-	160	437	Wood	Unworked roundwood	1	
160:40	-	160	631	Wood	Unworked roundwood	1	
160:41	-	160	538	Wood	Unworked roundwood	1	
160:42	-	160	-	Wood	Wood working waste	1	
160:43	-	160	229	Wood	Unworked roundwood	1	
160:44	-	160	234	Wood	Unworked roundwood	1	
160:45	-	160	147	Wood	Unworked wood	1	
160:46	-	160	172	Wood	Unworked roundwood	1	
160:47	-	160	632	Wood	Unworked roundwood	1	
160:48	-	160	633	Wood	Split timber	1	
160:49	-	160	634	Wood	Unworked roundwood	1	
160:50	-	160	293	Wood	Unworked roundwood	1	
160:51	-	160	319	Wood	Unworked roundwood	1	
160:52	-	160	-	Wood	Unworked roundwood	1	
160:53	-	160	483	Wood	Split wood	1	
160:54	-	160	842	Wood	Unworked roundwood	1	
160:55	-	160	-	Wood	Wood working waste	1	
160:56	-	160	401	Wood	Unworked wood	1	
160:57	-	160	484	Wood	Split wood	1	
161:1	-	161	-	Wood	Stake with pencil point	1	
162:1	-	162	-	Wood	Post with pencil point	1	
163:1	-	163	-	Wood	Post with wedge point	1	
164:1	-	164	-	Wood	Post with pencil point	1	
165:1	-	165	-	Wood	Post with pencil point	1	
166:1	-	166	-	Wood	Stake with chisel point	1	Conserved
167:1	-	167	83	Wood	Chisel point	1	
168:1	-	168	-	Wood	Post with pencil point	1	Conserved
169:1	-	169	-	Wood	Stake with pencil point	1	
170:1	-	170	583	Wood	Unworked brushwood	1	
170:2	-	170	282	Wood	Unworked wood	1	
170:3	-	170	584	Wood	Unworked roundwood	1	
170:4	-	170	178	Wood	Split timber	1	
170:5	-	170	-	Wood	Split timber	1	
170:6	-	170	585	Wood	Split timber	1	
170:7	-	170	465	Wood	Unworked brushwood	1	
170:8	-	170	623	Wood	Split timber	1	
170:9	-	170	98	Wood	Split wood	1	
170:10	-	170	260	Wood	Unworked roundwood	1	
170:11	-	170	-	Wood	Roundwood cut to a chisel point	1	
170:12	-	170	466	Wood	Split wood	1	
170:13	-	170	393	Wood	Unworked roundwood or possibly a fragment of split timber	1	
170:14	-	170	86	Wood	Split timber	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
170:15	-	170	262	Wood	Chisel point	1	
170:16	-	170	141	Wood	Split timber	1	
170:17	-	170	827	Wood	Chisel point	1	
170:18	-	170	185	Wood	Unworked roundwood	1	
170:19	-	170	355	Wood	Unworked roundwood	1	
170:20	-	170	526	Wood	Unworked roundwood	1	
170:21	-	170	586	Wood	Chisel point	1	
170:22	-	170	587	Wood	Unworked brushwood	1	
170:23	-	170	356	Wood	Split timber	1	
170:24	-	170	828	Wood	Unworked roundwood	1	
170:25	-	170	357	Wood	Unworked roundwood	1	
170:26	-	170	467	Wood	Unworked brushwood	1	
170:27	-	170	468	Wood	Unworked brushwood	1	
170:28	-	170	425	Wood	Unworked roundwood	1	
170:29	-	170	588	Wood	Unworked brushwood	1	
170:30	-	170	469	Wood	Unworked roundwood	1	
170:31	-	170	589	Wood	Unworked brushwood	1	
170:32	-	170	590	Wood	Unworked roundwood	1	
170:33	-	170	246	Wood	Unworked roundwood	1	
170:34	-	170	438	Wood	Unworked brushwood	1	
170:35	-	170	269	Wood	Unworked roundwood	1	
170:36	-	170	143	Wood	Unworked brushwood	1	
170:37	-	170	144	Wood	Unworked brushwood	1	
170:38	-	170	527	Wood	Unworked roundwood	1	
170:39	-	170	-	Wood	Chisel point	1	
170:40	-	170	358	Wood	Unworked roundwood	1	
170:41	-	170	470	Wood	Unworked brushwood	1	
170:42	-	170	528	Wood	Unworked brushwood	1	
170:43	-	170	529	Wood	Unworked wood	1	
170:44	-	170	-	Wood	Unworked brushwood	1	
170:45	-	170	270	Wood	Unworked roundwood	1	
170:46	-	170	471	Wood	Split wood	1	
170:47	-	170	472	Wood	Split wood	1	
170:48	-	170	473	Wood	Split wood	1	
170:49	-	170	474	Wood	Split wood	1	
170:50	-	170	475	Wood	Unworked roundwood	1	
170:51	-	170	476	Wood	Unworked brushwood	1	
170:52	-	170	149	Wood	Unworked wood	1	
170:53	-	170	359	Wood	Unworked roundwood	1	
170:54	-	170	477	Wood	Unworked brushwood	1	
170:55	-	170	-	Wood	Wedge point	1	
170:56	-	170	478	Wood	Unworked brushwood	1	
170:57	-	170	479	Wood	Unworked roundwood	1	
170:58	-	170	150	Wood	Unworked roundwood	1	
170:59	-	170	360	Wood	Unworked roundwood	1	
170:60	-	170	151	Wood	Unworked wood	1	
170:61	-	170	254	Wood	Chisel point	1	
170:62	-	170	244	Wood	Split timber	1	
170:63	-	170	145	Wood	Split wood	1	
170:64	-	170	146	Wood	Split wood	1	
170:65	-	170	-	Wood	Chisel point	1	
170:66	-	170	210	Wood	Chisel point	1	
170:67	-	170	152	Wood	Unworked roundwood	1	
170:68	-	170	153	Wood	Unworked roundwood	1	
170:69	-	170	361	Wood	Split timber	1	
170:70	-	170	480	Wood	Unworked roundwood	1	
170:71	-	170	207	Wood	Unworked roundwood	1	
170:72	-	170	154	Wood	Unworked wood	1	
170:73	-	170	247	Wood	Worked roundwood	1	
170:74	-	170	155	Wood	Unworked roundwood	1	
170:75	-	170	591	Wood	Unworked brushwood	1	
170:76	-	170	-	Wood	Unworked brushwood	1	
170:77	-	170	156	Wood	Unworked wood	1	
170:78	-	170	157	Wood	Unworked roundwood	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
170:79	-	170	158	Wood	Unworked brushwood	1	
170:80	-	170	159	Wood	Split wood	1	
170:81	-	170	160	Wood	Unworked wood	1	
170:82	-	170	267	Wood	Unworked wood	1	
170:83	-	170	252	Wood	Worked brushwood	1	
170:84	-	170	258	Wood	Unworked brushwood	1	
170:85	-	170	-	Wood	Chisel point	1	
170:86	-	170	256	Wood	Unworked brushwood	1	
170:87	-	170	196	Wood	Unworked roundwood	1	
170:88	-	170	264	Wood	Worked roundwood	1	
170:89	-	170	261	Wood	Unworked roundwood	1	
170:90	-	170	362	Wood	Unworked roundwood	1	
170:91	-	170	592	Wood	Unworked roundwood	1	
170:92	-	170	593	Wood	Split timber	1	
170:93	-	170	594	Wood	Split wood	1	
170:94	-	170	386	Wood	Unworked wood	1	
170:95	-	170	387	Wood	Split wood	1	
170:96	-	170	363	Wood	Unworked roundwood	1	
170:97	-	170	595	Wood	Split wood	1	
170:98	-	170	176	Wood	Split timber	1	
170:99	-	170	426	Wood	Unworked brushwood	1	
170:100	-	170	364	Wood	Split timber	1	
170:101	-	170	-	Wood	Unworked roundwood	1	
170:102	-	170	430	Wood	Unworked brushwood	1	
170:103	-	170	829	Wood	Unworked brushwood	1	
170:104	-	170	427	Wood	Unworked brushwood	1	
170:105	-	170	394	Wood	Worked wood	1	
170:106	-	170	365	Wood	Unworked roundwood	1	
170:107	-	170	366	Wood	Split timber	1	
170:108	-	170	596	Wood	Unworked roundwood	1	
170:109	-	170	265	Wood	Split timber	1	
170:110	-	170	367	Wood	Split timber	1	
170:111	-	170	206	Wood	Split wood	1	
170:112	-	170	368	Wood	Split wood	1	
170:113	-	170	597	Wood	Split wood	1	
170:114	-	170	205	Wood	Split wood	1	
170:115	-	170	294	Wood	Unworked brushwood	1	
170:116	-	170	295	Wood	Unworked brushwood	1	
170:117	-	170	296	Wood	Unworked brushwood	1	
170:118	-	170	248	Wood	Unworked brushwood	1	
170:119	-	170	297	Wood	Unworked brushwood	1	
170:120	-	170	164, 184	Wood	Unworked wood	1	
170:121	-	170	165, 175	Wood	Unworked brushwood	1	
170:122	-	170	-	Wood	Unworked brushwood	1	
170:123	-	170	439	Wood	Unworked roundwood	1	
170:124	-	170	161	Wood	Unworked roundwood	1	
170:125	-	170	162	Wood	Unworked brushwood	1	
170:126	-	170	298	Wood	Split wood	1	
170:127	-	170	186	Wood	Unworked wood	1	
170:128	-	170	369	Wood	Unworked roundwood	1	
170:129	-	170	598	Wood	Unworked brushwood	1	
170:130	-	170	-	Wood	Unworked brushwood	1	
170:131	-	170	163	Wood	Split wood	1	
170:132	-	170	530	Wood	Split timber	1	
170:133	-	170	370	Wood	Unworked roundwood	1	
170:134	-	170	371	Wood	Unworked roundwood	1	
170:135	-	170	372	Wood	Unworked roundwood	1	
170:136	-	170	599	Wood	Unworked roundwood	1	
170:137	-	170	600	Wood	Unworked roundwood	1	
170:138	-	170	601	Wood	Split timber	1	
170:139	-	170	602	Wood	Unworked roundwood	1	
170:140	-	170	603	Wood	Unworked roundwood	1	
170:141	-	170	605	Wood	Unworked roundwood	1	
170:142	-	170	604	Wood	Unworked roundwood	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
170:143	-	170	606	Wood	Split wood	1	
170:144	-	170	607	Wood	Unworked brushwood	1	
170:145	-	170	373	Wood	Unworked roundwood	1	
170:146	-	170	388	Wood	Unworked wood	1	
170:147	-	170	608	Wood	Split wood	1	
170:148	-	170	531	Wood	Split wood	1	
170:149	-	170	609	Wood	Split timber	1	
170:150	-	170	374	Wood	Unworked roundwood	1	
170:151	-	170	-	Wood	Unworked roundwood	1	
170:152	-	170	610	Wood	Unworked roundwood	1	
170:153	-	170	-	Wood	Split timber	1	
170:154	-	170	611	Wood	Unworked roundwood	1	
170:155	-	170	-	Wood	Unworked brushwood	1	
170:156	-	170	440	Wood	Split wood	1	
170:157	-	170	612	Wood	Unworked wood	1	
170:158	-	170	613	Wood	Unworked roundwood	1	
170:159	-	170	-	Wood	Unworked brushwood	1	
170:160	-	170	614	Wood	Unworked roundwood	1	
170:161	-	170	532	Wood	Unworked wood	1	
170:162	-	170	533	Wood	Unworked roundwood	1	
170:163	-	170	428	Wood	Unworked brushwood	1	
170:164	-	170	615	Wood	Unworked roundwood	1	
170:165	-	170	429	Wood	Unworked roundwood	1	
170:166	-	170	375	Wood	Unworked roundwood	1	
170:167	-	170	616	Wood	Split timber	1	
170:168	-	170	617	Wood	Split timber	1	
170:169	-	170	376	Wood	Unworked roundwood	1	
170:170	-	170	275	Wood	Unworked roundwood	1	
170:171	-	170	447	Wood	Unworked roundwood	1	
170:172	-	170	-	Wood	Wedge point	1	
170:173	-	170	377	Wood	Unworked roundwood	1	
170:174	-	170	618	Wood	Unworked roundwood	1	
170:175	-	170	450	Wood	Unworked roundwood	1	
170:176	-	170	-	Wood	Split timber	1	
170:177	-	170	619	Wood	Unworked roundwood	1	
170:178	-	170	378	Wood	Unworked roundwood	1	
170:179	-	170	830	Wood	Unworked wood	1	
170:180	-	170	620	Wood	Split timber	1	
170:181	-	170	621	Wood	Split timber	1	
170:182	-	170	831	Wood	Unworked roundwood	1	
170:183	-	170	622	Wood	Split timber	1	
170:184					Cancelled		
170:185	-	170	441	Wood	Unworked wood	1	
170:186	-	170	379	Wood	Unworked brushwood	1	
170:187	-	170	380	Wood	Unworked roundwood	1	
170:188	-	170	-	Wood	Split wood	1	
170:189	-	170	-	Wood	Wood working waste	1	
170:190	-	170	-	Wood	Split wood	1	
171:1	-	171	-	Wood	Stake with pencil point	1	
171:2	-	171	-	Wood	Stake with pencil point	1	
172:1	-	172	-	Wood	Post with pencil point	1	Conserved
173:1	-	173	-	Wood	Post with pencil point	1	
174:1	-	174	-	Wood	Post with pencil point	1	Conserved
175:1	-	175	-	Wood	Stake with pencil point	1	
176:1	-	176	-	Wood	Stake with pencil point	1	
177:1	-	177	-	Wood	Stake with pencil point	1	
178:1	-	178	-	Wood	Post with pencil point	1	
180:1	-	180	-	Wood	Post with pencil point	1	Conserved
181:1	-	181	-	Wood	Stake with wedge point	1	
182:1	-	182	-	Wood	Stake with chisel point	1	
183:1	-	183	-	Wood	Stake with chisel point	1	
184:1	-	184	-	Wood	Stake with pencil point	1	Conserved
185:1	-	185	-	Wood	Stake	1	
186:1	-	186	-	Wood	Stake with pencil point	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
187:1	-	187	-	Wood	Chisel point	1	
188:1	-	188	-	Wood	Stake with chisel point	1	
189:1	-	189	-	Wood	Portion of a wooden vessel comprising a long, narrow section of the vessel wall with an intact rim and base	1	Conserved
190:1	-	190	-	Wood	Stake with wedge point	1	
191:1	-	191	-	Wood	Post with wedge point	1	
192:1	-	192	-	Wood	Stake with wedge point	1	
193:1	-	193	-	Wood	Stake with pencil point	1	
193:2	-	193	-	Wood	Post with pencil point	1	Conserved
194:1	-	194	-	Wood	Stake with pencil point	1	Conserved
195:1	-	195	-	Wood	Stake	1	
196:1	-	196	-	Wood	Post with chisel point	1	
197:1	-	197	-	Wood	Stake with chisel point	1	
198:1	-	198	-	Wood	Stake tip with possible wedge point	1	
199:1	-	199	-	Wood	Post with pencil point	1	
250:1	-	250	-	Wood	Stake tip	1	
251:1	-	251	-	Wood	Post with wedge point	1	
252:1	-	252	-	Wood	Stake with wedge point	1	
253:1	-	253	-	Wood	Stake with chisel point	1	
254:1	-	254	-	Wood	Stake with chisel point	1	
255:1	-	255	-	Wood	Possible cart fragment	1	Conserved
255:2	-	255	-	Wood	Wooden object with 3 dowels/dowel holes	1	Conserved
255:3	-	255	421	Wood	Unworked roundwood	1	
255:4	-	255	709	Wood	Split timber	1	
255:5	-	255	-	Wood	Split timber	1	
255:6	-	255	710	Wood	Unworked roundwood	1	
255:7	-	255	711	Wood	Unworked roundwood	1	
255:8	-	255	712	Wood	Unworked roundwood	1	
255:9	-	255	381	Wood	Wedge point	1	
255:10	-	255	-	Wood	Unworked roundwood	1	
255:11	-	255	713	Wood	Unworked brushwood	1	
255:12	-	255	803	Wood	Unworked brushwood	1	
255:13	-	255	487	Wood	Unworked brushwood	1	
255:14	-	255	804	Wood	Unworked brushwood	1	
255:15	-	255	414	Wood	Brushwood cut to a chisel point	1	
255:16	-	255	714	Wood	Unworked roundwood	1	
255:17	-	255	715	Wood	Unworked roundwood	1	
255:18	-	255	716	Wood	Unworked brushwood	1	
255:19	-	255	415	Wood	Split timber	1	
255:20	-	255	382	Wood	Pencil point	1	
255:21	-	255	488	Wood	Worked roundwood	1	
255:22	-	255	717	Wood	Split wood	1	
255:23	-	255	383	Wood	Wedge point	1	
255:24	-	255	489	Wood	Unworked roundwood	1	
255:25	-	255	-	Wood	Pencil point	1	
255:26	-	255	805	Wood	Split wood	1	
255:27	-	255	718	Wood	Split timber	1	
255:28	-	255	719	Wood	Split timber	1	
255:29	-	255	308	Wood	Split wood	1	
255:30	-	255	-	Wood	Pencil point	1	Conserved
255:31	-	255	-	Wood	Chisel point	1	
255:32	-	255	-	Wood	Wedge point	1	
255:33	-	255	-	Wood	Pencil point	1	
255:34	-	255	-	Wood	Wedge point	1	
255:35	-	255	490	Wood	Split wood	1	
255:36	-	255	491	Wood	Bark fragment	1	
255:37	-	255	720	Wood	Split wood	1	
255:38	-	255	-	Wood	Pencil point	1	
255:39	-	255	-	Wood	Chisel point	1	
255:40	-	255	-	Wood	Chisel point	1	
255:41	-	255	384	Wood	Chisel point	1	
255:42	-	255	-	Wood	Split timber	1	
255:43	-	255	721	Wood	Unworked roundwood	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
255:44	-	255	-	Wood	Chisel point	1	
255:45	-	255	722	Wood	Split wood	1	
255:46	-	255	723	Wood	Split wood	1	
255:47	-	255	806	Wood	Unworked brushwood	1	
255:48	-	255	724	Wood	Unworked roundwood	1	
255:49	-	255	807	Wood	Unworked brushwood	1	
255:50	-	255	808	Wood	Unworked brushwood	1	
255:51	-	255	-	Wood	Chisel point	1	
255:52	-	255	725	Wood	Chisel point	1	
255:53	-	255	-	Wood	Chisel point	1	
255:54	-	255	809	Wood	Chisel point	1	
255:55	-	255	-	Wood	Wedge point	1	
255:56	-	255	492	Wood	Unworked roundwood	1	
255:57	-	255	-	Wood	Wedge point	1	
255:58	-	255	-	Wood	Pencil point	1	
255:59	-	255	726	Wood	Unworked brushwood	1	
255:60	-	255	727	Wood	Unworked roundwood	1	
255:61	-	255	-	Wood	Pencil point	1	
255:62	-	255	810	Wood	Unworked brushwood	1	
255:63	-	255	728	Wood	Unworked brushwood	1	
255:64	-	255	729	Wood	Unworked brushwood	1	
255:65	-	255	-	Wood	Pencil point	1	
255:66	-	255	-	Wood	Wedge point	1	
255:67	-	255	811	Wood	Unworked brushwood	1	
255:68	-	255	-	Wood	Chisel point	1	
255:69	-	255	-	Wood	Chisel point	1	
255:70	-	255	812	Wood	Split wood	1	
255:71	-	255	730	Wood	Unworked brushwood	1	
255:72	-	255	813	Wood	Unworked brushwood	1	
255:73	-	255	731	Wood	Split wood	1	
255:74	-	255	732	Wood	Unworked roundwood	1	
255:75	-	255	733	Wood	Unworked brushwood	1	
255:76	-	255	734	Wood	Split wood	1	
255:77	-	255	735	Wood	Unworked brushwood	1	
255:78	-	255	814	Wood	Split timber	1	
255:79	-	255	736	Wood	Split timber	1	
255:80	-	255	737	Wood	Unworked roundwood	1	
255:81	-	255	815	Wood	Unworked roundwood	1	
255:82	-	255	738	Wood	Unworked roundwood	1	
255:83	-	255	-	Wood	Chisel point	1	
255:84	-	255	-	Wood	Unworked roundwood	1	
255:85	-	255	816	Wood	Unworked brushwood	1	
255:86	-	255	-	Wood	Chisel point	1	
255:87	-	255	493	Wood	Unworked roundwood	1	
255:88	-	255	739	Wood	Unworked roundwood	1	
255:89	-	255	817	Wood	Split timber	1	
255:90	-	255	740	Wood	Split timber	1	
255:91	-	255	741	Wood	Split wood	1	
255:92	-	255	742	Wood	Split timber	1	
255:93	-	255	743	Wood	Unworked brushwood	1	
255:94	-	255	744	Wood	Unworked brushwood	1	
255:95	-	255	-	Wood	Split timber	1	
255:96	-	255	389	Wood	Unworked brushwood	1	
255:97	-	255	-	Wood	Chisel point	1	
255:98	-	255	745	Wood	Unworked brushwood	1	
255:99	-	255	-	Wood	Chisel point	1	
255:100	-	255	494	Wood	Unworked roundwood	1	
255:101	-	255	495	Wood	Split timber	1	
255:102	-	255	-	Wood	Pencil point	1	
255:103	-	255	431	Wood	Split timber	1	
255:104	-	255	818	Wood	Unworked wood	1	
255:105	-	255	432	Wood	Split timber	1	
255:106	-	255	496	Wood	Unworked roundwood	1	
255:107	-	255	497	Wood	Unworked brushwood	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
255:108	-	255	498	Wood	Unworked brushwood	1	
255:109	-	255	499	Wood	Split wood	1	
255:110	-	255	500	Wood	Unworked brushwood	1	
255:111	-	255	501	Wood	Unworked wood	1	
255:112	-	255	433	Wood	Unworked roundwood	1	
255:113	-	255	-	Wood	Chisel point	1	
255:114	-	255	746	Wood	Chisel point	1	
255:115	-	255	819	Wood	Unworked brushwood	1	
255:116	-	255	502	Wood	Unworked brushwood	1	
255:117	-	255	416	Wood	Split timber	1	
255:118	-	255	820	Wood	Chisel point	1	
255:119	-	255	-	Wood	Chisel point	1	
255:120	-	255	503	Wood	Unworked brushwood	1	
255:121	-	255	747	Wood	Unworked wood	1	
255:122	-	255	504	Wood	Unworked brushwood	1	
255:123	-	255	748	Wood	Split wood	1	
255:124	-	255	821	Wood	Unworked wood	1	
255:125	-	255	505	Wood	Split wood	1	
255:126	-	255	749	Wood	Unworked brushwood	1	
255:127	-	255	750	Wood	Unworked brushwood	1	
255:128	-	255	751	Wood	Unworked wood	1	
255:129	-	255	752	Wood	Split timber	1	
255:130	-	255	506	Wood	Split wood	1	
255:131	-	255	507	Wood	Split wood	1	
255:132	-	255	753	Wood	Unworked brushwood	1	
255:133	-	255	434	Wood	Unworked roundwood	1	
255:134	-	255	754	Wood	Unworked brushwood	1	
255:135	-	255	-	Wood	Chisel point	1	
255:136	-	255	-	Wood	Chisel point	1	
255:137	-	255	755	Wood	Unworked wood	1	
255:138	-	255	-	Wood	Chisel point	1	
255:139	-	255	756	Wood	Unworked brushwood	1	
255:140	-	255	822	Wood	Unworked brushwood	1	
255:141	-	255	417	Wood	Unworked wood	1	
255:142	-	255	418	Wood	Split wood	1	
255:143	-	255	390	Wood	Split wood	1	
255:144	-	255	508	Wood	Split timber	1	
255:145	-	255	509	Wood	Unworked brushwood	1	
255:146	-	255	757	Wood	Split wood	1	
255:147	-	255	758	Wood	Unworked brushwood	1	
255:148	-	255	759	Wood	Unworked brushwood	1	
255:149	-	255	760	Wood	Unworked brushwood	1	
255:150	-	255	-	Wood	Pencil point	1	
255:151	-	255	422	Wood	Unworked wood	1	
255:152	-	255	761	Wood	Unworked brushwood	1	
255:153	-	255	762	Wood	Unworked brushwood	1	
255:154	-	255	763	Wood	Unworked brushwood	1	
255:155	-	255	764	Wood	Unworked brushwood	1	
255:156	-	255	765	Wood	Split wood	1	
255:157	-	255	823	Wood	Unworked brushwood	1	
255:158	-	255	419	Wood	Split timber	1	
255:159	-	255	510	Wood	Split wood	1	
255:160	-	255	-	Wood	Chisel point	1	
255:161	-	255	-	Wood	Pencil point	1	
255:162	-	255	511	Wood	Split wood	1	
255:163	-	255	766	Wood	Unworked brushwood	1	
255:164	-	255	512	Wood	Unworked roundwood	1	
255:165	-	255	420	Wood	Worked roundwood	1	
255:166	-	255	767	Wood	Split wood	1	
255:167	-	255	768	Wood	Split wood	1	
255:168	-	255	-	Wood	Chisel point	1	
255:169	-	255	-	Wood	Unworked brushwood	1	
255:170	-	255	513	Wood	Unworked brushwood	1	
255:171	-	255	769	Wood	Split wood	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
255:172	-	255	770	Wood	Unworked brushwood	1	
255:173	-	255	-	Wood	Unworked brushwood	1	
255:174	-	255	-	Wood	Split wood	1	
255:175	-	255	771	Wood	Unworked brushwood	1	
255:176	-	255	514	Wood	Split wood	1	
255:177	-	255	515	Wood	Split wood	1	
255:178	-	255	772	Wood	Unworked brushwood	1	
255:179	-	255	-	Wood	Unworked brushwood	1	
255:180	-	255	516	Wood	Split wood	1	
255:181	-	255	773	Wood	Unworked brushwood	1	
255:182	-	255	824	Wood	Unworked brushwood	1	
255:183	-	255	774	Wood	Unworked brushwood	1	
255:184	-	255	517	Wood	Split wood	1	
255:185	-	255	523	Wood	Split wood	1	
255:186	-	255	518	Wood	Split timber	1	
255:187	-	255	519	Wood	Split wood	1	
255:188	-	255	775	Wood	Worked brushwood	1	
255:189	-	255	825	Wood	Split wood	1	
255:190	-	255	520	Wood	Split wood	1	
255:191	-	255	-	Wood	Unworked brushwood	1	
255:192	-	255	776	Wood	Unworked brushwood	1	
255:193	-	255	-	Wood	Chisel point	1	
255:194	-	255	777	Wood	Split wood	1	
255:195	-	255	778	Wood	Unworked brushwood	1	
255:196	-	255	521	Wood	Unworked roundwood	1	
255:197	-	255	522	Wood	Split wood	1	
255:198	-	255	-	Wood	Split timber	1	
255:199	-	255	-	Wood	Chisel point	1	
255:200	-	255	-	Wood	Chisel point	1	
255:201	-	255	-	Wood	Wood working waste	1	
255:202	-	255	826	Wood	Wood working waste	1	
255:203	-	255	-	Wood	Wood working waste	1	
256:1	-	256	-	Wood	Post with pencil point	1	Conserved
257:1	-	257	-	Wood	Post with wedge point	1	
258:1	-	258	-	Wood	Post with wedge point	1	
259:1	-	259	-	Wood	Post with chisel point	1	
260:1	-	260	-	Wood	Post with wedge point	1	
261:1	-	261	-	Wood	Stake with pencil point	1	
262:1	-	262	-	Wood	Chisel point	1	
262:2	-	262	-	Wood	Chisel point	1	
262:3	-	262	-	Wood	Wooden object with a carved shaft and perforated head	1	Conserved
262:4	-	262	-	Wood	Chisel point	1	
262:5	-	262	-	Wood	Chisel point	1	
262:6	-	262	-	Wood	Wedge point	1	
262:7	-	262	-	Wood	Chisel point	1	
262:8	-	262	-	Wood	Wood working waste	1	Conserved
262:9	-	262	-	Wood	Chisel point	1	
262:10	-	262	-	Wood	Chisel point	1	
262:11	-	262	-	Wood	Chisel point	1	
262:12	-	262	-	Wood	Wedge point	1	
262:13	-	262	-	Wood	Chisel point	1	
262:14	-	262	-	Wood	Chisel point	1	
262:15	-	262	-	Wood	Split timber	1	
262:16	-	262	-	Wood	Chisel point	1	
262:17	-	262	-	Wood	Chisel point	1	
262:18	-	262	-	Wood	Wood working waste	1	
262:19	-	262	-	Wood	Chisel point	1	
263:1	-	263	-	Wood	Stake	1	
264:1	-	264	-	Wood	Stake with pencil point	1	
265:1	-	265	-	Wood	Stake with pencil point	1	
266:1	-	266	-	Wood	Stake with pencil point	1	
267:1	-	267	-	Wood	Post with pencil point	1	Conserved
268:1	-	268	-	Wood	Stake with pencil point	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
269:1	-	269	-	Wood	Stake with pencil point	1	Conserved
270:1	-	270	-	Wood	Post with wedge point	1	Conserved
271:1	-	271	-	Wood	Post with chisel point	1	
272:1	-	272	-	Wood	Post with chisel point	1	
273:1	-	273	-	Wood	Stake	1	
274:1	-	274	-	Wood	Stake with wedge point	1	
275:1	-	275	-	Wood	Stake tip	1	
276:1	-	276	-	Wood	Post with wedge point	1	Conserved
277:1	-	277	-	Wood	Post with pencil point	1	Conserved
278:1	-	278	-	Wood	Stake with pencil point	1	
279:1	-	279	-	Wood	Stake with pencil point	1	
280:1	-	280	-	Wood	Stake with pencil point	1	
281:1	-	281	351	Wood	Unworked roundwood	1	
281:2	-	281	352	Wood	Split timber	1	
282:1	-	282	253	Wood	Unworked roundwood	1	
282:2	-	282	448	Wood	Split timber	1	
282:3	-	282	230	Wood	Unworked roundwood	1	
282:4	-	282	464	Wood	Unworked brushwood	1	
282:5	-	282	449	Wood	Split timber	1	
282:6	-	282	435	Wood	Split wood	1	
282:7	-	282	845	Wood	Split timber	1	
282:8	-	282	436	Wood	Split wood	1	
283:1	-	283	-	Wood	Stake with chisel point	1	
284:1	-	284	-	Wood	Post with wedge point	1	
285:1	-	285	-	Wood	Worked wood	1	
286:1	-	286	-	Wood	Stake with wedge point	1	
287:1	-	287	-	Wood	Post with chisel point	1	
288:1	-	288	-	Wood	Post tip with pencil point	1	
289:1	-	289	-	Wood	Stake tip	1	
290:1	-	290	-	Wood	Stake with pencil point	1	
291:1	-	291	-	Wood	Post with wedge point	1	Conserved
292:1	-	292	-	Wood	Stake with pencil point	1	
293:1	-	293	-	Wood	Post with pencil point	1	
294:1	-	294	-	Wood	Pencil point (possible post)	1	
295:1	-	295	848	Wood	Unworked roundwood	1	
295:2	-	295	353	Wood	Wedge point	1	
295:3	-	295	354	Wood	Split timber	1	
295:4	-	295	442	Wood	Unworked roundwood	1	
295:5	-	295	846	Wood	Unworked roundwood	1	
295:6	-	295	-	Wood	Split wood	1	
295:7	-	295	443	Wood	Split wood	1	
295:8	-	295	849	Wood	Unworked roundwood	1	
295:9	-	295	400	Wood	Split wood	1	
296:1	-	296	-	Wood	Post with pencil point	1	
297:1	-	297	395	Wood	Unworked roundwood	1	
297:2	-	297	453	Wood	Unworked brushwood	1	
297:3	-	297	635	Wood	Unworked brushwood	1	
297:4	-	297	444	Wood	Split wood	1	
297:5	-	297	396	Wood	Unworked roundwood	1	
297:6	-	297	454	Wood	Unworked brushwood	1	
297:7	-	297	397	Wood	Unworked roundwood	1	
297:8	-	297	455	Wood	Unworked roundwood	1	
297:9	-	297	550	Wood	Unworked roundwood	1	
297:10	-	297	832	Wood	Split wood	1	
297:11	-	297	636	Wood	Unworked roundwood	1	
297:12	-	297	402	Wood	Split wood	1	
297:13	-	297	403	Wood	Split wood	1	
297:14	-	297	456	Wood	Split wood	1	
297:15	-	297	309	Wood	Split wood	1	
297:16	-	297	404	Wood	Split wood	1	
297:17	-	297	405	Wood	Split wood	1	
297:18	-	297	303	Wood	Split wood	1	
297:19	-	297	310	Wood	Split wood	1	
297:20	-	297	311	Wood	Unworked brushwood	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
297:21	-	297	637	Wood	Split wood	1	
297:22	-	297	312	Wood	Split wood	1	
297:23	-	297	833	Wood	Split wood	1	
297:24	-	297	-	Wood	Chisel point	1	
297:25	-	297	313	Wood	Unworked brushwood	1	
297:26	-	297	314	Wood	Unworked brushwood	1	
297:27	-	297	406	Wood	Split wood	1	
297:28	-	297	407	Wood	Split wood	1	
297:29	-	297	-	Wood	Unworked roundwood	1	
297:30	-	297	638	Wood	Chisel point	1	
297:31	-	297	408	Wood	Split wood	1	
297:32	-	297	398	Wood	Unworked brushwood	1	
297:33	-	297	834	Wood	Unworked roundwood	1	
297:34	-	297	445	Wood	Unworked roundwood	1	
297:35	-	297	-	Wood	Unworked wood	1	
297:36	-	297	835	Wood	Split wood	1	
297:37	-	297	850	Wood	Split wood	1	
297:38	-	297	639	Wood	Unworked roundwood	1	
297:39	-	297	409	Wood	Split wood	1	
297:40	-	297	410	Wood	Split wood	1	
297:41	-	297	836	Wood	Split wood	1	
297:42	-	297	411	Wood	Unworked roundwood	1	
297:43	-	297	-	Wood	Worked brushwood	1	
297:44	-	297	837	Wood	Unworked roundwood	1	
297:45	-	297	304	Wood	Unworked roundwood	1	
297:46	-	297	305	Wood	Split wood	1	
297:47	-	297	306	Wood	Unworked brushwood	1	
297:48	-	297	640	Wood	Unworked roundwood	1	
297:49	-	297	641	Wood	Split wood	1	
297:50	-	297	315	Wood	Unworked roundwood	1	
297:51	-	297	316	Wood	Unworked brushwood	1	
297:52	-	297	642	Wood	Unworked roundwood	1	
297:53	-	297	299	Wood	Split wood	1	
297:54	-	297	300	Wood	Split wood	1	
297:55	-	297	551	Wood	Split timber	1	
297:56	-	297	838	Wood	Split wood	1	
297:57	-	297	307	Wood	Unworked brushwood	1	
297:58	-	297	317	Wood	Unworked roundwood	1	
297:59	-	297	301	Wood	Unworked wood	1	
297:60	-	297	839	Wood	Split wood	1	
298:1	-	298	552	Wood	Split wood	1	
298:2	-	298	779	Wood	Unworked brushwood	1	
298:3	-	298	643	Wood	Unworked roundwood	1	
298:4	-	298	780	Wood	Unworked roundwood	1	
298:5	-	298	423	Wood	Split timber	1	
298:6	-	298	781	Wood	Unworked brushwood	1	
298:7	-	298	459	Wood	Unworked roundwood	1	
298:8	-	298	460	Wood	Unworked roundwood	1	
298:9	-	298	-	Wood	Unworked roundwood	1	
298:10	-	298	644	Wood	Unworked roundwood	1	
298:11	-	298	-	Wood	Pencil point	1	
298:12	-	298	782	Wood	Bark fragment	1	
298:13	-	298	461	Wood	Unworked brushwood	1	
298:14	-	298	645	Wood	Split timber	1	
298:15	-	298	462	Wood	Split wood	1	
298:16	-	298	646	Wood	Split wood	1	
298:17	-	298	783	Wood	Split wood	1	
298:18	-	298	647	Wood	Chisel point	1	
298:19	-	298	648	Wood	Worked brushwood	1	
298:20	-	298	553	Wood	Unworked brushwood	1	
298:21	-	298	784	Wood	Unworked brushwood	1	
298:22	-	298	-	Wood	Chisel point	1	
298:23	-	298	-	Wood	Pencil point	1	
298:24	-	298	649	Wood	Split timber	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
298:25	-	298	650	Wood	Split wood	1	
298:26	-	298	-	Wood	Wedge point	1	Conserved
298:27	-	298	651	Wood	Split wood	1	
298:28	-	298	385	Wood	Chisel point	1	
298:29	-	298	554	Wood	Unworked brushwood	1	
298:30	-	298	785	Wood	Split wood	1	
298:31	-	298	786	Wood	Split wood	1	
298:32	-	298	652	Wood	Unworked roundwood	1	
298:33	-	298	787	Wood	Unworked roundwood	1	
298:34					Cancelled		
298:35	-	298	788	Wood	Split wood	1	
298:36	-	298	555	Wood	Split wood	1	
298:37	-	298	556	Wood	Unworked brushwood	1	
298:38	-	298	789	Wood	Unworked brushwood	1	
298:39	-	298	-	Wood	Chisel point	1	
298:40	-	298	653	Wood	Unworked roundwood	1	
298:41	-	298	654	Wood	Split brushwood	1	
298:42	-	298	655	Wood	Unworked brushwood	1	
298:43	-	298	790	Wood	Unworked brushwood	1	
298:44	-	298	656	Wood	Split wood	1	
298:45	-	298	657	Wood	Unworked brushwood	1	
298:46	-	298	658	Wood	Unworked brushwood	1	
298:47	-	298	791	Wood	Unworked brushwood	1	
298:48	-	298	659	Wood	Unworked brushwood	1	
298:49	-	298	660	Wood	Unworked brushwood	1	
298:50	-	298	557	Wood	Half-split brushwood	1	
298:51	-	298	661	Wood	Unworked brushwood	1	
298:52	-	298	662	Wood	Unworked brushwood	1	
298:53	-	298	663	Wood	Unworked brushwood	1	
298:54	-	298	664	Wood	Unworked brushwood	1	
298:55	-	298	-	Wood	Brushwood branch cut to chisel points	1	
298:56	-	298	558	Wood	Unworked brushwood	1	
298:57	-	298	665	Wood	Unworked brushwood	1	
298:58	-	298	-	Wood	Chisel point	1	
298:59	-	298	666	Wood	Half-split brushwood	1	
298:60	-	298	667	Wood	Unworked brushwood	1	
298:61	-	298	559	Wood	Unworked brushwood	1	
298:62	-	298	792	Wood	Unworked brushwood	1	
298:63	-	298	793	Wood	Unworked brushwood	1	
298:64	-	298	560	Wood	Half-split roundwood	1	
298:65	-	298	668	Wood	Unworked brushwood	1	
298:66	-	298	669	Wood	Unworked brushwood	1	
298:67	-	298	670	Wood	Unworked brushwood	1	
298:68	-	298	561	Wood	Unworked brushwood	1	
298:69	-	298	671	Wood	Chisel point	1	
298:70	-	298	-	Wood	Wedge point	1	
298:71	-	298	794	Wood	Unworked brushwood	1	
298:72	-	298	795	Wood	Unworked roundwood	1	
298:73	-	298	672	Wood	Unworked brushwood	1	
298:74	-	298	-	Wood	Damaged chisel point with spiralling indentation	1	Conserved
298:75	-	298	673	Wood	Unworked brushwood	1	
298:76	-	298	796	Wood	Unworked brushwood	1	
298:77	-	298	674	Wood	Unworked brushwood	1	
298:78	-	298	675	Wood	Unworked brushwood	1	
298:79	-	298	562	Wood	Chisel point	1	
298:80	-	298	676	Wood	Unworked brushwood	1	
298:81	-	298	677	Wood	Unworked brushwood	1	
298:82	-	298	678	Wood	Unworked brushwood	1	
298:83	-	298	679	Wood	Unworked brushwood	1	
298:84	-	298	563	Wood	Unworked brushwood	1	
298:85	-	298	-	Wood	Pencil point	1	
298:86	-	298	680	Wood	Chisel point	1	
298:87	-	298	681	Wood	Unworked roundwood	1	
298:88	-	298	682	Wood	Wedge point	1	

Find No	Cut	Deposit	Sample No	Category	Description	No pieces	Comment
298:89	-	298	-	Wood	Chisel point	1	
298:90	-	298	683	Wood	Unworked brushwood	1	
298:91	-	298	684	Wood	Unworked brushwood	1	
298:92	-	298	685	Wood	Unworked brushwood	1	
298:93	-	298	564	Wood	Unworked brushwood	1	
298:94	-	298	847	Wood	Rotted wood	1	
298:95	-	298	-	Wood	Chisel point	1	
298:96	-	298	797	Wood	Wedge point	1	
298:97	-	298	412	Wood	Chisel point	1	
298:98	-	298	686	Wood	Chisel point	1	
298:99	-	298	687	Wood	Unworked brushwood	1	
298:100	-	298	688	Wood	Unworked brushwood	1	
298:101	-	298	689	Wood	Chisel point	1	
298:102	-	298	690	Wood	Unworked brushwood	1	
298:103	-	298	691	Wood	Unworked roundwood	1	
298:104	-	298	-	Wood	Wood working waste	1	
298:105	-	298	798	Wood	Half-split timber	1	
298:106	-	298	413	Wood	Unworked burnt brushwood	1	
298:107	-	298	-	Wood	Wedge or pencil point	1	
298:108	-	298	692	Wood	Unworked brushwood	1	
298:109	-	298	693	Wood	Unworked brushwood	1	
298:110	-	298	694	Wood	Unworked brushwood	1	
298:111	-	298	-	Wood	Chisel point	1	
298:112	-	298	799	Wood	Unworked brushwood	1	
298:113	-	298	-	Wood	Unworked wood	1	
298:114	-	298	565	Wood	Half-split brushwood	1	
298:115	-	298	695	Wood	Unworked brushwood	1	
298:116	-	298	-	Wood	Chisel point	1	
298:117	-	298	696	Wood	Unworked wood	1	
298:118	-	298	697	Wood	Unworked brushwood	1	
298:119	-	298	-	Wood	Pencil point	1	
298:120	-	298	698	Wood	Unworked brushwood	1	
298:121	-	298	566	Wood	Unworked brushwood	1	
298:122	-	298	699	Wood	Unworked brushwood	1	
298:123	-	298	800	Wood	Unworked roundwood	1	
298:124	-	298	-	Wood	Wedge point	1	
298:125	-	298	-	Wood	Wedge point	1	
298:126	-	298	-	Wood	Wood working waste	1	
298:127	-	298	801	Wood	Half-split brushwood	1	
298:128	-	298	700	Wood	Unworked roundwood	1	
298:129	-	298	567	Wood	Unworked brushwood	1	
298:130	-	298	701	Wood	Chisel point	1	
298:131	-	298	702	Wood	Split timber	1	
298:132	-	298	568	Wood	Split wood	1	
298:133	-	298	703	Wood	Wooden object consisting of a forked branch with carved termini	1	Conserved
298:134	-	298	704	Wood	Unworked brushwood	1	
298:135	-	298	569	Wood	Unworked roundwood	1	
298:136	-	298	463	Wood	Unworked burnt roundwood	1	
298:137	-	298	424	Wood	Unworked roundwood	1	
298:138	-	298	705	Wood	Unworked brushwood	1	
298:139	-	298	802	Wood	Unworked brushwood	1	
298:140	-	298	706	Wood	Unworked brushwood	1	
298:141	-	298	707	Wood	Split burnt timber	1	
298:142	-	298	708	Wood	Unworked roundwood	1	
350:1	-	350	-	Wood	Chisel point	1	
351:1	-	351	-	Wood	Chisel point	1	
352:1	-	352	-	Wood	Wedge point	1	
353:1	-	353	-	Wood	Chisel point	1	
354:1	-	354	-	Wood	Pencil point	1	Conserved

Appendix 3: Wooden assemblage from Annaholty E3530

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
54:1	Wood working waste	Very good	Secondary	N/A	10	5	3	N/A	N/A	N/A	Trimmed radial or tangential. One end broken and worn, opposite is cut flat. Surfaces reasonably well split.	Y
54:2	Worked end	Good	N/A	N/A	12	N/A	N/A	1	N/A	N/A	Twig with branch trimming along length.	Y
54:3	Unworked wood	Good	N/A	N/A	5	N/A	N/A	1	N/A	N/A	Unworked twig.	Y
55:1	Worked end	Very good	N/A	Chisel	11	N/A	N/A	2	8	8	Damaged chisel point, simple worked end.	Y
55:2	Wood working waste	Good	Radial	N/A	13	11	10	N/A	N/A	N/A	Small chunk of radially split wood. One end cut at 90°, the opposite at 60°, both totally eroded, no remaining toolmarks.	Y
55:3	Wood working waste	Good	Irregular	N/A	11	5	6	N/A	N/A	N/A	Very irregularly shaped piece of wood, heavily eroded but may be split & further trimmed on 4-5 faces.	Y
55:4	Worked end	Very good	N/A	Chisel	15	N/A	N/A	1	10	N/A	Chisel point, simple worked end.	Y
55:5	Wood working waste	Good	Radial	N/A	21	9	9	N/A	N/A	N/A	Chunk of radially split wood, one end cut at 45°, all surfaces very worn and eroded.	Y
55:6	Wood working waste	Moderate	Irregular	N/A	19	9	3	N/A	N/A	N/A	Very degraded radial or quarter split. One end cut at 40° but very worn, opposite end is very uneven & eroded. Split surfaces are moderately flat.	Y
55:7	Worked end	Moderate	N/A	N/A	12	N/A	N/A	2	N/A	N/A	Brushwood, possibly worked but totally worn/rounded, possibly water?	Y
55:8	Unworked wood	Good	N/A	N/A	12	N/A	N/A	2	N/A	N/A	Piece of unworked brushwood.	Y
55:9	Worked end	Moderate	N/A	Chisel	9	N/A	N/A	4	35	N/A	Degraded chisel with a single incomplete facet. Hack mark along length, simple woodworking.	Y
55:11	Worked end	Good	N/A	Chisel	15	N/A	N/A	3	22	N/A	Degraded chisel point with a single flat facet, gnarly/bent piece of wood.	Y
55:12	Wood working waste	Good	Irregular	Chisel	6	2	No record	N/A	N/A	N/A	Tiny wood chip with remains of a single flat facet.	Y
55:13	Worked end	Poor	N/A	Wedge	31	N/A	N/A	3.20	20	N/A	Wedge point with 2 opposing faces with a total of 3 flat facets, all worn and eroded. Simple wood working.	Y
55:14	Worked end	Good	N/A	Wedge	28	N/A	N/A	2.50	30-58	30-58	Wedge point with 2 opposing faces, 2 flat facets, a simple worked end.	Y
55:15	Worked end	Very good	N/A	Pencil	22	N/A	N/A	2.20	80	N/A	Pencil point with 3 faces, each a single facet. Branch trimming along length, simple worked end.	Y
55:16	Worked end	Moderate	N/A	Chisel	15	N/A	N/A	2.40	30	N/A	Damaged chisel point, simple worked end.	Y
55:17	Worked end	Moderate	N/A	Pencil	6.50	N/A	N/A	3	N/A	N/A	Tip of a worked end, worked on 3 adjacent faces, flat facets.	Y
55:18	Worked end	Moderate	N/A	Wedge	38	N/A	N/A	6.80	45-25	45-25	One end cut to wedge with 2 opposing faces, both with 2 very worn facets. Opposite end cut to chisel point with 3 very worn facets. All facets quite flat, clean & stepped junctions, quite eroded.	Y
55:19	Unworked wood	Poor	N/A	N/A	46	N/A	N/A	9	N/A	N/A	Totally eroded and degraded. No woodworking evident.	Y

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
55:20	Wood working waste	Poor	Secondary	N/A	27	3	No record	N/A	N/A	N/A	Degraded, secondary split, very worn, probably waste.	Y
55:21	Wood working waste	Good	Irregular	N/A	6	4	1	N/A	N/A	N/A	Wood chip, flat surfaces, one end has single flat facet. Waste material.	Y
55:23	Wood working waste	Good	Irregular	N/A	18	13	5	N/A	N/A	N/A	Secondary conversion, trimmed radial or tangential. Small chunk of quite gnarly, natural looking split wood, concave on one side. Remains of probable tool mark at 45°.	Y
55:24	Worked end	Moderate	N/A	Pencil	24	N/A	N/A	5	17-20	17-25	Pencil point with 5 faces, total of 8 facets with clean junctions, all very smooth and flat, max L5; W2cm. Distinct raised signatures on all facets, slightly eroded/worn.	Y
56:1	Worked end	Moderate	N/A	Chisel	16	N/A	N/A	2.50	21	21	Chisel point, single eroded facet.	Y
56:2	Worked end	Good	N/A	Wedge	18	N/A	N/A	5	35	35	Wedge point with 2 opposing faces. One cut at 35° with 2 worn facets. Opposite is a chop & tear at 35° with 2 eroded facets. Simple woodworking.	Y
62:1	Worked end	Poor	N/A	Chisel	16	N/A	N/A	3.60	25	25	Chisel point at with 3 flat facets, cracked and degraded, stepped junctions.	Y
90:1	Split timber	Very poor	Half-split	N/A	459	26	10	N/A	N/A	N/A	Heavily degraded 1/2 split.	
90:2	Split timber	Good	Inner tangential	N/A	634	32	12	N/A	N/A	N/A	Inner tangential surfaces well split and flat but no tool marks. Possible remains of a rectangular socket at the N end, but very heavily eroded.	Y
90:3	Split timber	Very poor	Boxed heart	N/A	597	20	11	N/A	N/A	N/A	Boxed heart conversion, all surfaces flat but eroded. At S end is the remains of a circular socket, Diam. 9cm. No direct tool evidence.	Y
90:4	Split timber	Good	Inner tangential	N/A	233	26	13	N/A	N/A	N/A	Inner tangential timber heavily fragmented.	
90:5	Split timber	Poor	Irregular	N/A	145	16	12	N/A	N/A	N/A	Irregularly converted timber, possibly a degraded 1/4 split.	
90:6	Split timber	Good	Irregular	N/A	410	6	8	N/A	N/A	N/A	Irregularly converted timber, heavily fragmented.	
90:7	Split timber	Poor	Inner tangential	N/A	378	14	7	N/A	N/A	N/A	Inner tangential timber heavily fragmented.	
90:8	Split timber	Poor	Irregular	N/A	501	30	15	N/A	N/A	N/A	Irregularly converted timber, possibly a degraded 1/4 split, heavily fragmented.	
90:9	Split timber	Moderate	Outer tangential	N/A	485	24	13	N/A	N/A	N/A	Outer tangential both surfaces striated and worn. S end has the remains (3 sides) of a rectangular socket L25; W16cm the inner surfaces of which are totally worn. On one side of the socket are the remains of a single flat facet.	Y
90:10	Split timber	Poor	Inner tangential	N/A	192	29	6	N/A	N/A	N/A	Heavily degraded split timber.	
90:11	Split timber	Poor	Inner tangential	N/A	143	22	8	N/A	N/A	N/A	Heavily degraded split timber.	
90:12	Split timber	Poor	Outer tangential	N/A	313	29	14	N/A	N/A	N/A	Split timber, both ends quite worn and irregular.	
90:13	Split timber	Good	Inner tangential	N/A	292	28	18	N/A	N/A	N/A	Split timber, N end quite worn and irregular, opposite end cut by machine.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
90:14	Split timber	Poor	Inner tangential	N/A	290	31	6	N/A	N/A	N/A	Heavily fragmented timber the S end of which was burnt.	
90:15	Split timber	Poor	Inner tangential	N/A	245	25	8	N/A	N/A	N/A	Fragmentary split timber, S end is broken and irregular, N end cut by machine.	
90:16	Split timber	Poor	Half-split	N/A	115	26	10	N/A	N/A	N/A	Half-split timber the split surface of which is reasonably flat. N end was cut by machine the S end is quite irregular.	
90:17	Split timber	Poor	Irregular	N/A	68	19	10	N/A	N/A	N/A	Small piece of irregularly split timber, broken at both ends.	
90:18	Unworked wood	Poor	N/A	N/A	36.40	N/A	N/A	5.70	N/A	N/A	Unworked roundwood.	
90:19	Worked end	Very poor	N/A	N/A	47.20	N/A	N/A	4	N/A	N/A	Piece of gnarly brushwood with the remains of a single flat facet at one end. Incomplete and in a very poor condition.	Y
90:20	Split timber	Good	Outer tangential	N/A	166	38	29	N/A	N/A	N/A	Outer tangentially split timber, split surface reasonably flat. Both ends broken.	
90:21	Split timber	Poor	Inner tangential	N/A	69	20	9	N/A	N/A	N/A	Inner tangentially split timber one surface of which is heavily striated and grooved. Edges are cut flat.	
90:22	Split timber	Poor	Irregular	N/A	50	12	5	N/A	N/A	N/A	Small piece of irregularly split timber, probably broken from a larger element.	
90:23	Split timber	Poor	Half-split	N/A	50	16	17	N/A	N/A	N/A	Piece of half-split timber, broken at both ends, no toolmarks.	
90:24	Split timber	Good	Half-split	N/A	310	31	27	N/A	N/A	N/A	Half-split timber, cut by a drain at the N end, broken at the S end.	
90:25	Unworked wood	Good	N/A	N/A	325	N/A	N/A	18	N/A	N/A	Large roundwood both ends of which are broken.	
90:26	Worked end	Poor	N/A	Chisel	162	N/A	N/A	11	30	7-30	Roundwood cut to a chisel point at one end with 2 cracked flat facets with a stepped junction. Opposite end is very degraded but appears to have been cut to a wedge point with 2 opposing faces. There are occasional flat facets along the length and 1 instance of branch trimming.	Y
90:27	Split timber	Poor	Radial	N/A	140	38	6	N/A	N/A	N/A	Radially split timber the N end of which tapers to a point but is irregular and heavily worn. The S end is also eroded. The split surfaces are reasonably flat.	Y
90:28	Split timber	Good	Inner tangential	N/A	327	34	7	N/A	N/A	N/A	Inner tangential timber, broken in 2 by machine.	
90:29	Split timber	Poor	Inner tangential	N/A	217	37	5	N/A	N/A	N/A	Tangentially split timber the N end of which was cut by a drain.	
90:30	Split timber	Moderate	Outer tangential	N/A	406	37	10	N/A	N/A	N/A	Outer tangential the split surface of which is quite flat. There is the remains (3 sides) of a rectangular socket at one end L23; W15cm.	Y
90:31	Split timber	Poor	Inner tangential	N/A	284	26	9	N/A	N/A	N/A	Tangentially split timber which tapers from N-S.	
90:32	Split timber	Poor	Inner tangential	N/A	93	23	7	N/A	N/A	N/A	Small piece of split timber broken at one end, the opposite was cut by machine.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
90:33	Worked end	Good	N/A	Chisel	418	N/A	N/A	15	15	15	Forked roundwood. One end of fork has possible degraded chisel point but is very worn.	
90:34	Split timber	Poor	Quarter split	N/A	137	20	7	N/A	N/A	N/A	Piece of 1/4 split timber, broken with no toolmarks. Machine damage.	
90:35	Split timber	Poor	Irregular	N/A	115	34	20	N/A	N/A	N/A	Possible inner tangential, cut by machine at both ends.	
90:36	Split timber	Poor	Irregular	N/A	140	19	9	N/A	N/A	N/A	Possible inner tangential, cut by modern drain.	
90:37	Split timber	Moderate	Inner tangential	N/A	186	36	7	N/A	N/A	N/A	Inner tangential-second split. The ends are totally eroded/worn, no toolmarks. One surface is quite flat, the opposite is worn & striated.	Y
90:38	Wood working waste	Moderate	Radial	N/A	23.30	14.40	9.60	N/A	N/A	N/A	Small chunk of a radially split wood. Surfaces are smooth but worn, one end is cut flat but no facets remain, the opposite end irregular/jagged.	Y
90:39	Split timber	Very poor	Irregular	N/A	17.70	9.40	4.20	N/A	N/A	N/A	Fragment of split timber, heavily deteriorated.	
90:40	Split timber	Good	Inner tangential	N/A	80	19	9	N/A	N/A	N/A	Fragment of tangentially split timber. Cut by machine at both ends.	
90:41	Split timber	Poor	Inner tangential	N/A	185	17	8	N/A	N/A	N/A	Fragment of tangentially split timber. Cut by machine at S end.	
90:42	Split timber	Very poor	Radial	N/A	119	7	5.60	N/A	N/A	N/A	Radially split timber broken and deteriorated.	
90:43	Split timber	Good	Quarter split	N/A	69	18	14	N/A	N/A	N/A	Quarter split timber, cut by drain.	
90:44	Split timber	Very poor	Irregular	N/A	93	17.80	13	N/A	N/A	N/A	Heavily deteriorated timber, conversion unclear. Broken in 2 and truncated by drain.	
90:45	Split timber	Poor	Half-split	N/A	210	22	8	N/A	N/A	N/A	Fragmentary and rotten half-split, cut by modern drain at S end.	
90:46	Split timber	Moderate	Irregular	N/A	220	34	15	N/A	N/A	70	N end examined but conversion unclear. N end cut to a chisel point but heavily degraded, no real tool evidence. Split surfaces quite flat.	Y
90:47	Split timber	Very poor	Half-split	N/A	157.20	8.10	3.60	N/A	N/A	N/A	Heavily deteriorated half-split, truncated by drain.	
90:48	Unworked wood	Good	N/A	N/A	327	N/A	N/A	13	N/A	N/A	Unworked roundwood.	
90:49	Split timber	Poor	Inner tangential	N/A	362	39	9	N/A	N/A	N/A	Degraded inner tangential, S end cut by machine.	
90:50	Split timber	Poor	Inner tangential	N/A	230	20	6	N/A	N/A	N/A	Inner tangential, heavily deteriorated.	
90:51	Split timber	Poor	Quarter split	N/A	57	8	N/A	N/A	N/A	N/A	Very degraded, possible quarter split, no tool marks.	Y
90:52	Split timber	Very poor	Inner tangential	N/A	650	32	11	N/A	N/A	N/A	Inner tangential, heavily deteriorated.	
90:53	Split timber	Poor	Inner tangential	N/A	455	22	5	N/A	N/A	N/A	Inner tangential, heavily deteriorated.	
90:54	Split timber	Moderate	Half-split	N/A	227	15	5	N/A	N/A	N/A	Half-split, broken in 3 slightly degraded.	
90:55	Split timber	Poor	Inner tangential	N/A	477	18	5	N/A	N/A	N/A	Inner tangential, deteriorated and fragmentary.	
90:56	Split timber	Moderate	Irregular	N/A	255	10	10	N/A	N/A	N/A	Irregularly converted timber, machine cut at S end.	
90:57	Split timber	Poor	Quarter split	N/A	123	5	6	N/A	N/A	N/A	Damaged quarter split timber.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
90:58	Worked end	Good	N/A	Chisel	295	N/A	N/A	12	N/A	N/A	Roundwood worked to a degraded chisel point at one end. Adjacent to this is a triangular mortice, open at the outer edge of the timber, with an hourglass profile L10; W10cm, very worn. Possible degraded branch trimming along length.	Y
90:59	Split timber	Good	Inner tangential	N/A	440	48	13	N/A	N/A	N/A	Inner tangential timber, S end cut by machine.	
90:60	Split timber	Good	Inner tangential	N/A	390	33	10	N/A	N/A	N/A	Inner tangential timber, S end cut by machine.	
90:61	Split timber	Poor	Inner tangential	N/A	415	22	4	N/A	N/A	N/A	Inner tangential, soft and broken at both ends.	
90:62	Worked end	Good	N/A	Wedge	212	N/A	N/A	23	N/A	N/A	N end cut into lap joint L28; W23; D8cm at 90°, the surface of which is quite flat. The N terminus is cut to wedge point with two opposing faces of L15 & L8cm, both very worn.	Y
90:63	Split timber	Good	Irregular	N/A	113	6	4	N/A	N/A	N/A	Narrow piece of irregularly converted timber.	
90:64	Split timber	Poor	Irregular	N/A	120	18	16	N/A	N/A	N/A	Very degraded irregularly converted timber.	
90:65	Split timber	Poor	Radial	N/A	125	10	6	N/A	N/A	N/A	Small tapering piece of radially split timber, possibly broke from larger element.	
90:66	Split timber	Very poor	Outer tangential	N/A	124	26	4	N/A	N/A	N/A	Almost totally decayed timber.	
90:67	Split timber	Poor	Irregular	N/A	168	10	10	N/A	N/A	N/A	Irregularly split timber in 7 small fragments.	
90:68	Split timber	Good	Radial	N/A	58	6	5	N/A	N/A	N/A	Small piece of radially split timber.	
90:69	Worked end	Poor	N/A	Wedge	245.10	N/A	N/A	6	45	45	Roundwood one end cut to a wedge point with 2 opposing faces. One is a single facet at 45°, the opposite is a long shallow tear. In the central portion of the piece is a shallow 0° long facet and there is further branch trimming at the terminus.	
90:70	Unworked wood	Very poor	N/A	N/A	211.80	N/A	N/A	13.60	N/A	N/A	Unworked roundwood.	
90:71	Split timber	Poor	Inner tangential	N/A	87.70	15.70	3	N/A	N/A	N/A	Poorly preserved split timber.	
90:72	Split timber	Poor	Half-split	N/A	118.20	N/A	N/A	8.40	N/A	N/A	Degraded half-split timber.	
90:73	Split timber	Good	Radial	N/A	83	22	7	N/A	N/A	N/A	Radially split timber truncated by drain.	
90:74	Unworked wood	Good	N/A	N/A	79	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
90:75	Split timber	Very poor	Inner tangential	Chisel	42.90	23	7	N/A	60	60	Inner tangential-centre split, surfaces are quite flat. N end cut to a chisel point at 60°, it is very worn but appears to have at least 2 facets with heavy stepped junction.	Y
90:76	Split timber	Poor	Irregular	N/A	99.30	17.40	11	N/A	N/A	N/A	Very degraded irregularly split timber.	
90:77	Worked end	Poor	N/A	N/A	139.30	N/A	N/A	8.20	N/A	N/A	Roundwood with possible toolmarks at N end, cut by machine at S end.	
90:78	Split timber	Poor	Half-split	N/A	85.20	11.60	7.10	N/A	N/A	N/A	Degraded half-split timber.	
90:79	Split timber	Good	Irregular	N/A	83	10-16	7-9	N/A	N/A	N/A	Small piece of irregularly converted timber, quite worn at each end.	
90:80	Split timber	Poor	Irregular	N/A	222	15	13	N/A	N/A	N/A	Irregularly split timber, burnt at each end.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
90:81	Worked end	Good	N/A	N/A	243	14	8-12	N/A	N/A	N/A	Large roundwood with possible toolmarks at N end.	
90:82	Split timber	Poor	Half-split	N/A	92.50	9.50	4.70	N/A	N/A	N/A	Simple half-split timber.	
90:83	Split timber	Poor	Inner tangential	N/A	37.80	12.60	4.30	N/A	N/A	N/A	Degraded inner tangential-centre split, truncated by machine at S end.	
90:84	Split timber	Poor	Inner tangential	N/A	31.50	11.60	6.70	N/A	N/A	N/A	Fragment of irregularly split timber, possibly broken from a larger element.	
90:85	Worked end	Poor	N/A	N/A	111.30	N/A	N/A	5	N/A	N/A	Brushwood with possible toolmarks at one end, but damaged and severely degraded.	
90:86	Split timber	Good	Quarter split	N/A	321	17	10	N/A	N/A	N/A	Quarter split, S end burnt.	
90:87	Split timber	Poor	Inner tangential	N/A	84	19	9	N/A	N/A	N/A	Inner tangential, cut by machine at S end.	
90:88	Unworked wood	Good	N/A	N/A	167	N/A	N/A	16	N/A	N/A	Unworked crooked roundwood.	
90:89	Split timber	Good	Irregular	N/A	143	12	12	N/A	N/A	N/A	Possible trimmed quarter split.	
90:90	Split timber	Good	Irregular	N/A	43	13	11	N/A	85	85	N end is almost a roundwood, but small outer portion removed, end cut with 4-5 facets, worn and eroded.	
90:91	Worked end	Good	N/A	Chisel	278	N/A	N/A	6.50	30	30	Curved branch with the end cut to a chisel point with very rounded edges, similar to water erosion. Single flat facet.	Y
90:92	Unworked wood	Good	N/A	N/A	248	N/A	N/A	8	N/A	N/A	Unworked roundwood, S end cut by machine.	
90:93	Split timber	Poor	Outer tangential	N/A	360	40	13	N/A	N/A	N/A	Fragmentary outer tangential the S end cut by machine.	
90:94	Split timber	Poor	Inner tangential	N/A	104	19	8	N/A	N/A	N/A	Degraded inner tangential split.	
90:95	Split timber	Poor	Radial	Chisel	58.50	9.20	12.70	N/A	45	45-48	Radially split timber with quite worn surfaces. N end cut to a chisel point with 5-6 worn flat facets with clean junctions. Max. facet L26;W5cm.	Y
90:96	Split wood	Poor	Inner tangential	N/A	39	11	7	N/A	N/A	N/A	Small piece of degraded radially split wood.	
90:97	Split timber	Poor	Inner tangential	N/A	70	8	3	N/A	N/A	N/A	Narrow piece of tangentially split timber.	
90:98	Split timber	Poor	Irregular	N/A	63	7	4	N/A	N/A	N/A	Irregularly split timber, broken at both ends.	
90:99	Wood working waste	Good	Quarter split	N/A	32	12	11	N/A	N/A	N/A	Very worn chunk of a 1/4 split.	
90:100	Split timber	Poor	Irregular	N/A	75	6-10	5	N/A	N/A	N/A	Small piece of irregularly split wood.	
90:101	Split timber	Poor	Inner tangential	N/A	155	13	4	N/A	N/A	N/A	Inner tangential charred on one side.	
90:102	Split timber	Good	Inner tangential	N/A	52	12	8	N/A	N/A	N/A	Small piece of tangentially split timber.	
90:103	Split timber	Very poor	Quarter split	N/A	53	13	9	N/A	N/A	N/A	Very degraded 1/4 split, partial remains of one flat facet at N end.	
90:104	Split timber	Poor	Irregular	N/A	60	10	7	N/A	N/A	N/A	Small very irregularly split piece, S end cut flat at 90°, surfaces worn/eroded, possible waste material/off cut from splitting.	
90:105	Split timber	Good	Irregular	N/A	70	5-10	5	N/A	N/A	N/A	Irregularly split timber with flat even surfaces.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
90:106	Split wood	Very poor	Quarter split	N/A	15	7	4	N/A	N/A	N/A	Remains of quarter split in 12 pieces.	
90:107	Split timber	Good	Irregular	Wedge	200	N/A	N/A	12	35	35	N end is cut to a wedge point with 2 opposing faces, one is simply a tear while the opposite has 2-3 degraded flat facets with clean junctions.	Y
90:108	Split timber	Poor	Inner tangential	N/A	107	22	7	N/A	N/A	N/A	Split timber, S end broken.	
90:109	Split timber	Poor	Irregular	N/A	193	31	10	N/A	N/A	N/A	Very fragmentary irregularly split timber.	
90:110	Unworked wood	Moderate	N/A	N/A	170	N/A	N/A	3-6	N/A	N/A	Unworked roundwood, broken in 7 pieces.	
90:111	Split timber	Poor	Inner tangential	N/A	334	25	12	N/A	N/A	N/A	Rotten and fragile tangentially split timber.	
90:112	Split timber	Poor	Outer tangential	N/A	158	5-8	N/A	N/A	N/A	N/A	Outer tangential, rotted and broken.	
90:113	Split timber	Very poor	Inner tangential	N/A	338	29	17	N/A	N/A	N/A	Heavily deteriorated split timber.	
90:114	Split timber	Poor	Inner tangential	N/A	668	38	8-12	N/A	N/A	N/A	N end has a pair of opposing semi-circular notches, cut onto the outer edges. The first is set 8cm from the terminus and is 12cm in diameter with a rounded inner surface. The second is 14cm from the terminus and is oblong in shape L8.5; W6.5-8.5cm. Both are heavily worn but hourglass in profile. The split surfaces of the timber are smooth and flat, no tool marks remain.	Y
90:115	Unworked wood	Poor	N/A	N/A	660	N/A	N/A	6-16	N/A	N/A	Unworked knotty roundwood.	
90:116	Split timber	Poor	Irregular	N/A	670	40	15	N/A	N/A	N/A	N end appears to be a 1/4 split (Radius 12cm) with quite flat split surfaces. Into one edge is cut a semi-circular notch Diam. 12cm which is quite dry and degraded. S end appears to be an outer tangential or 1/2 split in a very poor condition with grooved and striated surfaces and the possible remains of a rectangular socket L20; W15cm. No individual toolmarks remain.	Y
90:117	Split timber	Very good	Half-split	N/A	585	32	13	N/A	30-45	30-45	1/2 split with possible further trimming although it may be compression/depositional damage. N end cut at 45°, with the remains of a rectangular socket (3 sides) L10; W14cm. S end appears to be an outer tangential and is cut at 30°, 16cm from the terminus is a damaged roughly circular socket L13;W9cm.	Y
90:118	Split timber	Good	Outer tangential	N/A	566	36	17	N/A	N/A	N/A	Outer tangential with a circular socket Diam. 13cm at the N end, cut in from the outer side of the split. Terminus is cut at 10° but very eroded. No real tool evidence remains but the split surface is very flat. Post 174:1 sat within the socket.	Y
90:119	Split timber	Moderate	Outer tangential	N/A	415	18-39	15	N/A	N/A	N/A	Outer tangential which tapers from N-S.	
90:120	Split timber	Moderate	Inner tangential	N/A	547	29	8	N/A	N/A	N/A	Fragmentary inner tangential.	

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90:121	Split timber	Good	Half-split	N/A	465	24	10	N/A	N/A	N/A	Fragmentary half-split.	
90:122	Split timber	Poor	Irregular	N/A	402	15	9	N/A	N/A	N/A	Heavy fragmentary and degraded split timber, conversion unknown.	
90:123	Split timber	Poor	Inner tangential	N/A	292	30	4-8	N/A	N/A	N/A	Very degraded inner tangential.	
90:124	Split timber	Very poor	Inner tangential	N/A	93	17	6	N/A	N/A	N/A	Very degraded inner tangential.	
90:125	Split timber	Poor	Inner tangential	N/A	234	30	8	N/A	N/A	N/A	Very eroded & degraded inner tangential, outer surface is grooved, inner surface is concave. The S end is cut flat but highly degraded, no tool evidence.	Y
90:126	Split timber	Very poor	Inner tangential	N/A	70	25	N/A	N/A	N/A	N/A	Heavily deteriorated split timber.	
90:127	Split timber	Poor	Inner tangential	N/A	406	15-23	N/A	N/A	N/A	N/A	Heavily deteriorated split timber.	
90:128	Split timber	Moderate	Half-split	N/A	314	20	10	N/A	N/A	N/A	Half-split with charring at its N end.	
90:129	Split timber	Very poor	Irregular	N/A	115	18	12	N/A	N/A	N/A	Severely deteriorated split timber.	
90:130	Split timber	Good	Irregular	N/A	80	10	7	N/A	N/A	N/A	Small irregularly split timber, gnarly and knotty.	
90:131	Unworked wood	Moderate	N/A	N/A	340	N/A	N/A	12-18	N/A	N/A	Unworked roundwood, slightly gnarly.	
90:132	Split timber	Good	Half-split	N/A	270	8	7-10	N/A	N/A	N/A	Half-split timber with charring on N end.	
90:133	Unworked wood	Poor	N/A	N/A	72	30	18	N/A	N/A	N/A	Irregularly shaped, gnarly piece of burnt and decayed wood.	
90:134	Unworked wood	Good	N/A	N/A	190	N/A	N/A	5-15	N/A	N/A	Unworked roundwood.	
90:135	Worked end	Good	N/A	N/A	382	30	16	N/A	N/A	N/A	Heavily eroded roundwood with jagged and broken ends, 0.34m from N end a large branch has been trimmed off with 3-4 very worn facets remaining.	Y
90:136	Unworked wood	Poor	N/A	N/A	70	14	15	N/A	N/A	N/A	Gnarly unworked roundwood, burnt on one side.	
90:137	Split wood	Poor	Irregular	N/A	40	9	4	N/A	N/A	N/A	Small piece of split wood probably broken from a larger element.	
90:138	Split timber	Very poor	Irregular	N/A	45	12	2	N/A	N/A	N/A	Heavily deteriorated small fragment of split timber.	
90:139	Unworked wood	Poor	N/A	N/A	27	4	4	N/A	N/A	N/A	Heavily eroded piece of unworked wood.	
90:140	Unworked wood	Poor	N/A	N/A	36	10	5	N/A	N/A	N/A	Heavily eroded piece of unworked wood.	
90:141	Unworked wood	Poor	N/A	N/A	42	7	7	N/A	N/A	N/A	Unworked roundwood.	
90:142	Split timber	Poor	Irregular	N/A	41	7	3	N/A	N/A	N/A	Possible quarter split but heavily eroded.	
90:143	Split timber	Poor	Irregular	N/A	78	23	14	N/A	N/A	N/A	Possible quarter split but heavily eroded and burnt on one side.	
90:144	Unworked wood	Moderate	N/A	N/A	220	N/A	N/A	15	N/A	N/A	Gnarly unworked roundwood.	
90:145	Split timber	Good	Quarter split	N/A	130	15	11	N/A	N/A	N/A	Quarter split timber, machine cut at N end.	
90:146	Unworked wood	Poor	N/A	N/A	106	N/A	N/A	8	N/A	N/A	Unworked roundwood.	
90:147	Split timber	Poor	Irregular	N/A	97	12	8	N/A	N/A	N/A	Piece of eroded and gnarly split timber.	
90:148	Split timber	Poor	Irregular	N/A	49	4	3	N/A	N/A	N/A	Fragmentary remains of an irregularly split timber.	
90:149	Unworked wood	Poor	N/A	N/A	183	N/A	N/A	20	N/A	N/A	Eroded roundwood with grooved surfaces.	
90:150	Unworked wood	Poor	N/A	N/A	114	10	3	N/A	N/A	N/A	Decayed roundwood.	
90:151	Unworked wood	Poor	N/A	N/A	135	N/A	N/A	4-10	N/A	N/A	Decayed roundwood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
90:152	Split timber	Poor	Irregular	N/A	93	11	8	N/A	N/A	N/A	Irregularly split timber.	
90:153	Split timber	Poor	Irregular	N/A	105	14	10	N/A	N/A	N/A	Irregularly split timber.	
90:154	Split timber	Very poor	Irregular	N/A	65	6	4	N/A	N/A	N/A	Fragmentary irregularly split timber.	
90:155	Split timber	Poor	Irregular	N/A	65	15	3	N/A	N/A	N/A	Fragmentary irregularly split timber.	
90:156	Split wood	Very poor	Irregular	N/A	36	8	3	N/A	N/A	N/A	Fragmentary piece of irregularly split wood.	
90:157	Split timber	Poor	Irregular	N/A	46	14	16	N/A	N/A	N/A	Piece of irregularly shaped and split wood.	
90:158	Split timber	Poor	Irregular	N/A	34	20	12	N/A	N/A	N/A	Piece of irregularly shaped and split wood.	
90:159	Split timber	Good	Inner tangential	N/A	77	7	2	N/A	N/A	N/A	Well split inner tangential.	
90:160	Split timber	Poor	Inner tangential	N/A	40	15	7	N/A	N/A	N/A	Small piece of tangentially split timber.	
90:161	Worked end	Moderate	N/A	N/A	175	N/A	N/A	30	N/A	N/A	Gnarly roundwood with branch trimming.	
90:162	Split timber	Moderate	Irregular	N/A	63	9	5	N/A	N/A	N/A	Small irregular split timber.	
90:163	Split timber	Poor	Irregular	N/A	44	4	5	N/A	N/A	N/A	Small irregular split timber.	
90:164	Split timber	Poor	Irregular	N/A	64	4	3	N/A	N/A	N/A	Small irregular split timber.	
90:165	Unworked wood	Very poor	N/A	N/A	172	16	8	N/A	N/A	N/A	Degraded unworked roundwood.	
90:166	Worked end	Poor	N/A	Chisel	202.50	N/A	N/A	11.50	40	40	E end cut to a chisel point at with 5-6 flat facets with stepped junctions, one complete jam-curve but cracked and warped-blade edge quite straight.	Y
90:167	Worked end	Good	N/A	N/A	221	N/A	N/A	4.30	N/A	N/A	N end forked, both pieces cut with a single very flat facet, simple woodworking.	Y
90:168	Split wood	Moderate	Irregular	N/A	36	8	3	N/A	N/A	N/A	Small piece of irregularly split wood.	
90:169	Unworked wood	Poor	N/A	N/A	38	15	8	N/A	N/A	N/A	Piece of gnarly irregularly shaped wood.	
90:170	Split timber	Moderate	Quarter split	N/A	172	15	6	N/A	N/A	N/A	Quarter split timber, broken in 3.	
90:171	Split timber	Moderate	Irregular	N/A	103	16	10	N/A	N/A	N/A	Irregularly split timber, broken in 2.	
90:172	Worked end	Very good	N/A	Chisel	155	N/A	N/A	7-12	N/A	N/A	Roundwood with a degraded chisel point and 6 incidents of branch trimming, no real tool evidence.	Y
90:173	Split timber	Poor	Irregular	N/A	80	8	5	N/A	N/A	N/A	Poorly preserved fragment of split timber.	
90:174	Unworked wood	Poor	N/A	N/A	66	N/A	N/A	4	N/A	N/A	Piece of unworked eroded brushwood.	
90:175	Split timber	Moderate	Inner tangential	N/A	55	8	2.50	N/A	N/A	N/A	Small piece of tangentially split timber, truncated by machine.	
90:176	Split timber	Good	Irregular	N/A	33	17	11	N/A	N/A	N/A	Irregularly converted roundwood, possibly an uneven quarter split.	
90:177	Split timber	Poor	Inner tangential	N/A	168	12	5	N/A	N/A	N/A	Tangentially split timber.	
90:178	Split timber	Poor	Irregular	N/A	50	15	8	N/A	N/A	N/A	Small chunk of irregularly split timber.	
90:179	Unworked wood	Moderate	N/A	N/A	129	N/A	N/A	8	N/A	N/A	Unworked roundwood.	
90:180	Split timber	Good	Irregular	Wedge	75	26	13	N/A	15	7-15	N end cut to an uneven wedge point with 2 opposing faces (L6-15cm), with a total of 7 eroded facets. S end is also an uneven wedge point but is cracked and degraded. Conversion is irregular, an inner tangential at the N end and a half-split at the S end. Overall is quite irregular and worn.	Y
90:181	Unworked wood	Poor	N/A	N/A	53	N/A	N/A	3-4	N/A	N/A	Piece of unworked brushwood.	

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90:182	Unworked wood	Good	N/A	N/A	70	24	16	N/A	N/A	N/A	Small chunk of wood, quite worn with no evidence of working.	
90:183	Split timber	Good	Quarter split	N/A	90	14	9	N/A	N/A	N/A	Quarter split timber, S end truncated by machine.	
90:184	Split timber	Good	Irregular	N/A	94	9	8	N/A	N/A	N/A	Small piece of irregularly split timber.	
90:185	Split timber	Poor	Inner tangential-halved	N/A	67	3-20	10	N/A	N/A	N/A	Probable halved an inner tangential, very gnarly with the possible remains of a single facet but heavily worn.	Y
90:186	Split timber	Good	Quarter split	N/A	73	19	9	N/A	N/A	N/A	Quarter split timber, broken at both ends.	
90:187	Split timber	Good	Inner tangential	N/A	203	14	5	N/A	N/A	N/A	Inner tangential truncated by machine at S end.	
90:188	Unworked wood	Good	N/A	N/A	150	N/A	N/A	14	N/A	N/A	Unworked roundwood.	
90:189	Split timber	Good	Inner tangential	N/A	107	13	10	N/A	N/A	N/A	Simple split timber.	
90:190	Split timber	Poor	Quarter split	N/A	130	8-17	15	N/A	N/A	N/A	Quarter split timber truncated by modern drain.	
90:191	Split timber	Moderate	Inner tangential	N/A	87	8	2	N/A	N/A	N/A	Small piece of split timber	
90:192	Unworked wood	Poor	N/A	N/A	54	17	13	N/A	N/A	N/A	Degraded and heavily cracked roundwood.	
90:193	Worked end	Poor	N/A	Chisel	85	N/A	N/A	4.70	20	20	Cracked chisel point with 1-2 flat facets, heavily degraded.	Y
90:194	Split timber	Moderate	Quarter split	N/A	102	16	8	N/A	N/A	N/A	Quarter split timber.	
90:195	Split wood	Very poor	Radial	N/A	12	2	3	N/A	N/A	N/A	Piece of radially split wood with broken jagged ends.	
90:196	Worked end	Poor	N/A	Chisel	235	N/A	N/A	14.50	35	35	Degraded roundwood, S end cut to a chisel point, totally worn.	Y
90:197	Split timber	Good	Tangential	N/A	54	4-7	6-7	N/A	N/A	N/A	Small piece of tangentially split timber.	
90:198	Worked end	Good	N/A	Chisel	134	N/A	N/A	4.5	N/A	N/A	Cracked and degraded chisel point.	Y
90:199	Split timber	Poor	Inner tangential	N/A	51	7	5	N/A	N/A	N/A	Fragment of split timber, truncated by a modern drain at its N end.	
90:200	Unworked wood	Good	N/A	N/A	121	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
90:201	Split timber	Poor	Outer tangential-halved	N/A	34	12	7	N/A	N/A	N/A	Heavily deteriorated piece of split timber.	
90:202	Split timber	Poor	Outer tangential	N/A	30	11	5	N/A	N/A	N/A	Deteriorated inner tangential.	
90:203	Split timber	Good	Quarter split	N/A	113	11	6	N/A	N/A	N/A	Quarter split, truncated at N end by modern drain	
90:204	Split timber	Good	Inner tangential	N/A	32	17	8	N/A	N/A	N/A	Truncated at N end by modern drain	
90:205	Split timber	Poor	Inner tangential	N/A	67	7-9	6	N/A	N/A	N/A	Truncated at N end by modern drain	
90:206	Split timber	Poor	Quarter split	N/A	36	12	5	N/A	N/A	N/A	Quarter split, truncated at N end by modern drain	
90:207	Split timber	Good	Inner tangential	N/A	44	13	9	N/A	N/A	N/A	Truncated at N end by modern drain	
90:208	Split timber	Good	Inner tangential	N/A	46	8.50	3	N/A	N/A	N/A	Inner tangential timber.	
90:209	Worked end	Poor	N/A	Chisel	58	N/A	N/A	10	35	35	Very warped & degraded roundwood with chisel point at its S end.	Y

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90:210	Split timber	Good	Tangential	Wedge	34	8-12	6	N/A	N/A	N/A	Very degraded tangential, S end cut to wedge point but is cracked.	Y
90:211	Split timber	Moderate	Irregular	N/A	162	12	10	N/A	N/A	N/A	Possible trimmed tangential, S end cut by machine.	
90:212	Split timber	Moderate	Irregular	N/A	84	10	9	N/A	N/A	N/A	Possible degraded half-split, charred on one side.	
90:213	Unworked wood	Poor	N/A	N/A	43.80	N/A	N/A	1.20	N/A	N/A	Piece of unworked forked brushwood.	
90:214	Split timber	Good	Outer tangential-halved	N/A	125	23	12	N/A	N/A	N/A	Halved outer tangential with very flat split surfaces.	Y
90:215	Split timber	Moderate	Half-split	N/A	72	5	2.50	N/A	N/A	N/A	Half-split truncated by machine at its S end.	
90:216	Unworked wood	Poor	N/A	N/A	32	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
90:217	Unworked wood	Moderate	N/A	N/A	34	N/A	N/A	2.50	N/A	N/A	Unworked roundwood.	
90:218	Unworked wood	Poor	N/A	N/A	160	N/A	N/A	8	N/A	N/A	Unworked roundwood.	
90:219	Unworked wood	Poor	N/A	N/A	450	N/A	N/A	12	N/A	N/A	Unworked roundwood.	
90:220	Split timber	Moderate	Inner tangential	N/A	97	15	5	N/A	N/A	N/A	Small split timber.	
90:221	Split timber	Moderate	Quarter split	N/A	102	10	9	N/A	N/A	N/A	Quarter split.	
90:222	Split wood	Moderate	Outer tangential	N/A	35	8	7	N/A	N/A	N/A	Small piece of split wood.	
90:223	Unworked wood	Very poor	N/A	N/A	37	3.30	2.80	N/A	N/A	N/A	Degraded piece of unworked brushwood.	
90:224	Split timber	Good	Half-split	Chisel	110	N/A	N/A	19	60	60	S end cut to chisel point which is eroded but has at least 9 flat facets, heavily stepped & clean junctions. Max. facet L5.2; W0.9cm, large broad flat bladed axe, small amount of charring, quite gnarly.	Y
90:225	Unworked wood	Very poor	N/A	N/A	43	7	5	N/A	N/A	N/A	Degraded roundwood.	
90:226	Split timber	Poor	Inner tangential	N/A	78	9	7	N/A	N/A	N/A	Possibly half an inner tangential but heavily degraded.	
90:227	Worked end	Good	N/A	Chisel	100	N/A	N/A	9.50	30	30	N end cut to a chisel point, very dry and degraded.	Y
90:228	Split timber	Poor	Quarter split	N/A	100	13	11	N/A	N/A	N/A	Poorly preserved quarter split timber.	
90:229	Worked end	Good	N/A	Chisel	53	N/A	N/A	5.50	25	25	Gnarly, crooked brushwood, N end cut to a chisel point with 2 flat facets, partial jam-curve, cracked.	Y
90:230	Split wood	Poor	Quarter split	N/A	27	11	2	N/A	N/A	N/A	Small piece of split wood probably broken from a larger element.	
90:231	Split timber	Moderate	Irregular	N/A	41	10	7	N/A	N/A	N/A	Irregularly split timber.	
90:232	Worked end	Good	N/A	Chisel	61	N/A	N/A	6.30	28	28	Roundwood with a degraded chisel point, heavily cracked.	Y
90:233	Split timber	Poor	Inner tangential	N/A	41	15	6	N/A	N/A	N/A	Degraded fragment of an inner tangential.	
90:234	Split timber	Good	Tangential	N/A	38	10	6	N/A	N/A	N/A	Small piece of tangentially split timber.	
90:235	Split timber	Moderate	Quarter split	N/A	110	11	11	N/A	N/A	N/A	Quarter spit timber.	
90:236	Split timber	Poor	Inner tangential-halved	N/A	115	8	6	N/A	N/A	N/A	Degraded fragment of an inner tangential.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
90:237	Split timber	Very good	Inner tangential	N/A	102	20-27	7-9	N/A	N/A	N/A	Inner tangential-2nd/3rd split. N end has been cut on one side at 45° with c.10 flat facets with stepped & clean junctions. One partial jam-curve of a tool with a straight blade edge and a 90° corner. All facets worn & eroded. The S end is cut at 40° but no individual facets remain. All surfaces are well split and flat with 2 facets on the inner surface indicating basic surface dressing/trimming.	Y
90:238	Split timber	Poor	Inner tangential-halved	N/A	215	21	13	N/A	N/A	N/A	Degraded split timber, N end appears to have a bare faced tenon but is heavily worn. Split surface quite flat.	Y
90:239	Split timber	Moderate	Quarter split	N/A	140	22	9	N/A	N/A	N/A	Quarter split, N end cut by machine.	
90:240	Unworked wood	Good	N/A	N/A	66	N/A	N/A	11	N/A	N/A	Unworked roundwood.	
90:241	Unworked wood	Good	N/A	N/A	59	N/A	N/A	10	N/A	N/A	Unworked roundwood.	
90:242	Split timber	Poor	Inner tangential	N/A	223	7-18	6.50	N/A	N/A	N/A	Fragmentary split timber.	
90:243	Split timber	Poor	Inner tangential	N/A	123	8	4-6	N/A	N/A	N/A	Fragmentary split timber.	
90:244	Split timber	Poor	Irregular	N/A	122	18	13	N/A	N/A	N/A	Irregularly split timber but could be degraded roundwood.	
90:245	Worked end	Good	N/A	N/A	170	N/A	N/A	11-15	N/A	N/A	Roundwood with very heavily degraded and cracked wedge or possible pencil point.	Y
90:246	Split timber	Good	Inner tangential	N/A	56	5-25	9	N/A	N/A	N/A	Small piece of tangentially split timber.	
90:248	Unworked wood	Good	N/A	N/A	106	7	5	N/A	N/A	N/A	Unworked wood.	
90:249	Split timber	Poor	Irregular	N/A	95	7	7	N/A	N/A	N/A	Degraded and fragmentary split timber.	
90:250	Split timber	Good	Inner tangential	N/A	45	15-18	7.50	N/A	N/A	N/A	Small piece of tangentially split timber.	
90:251	Split timber	Moderate	Irregular	N/A	122	13	3	N/A	N/A	N/A	Irregularly split and shaped timber, broken at both ends.	
90:252	Split timber	Good	Quarter split	N/A	96	7	N/A	N/A	N/A	N/A	Quarter split, broken at both ends.	
90:253	Split timber	Good	Inner tangential	N/A	61	18	4	N/A	N/A	N/A	Thin inner tangential split.	
90:254	Worked end	Good	N/A	N/A	150	N/A	N/A	6.20	N/A	N/A	Roundwood from which 2 branches have been trimmed.	Y
90:255	Split timber	Good	Quarter split	N/A	59	12-20	10	N/A	N/A	N/A	Short piece of quarter split timber.	
90:256	Split timber	Moderate	Half-split	N/A	96	14	8	N/A	N/A	N/A	Half-split.	
90:257	Split timber	Poor	Radial	N/A	93	12	8	N/A	N/A	N/A	Degraded radial split.	
90:258	Split timber	Good	Irregular	N/A	97	12	9	N/A	N/A	N/A	Irregularly split timber, appears to be a half-split at one end but complete at the opposite.	
90:259	Split timber	Good	Inner tangential	N/A	200	20	9	N/A	N/A	N/A	N end truncated by modern drain.	
90:260	Unworked wood	Good	N/A	N/A	137	N/A	N/A	6	N/A	N/A	Unworked knotty roundwood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
90:261	Split timber	Good	Irregular	N/A	130	14	7	N/A	N/A	N/A	Trimmed quarter split, all surfaces quite flat. S end cut at 90° but no facets remain, quite worn/rounded.	Y
90:262	Unworked wood	Very poor	N/A	N/A	41	3	N/A	N/A	N/A	N/A	Heavily degraded piece of brushwood, appears to be split but this is probably just decay.	
90:263	Split timber	Good	Quarter split	N/A	178	13	7	N/A	N/A	N/A	Quarters split timber.	
90:264	Worked end	Moderate	N/A	Chisel	82	N/A	N/A	5	20	20	Degraded and cracked chisel point.	Y
90:265	Split wood	Poor	Half-split	N/A	63	7	5	N/A	N/A	N/A	Half-split light roundwood.	
90:266	Worked end	Good	N/A	Chisel	70	N/A	N/A	8.50	40	40	S end cut to a degraded chisel point with 2 flat facets, both cracked and eroded with a stepped junction.	Y
90:267	Unworked wood	Good	N/A	N/A	88	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
90:268	Split timber	Good	Inner tangential	N/A	108	16	7	N/A	N/A	N/A	Tangentially split timber, truncated by machine at its S end, N end broken in antiquity.	
90:269	Split wood	Very poor	Irregular	N/A	38	6	7	N/A	N/A	N/A	Small fragment of split wood probably split from a larger element.	
90:270	Split timber	Good	Quarter split	N/A	58	11	5	N/A	N/A	N/A	Quarter split broken at both ends.	
90:271	Split timber	Poor	Quarter split	N/A	96	9	4	N/A	N/A	N/A	Degraded quarter split timber.	
90:272	Split wood	Poor	Inner tangential	N/A	19	7	3.50	N/A	N/A	N/A	Degraded tangentially split wood.	
90:273	Split timber	Good	Quarter split	N/A	51	9	3	N/A	N/A	N/A	Small quarter split, slightly irregular in shape.	
90:274	Split timber	Moderate	Quarter split	N/A	73	7	5	N/A	N/A	N/A	Quarter split timber.	
90:275	Split timber	Good	Inner tangential-halved	N/A	95	17	7	N/A	N/A	60-90	N end tapers to narrow point at 60° but no tool marks remain. S end is cut flat at 90°, again no facets remain. 11cm from S end a V-shaped notch L13; W4cm is cut into one edge but is heavily worn. All surfaces are well split.	Y
90:276	Unworked wood	Moderate	N/A	N/A	124	N/A	N/A	9	N/A	N/A	Unworked roundwood.	
90:277	Split wood	Poor	Inner tangential-halved	N/A	62	4-7	4	N/A	N/A	N/A	Small piece of degraded split wood.	
90:278	Split timber	Poor	Inner tangential-halved	N/A	93	15	10	N/A	N/A	N/A	Degraded inner tangential.	
91:1	Post	Good	N/A	Pencil	47	N/A	N/A	5.60	2	2-10	Pencil point with 7 faces and c.48 flat facets with clean & stepped junctions. Max. facet L9; W2cm. Broken in antiquity.	Y
92:1	Post	Excellent	N/A	Pencil	152	N/A	N/A	6.80	2	2-4	Shallow elongated pencil point with 3 faces L24-36cm. Total of 36 flat facets, max L5.6; W3.3cm, min L1.7; W1cm. Junctions clean & stepped, lovely sharp tool, red colour, very hard, fine woodworking.	Y
93:1	Stake	Very good	N/A	Wedge	43	N/A	N/A	4.10	10	10-13	Wedge point with 2 adjacent faces, total of 7 flat very shallow facets, max L5.9; W2cm, junctions are clean & stepped narrow, elongated point, red colour.	Y
95:1	Unworked wood	Very poor	N/A	N/A	227	11	8	N/A	N/A	N/A	Heavily deteriorated piece of wood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
95:2	Unworked wood	Very poor	N/A	N/A	146	9	8	N/A	N/A	N/A	Heavily deteriorated piece of wood.	
95:3	Worked end	Very poor	N/A	N/A	117	12	10	N/A	N/A	N/A	Degraded roundwood with a possible toolmark at its N end.	
95:4	Worked end	Good	N/A	Pencil	253	N/A	N/A	5.80	27	20-27	Pencil point with 3 faces around full circumference. 4 flat facets, max. L4; W5cm, clean & stepped junctions. The apex is torn off and overall it is quite worn and rough.	Y
95:5	Unworked wood	Poor	N/A	N/A	63	6	5	N/A	N/A	N/A	Degraded roundwood.	
96:1	Post	Very good	N/A	Pencil	56	N/A	N/A	6.80	1-3	1-3	Pencil point with 4 faces, total of 7 flat shallow facets max L8.5; W3.2cm with clean junctions. Degraded and broken in 4.	Y
97:3	Worked end	Moderate	N/A	Wedge	58	N/A	N/A	7.60	30	25-30	Wedge point with 2 opposing faces at 25° & 30°, facets are very worn and eroded but flat.	Y
97:4	Worked end	Good	N/A	Chisel	102	N/A	N/A	6.20	25	25-28	Forked roundwood the main stem of which is cut to a chisel point with 3 flat facets with stepped junctions. Toolmarks are quite hacked, slightly eroded.	Y
97:5	Worked end	Moderate	N/A	Chisel	67	N/A	N/A	3	22	22	Chisel point consisting of a chop & tear with 2 flat facets, small worked end.	Y
97:6	Worked end	Good	N/A	Pencil	50	N/A	N/A	4.20	28-70	28-70	Crooked branch, one end is cut to a pencil point with 3 adjacent faces, flat facets & clean junctions. Opposite end is a degraded, stumpy pencil point with 4 faces and 4 facets.	Y
97:7	Worked end	Good	N/A	Pencil	94	N/A	N/A	5	20	20	Forked roundwood the central stem of which is cut to a rounded pencil point with 8 faces, each a single flat facet. The tip is very blunt/rounded. Both ends of the fork are cut (wedge/chisel) with simple flat facets.	Y
97:8	Wood working waste	Moderate	Irregular	N/A	28	14	8	N/A	55-80	55-80	Small chunk of irregularly converted wood, possibly a rotted half-split. One end is cut at 55° with 2 flat facets, stepped junction. Opposite end at 80°.	Y
97:9	Worked end	Good	N/A	Chisel	47	N/A	N/A	7	N/A	N/A	Roundwood cut to a chisel point but appears modern.	Y
97:10	Worked end	Poor	N/A	Chisel	33	N/A	N/A	4.40	25	25	Brushwood cut to a chisel point, broken.	Y
97:11	Wood working waste	Moderate	Irregular	N/A	9	6	2	N/A	N/A	N/A	Wood chip with a single facet at one end, overall very rounded and worn, possibly by water?	Y
97:12	Split timber	Good	Radial	N/A	39	13	8	N/A	N/A	N/A	Chunk of a radial split timber, one end is quite flat the opposite is very eroded & worn. 10cm from the end is the remains of a rectangular (?) socket L12cm. All surfaces totally worn.	Y
97:13	Wood working waste	Good	Irregular	N/A	14	3	N/A	N/A	N/A	26	Small split fragment with crude surfaces, single flat facet at 26° at one end.	Y
97:14	Wood working waste	Good	Irregular	N/A	10	3.50	2	N/A	N/A	N/A	Small wood chip, quite worn & eroded.	Y

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
97:15	Wood working waste	Moderate	Irregular	N/A	18	8	5	N/A	N/A	N/A	Chunk of cut roundwood, possibly a post tip. All surfaces are damaged but it appears to be cut/split on 5 sides and chopped with single facets at each end.	Y
97:16	Worked end	Moderate	N/A	Wedge	39	N/A	N/A	2.80	10-30	10-30	Gnarly knotty piece of brushwood cut to wedge point with 2 opposing faces each a single flat facet.	Y
97:17	Worked end	Good	N/A	Chisel	31	N/A	N/A	5.50	15	15	Gnarly brushwood cut to a chisel point with 3 flat facets with clean junctions, chop & tear at tip, simple woodworking but very gnarly, almost root-like.	Y
98:1	Stake	Good	N/A	Pencil	7	N/A	N/A	2	N/A	N/A	Tip of stake, pencil point with 5 faces apparent, flat facets, only tiny amount surviving.	Y
99:1	Post	Good	N/A	Pencil	50	N/A	N/A	6.80	5	5-9	Pencil point with 4 faces and a portion unworked. 16 facets all long and flat with clean junctions, max L6.7; W3.8m, slightly worn.	Y
150:1	Post	Excellent	N/A	Pencil	43	N/A	N/A	9	7	7	Pencil point with long narrow 6 faces, av. L30; W2.5cm, total of 42 facets with clean & stepped junctions, av. L6.2; W3.1cm. Red colour, fine sharp facets but minor damage to one face.	Y
151:1	Stake	Excellent	N/A	Wedge	40	N/A	N/A	5.20	14	10-14	Wedge point with 2 adjacent faces with 9 flat facets, clean & stepped junctions, max. L5.5; W2.9cm.	Y
152:1	Stake	Excellent	N/A	Wedge	92	N/A	N/A	5.40	12	15	Wedge point with 2 adjacent faces, 10 facets max. L5; W2.3cm with clean junctions, very flat and clean, tip is broken.	Y
153:1	Post	Excellent	N/A	Pencil	47	N/A	N/A	6	10	10-35	Pencil point with 4 adjacent faces & a portion unworked, 50 facets max. L5.5; W3cm, min L1; W0.7cm, all very sharp and clean with clean & stepped junctions. Lovely long shallow point, red colour but incomplete.	Y
154:1	Post	Excellent	N/A	Pencil	69	N/A	N/A	6.20	2	2-5	Pencil point extensively worked on 10 faces and along its entire length. All 10 faces are long and narrow, av. L59; W2m. Total of 145 facets max. L7.1; W2.8cm, min. L2.8; W0.6cm, junctions are both clean & stepped. All facets are very shallow except the actual tip which is cut at 75°. Wood is very hard and red.	Y
154:2	Stake	Good	N/A	Pencil	49	N/A	N/A	5	2	2-10	Pencil point with 5 faces, av. L30cm, 45 flat facets max. L9.6; W2.7cm with clean & stepped junctions. Typical long shallow/narrow pencil point, tip broken.	Y
155:1	Stake	Poor	N/A	Wedge	26	N/A	N/A	4	10	10	Wedge point with 2 adjacent faces.	
156:1	Stake	Good	N/A	Pencil	46	N/A	N/A	4	2	2-18	Pencil point with 4 faces, one unworked. 16 flat facets max. L7.5; W1.7cm, clean & stepped junctions. Lovely red colour but slightly cracked.	Y

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
157:1	Post	Good	N/A	Pencil	51	N/A	N/A	6.90	15	15-20	Pencil point with 6 faces, 1 portion unworked av. L20cm. 45 small flat clean facets max. L3.9; W2.5cm with very clean & stepped junctions.	
157:2	Stake	Good	N/A	Wedge	26	N/A	N/A	4.50	18	15-18	Wedge point with 2 adjacent faces. Total of 9 flat facets max. L7.7; W3.2cm with clean & quite heavily stepped junctions.	Y
158:1	Post	Poor	N/A	Chisel	63	N/A	N/A	10	25	25-35	Chisel point with 12 flat facets max. L6.8; W6.1cm, junctions all clean except one stepped example. All facets very clean, very good sharp tool, beautiful red/gold colour, excellent example of chisel point.	Y
159:1	Stake	Good	N/A	Wedge	32	N/A	N/A	4.30	33	33	Degraded wedge point.	Y
160:1	Unworked wood	Very good	N/A	N/A	578	N/A	N/A	9-17	N/A	N/A	Long unworked roundwood.	
160:2	Unworked wood	Poor	N/A	N/A	385	N/A	N/A	7	N/A	N/A	Long unworked roundwood.	
160:3	Unworked wood	Poor	N/A	N/A	330	N/A	N/A	7-13	N/A	N/A	Unworked roundwood.	
160:4	Unworked wood	Moderate	N/A	N/A	135	N/A	N/A	10	N/A	N/A	Unworked roundwood.	
160:5	Unworked wood	Moderate	N/A	N/A	510	N/A	N/A	13	N/A	N/A	Unworked roundwood.	
160:6	Unworked wood	Poor	N/A	N/A	49	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
160:7	Unworked wood	Poor	N/A	N/A	48	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
160:8	Unworked wood	Poor	N/A	N/A	77	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
160:9	Unworked wood	Good	N/A	N/A	53	43	30	N/A	N/A	N/A	Irregular gnarly piece of wood.	
160:10	Unworked wood	Poor	N/A	N/A	200	N/A	N/A	7	N/A	N/A	Unworked roundwood.	
160:11	Unworked wood	Good	N/A	N/A	102	N/A	N/A	5-9	N/A	N/A	Unworked knotty roundwood.	
160:12	Unworked wood	Good	N/A	N/A	88	N/A	N/A	11	N/A	N/A	Unworked roundwood.	
160:13	Unworked wood	Poor	N/A	N/A	500	N/A	N/A	17-20	N/A	N/A	Long unworked roundwood.	
160:14	Unworked wood	Poor	N/A	N/A	150	N/A	N/A	3-5	N/A	N/A	Piece of unworked brushwood.	
160:15	Split timber	Good	Radial	N/A	92	18	7	N/A	N/A	N/A	Split timber, no toolmarks.	
160:16	Split timber	Moderate	Irregular	N/A	145	12	9	N/A	N/A	N/A	Irregularly split fragmented timber.	
160:17	Unworked wood	Moderate	N/A	N/A	150	N/A	N/A	9	N/A	N/A	Unworked roundwood.	
160:18	Unworked wood	Poor	N/A	N/A	48	8-13	6	N/A	N/A	N/A	Irregular chunk of wood.	
160:19	Unworked wood	Poor	N/A	N/A	28	13	6	N/A	N/A	N/A	Irregular chunk of wood.	
160:20	Split wood	Poor	Irregular	N/A	36	8	5	N/A	N/A	N/A	Small chunk of split wood, could be part of a radial or tangential, degraded tool facet on one end.	
160:21	Unworked wood	Moderate	N/A	N/A	96	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
160:22	Split wood	Poor	Irregular	N/A	23	5	2	N/A	N/A	N/A	Tiny piece of split wood, conversion unknown. May have split from a larger element.	
160:23	Split wood	Poor	Radial	N/A	33	6	4	N/A	N/A	N/A	Small piece of radially split wood.	
160:24	Worked end	Very poor	N/A	Wedge	32.10	N/A	N/A	6.60	N/A	N/A	Degraded roundwood with a cracked wedge point at each end and one instance of branch trimming.	Y
160:25	Unworked wood	Poor	N/A	N/A	69	13	6	N/A	N/A	N/A	Unworked roundwood.	
160:26	Unworked wood	Good	N/A	N/A	250	N/A	N/A	8-15	N/A	N/A	Unworked roundwood.	
160:27	Unworked wood	Moderate	N/A	N/A	226	N/A	N/A	8	N/A	N/A	Unworked roundwood.	
160:28	Split timber	Poor	Outer tangential	N/A	180	13	6	N/A	N/A	N/A	Degraded split timber.	
160:29	Unworked wood	Moderate	N/A	N/A	76	N/A	N/A	8	N/A	N/A	Forked unworked branch.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
160:30	Unworked wood	Very poor	N/A	N/A	50	10	7	N/A	N/A	N/A	Irregular chunk of wood.	
160:31	Unworked wood	Good	N/A	N/A	40	N/A	N/A	2	N/A	N/A	Piece of unworked brushwood.	
160:32	Split timber	Good	Irregular	N/A	290	12	6	N/A	N/A	N/A	Irregularly split timber.	
160:33	Split timber	Good	Outer tangential-halved	N/A	205	15	6	N/A	N/A	N/A	Thick tangential split, almost a 1/4 split. The W end is possibly cut flat but is totally degraded.	Y
160:34	Unworked wood	Moderate	N/A	N/A	118	N/A	N/A	14	N/A	N/A	Unworked roundwood.	
160:35	Unworked wood	Poor	N/A	N/A	40	12	4	N/A	N/A	N/A	Compressed roundwood.	
160:36	Unworked wood	Moderate	N/A	N/A	170	N/A	N/A	13	N/A	N/A	Unworked roundwood.	
160:37	Unworked wood	Good	N/A	N/A	104	N/A	N/A	14	N/A	N/A	Unworked roundwood.	
160:38	Split timber	Good	Inner tangential	N/A	194	13-17	10	N/A	N/A	N/A	Split timber.	
160:39	Unworked wood	Poor	N/A	N/A	55	N/A	N/A	7	N/A	N/A	Unworked roundwood.	
160:40	Unworked wood	Moderate	N/A	N/A	123	N/A	N/A	13	N/A	N/A	Unworked roundwood.	
160:41	Unworked wood	Moderate	N/A	N/A	204	N/A	N/A	16	N/A	N/A	Unworked roundwood.	
160:42	Wood working waste	Good	Quarter split	N/A	43	13-20	13	N/A	N/A	N/A	Chunk of 1/4 split, N end cut to chisel point at 70° with 6 flat facets & stepped junctions. S end cut to chisel point at 50° with 2 flat facets. All facets eroded and cracked av. W5-7cm, cut with a broad metal tool.	Y
160:43	Unworked wood	Good	N/A	N/A	163	N/A	N/A	12	N/A	N/A	Unworked roundwood.	
160:44	Unworked wood	Poor	N/A	N/A	184	N/A	N/A	4-7	N/A	N/A	Unworked roundwood.	
160:45	Unworked wood	Good	N/A	N/A	50	N/A	N/A	No record	N/A	N/A	Unworked wood.	
160:46	Unworked wood	Very poor	N/A	N/A	210	16	5	N/A	N/A	N/A	Degraded roundwood.	
160:47	Unworked wood	Poor	N/A	N/A	29	N/A	N/A	7	N/A	N/A	Unworked roundwood.	
160:48	Split wood	Moderate	Outer tangential	N/A	28	8	4	N/A	N/A	N/A	Small piece of split timber.	
160:49	Unworked wood	Good	N/A	N/A	56	N/A	N/A	8	N/A	N/A	Unworked roundwood.	
160:50	Unworked wood	Moderate	N/A	N/A	20	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
160:51	Unworked wood	Good	N/A	N/A	48	N/A	N/A	8-12	N/A	N/A	Unworked roundwood.	
160:52	Unworked wood	Very poor	N/A	N/A	50	N/A	N/A	2-8	N/A	N/A	Unworked roundwood.	
160:53	Split wood	Very poor	Irregular	N/A	60	13	2	N/A	N/A	N/A	Very heavily degraded piece of split wood. Conversion unknown.	
160:54	Unworked wood	Poor	N/A	N/A	157	N/A	N/A	8-18	N/A	N/A	Unworked roundwood.	
160:55	Wood working waste	Good	Radial-trimmed	N/A	27	7	4	N/A	N/A	N/A	Trimmed radial split, both ends cut with 2 degraded flat facets. The split surfaces are grooved and irregular.	Y
160:56	Unworked wood	Poor	N/A	N/A	6.50	49.60	4	N/A	N/A	N/A	Very heavily degraded piece of wood.	
160:57	Split wood	Very poor	Outer tangential-halved	N/A	14	4	3	N/A	N/A	N/A	Degraded fragment of split timber, probably split from a larger element.	
161:1	Stake	Good	N/A	Pencil	9	N/A	N/A	5	N/A	N/A	The tip of a stake which appears to have been a pencil point with 3 adjacent faces. All facets are flat.	Y

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
162:1	Post	Moderate	N/A	Pencil	32	N/A	N/A	6.80	17	2-17	Pencil point with 3 faces and a portion unworked. 25 flat smooth facets max. L8.2; W2.5cm, with clean & stepped junctions. Raised signatures on most facets.	Y
163:1	Post	Moderate	N/A	Wedge	43	N/A	N/A	7.80	14	5-14	Wedge point with 2 opposing faces L13 & L4cm. 7 flat facets max. L6; W3.2cm with clean & stepped junctions. Very heavy raised signature pattern of lines W1-2mm, spaced 4-5 mm apart. Tip is broken.	Y
164:1	Post	Poor	N/A	Pencil	33	N/A	N/A	6.20	2-34	2-34	Pencil point with 3 faces and a portion unworked. One face is simply a tear, the second is a combination of 3 facets and 2 tears at 2°, the third is cut at 34° with 3 facets. All facets are flat with clean & stepped junctions. Max. facet L3.4; W2.8cm, slightly worn.	Y
165:1	Post	Excellent	N/A	Pencil	34	N/A	N/A	6.50	8	5-12	Tip of a post cut to a pencil point with 6 faces. 26 flat facets max. L7.6; W2.4cm with clean & stepped junctions. Distinct narrow raised signature on all facets.	Y
166:1	Stake	Excellent	N/A	Chisel	47	N/A	N/A	4.90	19	19	Chisel point with 3 very flat clean facets max. L6.7; W4.9cm with clean junctions, raised but quite faint signatures.	Y
167:1	Worked end	Good	N/A	Chisel	56	N/A	N/A	3	25	25	One end is cut to a chisel point with a single flat facet. 2/3 instances of branch trimming, quite worn, simple woodworking.	Y
168:1	Post	Excellent	N/A	Pencil	58	N/A	N/A	7.80	10	10-15	Pencil point with 3 elongated faces. 12 flat facets with clean & torn junctions, distinct incised signatures.	Y
169:1	Stake	Good	N/A	Pencil	29	N/A	N/A	4	10	10-15	Pencil point with 4 small faces av. L7cm. Total of 7 flat shallow facets max. L3.5; W2.4cm, junctions are clean & stepped.	Y
170:1	Unworked wood	Poor	N/A	N/A	68.80	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
170:2	Unworked wood	Poor	N/A	N/A	41	9-16	No record	N/A	N/A	N/A	Chunk of unworked wood.	
170:3	Unworked wood	Moderate	N/A	N/A	108	N/A	N/A	7	N/A	N/A	Unworked roundwood.	
170:4	Split timber	Good	Inner tangential	N/A	52	11	6	N/A	N/A	N/A	Small piece of split timber.	
170:5	Split timber	Good	Quarter split	N/A	35	10	7	N/A	N/A	N/A	Small piece of split timber.	
170:6	Split timber	Moderate	Irregular	N/A	49	11	7	N/A	N/A	N/A	Small piece of split timber.	
170:7	Unworked wood	Very poor	N/A	N/A	84	N/A	N/A	2	N/A	N/A	Piece of unworked brushwood.	
170:8	Split timber	Very poor	Irregular	N/A	32	14	7	N/A	N/A	N/A	Small piece of split timber.	
170:9	Split wood	Poor	Irregular	N/A	37	6	2	N/A	N/A	N/A	Small piece of split timber.	
170:10	Unworked wood	Poor	N/A	N/A	41	N/A	N/A	7	N/A	N/A	Unworked roundwood.	
170:11	Worked end	Good	N/A	Chisel	29	N/A	N/A	5.30	17	17	Degraded gnarly roundwood cut to a chisel point with a single facet and 2 instances of branch trimming.	Y
170:12	Split wood	Poor	Irregular	N/A	25	7	5	N/A	N/A	N/A	Small piece of split wood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
170:13	Unworked wood	Poor	N/A	N/A	54	10	6	N/A	N/A	N/A	Heavily degraded roundwood, or possibly a fragment of split timber.	
170:14	Split timber	Very poor	Irregular	N/A	60	28	9	N/A	N/A	N/A	Heavily degraded possible split timber.	
170:15	Worked end	Moderate	N/A	Chisel	120	N/A	N/A	7.20	28	28	Very degraded chisel point with a single (?) flat facet.	Y
170:16	Split timber	Very poor	Irregular	N/A	85	14	6	N/A	N/A	N/A	Heavily degraded possible split timber.	
170:17	Worked end	Moderate	N/A	Chisel	130	N/A	N/A	9.20	55	55	Worn & cracked chisel point, no individual facets remain, tip is crushed.	Y
170:18	Unworked wood	Moderate	N/A	N/A	35	8	5	N/A	N/A	N/A	Unworked irregular roundwood.	
170:19	Unworked wood	Good	N/A	N/A	58	N/A	N/A	13	N/A	N/A	Unworked roundwood.	
170:20	Unworked wood	Poor	N/A	N/A	72	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
170:21	Worked end	Good	N/A	Chisel	130	N/A	N/A	7.50	35	35	Cracked and degraded chisel point.	Y
170:22	Unworked wood	Very poor	N/A	N/A	49	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
170:23	Split timber	Good	Quarter split	N/A	72	13	6	N/A	N/A	N/A	Fragment of a 1/4 split timber.	
170:24	Unworked wood	Moderate	N/A	N/A	86	N/A	N/A	8	N/A	N/A	Unworked roundwood.	
170:25	Unworked wood	Good	N/A	N/A	233	N/A	N/A	10	N/A	N/A	Unworked roundwood.	
170:26	Unworked wood	Moderate	N/A	N/A	49	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
170:27	Unworked wood	Very poor	N/A	N/A	12	N/A	N/A	5	N/A	N/A	Piece of unworked forked brushwood.	
170:28	Unworked wood	Poor	N/A	N/A	86	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
170:29	Unworked wood	Moderate	N/A	N/A	62	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
170:30	Unworked wood	Poor	N/A	N/A	172	N/A	N/A	8	N/A	N/A	Unworked roundwood.	
170:31	Unworked wood	Good	N/A	N/A	38	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
170:32	Unworked wood	Poor	N/A	N/A	68	N/A	N/A	6	N/A	N/A	Unworked forked roundwood.	
170:33	Unworked wood	Good	N/A	N/A	125	N/A	N/A	6	N/A	N/A	Unworked forked roundwood.	
170:34	Unworked wood	Poor	N/A	N/A	32.60	N/A	N/A	2.40	N/A	N/A	Piece of unworked brushwood.	
170:35	Unworked wood	Very good	N/A	N/A	196	N/A	N/A	4-7.50	N/A	N/A	Unworked roundwood.	
170:36	Unworked wood	Poor	N/A	N/A	24	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
170:37	Unworked wood	Poor	N/A	N/A	45	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
170:38	Unworked wood	Good	N/A	N/A	60	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
170:39	Worked end	Very poor	N/A	Chisel	86	N/A	N/A	4.90	25	25	Very degraded chisel point.	Y
170:40	Unworked wood	Poor	N/A	N/A	163	N/A	N/A	4-6.50	N/A	N/A	Unworked roundwood.	
170:41	Unworked wood	Poor	N/A	N/A	19	N/A	N/A	4	N/A	N/A	Piece of heavily degraded and rotten brushwood.	
170:42	Unworked wood	Poor	N/A	N/A	34	N/A	N/A	2	N/A	N/A	Piece of unworked brushwood.	
170:43	Unworked wood	Very poor	N/A	N/A	6	N/A	N/A	1	N/A	N/A	Tiny degraded twig.	
170:44	Unworked wood	Very poor	N/A	N/A	16	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
170:45	Unworked wood	Good	N/A	N/A	200	N/A	N/A	20	N/A	N/A	Unworked roundwood.	
170:46	Split wood	Poor	Quarter split	N/A	33	8	5	N/A	N/A	N/A	Degraded piece of 1/4 split wood.	
170:47	Split wood	Very poor	Irregular	N/A	25	5	3	N/A	N/A	N/A	Degraded piece of irregularly split wood.	
170:48	Split wood	Poor	Quarter split	N/A	40	5	4	N/A	N/A	N/A	Degraded piece of 1/4 split wood.	
170:49	Split wood	Very poor	Inner tangential	N/A	55	6	3	N/A	N/A	N/A	Heavily degraded piece of split wood.	
170:50	Unworked wood	Poor	N/A	N/A	18	4	3	N/A	N/A	N/A	Degraded roundwood.	
170:51	Unworked wood	Poor	N/A	N/A	29	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
170:52	Unworked wood	Poor	N/A	N/A	35	N/A	N/A	No record	N/A	N/A	Unworked wood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
170:53	Unworked wood	Good	N/A	N/A	86	N/A	N/A	8	N/A	N/A	Unworked roundwood.	
170:54	Unworked wood	Good	N/A	N/A	137	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
170:55	Worked end	Poor	N/A	Wedge	24	N/A	N/A	6.90	40	20-40	Wedge point with 2 opposing faces, heavily degraded.	Y
170:56	Unworked wood	Poor	N/A	N/A	75	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
170:57	Unworked wood	Good	N/A	N/A	46	N/A	N/A	15	N/A	N/A	Unworked forked roundwood.	
170:58	Unworked wood	Moderate	N/A	N/A	36	N/A	N/A	9	N/A	N/A	Unworked roundwood.	
170:59	Unworked wood	Poor	N/A	N/A	63	24	12	N/A	N/A	N/A	Unworked roundwood.	
170:60	Unworked wood	Poor	N/A	N/A	72	N/A	N/A	No record	N/A	N/A	Unworked wood.	
170:61	Worked end	Good	N/A	Chisel	120	N/A	N/A	9.20	90	90	N end cut to a chisel point with 5 facets all incomplete and degraded. S end cut at 90°, with 1-2 very degraded facets.	Y
170:62	Split timber	Good	Inner tangential	N/A	70	15	2	N/A	N/A	N/A	Fragment of split timber.	
170:63	Split wood	Poor	Inner tangential	N/A	44	8	4	N/A	N/A	N/A	Fragment of split wood.	
170:64	Split wood	Poor	Quarter split	N/A	27	14	10	N/A	N/A	N/A	Fragment of 1/4 split wood.	
170:65	Worked end	Good	N/A	Chisel	35	N/A	N/A	6.50	20	20	Degraded cracked chisel point with a single facet.	Y
170:66	Worked end	Good	N/A	Chisel	74	N/A	N/A	7.20	30	30	Degraded chisel point with 1-2 flat facets. Quite knotty piece of wood.	Y
170:67	Unworked wood	Moderate	N/A	N/A	28	N/A	N/A	7	N/A	N/A	Unworked roundwood.	
170:68	Unworked wood	Moderate	N/A	N/A	44	N/A	N/A	10	N/A	N/A	Unworked roundwood.	
170:69	Split timber	Good	Irregular	Chisel	120	9	4	N/A	50	50	A piece of wood, almost completely in the round but a portion has been tangentially removed. S end cut to a shallow chisel point with c. 4 facets, all damaged.	Y
170:70	Unworked wood	Poor	N/A	N/A	82	N/A	N/A	4.50-6.50	N/A	N/A	Unworked roundwood.	
170:71	Unworked wood	Good	N/A	N/A	215	N/A	N/A	11	N/A	N/A	Very knotty unworked roundwood.	
170:72	Unworked wood	Poor	N/A	N/A	30	N/A	N/A	No record	N/A	N/A	Heavily compressed piece of wood.	
170:73	Worked end	Poor	N/A	N/A	73	N/A	N/A	12.50	70	70-90	Forked roundwood, each branch is cut with a single flat facet. Heavily degraded.	Y
170:74	Unworked wood	Moderate	N/A	N/A	32	N/A	N/A	9	N/A	N/A	Unworked roundwood.	
170:75	Unworked wood	Poor	N/A	N/A	72	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
170:76	Unworked wood	Moderate	N/A	N/A	64	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
170:77	Unworked wood	Poor	N/A	N/A	13	8	No record	N/A	N/A	N/A	Irregular piece of wood, probably broken from a larger piece.	
170:78	Unworked wood	Moderate	N/A	N/A	26	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
170:79	Unworked wood	Moderate	N/A	N/A	40	N/A	N/A	2	N/A	N/A	Piece of unworked brushwood.	
170:80	Split wood	Moderate	Outer tangential	N/A	30	10	2	N/A	N/A	N/A	Fragment of split wood, probably broken from a larger element.	
170:81	Unworked wood	Poor	N/A	N/A	30	50	No record	N/A	N/A	N/A	Degraded fragment of unworked wood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
170:82	Unworked wood	Poor	N/A	N/A	16	4	2.50	N/A	N/A	N/A	Unworked fragment, probably split from a larger piece.	
170:83	Worked end	Good	N/A	Tear	100	N/A	N/A	4	N/A	N/A	A piece of brushwood with what appears to be a torn end but is quite dried out and degraded.	Y
170:84	Unworked wood	Good	N/A	N/A	48	N/A	N/A	2.50	N/A	N/A	Piece of unworked brushwood.	
170:85	Worked end	Good	N/A	Chisel	50	N/A	N/A	4.40	7	7	Chisel point with 2-3 flat, worn facets max. L8.5; W3.8cm with clean junctions. Simple worked end.	Y
170:86	Unworked wood	Good	N/A	N/A	54	N/A	N/A	4	N/A	N/A	Piece of unworked gnarly, forked brushwood	
170:87	Unworked wood	Good	N/A	N/A	97	N/A	N/A	9	N/A	N/A	Unworked roundwood.	
170:88	Worked end	Good	N/A	N/A	117	N/A	N/A	5.80	N/A	N/A	Roundwood with a single flat facet from branch trimming.	Y
170:89	Unworked wood	Good	N/A	N/A	46	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
170:90	Unworked wood	Good	N/A	N/A	181	N/A	N/A	8	N/A	N/A	Unworked roundwood.	
170:91	Unworked wood	Poor	N/A	N/A	164	N/A	N/A	8	N/A	N/A	Unworked roundwood.	
170:92	Split timber	Poor	Tangential-trimmed	Chisel	34.70	9	5.40	N/A	50	50	Piece of a trimmed tangential. S end cut to a chisel point at 50° with multiple degraded facets. Surfaces are flat and split very well.	Y
170:93	Split wood	Good	Quarter split	N/A	34	6	5	N/A	N/A	N/A	Piece of 1/4 split wood.	
170:94	Unworked wood	Poor	N/A	N/A	31	N/A	N/A	5	N/A	N/A	Small piece of unworked wood.	
170:95	Split wood	Poor	Irregular	N/A	14	4.50	3	N/A	N/A	N/A	Small piece of split wood.	
170:96	Unworked wood	Good	N/A	N/A	174	N/A	N/A	16	N/A	N/A	Unworked roundwood.	
170:97	Split wood	Poor	Irregular	N/A	34	8	3	N/A	N/A	N/A	Small piece of split wood.	
170:98	Split timber	Moderate	Inner tangential	N/A	44	10	4	N/A	N/A	N/A	Fragment of an inner tangentially split timber.	
170:99	Unworked wood	Very poor	N/A	N/A	64	N/A	N/A	5.20	N/A	N/A	Piece of unworked brushwood.	
170:100	Split timber	Good	Half-split	N/A	41	14	12	N/A	N/A	N/A	Very degraded half-split, the end is cut but is cracked and warped.	Y
170:101	Unworked wood	Poor	N/A	N/A	77	N/A	N/A	7	N/A	N/A	Unworked roundwood.	
170:102	Unworked wood	Poor	N/A	N/A	57.80	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
170:103	Unworked wood	Poor	N/A	N/A	51.80	N/A	N/A	3.80	N/A	N/A	Piece of unworked brushwood.	
170:104	Unworked wood	Poor	N/A	N/A	51.30	N/A	N/A	2.60	N/A	N/A	Piece of unworked brushwood.	
170:105	Worked end	Good	N/A	Chisel	86	N/A	N/A	10.80	85	85	S end has a very degraded toolmark at 85°, totally cracked/degraded.	Y
170:106	Unworked wood	Poor	N/A	N/A	104	13	8	N/A	N/A	N/A	Unworked degraded roundwood.	
170:107	Split timber	Poor	Half-split	N/A	61	7	9	N/A	N/A	N/A	Half-split roundwood.	
170:108	Unworked wood	Very poor	N/A	N/A	63	11.80	4.50	N/A	N/A	N/A	Unworked degraded roundwood.	
170:109	Split timber	Poor	Inner tangential	N/A	73	3-11	3	N/A	N/A	N/A	Fragment of an inner tangentially split timber, probably broken from a larger element.	
170:110	Split timber	Good	Outer tangential	N/A	71	15	10	N/A	85	85	Outer tangential with a small amount of charring and uneven, grooved surfaces. N end has the remains of a possible toolmark, very heavily eroded.	Y
170:111	Split wood	Moderate	Inner tangential	N/A	25	4	3	N/A	N/A	N/A	Small fragment of tangentially split timber.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
170:112	Split wood	Good	Inner tangential-halved	N/A	41	15-20	9.50	N/A	50	50	Halved inner tangential (2nd split) with flat and well split surfaces and edges. S end cut at 50° with 1-3 facets but totally degraded.	Y
170:113	Split wood	Good	Quarter split	N/A	40	13	9	N/A	25	25	Heavily degraded 1/4 split, SE end cut at 25°, cracked and degraded.	Y
170:114	Split wood	Moderate	Tangential	N/A	22	8	2	N/A	N/A	N/A	Small piece of split wood.	
170:115	Unworked wood	Poor	N/A	N/A	33	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
170:116	Unworked wood	Moderate	N/A	N/A	29	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
170:117	Unworked wood	Poor	N/A	N/A	22	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
170:118	Unworked wood	Poor	N/A	N/A	124	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
170:119	Unworked wood	Poor	N/A	N/A	22	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
170:120	Unworked wood	Poor	N/A	N/A	36	12	6	N/A	N/A	N/A	Unworked irregular piece of wood.	
170:121	Unworked wood	Poor	N/A	N/A	22	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
170:122	Unworked wood	Very poor	N/A	N/A	60	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
170:123	Unworked wood	Moderate	N/A	N/A	64	N/A	N/A	6-12	N/A	N/A	Unworked roundwood.	
170:124	Unworked wood	Very poor	N/A	N/A	28	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
170:125	Unworked wood	Very poor	N/A	N/A	23	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
170:126	Split wood	Moderate	Tangential	N/A	23	9	4	N/A	N/A	N/A	Small piece of tangentially split wood.	
170:127	Unworked wood	Moderate	N/A	N/A	32	9	2	N/A	N/A	N/A	Unworked irregular piece of wood.	
170:128	Unworked wood	Poor	N/A	N/A	181	N/A	N/A	7	N/A	N/A	Unworked roundwood.	
170:129	Unworked wood	Moderate	N/A	N/A	48	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
170:130	Unworked wood	Moderate	N/A	N/A	70	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
170:131	Split wood	Moderate	Outer tangential	N/A	22	9	4	N/A	N/A	N/A	Small piece of split wood.	
170:132	Split timber	Very poor	Irregular	N/A	110.20	11	7.80	N/A	N/A	80	Very degraded irregular split, E end cut at 80° but broken/damaged, split surfaces reasonably flat.	Y
170:133	Unworked wood	Poor	N/A	N/A	270	N/A	N/A	8	N/A	N/A	Unworked roundwood.	
170:134	Unworked wood	Poor	N/A	N/A	65	8	3-7	N/A	N/A	N/A	Degraded unworked roundwood.	
170:135	Unworked wood	Poor	N/A	N/A	147	N/A	N/A	10-20	N/A	N/A	Degraded unworked roundwood.	
170:136	Unworked wood	Moderate	N/A	N/A	342	N/A	N/A	12	N/A	N/A	Unworked roundwood.	
170:137	Unworked wood	Moderate	N/A	N/A	140	N/A	N/A	21	N/A	N/A	Unworked roundwood.	
170:138	Split timber	Poor	Half-split	N/A	60	7	3	N/A	N/A	N/A	Half-split roundwood.	
170:139	Unworked wood	Good	N/A	N/A	61	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
170:140	Unworked wood	Poor	N/A	N/A	210	23	14	N/A	N/A	N/A	Degraded unworked roundwood.	
170:141	Unworked wood	Poor	N/A	N/A	76	3-8	4.50	N/A	N/A	N/A	Degraded unworked roundwood.	
170:142	Unworked wood	Poor	N/A	N/A	60	N/A	N/A	4-6	N/A	N/A	Unworked roundwood.	
170:143	Split wood	Poor	Irregular	N/A	31	6	4	N/A	N/A	N/A	Small piece of split wood.	
170:144	Unworked wood	Poor	N/A	N/A	45	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
170:145	Unworked wood	Moderate	N/A	N/A	108	N/A	N/A	10	N/A	N/A	Unworked roundwood.	
170:146	Unworked wood	Moderate	N/A	N/A	15	4	1	N/A	N/A	N/A	Small fragment, probably broken from a larger piece.	
170:147	Split wood	Moderate	Quarter split	N/A	30	4.50	4	N/A	N/A	N/A	Small piece of 1/4 split wood.	
170:148	Split wood	Poor	Irregular	N/A	16	5	2.50	N/A	N/A	N/A	Small fragment of split wood.	
170:149	Split timber	Very poor	Tangential	N/A	111	6-11	5	N/A	N/A	N/A	Heavily fragmented piece of split timber.	
170:150	Unworked wood	Good	N/A	N/A	55	N/A	N/A	6	N/A	N/A	Unworked roundwood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
170:151	Unworked wood	Good	N/A	N/A	75	N/A	N/A	12	N/A	N/A	Unworked roundwood.	
170:152	Unworked wood	Good	N/A	N/A	277	N/A	N/A	19	N/A	N/A	Unworked roundwood with charring on S end.	
170:153	Split timber	Good	Irregular	N/A	48	23	No record	N/A	N/A	45	Trimmed radial or tangential. One end cut at 45° with multiple worn & eroded facets. L-shaped end appears to be due to breakage/decay rather than deliberate working, no tool evidence, very rotten/dry.	Y
170:154	Unworked wood	Poor	N/A	N/A	64	N/A	N/A	3-15	N/A	N/A	Unworked irregular gnarly roundwood.	
170:155	Unworked wood	Good	N/A	N/A	48	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
170:156	Split wood	Poor	Irregular	N/A	41.30	7.30	2.80	N/A	N/A	N/A	Small fragment of irregularly split wood.	
170:157	Unworked wood	Poor	N/A	N/A	27.80	7.50	3	N/A	N/A	N/A	Small fragment of gnarly, irregular wood.	
170:158	Unworked wood	Very poor	N/A	N/A	62	8	6	N/A	N/A	N/A	Unworked degraded roundwood.	
170:159	Unworked wood	Good	N/A	N/A	62	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
170:160	Unworked wood	Moderate	N/A	N/A	210	N/A	N/A	14	N/A	N/A	Unworked roundwood.	
170:161	Unworked wood	Very poor	N/A	N/A	37.90	3.10	2.20	N/A	N/A	N/A	Small irregular piece of wood.	
170:162	Unworked wood	Very poor	N/A	N/A	42	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
170:163	Unworked wood	Good	N/A	N/A	74	5	3	N/A	N/A	N/A	Degraded piece of unworked brushwood.	
170:164	Unworked wood	Very poor	N/A	N/A	59	7	6	N/A	N/A	N/A	Heavily degraded roundwood.	
170:165	Unworked wood	Good	N/A	N/A	263	N/A	N/A	14	N/A	N/A	Unworked roundwood.	
170:166	Unworked wood	Good	N/A	N/A	148	N/A	N/A	5-9	N/A	N/A	Unworked roundwood.	
170:167	Split timber	Poor	Tangential	N/A	50	9	3	N/A	N/A	N/A	Small piece of tangentially split timber.	
170:168	Split timber	Very poor	Irregular	N/A	80	13	7	N/A	N/A	N/A	Fragments of irregularly split timber.	
170:169	Unworked wood	Poor	N/A	N/A	111	N/A	N/A	13	N/A	N/A	Unworked roundwood.	
170:170	Unworked wood	Moderate	N/A	N/A	100	N/A	N/A	7	N/A	N/A	Unworked curved roundwood with charring.	
170:171	Unworked wood	Moderate	N/A	N/A	130	N/A	N/A	7	N/A	N/A	Unworked roundwood.	
170:172	Worked end	Good	N/A	Wedge	37	N/A	N/A	2.80	17	17	Wedge point with 2 adjacent faces, simple worked end.	Y
170:173	Unworked wood	Good	N/A	N/A	220	N/A	N/A	15	N/A	N/A	Unworked forked roundwood.	
170:174	Unworked wood	Poor	N/A	N/A	182	10	4	N/A	N/A	N/A	Degraded unworked roundwood.	
170:175	Unworked wood	Good	N/A	N/A	111	N/A	N/A	6-11	N/A	N/A	Unworked roundwood.	
170:176	Split timber	Poor	Quarter split	N/A	93	14-24	7-14	N/A	N/A	85	Gnarly 1/4 split, S end cut at 85°, 19cm from this is a large rectangular socket L11; W16.5cm, internal surfaces are heavily worn. Opposite end is irregular & gnarly.	Y
170:177	Unworked wood	Moderate	N/A	N/A	168	7	8	N/A	N/A	N/A	Degraded unworked roundwood.	
170:178	Unworked wood	Poor	N/A	N/A	8	N/A	N/A	14	N/A	N/A	Degraded unworked roundwood.	
170:179	Unworked wood	Poor	N/A	N/A	196	N/A	N/A	8-12	N/A	N/A	Degraded forked branch.	
170:180	Split timber	Moderate	Inner tangential	N/A	94	6-13	6	N/A	N/A	N/A	Tangentially split timber.	
170:181	Split timber	Poor	Irregular	N/A	70	5-8	4	N/A	N/A	N/A	Piece of irregularly split timber, possibly split from a larger element.	
170:182	Unworked wood	Poor	N/A	N/A	57	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
170:183	Split timber	Poor	Inner tangential	N/A	67	7-17	6-9	N/A	N/A	N/A	Tangentially split timber.	
170:185	Unworked wood	Poor	N/A	N/A	31.80	6.60	2.70	N/A	N/A	N/A	Fragmented unworked wood.	
170:186	Unworked wood	Poor	N/A	N/A	86	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
170:187	Unworked wood	Good	N/A	N/A	202	N/A	N/A	5-13	N/A	N/A	Unworked forked roundwood.	
170:188	Split wood	Moderate	Radial	N/A	15	3.50	2	N/A	N/A	N/A	Small fragment of radially split wood with a knot hole at the edge.	Y
170:189	Wood working waste	Moderate	Secondary	N/A	20	5	4	N/A	N/A	N/A	Small secondary split piece with flat surfaces but no toolmarks. Slightly warped.	Y
170:190	Split wood	Moderate	Irregular	N/A	34	5	3.50	N/A	N/A	N/A	Split wood possibly part of a radial which is very heavily worn. Appears to have suffered long-term exposure or insect attack.	Y
171:1	Stake	Poor	N/A	Pencil	30	N/A	N/A	5	5	7	Pencil point with 5 very shallow elongated faces. Approximately 11 facets, all worn and eroded, junctions clean & stepped.	Y
171:2	Stake	Poor	N/A	Pencil	50	N/A	N/A	4	5	7	Pencil point with 3 long shallow adjacent faces and a small portion unworked. Total of 14 facets max. L7.8; W1.5cm, slightly rounded/worn.	Y
172:1	Post	Excellent	N/A	Pencil	48	N/A	N/A	6.90	3	3-20	Pencil point with 7 faces with 16 flat smooth facets max. L9.4; W6.1cm with clean & stepped junctions. Slightly bigger than most.	Y
173:1	Post	Poor	N/A	Pencil	25	N/A	N/A	7	N/A	N/A	Tip of a stake cut to a pencil point but the actual tip is a tear. There are 12 damaged flat facets with clean & stepped junctions.	Y
174:1	Post	Good	N/A	Pencil	61	N/A	N/A	7.60	2	2-30	Pencil point with 6 faces, 31 facets max. L6.7; W2.4cm with clean & stepped junctions, generally quite broad and flat, excellent condition. This post sat within a circular mortice on timber 90:118.	Y
175:1	Stake	Good	N/A	Pencil	46	N/A	N/A	5.40	0-15	0-15	Pencil point with 7 faces. 28 very flat facets max. L8.8; W3cm with clean & stepped junctions. The apex is trimmed off with a single facet cut at 50°, all facets slightly eroded and faint.	Y
176:1	Stake	Moderate	N/A	Pencil	37	N/A	N/A	4.50	5	10-15	Pencil point with 5 faces and a portion unworked. 8 flat facets max. L4.2; W2cm with clean & stepped junctions. 1 facet is a tear. The tip is missing.	Y
177:1	Stake	Good	N/A	Pencil	69	N/A	N/A	5	2	2-4	Extensively worked stake, incomplete and broken in 2. Worked on 6 faces av. L6.8cm to a very long shallow pencil point with approx. 99 flat facets max. L5.4; W2cm with clean & occasionally stepped junctions. Slightly worn.	Y
178:1	Post	Poor	N/A	Pencil	53	N/A	N/A	6	10	5-10	Pencil point with 3 adjacent faces and portion unworked. Total of 7-8 flat shallow facets with clean & slightly stepped junctions. Quite worn, broken & degraded.	Y
180:1	Post	Moderate	N/A	Pencil	46	N/A	N/A	7	5	5-7	Pencil point with 3 faces and a portion unworked. 11-13 flat but slightly worn rounded facets max. L13.5; W2.5cm with clean & stepped junctions. Broken in 2.	Y
181:1	Stake	Moderate	N/A	Wedge	25	N/A	N/A	4.20	19	19	Degraded wedge point with 2 opposing faces and 2 flat facets.	Y

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
182:1	Stake	Good	N/A	Chisel	44	N/A	N/A	4.60	19	19	Chisel point with 4 very flat facets max. L3.9; W4.4cm with clean & stepped junctions.	Y
183:1	Stake	Poor	N/A	Chisel	16	N/A	N/A	3.50	32	N/A	Chisel point with a single flat facet broken & incomplete, simple woodworking.	Y
184:1	Stake	Good	N/A	Pencil	39	N/A	N/A	4.10	5-7	5-7	Pencil point with 3 adjacent faces and a portion unworked. 10 flat smooth facets max. L4.3; W2cm with clean junctions.	Y
185:1	Stake	Moderate	N/A	N/A	13	N/A	N/A	4	N/A	N/A	Tip of stake, 3 faces & 3 facets, incomplete.	Y
186:1	Stake	Good	N/A	Pencil	16	N/A	N/A	4	10	10	Pencil point with 7 faces, 3 of which are incomplete. Minimum of 15 flat facets, clean & stepped junctions, heavily raised signature.	Y
187:1	Worked end	Good	N/A	Chisel	23	N/A	N/A	4	15	10-15	Chisel point with 4 very clean flat facets max. L7; W3.9cm with clean & slightly stepped junctions, nice simple woodworking.	Y
188:1	Stake	Good	N/A	Chisel	24	N/A	N/A	4.80	25	25	Chisel point with 4 flat clean facets max. L4; W4.3cm with stepped junctions, very distinct heavy signature pattern.	Y
190:1	Stake	Poor	N/A	Wedge	30	N/A	N/A	5	5	5-20	Wedge point with 2 adjacent faces, 7 facets, clean & stepped junctions, cracked and degraded.	Y
191:1	Post	Moderate	N/A	Wedge	29	N/A	N/A	6	28	10-28	Wedge point with 2 adjacent faces. 12 flat smooth facets max. L5.2; W2cm with clean & stepped junctions. Small out of damage but quite good condition.	Y
192:1	Stake	Moderate	N/A	Wedge	33	4	N/A	4.20	19	15-19	Wedge point with 2 adjacent faces, 7 flat facets max. L4; W2.6cm with clean & stepped junctions, all quite small. Nice simple point.	Y
193:1	Stake	Good	N/A	Pencil	23	N/A	N/A	5	7	2-7	Portion of a stake cut to a pencil point with 3 faces with a potion unworked. The largest face is a tear L14cm. Total of 8 flat facets max. L13.5; W1.9m with clean & stepped junctions.	Y
193:2	Post	Excellent	N/A	Pencil	44	N/A	N/A	8.20	3	2-20	Pencil point, with 5 faces min. L3.5; max. L37cm. 39 flat facets max. L8.5; W2.8cm with clean & stepped junctions with raised signatures.	Y
194:1	Stake	Excellent	N/A	Pencil	44	N/A	N/A	4.70	7	7-30	Pencil point with 5 faces max. L20.5, min. L3.2cm. 19 flat smooth facets max. L6; W3.5cm, clean & stepped junctions. Lovely pencil point, excellent condition.	Y
195:1	Stake	Poor	N/A	N/A	8	N/A	N/A	4	N/A	N/A	Tip of a stake worked on 3 faces absolutely tiny.	Y
196:1	Post	Good	N/A	Chisel	70	N/A	N/A	6.10	21	21	Chisel point with flat facets max. L5.4; W5.3cm, with stepped junctions, heavy raised signature pattern across all facets.	Y
197:1	Stake	Good	N/A	Chisel	25	N/A	N/A	2.40	50	50	Chisel point with a single flat smooth facet with raised signatures, simple wood working.	Y
198:1	Stake	Moderate	N/A	N/A	12	N/A	N/A	5	N/A	N/A	Stake tip, appears to have been wedge point with 2 adjacent faces, very little remains but fits in with rest of assemblage, shallow flat facets.	Y

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
199:1	Post	Good	N/A	Pencil	36	N/A	N/A	6	2	2-5	Pencil point with 5 faces, min. L8.2, max. L31cm. 33 very flat facets max. L5.7; W3cm with clean & stepped junctions, raised signatures on all facets. Only the tip is remaining.	Y
250:1	Post	Poor	N/A	Pencil	14	N/A	N/A	6	N/A	N/A	Tip of stake, appears to have been a pencil point, worked on 4 adjacent faces with flat facets. It fits with assemblage as a whole but is on the tip.	Y
251:1	Post	Moderate	N/A	Wedge	57	N/A	N/A	6.80	35	30-35	Wedge point, one face heavily damaged the opposite is cut at 35° with 4 flat facets max. L3.3; W3.2m & stepped junctions. Overall it is quite worn & rounded.	Y
252:1	Stake	Moderate	N/A	Wedge	41	N/A	N/A	4.20	20-40	20-40	Wedge point with 2 opposing faces which culminate in a long tear L13cm. Each face is a single facet L2-4.5cm. Broken and quite knotty. Splintered remains of branch trimming at the opposite end.	Y
253:1	Stake	Good	N/A	Chisel	18	N/A	N/A	4.60	12	12	Chisel point with 5 flat & slightly concave facets with clean junctions, simple woodworking.	Y
254:1	Stake	Moderate	N/A	Chisel	21	N/A	N/A	3.90	15	15	Chisel point with 2 flat slightly worn facets max. L4.3; W3.1cm, stepped junction, simple woodworking.	Y
255:3	Unworked wood	Good	N/A	N/A	185	N/A	N/A	14	N/A	N/A	Unworked roundwood.	
255:4	Split timber	Poor	Inner tangential	N/A	68	10	7	N/A	N/A	N/A	Tangentially split timber.	
255:5	Split timber	Moderate	Outer tangential	N/A	No record	36	12	N/A	N/A	N/A	N end has a halved-lap joint L23; D15cm, cut at 85° with 2+ eroded and worn facets. Cut into the lap at its E side is the remains of a roughly square socket L12; W12.5cm, part of which is missing. The inner surfaces are totally worn. The terminus of timber/lap is cut at 42° with multiple eroded facets.	Y
255:6	Unworked wood	Good	N/A	N/A	135	N/A	N/A	10-18	N/A	N/A	Unworked tapering irregular roundwood.	
255:7	Unworked wood	Very poor	N/A	N/A	104.30	34.80	18	N/A	N/A	N/A	Heavily degraded and rotten roundwood.	
255:8	Unworked wood	Poor	N/A	N/A	140.20	N/A	N/A	12	N/A	N/A	Heavily degraded and rotten roundwood.	
255:9	Worked end	Good	N/A	Wedge	278	N/A	N/A	5.60	20-30	20-30	Wedge point with 2 opposing faces cut at 20°/30°, 3 flat cracked facets incl. 1 partial jam-curve of a tool min. W4cm with straight blade edge and a 90° corner.	Y
255:10	Unworked wood	Poor	N/A	N/A	82	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
255:11	Unworked wood	Poor	N/A	N/A	39	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
255:12	Unworked wood	Very poor	N/A	N/A	19	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
255:13	Unworked wood	Good	N/A	N/A	135	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
255:14	Unworked wood	Poor	N/A	N/A	32	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
255:15	Worked end	Poor	N/A	Chisel	135.10	N/A	N/A	4	35	35	Knotty brushwood cut to a chisel point, degraded.	
255:16	Unworked wood	Moderate	N/A	N/A	275	N/A	N/A	10	N/A	N/A	Unworked roundwood.	
255:17	Unworked wood	Poor	N/A	N/A	98	N/A	N/A	7.50	N/A	N/A	Unworked roundwood.	
255:18	Unworked wood	Poor	N/A	N/A	54.50	N/A	N/A	4.20	N/A	N/A	Piece of unworked brushwood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
255:19	Split timber	Moderate	Quarter split	N/A	148	25	12	N/A	N/A	N/A	Quarter split timber.	
255:20	Worked end	Good	N/A	Pencil	130	N/A	N/A	7.30	10	10-15	Pencil point with 6 faces L3.5-19.5cm. 21 flat worn facets max. L8; W3.8cm with clean & stepped junctions.	Y
255:21	Worked end	Good	N/A	N/A	135	N/A	N/A	6.50	N/A	N/A	Long roundwood with evidence of branch trimming along its length.	
255:22	Split wood	Moderate	Irregular	N/A	36.20	9.10	7.50	N/A	N/A	N/A	Small fragment of split wood.	
255:23	Worked end	Good	N/A	Wedge	130	N/A	N/A	11-12	75-85	20-85	Uneven wedge point with 2 opposing faces. Small face is cut at 85° with 4 flat facets, clean & stepped junctions. Large face is cut at 75° with 9 flat facets, clean & stepped junctions. 1 partial jam-curve of tool min. W4.6cm with a straight blade edge and sides. Max. facet is L8.2; W8cm indicating a large broad flat axe. 20cm from terminus a large branch has been trimmed off at 20°, 3 flat facets, clean junctions. There are faint raised signatures on all facets on this piece.	Y
255:24	Unworked wood	Good	N/A	N/A	68	N/A	N/A	7	N/A	N/A	Unworked knotty roundwood.	
255:25	Worked end	Moderate	N/A	Pencil	34	N/A	N/A	5.40	10	10-15	Pencil point with 7 long narrow faces. 32 flat facets max. L7.8; W1.5cm, with clean & stepped junctions.	Y
255:26	Split wood	Poor	Quarter split	N/A	15	8	6	N/A	N/A	N/A	Small fragment of split wood.	
255:27	Split timber	Poor	Half-split	N/A	306	25	6.50	N/A	N/A	N/A	Very heavily degraded and fragmented half-split timber.	
255:28	Split timber	Good	Irregular	N/A	111	20	10	N/A	N/A	N/A	Irregular split, possible a trimmed inner tangential.	
255:29	Split wood	Good	Inner tangential	N/A	40	6	4	N/A	N/A	N/A	Small piece of split wood, probably broken from a larger element.	
255:30	Worked end	Moderate	N/A	Pencil	45	N/A	N/A	2	5	5-7	Pencil point with 4 faces, 11 small flat facets max. L7; W1.3cm, clean junctions.	Y
255:31	Worked end	Good	N/A	Chisel	50	N/A	N/A	2.80	20	20	Chisel point with a single very clean flat facet, simple woodworking.	Y
255:32	Worked end	Moderate	N/A	Wedge	66	N/A	N/A	2.60	30	30	Wedge point with 2 adjacent faces, one is cut at 30° the second is simply torn at 2°, simple woodworking.	Y
255:33	Worked end	Good	N/A	Pencil	46	N/A	N/A	2.10	7	7	A fine pencil point with 5 faces L2-8cm and 7 flat facets, very clean almost delicate point.	Y
255:34	Worked end	Good	N/A	Wedge	61	N/A	N/A	3	12	12-20	Wedge point with 2 opposing faces. One is a tear L15cm, the opposite is cut at 12° with 2 flat facets max. L3.5; W3.5cm, clean junction.	Y
255:35	Split wood	Good	Outer tangential	N/A	16	16	4	N/A	N/A	N/A	Fragment of wood with bark intact. May be natural rather than formally converted.	
255:36	Bark	Very good	N/A	N/A	26	9	3	N/A	N/A	N/A	Bark fragment.	
255:37	Split wood	Good	Inner tangential	N/A	34	14-17	2.50	N/A	N/A	N/A	Small piece of tangentially split wood.	
255:38	Worked end	Good	N/A	Pencil	130	N/A	N/A	3.50	5	5-10	A long shallow pencil point with 4 faces. Total of 12 very flat facets, junctions are mainly clean. Tip is crushed.	Y

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
255:39	Worked end	Good	N/A	Chisel	78	N/A	N/A	2.80	25	25	Chisel point with 3 very flat facets, clean & stepped junctions, simple woodworking.	Y
255:40	Worked end	Good	N/A	Chisel	94	N/A	N/A	3.80	10	10	Chisel point with 5 very flat facets with clean junctions, simple woodworking.	Y
255:41	Worked end	Poor	N/A	Chisel	90	N/A	N/A	8	25	25	Chisel point with 2-3 very flat facets incl. 1 complete jam-curve W5cm with a quite straight blade & side and sharp 90° corners.	Y
255:42	Split timber	Moderate	Irregular	Wedge	62	11	6	N/A	N/A	N/A	Appears to be a trimmed half-split, one end of which is charred. The opposite is cut to an uneven wedge point with 2 opposing faces and worn facets, simple woodworking, quite degraded.	Y
255:43	Unworked wood	Good	N/A	N/A	35	N/A	N/A	4	N/A	N/A	Unworked forked roundwood.	
255:44	Worked end	Good	N/A	Chisel	72	N/A	N/A	3.80	35	35	S end has a damaged chisel point with a single incomplete flat facet. N end is compressed.	Y
255:45	Split wood	Poor	Irregular	N/A	35	21	8	N/A	N/A	N/A	Irregular piece of split wood.	
255:46	Split wood	Poor	Quarter split	N/A	45	11	8	N/A	N/A	N/A	Small quarter split.	
255:47	Unworked wood	Poor	N/A	N/A	37.10	N/A	N/A	3.50	N/A	N/A	Piece of unworked brushwood.	
255:48	Unworked wood	Very poor	N/A	N/A	277	N/A	N/A	7.50	N/A	N/A	Unworked roundwood.	
255:49	Unworked wood	Good	N/A	N/A	61	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
255:50	Unworked wood	Poor	N/A	N/A	5.50	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
255:51	Worked end	Moderate	N/A	Chisel	93	N/A	N/A	7.20	40	40	Chisel point with 6 flat facets with stepped junctions. The largest facet is a partial jam-curve of a tool blade min. W4.2cm with a straight edge and 90° corner.	Y
255:52	Worked end	Poor	N/A	Chisel	75.50	N/A	N/A	2.60	45	45	Chisel with 2 facets, broken and degraded.	Y
255:53	Worked end	Good	N/A	Chisel	83	N/A	N/A	3.50	12	12	Chisel point with 3 flat facets and clean junctions. The tip is crushed, simple woodworking.	Y
255:54	Worked end	Poor	N/A	Chisel	42.60	N/A	N/A	2.90	30	30	Chisel point with 2 facets and a stepped junction.	
255:55	Worked end	Moderate	N/A	Wedge	30	N/A	N/A	5.10	30	30	An uneven wedge point with 2 opposing faces. 4 flat facets with clean junctions all heavily worn and eroded.	Y
255:56	Unworked wood	Good	N/A	N/A	153	N/A	N/A	6.40	N/A	N/A	Unworked roundwood.	
255:57	Worked end	Good	N/A	Wedge	37	N/A	N/A	5.60	29	20-29	Wedge point with 2 opposing faces, 3 flat facets max. L4.9; W2.6cm with stepped junctions, tip is broken.	Y
255:58	Worked end	Very good	N/A	Pencil	65	N/A	N/A	8.50	10	7-10	A long narrow pencil point with 8 faces, av. L37cm. Total of 54 flat facets max. L5.4; W3.7cm with clean & stepped junctions, overall quite worn and facets are faint. Tip is crushed.	Y
255:59	Unworked wood	Poor	N/A	N/A	4.50	N/A	N/A	3.30	N/A	N/A	Piece of unworked brushwood.	
255:60	Unworked wood	Poor	N/A	N/A	25	N/A	N/A	8	N/A	N/A	Unworked roundwood.	
255:61	Worked end	Very good	N/A	Pencil	41	N/A	N/A	7	7	7-10	Tip of a worked end cut on 4 faces to a pencil point with a portion unworked. 37 flat facets max. L8.8; W2cm with clean junctions. Long shallow shape, typical of assemblage, slightly compressed.	Y
255:62	Unworked wood	Poor	N/A	N/A	28	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
255:63	Unworked wood	Good	N/A	N/A	11	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
255:64	Unworked wood	Poor	N/A	N/A	95	N/A	N/A	6.50	N/A	N/A	Piece of unworked brushwood with heel where it was torn from larger branch or trunk.	
255:65	Worked end	Good	N/A	Pencil	48	N/A	N/A	6	5	5-17	SE end cut to a pencil point with 3 elongated faces. 14 very flat facets max. L6.8; W3cm with clean & stepped junctions. Very well worked.	Y
255:66	Worked end	Good	N/A	Wedge	49	N/A	N/A	4	35	35	An uneven wedge point with 2 adjacent faces, one of which is a tear L23cm. Adjacent to this at the tip is a single flat facet, very simple woodworking.	Y
255:67	Unworked wood	Poor	N/A	N/A	48	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
255:68	Worked end	Good	N/A	Chisel	47	N/A	N/A	2.40	15	15	Chisel point with 4 very flat facets, simple woodworking.	Y
255:69	Worked end	Good	N/A	Chisel	38	N/A	N/A	2	6	6	Chisel point with 2 flat facets, simple woodworking.	Y
255:70	Split wood	Poor	Irregular	N/A	16	7.50	3.50	N/A	N/A	N/A	Fragment of split wood, probably broken from a larger element.	
255:71	Unworked wood	Poor	N/A	N/A	36	N/A	N/A	1.50-4	N/A	N/A	Unworked tapering piece of brushwood.	
255:72	Unworked wood	Poor	N/A	N/A	14	N/A	N/A	3.50	N/A	N/A	Piece of unworked brushwood.	
255:73	Split wood	Good	Radial	N/A	15	9	6	N/A	N/A	N/A	Small piece of radially split wood.	
255:74	Unworked wood	Poor	N/A	N/A	64	N/A	N/A	7	N/A	N/A	Unworked roundwood.	
255:75	Unworked wood	Poor	N/A	N/A	30	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
255:76	Split wood	Poor	Irregular	N/A	35	6	3	N/A	N/A	N/A	Small piece of irregularly split wood.	
255:77	Unworked wood	Poor	N/A	N/A	32	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
255:78	Split timber	Poor	Half-split	N/A	97	20	11	N/A	N/A	N/A	Half-split timber.	
255:79	Split timber	Poor	Quarter split	N/A	130	27	21	N/A	N/A	N/A	Very heavily fragmented 1/4 split.	
255:80	Unworked wood	Moderate	N/A	N/A	60	N/A	N/A	7	N/A	N/A	Unworked roundwood.	
255:81	Unworked wood	Poor	N/A	N/A	38	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
255:82	Unworked wood	Moderate	N/A	N/A	62	7	4	N/A	N/A	N/A	Degraded compressed roundwood.	
255:83	Worked end	Good	N/A	Chisel	84	N/A	N/A	4	30	30	Chisel point with 2 very rounded & eroded facets, clean junction.	Y
255:84	Unworked wood	Poor	N/A	N/A	61	11.60	3.80	N/A	N/A	N/A	Degraded rotted roundwood.	
255:85	Unworked wood	Poor	N/A	N/A	51.80	N/A	N/A	3.20	N/A	N/A	Piece of unworked brushwood.	
255:86	Worked end	Good	N/A	Chisel	116	N/A	N/A	5.30	20	20	Chisel point with 3 degraded flat facets.	Y
255:87	Unworked wood	Moderate	N/A	N/A	54	N/A	N/A	10	N/A	N/A	Unworked roundwood.	
255:88	Unworked wood	Poor	N/A	N/A	43	N/A	N/A	6.50	N/A	N/A	Unworked forked roundwood.	
255:89	Split timber	Moderate	Half-split	N/A	125	23	7	N/A	N/A	N/A	Half-split timber.	
255:90	Split timber	Very poor	Irregular	N/A	152	25	11	N/A	N/A	N/A	Irregularly split timber.	
255:91	Split wood	Moderate	Irregular	N/A	45	6	10	N/A	N/A	N/A	Small piece of split wood.	
255:92	Split timber	Good	Irregular	N/A	103	8	5	N/A	N/A	N/A	Split timber.	
255:93	Unworked wood	Moderate	N/A	N/A	40	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
255:94	Unworked wood	Poor	N/A	N/A	41.10	N/A	N/A	3.50	N/A	N/A	Piece of unworked brushwood.	
255:95	Split timber	Good	Irregular	N/A	50	8	3	N/A	N/A	N/A	Irregular split, possible trimmed outer tangential. N end cut at 30°, with eroded flat facets.	Y
255:96	Unworked wood	Good	N/A	N/A	30	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
255:97	Worked end	Poor	N/A	Chisel	45	N/A	N/A	3.10	45	45	Chisel point with a single broken facet, worn and eroded.	Y

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
255:98	Unworked wood	Poor	N/A	N/A	38	N/A	N/A	3.70	N/A	N/A	Piece of unworked brushwood.	
255:99	Worked end	Good	N/A	Chisel	54	N/A	N/A	5.50	25	25	Chisel point with 4 flat facets incl. 1 partial jam-curve of tool min. W5cm with a slightly rounded blade edge and corner, quite worn with minor damage.	Y
255:100	Unworked wood	Good	N/A	N/A	38	N/A	N/A	7	N/A	N/A	Unworked roundwood.	
255:101	Split timber	Good	Half-split	N/A	57	8	5	N/A	N/A	N/A	Half-split timber.	
255:102	Worked end	Good	N/A	Pencil	29	N/A	N/A	6.20	34	2-24	Pencil point with 4 faces and one heavily damaged side. 6 flat facets max. L2; W4.9cm with clean junctions, quite stumpy.	Y
255:103	Split timber	Good	Outer tangential	N/A	59	14	7	N/A	N/A	N/A	Small piece of tangentially split wood, may have broken from a larger element.	
255:104	Unworked wood	Poor	N/A	N/A	11.90	N/A	N/A	N/A	N/A	N/A	Heavily fragmented piece of wood, possibly split.	
255:105	Split timber	Good	Irregular	N/A	56	12	6	N/A	N/A	N/A	Small piece of irregularly split timber.	
255:106	Unworked wood	Good	N/A	N/A	38	N/A	N/A	5-6.40	N/A	N/A	Unworked roundwood.	
255:107	Unworked wood	Good	N/A	N/A	82	N/A	N/A	3.50	N/A	N/A	Piece of unworked brushwood.	
255:108	Unworked wood	Moderate	N/A	N/A	24	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
255:109	Split wood	Poor	Tangential	N/A	31.40	10.10	2	N/A	N/A	N/A	Small piece of tangentially split wood.	
255:110	Unworked wood	Good	N/A	N/A	48	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
255:111	Unworked wood	Poor	N/A	N/A	35.90	5.60	4.40	N/A	N/A	N/A	Small irregular piece of wood.	
255:112	Unworked wood	Good	N/A	N/A	178	N/A	N/A	12	N/A	N/A	Unworked roundwood.	
255:113	Worked end	Poor	N/A	Chisel	41	N/A	N/A	5.80	30	30	Curved brushwood cut to a chisel point with c. 6 eroded facets. Tip is broken.	Y
255:114	Worked end	Poor	N/A	Chisel	106	N/A	N/A	3.50	N/A	N/A	Cracked chisel point at one end, totally degraded.	Y
255:115	Unworked wood	Good	N/A	N/A	108	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
255:116	Unworked wood	Moderate	N/A	N/A	51	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
255:117	Split timber	Good	Half-split	N/A	86	13	8	N/A	N/A	N/A	Half-split timber, broken at each end and burnt on one side.	
255:118	Worked end	Poor	N/A	Chisel	96	N/A	N/A	2.10	15	15	Chisel point with a single facet.	
255:119	Worked end	Good	N/A	Chisel	98	N/A	N/A	4	33	33	Chisel point with 3 slightly concave facets max. L3.6; W4cm with clean & stepped junctions, tip is broken, simple woodworking.	Y
255:120	Unworked wood	Moderate	N/A	N/A	31	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
255:121	Unworked wood	Poor	N/A	N/A	93	5.20-8.70	1.50-7	N/A	N/A	N/A	Heavily fragmented piece of wood, possibly split.	
255:122	Unworked wood	Poor	N/A	N/A	37.60	N/A	N/A	3.50	N/A	N/A	Piece of unworked forked brushwood.	
255:123	Split wood	Very poor	Irregular	N/A	49	9	5	N/A	N/A	N/A	Small piece of split wood.	
255:124	Unworked wood	Poor	N/A	N/A	18.20	4.20	2.80	N/A	N/A	N/A	Small piece of gnarly irregular wood.	
255:125	Split wood	Moderate	Irregular	N/A	45	12	4	N/A	N/A	N/A	Small piece of split wood-possibly radially converted.	
255:126	Unworked wood	Poor	N/A	N/A	156	N/A	N/A	4	N/A	N/A	Piece of unworked forked brushwood.	
255:127	Unworked wood	Poor	N/A	N/A	77.60	N/A	N/A	2.80-4	N/A	N/A	Piece of unworked brushwood.	
255:128	Unworked wood	Poor	N/A	N/A	21	3	3	N/A	N/A	N/A	Unworked irregular rotted piece of wood.	
255:129	Split timber	Very poor	Tangential	N/A	119	23	8.20	N/A	N/A	N/A	Tangentially split timber.	
255:130	Split wood	Good	Tangential	N/A	24	6	3	N/A	N/A	N/A	Tangentially split timber.	
255:131	Split wood	Good	Tangential	N/A	45	11-14	1-4.50	N/A	N/A	N/A	Tangentially split timber.	
255:132	Unworked wood	Poor	N/A	N/A	40	N/A	N/A	2.50	N/A	N/A	Piece of unworked brushwood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
255:133	Unworked wood	Good	N/A	N/A	41	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
255:134	Unworked wood	Poor	N/A	N/A	49.70	N/A	N/A	3.10	N/A	N/A	Piece of unworked brushwood.	
255:135	Worked end	Good	N/A	Chisel	36	N/A	N/A	4.50	40	40	Degraded chisel point.	Y
255:136	Worked end	Poor	N/A	Chisel	135	N/A	N/A	3.80	28	28	Chisel point with 3 flat facets with clean & stepped junctions, cracked.	Y
255:137	Unworked wood	Poor	N/A	N/A	20	4	3	N/A	N/A	N/A	Irregular degraded piece of wood.	
255:138	Worked end	Good	N/A	Chisel	46	N/A	N/A	4	22	22	Chisel point with 4 flat facets, slightly degraded, tip is broken, simple woodworking.	Y
255:139	Unworked wood	Good	N/A	N/A	73	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
255:140	Unworked wood	Poor	N/A	N/A	127	N/A	N/A	3.50	N/A	N/A	Piece of unworked brushwood.	
255:141	Unworked wood	Poor	N/A	N/A	99.80	N/A	N/A	15.30	N/A	N/A	Gnarly unworked piece.	
255:142	Split wood	Good	Irregular	N/A	3.80	10	5	N/A	N/A	N/A	Small piece of possibly radially split wood.	
255:143	Split wood	Good	Tangential	N/A	25	10	4	N/A	N/A	N/A	Small piece of tangentially split wood.	
255:144	Split timber	Good	Tangential	N/A	64	7	4	N/A	N/A	N/A	Tangentially split timber.	
255:145	Unworked wood	Good	N/A	N/A	41.70	N/A	N/A	3.20	N/A	N/A	Piece of unworked brushwood.	
255:146	Split wood	Good	Tangential	N/A	42	5	2	N/A	N/A	N/A	Small piece of split wood.	
255:147	Unworked wood	Poor	N/A	N/A	51.70	N/A	N/A	4.40	N/A	N/A	Piece of unworked brushwood.	
255:148	Unworked wood	Good	N/A	N/A	29	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
255:149	Unworked wood	Poor	N/A	N/A	56.80	N/A	N/A	5.20	N/A	N/A	Piece of unworked forked brushwood.	
255:150	Worked end	Poor	N/A	Pencil	41	N/A	N/A	3.90	2	2-5	Pencil point with 3 adjacent faces and a portion unworked. Total of 8 flat facets with clean junctions, eroded and broken.	Y
255:151	Unworked wood	Poor	N/A	N/A	41	22	No record	N/A	N/A	N/A	Gnarly stump like piece of wood.	
255:152	Unworked wood	Good	N/A	N/A	56	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
255:153	Unworked wood	Good	N/A	N/A	62	N/A	N/A	3.50	N/A	N/A	Piece of unworked brushwood.	
255:154	Unworked wood	Good	N/A	N/A	42	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
255:155	Unworked wood	Poor	N/A	N/A	31	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
255:156	Split wood	Poor	Tangential	N/A	30	4	3	N/A	N/A	N/A	Fragment of an outer tangential, possibly a natural split.	
255:157	Unworked wood	Poor	N/A	N/A	160	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
255:158	Split timber	Good	Radial	N/A	80	10	6	N/A	N/A	N/A	Radially split timber.	
255:159	Split wood	Poor	Irregular	N/A	37.10	9.40	5.10	N/A	N/A	N/A	Small piece of split wood.	
255:160	Worked end	Good	N/A	Chisel	77	N/A	N/A	5	N/A	N/A	Chisel point with a single facet.	
255:161	Worked end	Moderate	N/A	Pencil	39	N/A	N/A	3.50	15	15	Pencil point with 3 adjacent faces and a portion unworked. Total of 6 flat facets max. L3.2; W2.5cm with clean & stepped junctions, very worn.	Y
255:162	Split wood	Good	Tangential	N/A	35	7	4	N/A	N/A	N/A	Small piece of split wood.	
255:163	Unworked wood	Good	N/A	N/A	59	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
255:164	Unworked wood	Poor	N/A	N/A	45.50	N/A	N/A	6.10	N/A	N/A	Unworked roundwood.	
255:165	Worked end	Poor	N/A	N/A	125	N/A	N/A	7.30	35	35	Roundwood with the remains of at least 1 flat facet but the remainder is crushed and decayed.	Y
255:166	Split wood	Moderate	Irregular	N/A	32.20	5.10	3	N/A	N/A	N/A	Small piece of split wood.	
255:167	Split wood	Poor	Half-split	N/A	33	6.50	11.20	N/A	N/A	N/A	Small half-split roundwood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
255:168	Worked end	Moderate	N/A	Chisel	54	N/A	N/A	5.50	10	7-10	Gnarly brushwood cut to a chisel point with 5 flat facets max. L4.3; W4.2cm, stepped junctions, slightly worn/rounded.	Y
255:169	Unworked wood	Moderate	N/A	N/A	22	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
255:170	Unworked wood	Poor	N/A	N/A	53.70	4.70	3.50	N/A	N/A	N/A	Degraded piece of unworked brushwood.	
255:171	Split wood	Good	Irregular	N/A	44	5.50-7	4	N/A	N/A	N/A	Small piece of split wood.	
255:172	Unworked wood	Moderate	N/A	N/A	56	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
255:173	Unworked wood	Good	N/A	N/A	131	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
255:174	Split wood	Moderate	Irregular	N/A	36	20	8	N/A	N/A	N/A	Chunk of a very worn & eroded split with the possible remains of socket, very irregular conversion.	Y
255:175	Unworked wood	Poor	N/A	N/A	120	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
255:176	Split wood	Poor	Irregular	N/A	21	No record	No record	N/A	N/A	N/A	Small piece of split wood.	
255:177	Split wood	Good	Tangential	N/A	20	10	1	N/A	N/A	N/A	Small piece of split wood.	
255:178	Unworked wood	Good	N/A	N/A	50	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
255:179	Unworked wood	Poor	N/A	N/A	93.90	N/A	N/A	4.60	N/A	N/A	Piece of unworked brushwood.	
255:180	Split wood	Poor	Irregular	N/A	39.70	8.20	3.80	N/A	N/A	N/A	Small piece of split wood.	
255:181	Unworked wood	Poor	N/A	N/A	87.70	N/A	N/A	4.30	N/A	N/A	Piece of unworked brushwood.	
255:182	Unworked wood	Poor	N/A	N/A	37	N/A	N/A	2	N/A	N/A	Piece of unworked brushwood.	
255:183	Unworked wood	Poor	N/A	N/A	38	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
255:184	Split wood	Good	Half-split	N/A	50	7	4	N/A	N/A	N/A	Small piece of split wood.	
255:185	Split wood	Poor	Irregular	N/A	29.20	13.30	5.20	N/A	N/A	N/A	Small piece of split wood.	
255:186	Split timber	Poor	Half-split	N/A	58.70	6.70	3.30	N/A	N/A	N/A	Half-split roundwood.	
255:187	Split wood	Good	Tangential	N/A	23	9	2.50	N/A	N/A	N/A	Small piece of split wood.	
255:188	Worked end	Poor	N/A	N/A	46.10	N/A	N/A	3.80	N/A	N/A	Brushwood with the remains of 1 flat facet, incomplete.	Y
255:189	Split wood	Poor	Tangential	N/A	57	5.50	2.50	N/A	N/A	N/A	Small piece of split wood.	
255:190	Split wood	Poor	Tangential	N/A	18.80	11.50	2	N/A	N/A	N/A	Small piece of split wood.	
255:191	Unworked wood	Good	N/A	N/A	19	N/A	N/A	3.50	N/A	N/A	Piece of unworked brushwood.	
255:192	Unworked wood	Good	N/A	N/A	45	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
255:193	Worked end	Poor	N/A	Chisel	24	N/A	N/A	2.60	20	20	Degraded chisel point with a single flat facet, dried out and cracked.	Y
255:194	Split wood	Good	Irregular	N/A	30	4	2	N/A	N/A	N/A	Small piece of split wood.	
255:195	Unworked wood	Poor	N/A	N/A	50	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
255:196	Unworked wood	Poor	N/A	N/A	64.30	10.10	9.80	N/A	N/A	N/A	Unworked irregular roundwood, charred on one end.	
255:197	Split wood	Good	Tangential	N/A	35	8.50	3	N/A	N/A	N/A	Small piece of split wood.	
255:198	Split timber	Poor	Irregular	N/A	23.50	9.20	4.70	N/A	45	45	A squared/trimmed tangential with well split, flat surfaces. S end cut at 45° with 2-3 facets.	Y
255:199	Worked end	Good	N/A	Chisel	24	N/A	N/A	4.40	31	31	Chisel point with a single flat facet, faint signatures, simple woodworking.	Y
255:200	Worked end	Good	N/A	Chisel	28	N/A	N/A	3.30	12	12	Chisel point with small flat facets, all slightly worn. Along the length of the piece is a single flat facet L11.4; W2cm at 0°. Simple wood working.	Y

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
255:201	Wood working waste	Good	Irregular	N/A	9	8	4	N/A	N/A	N/A	A chunky woodchip, irregularly split with worn facets at each end.	Y
255:202	Wood working waste	Good	Secondary	N/A	49	8	7	N/A	N/A	N/A	Small chunk of trimmed tangential with very well split surfaces. One end is cut at 90° but is quite worn.	Y
255:203	Wood working waste	Good	Tangential	N/A	12	10	3	N/A	80-90	N/A	Chunk of tangentially split wood, surfaces are quite uneven but the edges are flat. One end is cut at 90/80°.	Y
256:1	Post	Excellent	N/A	Pencil	66	N/A	N/A	6.60	2	2-10	Pencil point with 3 adjacent faces and a portion unworked. 19 flat smooth facets max. L7.2; W2.8cm with clean & stepped junctions, typical long shallow point.	Y
257:1	Post	Good	N/A	Wedge	19	N/A	N/A	6	15	25	Wedge point, one face of which is roughly torn. The opposite is torn for a length of 11cm beyond which it is cut at 15° with 3 flat facets max. L6.5; W4.1cm. The junctions are clean and overall impression is of a very clean, sharp blade.	Y
258:1	Post	Excellent	N/A	Wedge	61	N/A	N/A	8	30-34	30-34	Uneven wedge point with 2 opposing faces. The smallest has 2 flat facets cut at 30° and clean junctions. The largest has 6 flat facets and clean junctions but is quite worn & rounded. Max. facet L6; W4.2cm.	Y
259:1	Post	Good	N/A	Chisel	27	N/A	N/A	6.80	25	25	Chisel point with 5 very flat facets max. L4.6; W2.2cm with clean & heavily stepped junctions. 1 partial jam-curve of a blade of min. W2.1cm with a slightly rounded corner. Simple enough woodworking.	Y
260:1	Post	Good	N/A	Wedge	33	N/A	N/A	7	N/A	N/A	Post cut to a wedge point with c. 8 facets. Described from field drawing only.	
261:1	Stake	Good	N/A	Pencil	36	N/A	N/A	5.40	5	5-8	Tip of a stake cut to a pencil point with 4 adjacent faces and portion unworked. 20 very smooth flat facets with clean & stepped junctions.	Y
262:1	Worked end	Good	N/A	Chisel	31	N/A	N/A	4	28	28	Chisel point with a single flat facet, simple woodworking.	Y
262:2	Worked end	Good	N/A	Chisel	25	N/A	N/A	5.40	70	21-70	Chisel point with 3 very flat facets max. L6; W5.2cm with clean junctions, nice simple worked end.	Y
262:4	Worked end	Good	N/A	Chisel	15	N/A	N/A	4	15	15	Brushwood cut to a chisel point at one end with a single facet. The opposite end is forked but both branches are cut off with flat facets, simple woodworking.	Y
262:5	Worked end	Good	N/A	Chisel	19	N/A	N/A	2.90	20	20	Chisel point with a single flat facet, simple woodworking.	Y
262:6	Worked end	Good	N/A	Wedge	17	N/A	N/A	3.40	2-50	2-50	Wedge point with 2 opposing faces at 50° & 2°, both are single flat facets, slightly worn & eroded, simple worked end.	Y

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
262:7	Worked end	Good	N/A	Chisel	33	N/A	N/A	5	25-30	25-30	Both ends cut to chisel points at 25 & 30°, quite rounded and worn.	
262:8	Wood working waste	Good	N/A	N/A	26	N/A	N/A	12	N/A	N/A	Chunk of roundwood worked at both ends and along one surface. One end is cut to a shallow point with c. 10 flat facets at 75-89°, incl. 2 partial jam-curves of a tool min. W5cm with a 90° corner & flat blade edge. Junctions are clean & heavily stepped junctions, some quite rounded and worn in appearance. The opposite end is worked in the same manner with c. 21 facets with heavy raised signatures. All facets are flat and at steep angles. 1 complete jam-curve of a tool W3.7cm with sharp 90° corners and a flat blade edge (chisel/gouge). There are 8 partial jam-curves of the same tool present. Along one side the roundwood has been trimmed flat for a length of 20cm.	Y
262:9	Worked end	Moderate	N/A	Chisel	35	N/A	N/A	3	10	10	Brushwood with broken chisel point with a single facet.	Y
262:10	Worked end	Good	N/A	Chisel	22	N/A	N/A	2	10	10	Brushwood cut to chisel point.	Y
262:11	Worked end	Good	N/A	Chisel	46	N/A	N/A	3.80	15	15-17	Gnarly crooked piece with 6 knots. Tip is cut to a chisel point with 4-5 flat facets max. L4.2; W3.8cm with very heavy stepped junctions. It is slightly eroded and the tip is damaged.	Y
262:12	Worked end	Good	N/A	Wedge	27	N/A	N/A	4	36	20-36	Wedge point with 2 adjacent faces, 4 flat facets, very eroded/rounded.	Y
262:13	Worked end	Good	N/A	Chisel	7	N/A	N/A	2.50	40	40	Chisel point with a single flat facet.	Y
262:14	Worked end	Good	N/A	Chisel	79	N/A	N/A	5.10	20	20	Chisel point with 4 flat facets, clean junctions, cracked and splitting.	Y
262:15	Split timber	Good	Radial	N/A	20	13	No record	N/A	N/A	N/A	Fragment of radial split, heavily worn and eroded, cut into L-shape at one end which could be the remains of a rectangular socket or a bare faced tenon. Heavy erosion suggests break in antiquity, no tool evidence.	Y
262:16	Worked end	Good	N/A	Chisel	28	N/A	N/A	3	25	25-40	Forked brushwood cut to a chisel point with 4 flat facets, clean & stepped junctions. Broken and eroded, simple woodworking.	Y
262:17	Worked end	Good	N/A	Chisel	50	N/A	N/A	5.80	23	20-23	Curved, knotty roundwood cut to a chisel point with 3 flat facets max. L5.5; W4cm. Clean & stepped junctions, quite simple woodworking.	Y
262:18	Wood working waste	Good	Radial-trimmed	N/A	18	11	8	N/A	40	40	Chunk of a trimmed radial, split surfaces quite flat and well split. One end is cut at 40° with 4 flat, slightly eroded facets incl. 1 partial jam-curve of a tool min. W2.1cm with a slightly curved blade and a 90° corner.	Y

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
262:19	Worked end	Good	N/A	Chisel	112	N/A	N/A	9	45	45	Gnarly roundwood with 6 knots. N end cut to a chisel point with 5 flat facets max. L5.5; W7cm, clean & stepped junctions. 1 partial jam-curve showing a straight blade edge and 90°corner.	Y
263:1	Stake	Poor	N/A	N/A	17	N/A	N/A	3	N/A	N/A	Fragmented into 10 pieces, possible metal cut facets along length.	Y
264:1	Stake	Good	N/A	Pencil	25	N/A	N/A	5	8	8-10	Pencil point with 4 faces and a portion unworked. 24 flat facets max. L4; W2.2m, clean & stepped junctions.	Y
265:1	Stake	Poor	N/A	Pencil	34	N/A	N/A	4.50	20	20	Pencil point with 6 faces, min. L1.9; max. L14.7cm. 12 flat facets max. L4.6; W2.5cm with clean & stepped junctions, raised signatures on one face.	Y
266:1	Stake	Moderate	N/A	Pencil	28	N/A	N/A	3.40	8	8-10	Pencil point with 3 adjacent faces and a portion unworked. 14 flat smooth facets max. L5.8; W2cm with clean & stepped junctions, some damage.	Y
267:1	Post	Good	N/A	Pencil	68	N/A	N/A	6.60	20	3-20	An uneven pencil point with 3 faces L6-3.7; W1.7-6.2cm and a portion unworked. The smallest face is a single facet. The medium face has 5 flat facets, clean & stepped junctions and a partial jam-curve of a tool min. W4cm with sharp 90° corners and a straight blade edge. The largest face as a stepped profile and is cut at 10-20°. It has 15 slightly concave facets, clean & stepped junctions and 2 partial jam-curves W4.3cm. Apart from the largest face the facets are generally flat and very clean indicating a good sharp blade. Lovely red/gold colour.	Y
268:1	Stake	Good	N/A	Pencil	36	N/A	N/A	2.90	12	12	Pencil point with 3 adjacent faces and a portion unworked. 13 small flat facets max. L4.2; W1.4cm with clean junctions.	Y
269:1	Stake	Good	N/A	Pencil	51	N/A	N/A	5.50	7	7-20	A beautiful pencil point with 3 adjacent faces L17-2.5cm and a portion unworked. 15 very flat facets max. L9.8; W2.2cm with clean & stepped junctions. Heavy signature pattern of raised lines 0.1cm wide, set 0.2 cm apart.	Y
270:1	Post	Excellent	N/A	Wedge	49	N/A	N/A	7.20	15	15-20	Beautifully worked wedge point with 2 adjacent faces L38-39cm and the tip cut flat. 21 flat facets max. L5; W4.1cm clean & stepped junctions. Lovely red/gold colour.	Y
271:1	Post	Good	N/A	Chisel	36	N/A	N/A	6	35	35-40	Chisel point with 3-4 flat facets max. L6; W5m with clean junctions, overall quite worn/eroded, tip is very rounded.	Y

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
272:1	Post	Good	N/A	Chisel	35	N/A	N/A	6.10	8	8-18	Chisel point with 14 flat facets max. L4.9; W4.7cm, with clean & heavily stepped junctions. 1 partial jam-curve min. W4.7m of a tool with a straight blade edge and a sharp 90° corner. The tip is broken, otherwise the condition is very good.	Y
273:1	Stake	Good	N/A	Chop & tear	54	N/A	N/A	2.40	15	15	Chop & tear with 2 flat facets max. L4; W2cm. Tear is L10.5cm but is broken, simple woodworking.	Y
274:1	Stake	Good	N/A	Wedge	33	N/A	N/A	4	27	20-27	Wedge point with 2 adjacent faces. Total of 9 flat facets max. L3.6; W1.8cm with clean junctions. Heavy raised signature pattern across one face.	Y
275:1	Stake	Moderate	N/A	N/A	7	N/A	N/A	4	N/A	N/A	Tip of a stake with flat facets on 3 adjacent faces and a portion unworked.	Y
276:1	Post	Good	N/A	Wedge	39	N/A	N/A	7	20	22	Wedge point with 2 adjacent faces. 15 flat facets max. L7.1; W4.1cm with clean & stepped junctions. Facets are generally quite flat & broad, slightly bigger than average.	Y
277:1	Post	Good	N/A	Pencil	30	N/A	N/A	6	7	7-15	Pencil point with 4 faces and a portion left unworked. 15 facets max. L5.5; W2.4cm with clean & stepped junctions. Faint raised signature pattern across all facets.	Y
278:1	Stake	Moderate	N/A	Pencil	38	N/A	N/A	3.50	3	3-10	Pencil point with 4 faces. Total of 9 flat facets max. L6.2; W2.5cm with clean junctions.	Y
279:1	Stake	Good	N/A	Pencil	33	N/A	N/A	3.90	24	15-24	Pencil point with 5 small faces. 11 very flat smooth facets max. L4.2; W3.2cm with clean junctions.	Y
280:1	Stake	Moderate	N/A	Pencil	31	N/A	N/A	5	10	10-15	Pencil point with 3 adjacent faces and a portion unworked. Total of 13 flat shallow facets max. L5.9; W3.2cm with clean & stepped junctions, all faces slightly worn but overall condition is quite good, slight damage to tip.	Y
281:1	Unworked wood	Poor	N/A	N/A	185	N/A	N/A	13	N/A	N/A	Unworked roundwood.	
281:2	Split timber	Moderate	Half-split	N/A	172	11	7	N/A	N/A	N/A	Half-split roundwood.	
282:1	Unworked wood	Good	N/A	N/A	41	N/A	N/A	13	N/A	N/A	Unworked roundwood.	
282:2	Split timber	Good	Radial	N/A	55	18	10	N/A	N/A	N/A	Radial split with smooth flat surfaces. N end is cut at 60° with 2-4 eroded facets with stepped junctions. S end is cut at 90° with 1 partial jam-curve W5.2cm with a rounded blade edge and a rounded 90° corner.	Y
282:3	Unworked wood	Moderate	N/A	N/A	46	N/A	N/A	8	N/A	N/A	Unworked roundwood with charring on one side.	
282:4	Unworked wood	Moderate	N/A	N/A	48	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
282:5	Split timber	Good	Irregular	N/A	87	5.50-8	6	N/A	N/A	N/A	Irregularly split timber.	
282:6	Split wood	Poor	Irregular	N/A	24.50	5.40	9	N/A	N/A	N/A	Small piece of split wood.	
282:7	Split timber	Good	Irregular	N/A	104	18	13	N/A	N/A	N/A	Irregularly split timber.	
282:8	Split wood	Poor	Irregular	N/A	40.50	7.70	7.70	N/A	N/A	N/A	Small piece of split wood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
283:1	Stake	Good	N/A	Chisel	34	N/A	N/A	5.20	20	15-20	Chisel point with 7 very flat facets max. L5.2; W3.2cm with clean and heavily stepped junctions. One edge broken.	Y
284:1	Post	Good	N/A	Wedge	18	N/A	N/A	5.60	42	32-42	Wedge point with 2 opposing faces each a single flat facets. Both are incomplete as tip is broken.	Y
285:1	Worked end	Good	N/A	Chisel	16	N/A	N/A	6	30	30	Gnarly piece of wood with a single flat facet, simple woodworking.	Y
286:1	Stake	Moderate	N/A	Wedge	18	N/A	N/A	4.30	30	25-50	One end cut to a broken wedge point at 25/30° with incomplete flat facets. The opposite end has a chop and tear mark with a single flat facet at 50°.	Y
287:1	Post	Good	N/A	Chisel	34	N/A	N/A	6.70	10	10-15	Chisel point with 5 flat facets max. L5.5; W6m with clean & stepped junctions. Very heavy raised signatures, red/gold colour, good example of a chisel point.	Y
288:1	Post	Moderate	N/A	Pencil	33	N/A	N/A	6.40	10-17	10-70	Tip only cut to a pencil point with 4 faces and a portion unworked. 21 facets with clean & stepped junctions, slightly worn.	Y
289:1	Stake	Poor	N/A	Pencil	10	N/A	N/A	4	N/A	N/A	Tip of stake appears to have been a pencil point with 4-5 faces all heavily damaged and eroded. Multiple incomplete flat facets.	Y
290:1	Stake	Very good	N/A	Pencil	68	N/A	N/A	5.40	5	5-40	Pencil point with 7 faces and the apex trimmed off. 22 flat clean facets max. L7.1; W2cm with clean junctions. Quite a stumpy point compared to majority, the apex is slightly damaged, raised signatures across all facets.	Y
291:1	Post	Excellent	N/A	Wedge	61	N/A	N/A	6.60	12	10-22	Wedge point with 2 adjacent faces. 20 clean flat facets max. L4.8; W4.4cm with clean & stepped junctions. Quite a typical long shallow point.	Y
292:1	Stake	Good	N/A	Pencil	24	N/A	N/A	3.60	10	10-12	Pencil point with 4 faces and a portion unworked. 6 flat facets max. L10; W2.3cm all slightly worn with clean junctions.	Y
293:1	Post	Good	N/A	Pencil	33	3.80	3.80	N/A	3	2-5	The tip of a post worked to a long narrow, shallow pencil point with 4 faces, L29cm. 25 facets max. L5.3; W3cm with clean & stepped junctions, broken in 3, typical elongated shape.	Y
294:1	Worked end	Good	N/A	Pencil	24	N/A	N/A	6.20	5	5	Probable tip of a post cut to a pencil point with 8 faces. 31 flat facets max. L10.4; W2cm with clean & stepped junctions. Quite worn and eroded, incomplete.	Y
295:1	Unworked wood	Good	N/A	N/A	278	N/A	N/A	10	N/A	N/A	Unworked roundwood.	
295:2	Worked end	Good	N/A	Wedge	85	N/A	N/A	6.50	10	10	Degraded wedge point, dry and cracked.	Y
295:3	Split timber	Poor	Irregular	N/A	95	7-14	6	N/A	N/A	N/A	Long thin piece of split timber probably broken from a larger element.	
295:4	Unworked wood	Poor	N/A	N/A	91.40	N/A	N/A	11.30	N/A	N/A	Unworked roundwood.	
295:5	Unworked wood	Poor	N/A	N/A	30	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
295:6	Split wood	Poor	Irregular	N/A	36.70	5	3.70	N/A	N/A	N/A	Small piece of split wood.	
295:7	Split wood	Poor	Irregular	N/A	24.10	4.20	3.40	N/A	N/A	N/A	Small piece of split wood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
295:8	Unworked wood	Moderate	N/A	N/A	170	N/A	N/A	9	N/A	N/A	Unworked roundwood.	
295:9	Split wood	Poor	Irregular	N/A	39.70	6.20	3.50	N/A	N/A	N/A	Split wood.	
296:1	Post	Good	N/A	Pencil	72	N/A	N/A	5.70	20	20	Pencil point with 3 adjacent faces and a small portion unworked. 6 facets max. L4.5; W4cm with clean junctions, all are slightly worn. Simple wood working.	Y
297:1	Unworked wood	Moderate	N/A	N/A	148.50	N/A	N/A	6.30	N/A	N/A	Unworked crooked roundwood.	
297:2	Unworked wood	Poor	N/A	N/A	65.70	N/A	N/A	4.60	N/A	N/A	Piece of unworked brushwood.	
297:3	Unworked wood	Poor	N/A	N/A	202	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
297:4	Split wood	Poor	Irregular	N/A	33.30	4	1	N/A	N/A	N/A	Small piece of split wood.	
297:5	Unworked wood	Good	N/A	N/A	56	N/A	N/A	8.70	N/A	N/A	Unworked roundwood.	
297:6	Unworked wood	Poor	N/A	N/A	60	N/A	N/A	3.90	N/A	N/A	Piece of unworked brushwood.	
297:7	Unworked wood	Poor	N/A	N/A	32.60	N/A	N/A	6.20	N/A	N/A	Unworked roundwood.	
297:8	Unworked wood	Poor	N/A	N/A	78.70	N/A	N/A	5.70	N/A	N/A	Unworked forked roundwood.	
297:9	Unworked wood	Poor	N/A	N/A	19	9	5	N/A	N/A	N/A	Unworked irregularly shaped charred roundwood.	
297:10	Split wood	Poor	Quarter split	N/A	26	10	5	N/A	N/A	N/A	Small piece of 1/4 split wood.	
297:11	Unworked wood	Good	N/A	N/A	176	N/A	N/A	7	N/A	N/A	Unworked charred roundwood.	
297:12	Split wood	Poor	Half-split	N/A	39.50	4.60	3.40	N/A	N/A	N/A	Half-split brushwood.	
297:13	Split wood	Good	Irregular	N/A	23.40	12.30	2.50	N/A	N/A	N/A	Small piece of split wood.	
297:14	Split wood	Poor	Irregular	N/A	30.10	4.70	3.20	N/A	N/A	N/A	Small piece of split wood.	
297:15	Split wood	Moderate	Irregular	N/A	40	13	No record	N/A	N/A	N/A	Small piece of split wood, possibly a natural split.	
297:16	Split wood	Poor	Tangential	N/A	31.40	8.10	2.30	N/A	N/A	N/A	Small piece of split wood.	
297:17	Split wood	Very poor	Radial	N/A	19.10	6.20	3.20	N/A	N/A	N/A	Small piece of split wood.	
297:18	Split wood	Moderate	Irregular	N/A	40	No record	No record	N/A	N/A	N/A	Small piece of split wood, possibly a natural split.	
297:19	Split wood	Poor	Irregular	N/A	28	6	2	N/A	N/A	N/A	Small piece of split wood.	
297:20	Unworked wood	Moderate	N/A	N/A	66	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
297:21	Split wood	Poor	Irregular	N/A	55.90	1.50	5	N/A	N/A	N/A	Small piece of split wood.	
297:22	Split wood	Poor	Irregular	N/A	23	3	No record	N/A	N/A	N/A	Small piece of split wood.	
297:23	Split wood	Very poor	Irregular	N/A	13	3	2	N/A	N/A	N/A	Small piece of split wood.	
297:24	Worked end	Poor	N/A	Chisel	97	N/A	N/A	6.70	30	30	Gnarly roundwood with a degraded chisel point with 1-2 facets.	Y
297:25	Unworked wood	Moderate	N/A	N/A	49	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
297:26	Unworked wood	Good	N/A	N/A	45	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
297:27	Split wood	Very poor	Irregular	N/A	39.60	6.20	2.80	N/A	N/A	N/A	Small piece of split wood.	
297:28	Split wood	Poor	Irregular	N/A	25.20	5.80	1.90	N/A	N/A	N/A	Small piece of split wood.	
297:29	Unworked wood	Good	N/A	N/A	66	N/A	N/A	7	N/A	N/A	Unworked roundwood.	
297:30	Worked end	Poor	N/A	Chisel	123	N/A	N/A	9.40	50	50	N end cut to a chisel point with 5 flat facets with stepped junctions.	Y
297:31	Split wood	Poor	Irregular	N/A	17.20	5.30	1.80	N/A	N/A	N/A	Small piece of split wood.	
297:32	Unworked wood	Poor	N/A	N/A	49	N/A	N/A	4.30	N/A	N/A	Piece of unworked brushwood.	
297:33	Unworked wood	Poor	N/A	N/A	130	N/A	N/A	15	N/A	N/A	Unworked roundwood.	
297:34	Unworked wood	Poor	N/A	N/A	112.90	N/A	N/A	6	N/A	N/A	Unworked roundwood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
297:35	Unworked wood	Poor	N/A	N/A	20	13	5	N/A	N/A	N/A	Chunk of irregular gnarly wood.	
297:36	Split wood	Very poor	Irregular	N/A	9	4	1	N/A	N/A	N/A	Small piece of split wood.	
297:37	Split wood	Poor	Half-split	N/A	35	7	4	N/A	N/A	N/A	Half-split roundwood.	
297:38	Unworked wood	Poor	N/A	N/A	70	N/A	N/A	6.40	N/A	N/A	Unworked roundwood.	
297:39	Split wood	Very poor	Irregular	N/A	20.40	3.10	0.10	N/A	N/A	N/A	Small piece of split wood.	
297:40	Split wood	Very poor	Irregular	N/A	19.10	2.20	1.30	N/A	N/A	N/A	Small piece of split wood.	
297:41	Split wood	Very poor	Half-split	N/A	23	4	3	N/A	N/A	N/A	Half-split brushwood.	
297:42	Unworked wood	Moderate	N/A	N/A	122.50	9.30	4.30	N/A	N/A	N/A	Irregular unworked roundwood.	
297:43	Worked end	Very good	N/A	Chisel	79	N/A	N/A	4.20	30	30	A piece of brushwood one end of which is forked and both branches were probably trimmed but are very worn and rounded now. The opposite end is cut to a chisel point with 2 flat facets with a stepped junction, again slightly worn. Simple woodworking.	Y
297:44	Unworked wood	Poor	N/A	N/A	61	N/A	N/A	5	N/A	N/A	Unworked roundwood.	
297:45	Unworked wood	Poor	N/A	N/A	49	N/A	N/A	7	N/A	N/A	Unworked roundwood.	
297:46	Split wood	Poor	Tangential	N/A	30	4	2	N/A	N/A	N/A	Small piece of split wood.	
297:47	Unworked wood	Good	N/A	N/A	30	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
297:48	Unworked wood	Very poor	N/A	N/A	23	2	4	N/A	N/A	N/A	Unworked degraded roundwood.	
297:49	Split wood	Very poor	Irregular	N/A	18	5	5	N/A	N/A	N/A	Small piece of split wood.	
297:50	Unworked wood	Moderate	N/A	N/A	36	5	5	9	N/A	N/A	Unworked roundwood.	
297:51	Unworked wood	Poor	N/A	N/A	62	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
297:52	Unworked wood	Poor	N/A	N/A	66.20	N/A	N/A	6.80	N/A	N/A	Unworked roundwood.	
297:53	Split wood	Poor	Half-split	N/A	37	7	3	N/A	N/A	N/A	Small piece of split wood.	
297:54	Split wood	Poor	Tangential	N/A	25	10	1	N/A	N/A	N/A	Small piece of split wood.	
297:55	Split timber	Poor	Tangential	N/A	66	15.20	7.50	N/A	N/A	N/A	Tangentially split timber.	
297:56	Split wood	Very poor	Irregular	N/A	19	5	3	N/A	N/A	N/A	Small piece of split wood.	
297:57	Unworked wood	Poor	N/A	N/A	32	N/A	N/A	2	N/A	N/A	Piece of unworked brushwood.	
297:58	Unworked wood	Moderate	N/A	N/A	55	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
297:59	Unworked wood	Poor	N/A	N/A	17	8	2	N/A	N/A	N/A	A small piece of burnt wood.	
297:60	Split wood	Poor	Irregular	N/A	21	5	5	N/A	N/A	N/A	Small piece of split wood.	
298:1	Split wood	Poor	Half-split	N/A	48.80	7.80	3.70	N/A	N/A	N/A	Half-split roundwood.	
298:2	Unworked wood	Poor	N/A	N/A	21.50	N/A	N/A	1.60	N/A	N/A	Piece of unworked brushwood.	
298:3	Unworked wood	Very poor	N/A	N/A	65.70	N/A	N/A	5.90	N/A	N/A	Unworked roundwood.	
298:4	Unworked wood	Moderate	N/A	N/A	121	N/A	N/A	8-13	N/A	N/A	Unworked roundwood.	
298:5	Split timber	Poor	Tangential	N/A	175	51	7	N/A	N/A	N/A	Large burnt tangentially split timber.	
298:6	Unworked wood	Very poor	N/A	N/A	68.90	N/A	N/A	4.50	N/A	N/A	Piece of unworked brushwood.	
298:7	Unworked wood	Good	N/A	N/A	103	N/A	N/A	7	N/A	N/A	Unworked roundwood.	
298:8	Unworked wood	Poor	N/A	N/A	178	10	3.70	N/A	N/A	N/A	Heavily fragmented roundwood.	
298:9	Unworked wood	Poor	N/A	N/A	9.10	N/A	N/A	9	N/A	N/A	Unworked roundwood.	
298:10	Unworked wood	Poor	N/A	N/A	220	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
298:11	Worked end	Good	N/A	Pencil	71	N/A	N/A	6.20	5	5-8	Pencil point with 6 faces. 26 flat facets max. L12.2; W3.6cm with clean & worn junctions. Overall quite worn, tip is rounded.	Y
298:12	Bark	Moderate	N/A	N/A	19.50	9.50	1.70	N/A	N/A	N/A	Bark fragment.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
298:13	Unworked wood	Poor	N/A	N/A	224	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
298:14	Split timber	Poor	Irregular	N/A	145.90	13.50	6	N/A	N/A	N/A	Appears to be boxed heart conversion but condition very poor, S end has a degraded wedge point. 19cm from this in the edge of the timber is a possible semicircular notch (Diam. 5cm). The N end is also cut to a wedge point and is very degraded.	Y
298:15	Split wood	Poor	Half-split	N/A	42	7	6	N/A	N/A	N/A	Half-split roundwood.	
298:16	Split wood	Poor	Irregular	N/A	15.20	8.70	1.30	N/A	N/A	N/A	Small piece of split wood.	
298:17	Split wood	Poor	Radial	N/A	18	5	2	N/A	N/A	N/A	Small piece of split wood.	
298:18	Worked end	Good	N/A	Chisel	105	N/A	N/A	4.50	30	20	Heavily degraded chisel point with a single facet.	Y
298:19	Worked end	Poor	N/A	N/A	23	N/A	N/A	3.30	N/A	N/A	Brushwood with the remains of 2 flat facets at one end. Degraded and incomplete.	Y
298:20	Unworked wood	Good	N/A	N/A	85	N/A	N/A	2.50	N/A	N/A	Piece of unworked brushwood.	
298:21	Unworked wood	Very poor	N/A	N/A	39	N/A	N/A	3.50	N/A	N/A	Piece of unworked brushwood.	
298:22	Worked end	Good	N/A	Chisel	41	N/A	N/A	4.10	25	25	Degraded chisel point with 3 flat facets, simple woodworking	Y
298:23	Worked end	Poor	N/A	Pencil	36	N/A	N/A	5.60	5	2-5	Broken pencil point with 5-6 faces, one is heavily degraded. 9 flat facets max. L8.4; W2.8cm, junctions clean but rounded.	Y
298:24	Split timber	Good	Tangential	N/A	75	5-11	5-7	N/A	N/A	N/A	Small split timber.	
298:25	Split wood	Poor	Tangential	N/A	41.80	14.20	3.20	N/A	N/A	N/A	Small piece of split wood.	
298:26	Worked end	Poor	N/A	Wedge	47	N/A	N/A	6	30	30	Degraded with wedge point, cracked and broken.	
298:27	Split wood	Poor	Irregular	N/A	26	8	5.50	N/A	N/A	N/A	Small piece of split wood.	
298:28	Worked end	Moderate	N/A	Chisel	182.50	N/A	N/A	4.50	32	32	S end cut to a chisel point with 2 degraded facets, simple woodworking.	Y
298:29	Unworked wood	Poor	N/A	N/A	13.50	N/A	N/A	2.50	N/A	N/A	Piece of unworked brushwood.	
298:30	Split wood	Poor	Tangential	N/A	45.50	6.20	0.80	N/A	N/A	N/A	Small piece of split wood.	
298:31	Split wood	Poor	Irregular	N/A	19.60	2	1	N/A	N/A	N/A	Small piece of split wood.	
298:32	Unworked wood	Good	N/A	N/A	160	N/A	N/A	7	N/A	N/A	Unworked roundwood.	
298:33	Unworked wood	Poor	N/A	N/A	70	N/A	N/A	10	N/A	N/A	Unworked roundwood.	
298:35	Split wood	Poor	Irregular	N/A	27	5.50	4.80	N/A	N/A	N/A	Small piece of split wood.	
298:36	Split wood	Good	Quarter split	N/A	32	7	9-13	N/A	N/A	N/A	1/4 split roundwood.	
298:37	Unworked wood	Poor	N/A	N/A	90.20	N/A	N/A	3.50	N/A	N/A	Piece of unworked brushwood.	
298:38	Unworked wood	Poor	N/A	N/A	54	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
298:39	Worked end	Poor	N/A	Chisel	29	N/A	N/A	2.10	10	10	Piece of curved brushwood cut to a chisel point with a single flat facet L3.5; W1.5cm. There is a tear along length of the element.	Y
298:40	Unworked wood	Good	N/A	N/A	29	N/A	N/A	6	N/A	N/A	Unworked roundwood.	
298:41	Split wood	Poor	Irregular	N/A	13.20	1.90	1.10	N/A	N/A	N/A	Small fragment of split brushwood.	
298:42	Unworked wood	Good	N/A	N/A	59	N/A	N/A	2	N/A	N/A	Piece of unworked brushwood.	
298:43	Unworked wood	Good	N/A	N/A	45	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
298:44	Split wood	Poor	Irregular	N/A	21.70	5	3.50	N/A	N/A	N/A	Small piece of split wood.	
298:45	Unworked wood	Good	N/A	N/A	52	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
298:46	Unworked wood	Good	N/A	N/A	34	N/A	N/A	2	N/A	N/A	Piece of unworked brushwood.	
298:47	Unworked wood	Poor	N/A	N/A	16.70	N/A	N/A	1.60	N/A	N/A	Piece of unworked brushwood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
298:48	Unworked wood	Very poor	N/A	N/A	24.20	N/A	N/A	2.20	N/A	N/A	Piece of unworked brushwood.	
298:49	Unworked wood	Good	N/A	N/A	75	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
298:50	Split wood	Moderate	Half-split	N/A	28.20	1.70	4	N/A	N/A	N/A	Half-split brushwood.	
298:51	Unworked wood	Moderate	N/A	N/A	42	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
298:52	Unworked wood	Poor	N/A	N/A	53.70	N/A	N/A	2.40	N/A	N/A	Piece of unworked brushwood.	
298:53	Unworked wood	Good	N/A	N/A	43	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
298:54	Unworked wood	Good	N/A	N/A	64	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
298:55	Worked end	Good	N/A	N/A	47	N/A	N/A	2.90	N/A	N/A	Forked brushwood with each branch cut to a chisel point with single flat facets.	
298:56	Unworked wood	Poor	N/A	N/A	34.90	N/A	N/A	2.60	N/A	N/A	Piece of unworked brushwood.	
298:57	Unworked wood	Good	N/A	N/A	58	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
298:58	Worked end	Good	N/A	Chisel	33	N/A	N/A	2.30	30	30	Chisel point with a single flat facet and evidence of branch trimming.	Y
298:59	Split wood	Good	Half-split	N/A	14.40	3.20	1.60	N/A	N/A	N/A	Half-split brushwood.	
298:60	Unworked wood	Poor	N/A	N/A	28.10	N/A	N/A	2.30	N/A	N/A	Piece of unworked brushwood.	
298:61	Unworked wood	Poor	N/A	N/A	21.70	4.30	2.30	N/A	N/A	N/A	Piece of crooked unworked brushwood.	
298:62	Unworked wood	Poor	N/A	N/A	48.70	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
298:63	Unworked wood	Good	N/A	N/A	28	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
298:64	Split wood	Poor	Half-split	N/A	17.50	12.80	1.20	N/A	N/A	N/A	Half-split roundwood.	
298:65	Unworked wood	Poor	N/A	N/A	38.40	N/A	N/A	2.20	N/A	N/A	Piece of unworked brushwood.	
298:66	Unworked wood	Poor	N/A	N/A	39	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
298:67	Unworked wood	Good	N/A	N/A	43	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
298:68	Unworked wood	Poor	N/A	N/A	55.40	N/A	N/A	3.10	N/A	N/A	Piece of unworked brushwood.	
298:69	Worked end	Good	N/A	Chisel	47	N/A	N/A	3.20	30	30	Chisel point with a single flat facet, simple woodworking.	Y
298:70	Worked end	Good	N/A	Wedge	49	N/A	N/A	3.20	30-40	30-40	A small wedge point with 2 opposing faces at 30/40°, each is a single worn facet.	Y
298:71	Unworked wood	Moderate	N/A	N/A	27	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
298:72	Unworked wood	Poor	N/A	N/A	14.60	N/A	N/A	1.60	N/A	N/A	Unworked roundwood, root like.	
298:73	Unworked wood	Moderate	N/A	N/A	72	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
298:74	Worked end	Good	N/A	Chisel	83	N/A	N/A	3.20	N/A	N/A	Piece of knotty brushwood with a damaged chisel point at one end and a tear at the opposite end. There is a spiralling indentation around the length of the piece as the result of Honeysuckle or similar creeper.	Y
298:75	Unworked wood	Good	N/A	N/A	63	N/A	N/A	2.50-3.50	N/A	N/A	Piece of unworked brushwood.	
298:76	Unworked wood	Good	N/A	N/A	69	N/A	N/A	3.50	N/A	N/A	Piece of unworked brushwood.	
298:77	Unworked wood	Good	N/A	N/A	68	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
298:78	Unworked wood	Good	N/A	N/A	58	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
298:79	Worked end	Poor	N/A	Chisel	41.30	N/A	N/A	3.40	N/A	N/A	Degraded and cracked chisel point, simple woodworking.	Y
298:80	Unworked wood	Poor	N/A	N/A	47	N/A	N/A	2.80	N/A	N/A	Piece of unworked brushwood.	
298:81	Unworked wood	Good	N/A	N/A	74	N/A	N/A	5	N/A	N/A	Piece of unworked forked brushwood.	
298:82	Unworked wood	Poor	N/A	N/A	50.10	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
298:83	Unworked wood	Poor	N/A	N/A	30.30	N/A	N/A	2.70	N/A	N/A	Piece of unworked brushwood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
298:84	Unworked wood	Moderate	N/A	N/A	88	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
298:85	Worked end	Moderate	N/A	Pencil	26	N/A	N/A	7.50	4	4	Degraded pencil point, 1 face is simply torn but the remaining 6 are cut. All facets cracked and worn.	Y
298:86	Worked end	Moderate	N/A	Chisel	61	N/A	N/A	5	N/A	N/A	Chisel point with a single facet.	
298:87	Unworked wood	Good	N/A	N/A	104	N/A	N/A	8	N/A	N/A	Unworked roundwood.	
298:88	Worked end	Poor	N/A	Wedge	107	N/A	N/A	3	N/A	N/A	Wedge point with 2 adjacent faces.	
298:89	Worked end	Good	N/A	Chisel	47	N/A	N/A	2.50	30	30	Chisel point with a single facet, very straight but knotty piece of wood.	Y
298:90	Unworked wood	Poor	N/A	N/A	41	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
298:91	Unworked wood	Poor	N/A	N/A	25.50	N/A	N/A	3.30	N/A	N/A	Piece of unworked brushwood.	
298:92	Unworked wood	Poor	N/A	N/A	21.40	N/A	N/A	1.40	N/A	N/A	Piece of unworked brushwood.	
298:93	Unworked wood	Good	N/A	N/A	51	N/A	N/A	8	N/A	N/A	Gnarly unworked piece of brushwood.	
298:94	Unworked wood	Very poor	N/A	N/A	11	6.20	2.50	N/A	N/A	N/A	Small piece of rotted wood.	
298:95	Worked end	Good	N/A	Chisel	46	N/A	N/A	3	N/A	N/A	Chisel point with a single facet.	
298:96	Worked end	Moderate	N/A	Wedge	44.10	N/A	N/A	4	N/A	N/A	Wedge point with 2 opposing faces.	
298:97	Worked end	Poor	N/A	Chisel	69.20	N/A	N/A	2.30	30	30	Chisel point with a single broken facet, simple woodworking.	Y
298:98	Worked end	Poor	N/A	Chisel	26.60	N/A	N/A	2.30	10	10	Chisel point with a single flat facet.	Y
298:99	Unworked wood	Good	N/A	N/A	24	N/A	N/A	3	N/A	N/A	Piece of unworked brushwood.	
298:100	Unworked wood	Poor	N/A	N/A	17.20	N/A	N/A	1.70	N/A	N/A	Piece of unworked brushwood.	
298:101	Worked end	Poor	N/A	chisel	53.30	N/A	N/A	2.20	N/A	N/A	Chisel point with a single facet.	
298:102	Unworked wood	poor	N/A	N/A	47.50	N/A	N/A	2.90	N/A	N/A	Piece of unworked brushwood.	
298:103	Unworked wood	Moderate	N/A	N/A	440	N/A	N/A	8	N/A	N/A	Unworked roundwood.	
298:104	Wood working waste	Poor	Radial	N/A	20	11.80	2.20	N/A	N/A	10-80	A very thin radial split, both ends trimmed off with flat facets at 10/80°, quite degraded.	Y
298:105	Split timber	Very poor	Half-split	N/A	163	13	7.80	N/A	N/A	N/A	Heavily fragmented half-split timber.	
298:106	Unworked wood	Good	N/A	N/A	108	N/A	N/A	5	N/A	N/A	Piece of unworked burnt brushwood.	
298:107	Worked end	Poor	N/A	N/A	26	3.20-5.50	N/A	N/A	5	5	Very degraded worked end, may have been wedge or pencil point, incomplete and damaged.	Y
298:108	Unworked wood	Poor	N/A	N/A	43.40	N/A	N/A	2.40	N/A	N/A	Piece of unworked brushwood.	
298:109	Unworked wood	Poor	N/A	N/A	31.80	N/A	N/A	5.10	N/A	N/A	Piece of unworked brushwood.	
298:110	Unworked wood	Good	N/A	N/A	33	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
298:111	Worked end	Poor	N/A	Chisel	21	N/A	N/A	3.80	60	60	Chisel point with multiple eroded facets.	Y
298:112	Unworked wood	Poor	N/A	N/A	34.20	N/A	N/A	1.40	N/A	N/A	Piece of unworked brushwood.	
298:113	Unworked wood	Very poor	N/A	N/A	35.80	5.60	4	N/A	N/A	N/A	Small piece of heavily degraded wood.	
298:114	Split wood	Poor	Half-split	N/A	28	5	30.20	N/A	N/A	N/A	Half-split brushwood.	
298:115	Unworked wood	Poor	N/A	N/A	37	N/A	N/A	2.60	N/A	N/A	Piece of unworked brushwood.	
298:116	Worked end	Good	N/A	Chisel	24	N/A	N/A	2.80	20	20	Broken chisel point with a flat incomplete facet.	Y
298:117	Unworked wood	Very poor	N/A	N/A	39.50	7	3.40	N/A	N/A	N/A	Piece of heavily degraded wood.	
298:118	Unworked wood	Poor	N/A	N/A	42.40	N/A	N/A	2.80	N/A	N/A	Piece of unworked brushwood.	
298:119	Worked end	Poor	N/A	Pencil	58	N/A	N/A	6.40	2-3	2-3	Pencil point with 4 faces and 9 flat facets, all eroded and damaged.	Y
298:120	Unworked wood	Poor	N/A	N/A	53	N/A	N/A	2.60	N/A	N/A	Piece of unworked brushwood.	
298:121	Unworked wood	Poor	N/A	N/A	16.10	N/A	N/A	2.20	N/A	N/A	Piece of unworked brushwood.	

Find No.	Classification	Condition	Conversion	Point Type	L (cm)	W (cm)	D (cm)	Diam. (cm)	Angle of point	Cutting angles	Description	CMM
298:122	Unworked wood	Poor	N/A	N/A	32.50	N/A	N/A	2.30	N/A	N/A	Piece of unworked brushwood.	
298:123	Unworked wood	Moderate	N/A	N/A	255	N/A	N/A	14	N/A	N/A	Unworked roundwood.	
298:124	Worked end	Good	N/A	Wedge	55	N/A	N/A	3.80	N/A	N/A	Cracked and degraded wedge point, simple woodworking.	Y
298:125	Worked end	Moderate	N/A	Wedge	130	N/A	N/A	3.50	20	20	Wedge point with 2 faces. 1 is a single flat facet at 20° the opposite is a tear, simple woodworking.	Y
298:126	Wood working waste	Good	Irregular	N/A	18	11	5	N/A	N/A	65-75	Large irregularly split wood chip. One end is cut at 65° with 4 flat facets, stepped junctions and a partial jam-curve of a tool min. W5.3cm, with a slightly rounded blade edge and a 90° corner. The opposite end is cut at 75°, 3 flat facets. All toolmarks rounded and worn.	Y
298:127	Split wood	Poor	Half-split	N/A	14	5	4	N/A	N/A	N/A	Half-split brushwood.	
298:128	Unworked wood	Poor	N/A	N/A	144	N/A	N/A	11.30	N/A	N/A	Unworked roundwood.	
298:129	Unworked wood	Poor	N/A	N/A	50	N/A	N/A	4	N/A	N/A	Piece of unworked brushwood.	
298:130	Worked end	Poor	N/A	Chisel	55.60	N/A	N/A	3.40	N/A	N/A	Degraded chisel point consisting of a chop and tear.	Y
298:131	Split timber	Poor	Irregular	N/A	50.90	3.40	6.80	N/A	N/A	N/A	Small piece of split timber, possibly a tangential split.	
298:132	Split wood	Poor	Tangential	N/A	25.20	5.30	2.10	N/A	N/A	N/A	Small piece of split wood.	
298:134	Unworked wood	Poor	N/A	N/A	27.20	N/A	N/A	2.50	N/A	N/A	Piece of unworked brushwood.	
298:135	Unworked wood	Poor	N/A	N/A	184	N/A	N/A	13	N/A	N/A	Unworked roundwood.	
298:136	Unworked wood	Moderate	N/A	N/A	70	N/A	N/A	9	N/A	N/A	Unworked burnt roundwood.	
298:137	Unworked wood	Good	N/A	N/A	240	N/A	N/A	23	N/A	N/A	Unworked roundwood.	
298:138	Unworked wood	Poor	N/A	N/A	28.20	N/A	N/A	3.30	N/A	N/A	Piece of unworked brushwood.	
298:139	Unworked wood	Poor	N/A	N/A	43.30	N/A	N/A	3.30	N/A	N/A	Piece of unworked brushwood.	
298:140	Unworked wood	Good	N/A	N/A	124	N/A	N/A	5	N/A	N/A	Piece of unworked brushwood.	
298:141	Split timber	Poor	Irregular	N/A	107	9	10	N/A	N/A	N/A	Burnt timber, irregular conversion.	
298:142	Unworked wood	Good	N/A	N/A	130	N/A	N/A	10	N/A	N/A	Unworked roundwood.	
350:1	Worked end	Good	N/A	Chisel	25	N/A	N/A	3.80	4	4	Chisel point with 3 very flat facets max. L4.9; W2.6cm, clean & stepped junctions.	Y
351:1	Worked end	Good	N/A	Chisel	15	N/A	N/A	4.90	20	20-23	Chisel point with 2-3 flat, slightly eroded facets max. L6.8; W4.2cm with clean & stepped junctions, simple worked end.	Y
352:1	Stake	Poor	N/A	Wedge	36	N/A	N/A	4	35	35	Wedge point with 2 opposing faces each a single facet, but very rounded & worn, simple woodworking.	Y
353:1	Stake	Poor	N/A	Chisel	26	N/A	N/A	3.20	32	32	Cracked & degraded chisel point.	Y
354:1	Stake	Good	N/A	Pencil	30	N/A	N/A	3.30	5	5-10	Pencil point with 5 faces, 15 facets max. L6.7; W1.9cm, clean junctions, typical long narrow point.	Y

Appendix 4: Wood species analysis results from Annaholty Site 8: Phase 1 (298)

Timber No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
298:1	298	552	Split wood	Quercus sp. (oak)	-	41	1 - 2	
298:2	298	779	Unworked brushwood	Quercus sp. (oak)	63	54	1 - 1.5	
298:3	298	643	Unworked roundwood	Quercus sp. (oak)	42	68	0.3 - 0.6	
298:4	298	780	Unworked rounwood	Quercus sp. (oak)	66	46	1.5 - 3	
298:5	298	423	Split timber	Quercus sp. (oak)	-	39	1 - 2.2	
298:6	298	781	Unworked brushwood	Quercus sp. (oak)	41	48	0.5 - 1	
298:7	298	459	Unworked roundwood	Quercus sp. (oak)	60	41	1 - 2	
298:8	298	460	Unworked roundwood	Quercus sp. (oak)	-	37	1 - 2	
298:9	298	-	Unworked roundwood	Quercus sp. (oak)	16	10+	0.5 - 2	
298:10	298	644	Unworked roundwood	Quercus sp. (oak)	40	52	0.5 - 1	
298:11	298	-	Pencil pint	Fraxinus excelsior (ash)	43	82	0.5	
298:12	298	782	Bark fragment	cf Quercus sp.	-	-	-	Degraded
298:13	298	461	Unworked brushwood	Quercus sp. (oak)	40	46	0.5 - 1	
298:14	298	645	Split timber	Quercus sp. (oak)	-	50-53	0.5 - 2	
298:15	298	462	Split wood	Pomoideae cf sorbus (rowan)	60	31	1 - 3	
298:16	298	646	Split wood	Quercus sp. (oak)	28 (rad)	24	0.5 - 1	
298:17	298	783	Split wood	Pomoideae spp.	-	18-20	0.5 - 0.8	
298:18	298	647	Chisel point	Salix sp. (willow)	23	8	3 - 4	Coppiced
298:19	298	648	Worked brushwood	Fraxinus excelsior (ash)	28	10	2 - 2.5	
298:20	298	553	Unworked brushwood	Corylus avellana (hazel)	-	16	0.5 - 1	
298:21	298	784	Unworked brushwood	Corylus avellana (hazel)	-	15	0.8 - 1.2	
298:22	298	-	Chisel point	Quercus sp. (oak)	40	8	2 - 3	
298:23	298	-	Pencil point	Quercus sp. (oak)	54	14-16	2 - 3	
298:24	298	649	Split timber	Quercus sp. (oak)	80 (rad)	48	0.2 - 2	
298:25	298	650	Split wood	Quercus sp. (oak)	-	86	0.3 - 4	
298:26	298	-	Wedge point	Sorbus sp. (rowan)	62	36-40	1 - 2.5	
298:27	298	651	Split wood	Quercus sp. (oak)	-	18	2 - 2.5	
298:28	298	385	Chisel point	Sorbus sp. (rowan)	43	19	1 – 2	Two ID’s made
298:28	298	385	Chisel point	Salix sp. (willow)	40	21	0.5 - 2	
298:29	298	554	Unworked brushwood	Corylus avellana (hazel)	26	16	1 - 2	
298:30	298	785	Split wood	Quercus sp. (oak)	-	34	1 – 2	Degraded

Timber No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
298:31	298	786	Split wood	Quercus sp. (oak)	11 (rad)	11	1	Degraded
298:32	298	652	Unworked roundwood	Quercus sp. (oak)	76	68	0.5 -1.5	
298:33	298	787	Unworked roundwood	Betula sp. (birch)	-	-	-	Degraded
298:34	298	-						Same as 298:28
298:35	298	788	Split wood	Quercus sp. (oak)	52 (rad)	38	1 - 1.5	
298:36	298	555	Split wood	Quercus sp. (oak)	-	25	2 - 3	
298:37	298	556	Unworked brushwood	Corylus avellana (hazel)	35	21	1 - 2	
298:38	298	789	Unworked brushwood	Corylus avellana (hazel)	22	13	1 - 1.2	
298:39	298	-	Chisel point	Corylus avellana (hazel)	18	8	1 – 2	Coppiced
298:40	298	653	Unworked roundwood	Quercus sp. (oak)	57	72	0.8 - 1.5	
298:41	298	654	Split brushwood	Corylus avellana (hazel)	12	14	0.5 - 0.8	
298:42	298	655	Unworked brushwood	Corylus avellana (hazel)	24	16	1 - 2	
298:43	298	790	Unworked brushwood	Corylus avellana (hazel)	30	16	1 - 1.4	
298:44	298	656	Split wood	Quercus sp. (oak)	35	48	0.4 - 0.6	
298:45	298	657	Unworked brushwood	Corylus avellana (hazel)	25	14	0.5 - 1	
298:46	298	658	Unworked brushwood	Corylus avellana (hazel)	18	8	1 - 2	
298:47	298	791	Unworked brushwood	Pomoideae spp.	20	20	1	
298:48	298	659	Unworked brushwood	Corylus avellana (hazel)	16	8	1 - 1.2	
298:49	298	660	Unworked brushwood	Salix sp. (willow)	22	13	0.8 - 1	
298:50	298	557	Half-Split brushwood	Salix sp. (willow)	39	18	2	
298:51	298	661	Unworked brushwood	Corylus avellana (hazel)	25	10	1 - 2	
298:52	298	662	Unworked brushwood	Corylus avellana (hazel)	24	11	1 - 2	
298:53	298	663	Unworked brushwood	Corylus avellana (hazel)	31	8	2 - 4	Coppiced
298:54	298	664	Unworked brushwood	Corylus avellana (hazel)	24	13	1 - 2	
298:55	298	-	Brushwood branch cut to chisel point	Corylus avellana (hazel)	25	13	1 - 2	Coppiced
298:56	298	558	Unworked brushwood	Corylus avellana (hazel)	20	12	0.8 - 1	
298:57	298	665	Unworked brushwood	Corylus avellana (hazel)	23	13	1 - 2	
298:58	298	-	Chisel point	Corylus avellana (hazel)	21	15	0.5 - 1.5	Coppiced
298:59	298	666	Half split brushwood	Corylus avellana (hazel)	27	15	1 - 2	
298:60	298	667	Unworked brushwood	Corylus avellana (hazel)	26	11	2 - 2.5	
298:61	298	559	Unworked brushwood	Quercus sp. (oak)	2	11	1 - 1.5	
298:62	298	792	Unworked brushwood	Quercus sp. (oak)	26 (rad)	6	4 - 5	
298:63	298	793	Unworked brushwood	Corylus avellana (hazel)	28	9	1.5 - 2.5	
298:64	298	560	Half-split roundwood	Corylus avellana (hazel)	13 (rad)	7	1 - 1.5	Coppiced

Timber No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
298:65	298	668	Unworked brushwood	Corylus avellana (hazel)	20	6	2 - 3	
298:66	298	669	Unworked brushwood	Corylus avellana (hazel)	22	6	2 - 3	
298:67	298	670	Unworked brushwood	Corylus avellana (hazel)	21	11	2 - 3	
298:68	298	561	Unworked brushwood	Corylus avellana (hazel)	16	9	2.5 - 3	Coppiced
298:69	298	671	Chisel point	Corylus avellana (hazel)	30	14	1 - 2	Coppiced
298:70	298	-	Wedge point	Corylus avellana (hazel)	28	14 - 18	1 - 2	Coppiced
298:71	298	794	Unworked brushwood	Quercus sp. (oak)	23	20	1 - 1.5	
298:72	298	795	Unworked roundwood	Populus/Salix sp.	12	9	1 - 1.2	
298:73	298	672	Unworked brushwood	Corylus avellana (hazel)	-	12	2 - 3	
298:74	298	-	Damaged chisel point with spiralling identation	Corylus avellana (hazel)	33	8 - 10	2 - 3	
298:75	298	673	Unworked brushwood	Corylus avellana (hazel)	28	14	1 - 2	Degraded
298:76	298	796	Unworked brushwood	Corylus avellana (hazel)	31	6	2 - 3	Coppiced - late felling
298:77	298	674	Unworked brushwood	Corylus avellana (hazel)	30	17	1 - 2	
298:78	298	675	Unworked brushwood	Corylus avellana (hazel)	21	18	1 - 1.5	
298:79	298	562	Chisel point	Corylus avellana (hazel)	34 (rad)	6	3 -4	Coppiced
298:80	298	676	Unworked brushwood	Corylus avellana (hazel)	28	14 - 16	1- 2	
298:81	298	677	Unworked brushwood	Corylus avellana (hazel)	33	19	1 - 1.5	
298:82	298	678	Unworked brushwood	Corylus avellana (hazel)	28	14	1 - 2	
298:83	298	679	Unworked brushwood	Corylus avellana (hazel)	28	15	1 - 1.5	
298:84	298	563	Unworked brushwood	Prunus avium (wild cherry)	32	15	1.5	
298:85	298	-	Pencil point	Corylus avellana (hazel)	62	32	1.5 - 2	
298:86	298	680	Chisel point	Corylus avellana (hazel)	45	22	1 - 2.5	Degraded
298:87	298	681	Unworked roundwood	Quercus sp. (oak)	34 (rad)	35	0.5 - 1	
298:88	298	682	Wedge point	Corylus avellana (hazel)	38	13	1 - 3	
298:89	298	-	Chisel point	Corylus avellana (hazel)	28	16	0.8 - 1.2	
298:90	298	683	Unworked brushwood	Corylus avellana (hazel)	21	10	1 - 2	
298:91	298	684	Unworked brushwood	Quercus sp. (oak)	30	22	1 - 1.5	
298:92	298	685	Unworked brushwood	Betula sp. (birch)	16	18	0.5 - 0.8	
298:93	298	564	Unworked brushwood	Betula sp. (birch)	45	31	0.7 - 1	
298:94	298	847	Rotted wood	Quercus sp. (oak)	-	-	0.4	
298:95	298	-	Chisel point	Betula sp. (birch)	22	12-14	1 - 2	

Timber No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
298:96	298	797	Wedge point	Corylus avellana (hazel)	35	14	1 - 2	
298:97	298	412	Chisel point	Corylus avellana (hazel)	35	12	1.5 - 2	Coppiced
298:98	298	686	Chisel point	Corylus avellana (hazel)	30	12	1 - 1.5	Coppiced
298:99	298	687	Unworked brushwood	Corylus avellana (hazel)	30	13	1	Coppiced
298:100	298	688	Unworked brushwood	Quercus sp. (oak)	-	48	0.5 - 2.2	
298:101	298	689	Chisel point	Corylus avellana (hazel)	20	12	1 - 2	
298:102	298	690	Unworked brushwood	Corylus avellana (hazel)	-	17	1 - 1.2	
298:103	298	691	Unworked roundwood	Quercus sp. (oak)	75	79	0.5 - 1	Same as 295:6
298:104	298	-	Wood working waste	Quercus sp. (oak)	-	42	1.5 - 2.5	
298:105	298	798	Half-split timber	Quercus sp. (oak)	-	42	0.5 - 1	
298:106	298	413	Unworked burnt brushwood	Quercus sp. (oak)	46	41	0.5 - 0.8	
298:107	298	-	Wedge of pencil point	cf Sorbus sp. (rowan)	28 (rad)	28	0.8 - 1	
298:108	298	692	Unworked brushwood	Corylus avellana (hazel)	22	12	1 - 2	
298:109	298	693	Unworked brushwood	Pomoideae spp.	34 (rad)	21	1 - 2	Degraded
298:110	298	694	Unworked brushwood	Quercus sp. (oak)	30	28	1	
298:111	298		Chisel point					Missing
298:112	298	799	Unworked brushwood	Corylus avellana (hazel)	12	18	0.5 - 1	Degraded
298:113	298	-	Unworked wood	Corylus avellana (hazel)	20	10+	1 - 2	Degraded
298:114	298	565	Half-split brushwood	Pomoideae cf sorbus (rowan)	41	30-32	1 - 2	
298:115	298	695	Unworked brushwood	Corylus avellana (hazel)	27	7	2 - 4	Coppiced
298:116	298	-	Chisel point	Corylus avellana (hazel)	15	5	2 – 3	Coppiced
298:117	298	696	Unworked wood	Corylus avellana (hazel)	16 (rad)	10	1 - 1.5	
298:118	298	697	Unworked brushwood	Corylus avellana (hazel)	24	7	1 - 1.5	
298:119	298	-	Pencil point	Sorbus sp. (rowan)	45	27 - 32	0.8 - 1.4	
298:120	298	698	Unworked brushwood	Corylus avellana (hazel)	-	14	2 - 2.5	
298:121	298	566	Unworked brushwood	Corylus avellana (hazel)	16	6	2 - 4	Coppiced
298:122	298	699	Unworked brushwood	Corylus avellana (hazel)	20	12	1 - 1.5	
298:123	298	800	Unworked roundwood	Quercus sp. (oak)	68	51	0.4 - 1	
298:124	298	-	Wedge point	Corylus avellana (hazel)	24	13	1 - 2	
298:125	298	-	Wedge point	Corylus avellana (hazel)	26	8	2 - 3	
298:126	298	-	Wood working waste	Quercus sp. (oak)	-	31-34	2 - 3	
298:127	298	801	Half-split brushwood	Pomoideae spp.	28	17	0.8 - 1.5	
298:128	298	700	Unworked roundwood	Quercus sp. (oak)	115	88	1 - 2	
298:129	298	567	Unworked brushwood	Salix sp. (willow)	50	-	-	Degraded

Timber No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
298:130	298	701	Chisel point	Salix sp. (willow)	32	14	1 - 3	
298:131	298	702	Split timber	Quercus sp. (oak)	-	29	1 - 3	
298:132	298	568	Split wood	Quercus sp. (oak)	42	22	1 - 2	
298:133	298	703	Wooden object consisting of a forked branch with carved termini	Corylus avellana (hazel)	59	12	2 - 4	
298:134	298	704	Unworked brushwood	Corylus avellana (hazel)	19	8	1.5 - 2.5	Coppiced
298:135	298	569	Unworked roundwood	Betula sp. (birch)	128	31	1.5 - 4	
298:136	298	463	Unworked burnt roundwood	Betula sp. (birch)	79	36	1 - 2	
298:137	298	424	Unworked roundwood	Quercus sp. (oak)	239	74	1 - 4.2	
298:138	298	705	Unworked brushwood	Quercus sp. (oak)	32	19	1 - 2	
298:139	298	802	Unworked brushwood	Quercus sp. (oak)	28 (rad)	59	0.3 - 0.6	
298:140	298	706	Unworked brushwood	Quercus sp. (oak)	-	-	1.5 - 2.3	Degraded
298:141	298	707	Split burnt timber	Quercus sp. (oak)	60 (rad)	72	0.3 - 1	
298:142	298	708	Unworked roundwood	Quercus sp. (oak)	134	54	3 - 5	

Appendix 5: Wood species analysis results from Annaholty Site 8: Phase 2 (170)

Timber No.	Deposit No.	Sample No	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
170:1	170	583	Unworked brushwood	Corylus avellana (hazel)	38	16	2	
170:2	170	282	Unworked wood	Quercus sp. (oak)	-	25-30	2 - 2.5	
170:3	170	584	Unworked roundwood	Quercus sp. (oak)	54 (rad)	28	2.2 - 3.3	
170:4	170	178	Split timber	Quercus sp. (oak)	-	72	0.3 - 0.5	Very slow growth
170:5	170	-	Split timber	Quercus sp. (oak)	-	-	-	
170:6	170	585	Split timber	Quercus sp. (oak)	-	32	2 - 4	
170:7	170	465	Unworked brushwood	Betula sp. (birch)	-	-	-	Degraded
170:8	170	623	Split timber	Betula sp. (birch)	-	-	-	
170:9	170	98	Split wood	Quercus sp. (oak)	-	8+	2 - 3.3	Insect damage/degraded
170:10	170	260	Unworked roundwood	Quercus sp. (oak)	-	24	0.5 - 5	
170:11	170	-	Roundwood cut to a chisel point	Quercus sp. (oak)	48	64-68	0.4 - 1	
170:12	170	466	Split wood	Betula sp. (birch)	-	18	1	
170:13	170	393	Unworked roundwood or possibly a fragment of split timber	Alnus glutinous (alder)	-	19	2 - 3	
170:14	170	86	Split timber	Quercus sp. (oak)	-	48	2	
170:15	170	262	Chisel point	Quercus sp. (oak)	74	43	1 - 2	
170:16	170	141	Split timber	Quercus sp. (oak)	-	29	1 - 2	
170:17	170	827	Chisel point	Betula sp. (birch)	-	37	1 - 3	
170:18	170	185	Unworked roundwood	Betula sp. (birch)	59	23	2 - 2.8	
170:19	170	355	Unworked roundwood	Alnus glutinous (alder)	98	52	2 - 3.4	
170:20	170	526	Unworked roundwood	Betula sp. (birch)	-	28	0.8 - 1.5	
170:21	170	586	Chisel point	Betula sp. (birch)	66	33	1 - 2.5	
170:22	170	587	Unworked brushwood	Alnus glutinous (alder)	-	18	1 - 2	
170:23	170	356	Split timber	Betula sp. (birch)	-	16	2	
170:24	170	828	Unworked roundwood	Quercus sp. (oak)	55	30	1 - 2	
170:25	170	357	Unworked roundwood	Quercus sp. (oak)	66	43	1 - 3	
170:26	170	467	Unworked brushwood	Quercus sp. (oak)	40	32	1 - 1.5	
170:27	170	468	Unworked brushwood	Quercus sp. (oak)	11 (rad)	20	0.3 - 0.6	Degraded
170:28	170	425	Unworked roundwood	Quercus sp. (oak)	30	21	1 - 2.6	
170:29	170	588	Unworked brushwood	Betula sp. (birch)	25	29	0.5 - 0.6	Slow growth
170:30	170	469	Unworked roundwood	Betula sp. (birch)	38	32	0.5 - 1	

Timber No.	Deposit No.	Sample No	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
170:31	170	589	Unworked brushwood	Betula sp. (birch)	45	26	1 - 1.5	
170:32	170	590	Unworked roundwood	Betula sp (birch)	56	33	1 - 2	
170:33	170	246	Unworked roundwood	Betula sp. (birch)	46	48	0.3 - 1	
170:34	170	438	Unworked brushwood	Betula sp. (birch)	24	15	1 - 1.5	
170:35	170	269	Unworked roundwood	Betula sp. (birch)	69	19	1 - 4	
170:36	170	143	Unworked brushwood	Quercus sp. (oak)	32 (rad)	76	0.2 - 0.5	Very slow growth
170:37	170	144	Unworked brushwood	Betula sp. (birch)	30	18	1 - 1.5	
170:38	170	527	Unworked roundwood	Betula sp. (birch)	24	28	0.5 - 1	
170:39	170	-	Chisel point	Betula sp. (birch)	27	19	0.5 - 2	
170:40	170	358	Unworked roundwood	Betula sp. (birch)	52	29	1 - 3	
170:41	170	470	Unworked brushwood	Corylus avellana (hazel)	36 (rad)	16	1 - 2	
170:42	170	528	Unworked brushwood	Betula sp. (birch)	11	6	1 - 1.5	Young tree
170:43	170	529	Unworked wood	Betula sp. (birch)	10	-	-	Degraded
170:44	170	-	Unworked brushwood	Betula sp. (birch)	18	10	1	
170:45	170	270	Unworked roundwood	Betula sp. (birch)	121	67	1 - 3	
170:46	170	471	Split wood	Betula sp. (birch)	-	24	2 - 4	
170:47	170	472	Split wood	Salix sp. (willow)	-	-	1 - 2	
170:48	170	473	Split wood	Quercus sp. (oak)	41	43	1 - 1.5	
170:49	170	474	Split wood	Pomoideae spp.	24	10	2	
170:50	170	475	Unworked roundwood	Pomoideae spp.	-	-	-	Degraded
170:51	170	476	Unworked brushwood	Betula sp. (birch)	32	25	1 - 2	
170:52	170	149	Unworked wood	Quercus sp. (oak)	38	39	0.8 - 1.2	
170:53	170	359	Unworked roundwood	Betula sp. (birch)	76	31	2 - 3.2	
170:54	170	477	Unworked brushwood	Betula sp. (birch)	38 (rad)	18	1 - 2.5	
170:55	170	-	Wedge point	Corylus avellana (hazel)	54	40	1 - 2	
170:56	170	478	Unworked brushwood	Betula sp. (birch)	21	19	1	
170:57	170	479	Unworked roundwood	Betula sp. (birch)	71	39	2 - 4	
170:58	170	150	Unworked roundwood	Quercus sp. (oak)	-	21	0.5	
170:59	170	360	Unworked roundwood	Quercus sp. (oak)	-	61	1 - 2.2	
170:60	170	151	Unworked wood	Quercus sp. (oak)	-	54	0.5	Slow growth
170:61	170	254	Chisel point	Betula sp. (birch)	82	38	2 - 3	
170:62	170	244	Split timber	Betula sp. (birch)	-	39	1 - 3	
170:63	170	145	Split wood	Quercus sp. (oak)	-	24	1	
170:64	170	146	Split wood	Quercus sp. (oak)	-	28	2 - 3	
170:65	170	-	Chisel point	Pomoideae spp.	48	46	1	

Timber No.	Deposit No.	Sample No	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
170:66	170	210	Chisel point	Betula sp. (birch)	69	49	1 - 2	
170:67	170	152	Unworked roundwood	Pomoideae cf sorbus (rowan)	69	56	0.5 - 1.2	
170:68	170	153	Unworked roundwood	Betula sp. (birch)	-	-	-	
170:69	170	361	Split timber	Pomoideae cf sorbus (rowan)	78	42	2 - 3	
170:70	170	480	Unworked roundwood	Alnus glutinous (alder)	-	14	2 - 2.5	
170:71	170	207	Unworked roundwood	Betula sp. (birch)	112	28	3 - 5	
170:72	170	154	Unworked wood	Quercus sp. (oak)	-	15	2 - 3	
170:73	170	247	Worked roundwood	Quercus sp. (oak)	-	33	1 - 4.2	
170:74	170	155	Unworked roundwood	Quercus sp. (oak)	-	15	3 - 4	
170:75	170	591	Unworked brushwood	Betula sp. (birch)	28	32	0.7 - 1	
170:76	170	-	Unworked brushwood	Quercus sp. (oak)	32	14-17	1-2.5	
170:77	170	156	Unworked wood	Fraxinus excelsior (ash)	-	-	2 - 3	
170:78	170	157	Unworked roundwood	Quercus sp. (oak)	55	49	1 - 2.2	
170:79	170	158	Unworked brushwood	Betula sp. (birch)	24	13	1 - 2	
170:80	170	159	Split wood	Quercus sp. (oak)	-	62	0.5 - 1	
170:81	170	160	Unworked wood	Corylus avellana (hazel)	21	6	2 - 3	Two ID's made
170:81	170	160	Roundwood	Betula sp. (birch)	-	50	1 - 2	
170:82	170	267	Unworked wood	Quercus sp. (oak)	-	-	-	Degraded
170:83	170	252	Worked brushwood	Corylus avellana (hazel)	44	16	2 - 3	Coppiced
170:84	170	258	Unworked brushwood	Corylus avellana (hazel)	19	8	1 - 3	Coppice heel
170:85	170	-	Chisel point	Corylus avellana (hazel)	45	19	2 - 3	
170:86	170	256	Unworked brushwood	Alnus glutinous (alder)	32	19	1 - 2	
170:87	170	196	Unworked roundwood	Alnus glutinous (alder)	60	30	1 - 2	
170:88	170	264	Worked roundwood	Alnus glutinous (alder)	62	32	1 - 2	
170:89	170	261	Unworked roundwood	Alnus glutinous (alder)	51	18	1 - 2.8	
170:90	170	362	Unworked roundwood	Betula sp. (birch)	60	34	1 - 2	
170:91	170	592	Unworked roundwood	Quercus sp. (oak)	75	80	0.5 - 1	
170:92	170	593	Split timber	Quercus sp. (oak)	56 (rad)	18	2 - 4	
170:93	170	594	Split wood	Quercus sp. (oak)	-	14 - 18	3 - 4	
170:94	170	386	Unworked wood	Pomoideae spp.	-	-	-	Degraded
170:95	170	387	Split wood	Quercus sp. (oak)	-	24	1	Degraded
170:96	170	363	Unworked roundwood	Betula sp. (birch)	156	71	1 - 3	
170:97	170	595	Split wood	cf Sorbus sp. (Rowan)	-	-	-	

Timber No.	Deposit No.	Sample No	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
170:98	170	176	Split timber	Betula sp. (birch)	55	17	1 - 3.2	
170:99	170	426	Unworked brushwood	Betula sp. (birch)	46	11	2 - 3.8	
170:100	170	364	Split timber	Quercus sp. (oak)	96 (rad)	24 - 26	1.5 – 4	
170:101	170		Unworked roundwood					Missing
170:102	170	430	Unworked brushwood	Prunus avium (wild cherry)	22	7	3	
170:103	170	829	Unworked brushwood	Alnus glutinous (alder)	22	16	1 - 1.2	
170:104	170	427	Unworked brushwood	Corylus avellana (hazel)	18	7	2	
170:105	170	394	Worked wood	Betula sp. (birch)	109	59	1 - 2.5	
170:106	170	365	Unworked roundwood	Quercus sp. (oak)	-	56	1 - 2	
170:107	170	366	Split timber	Quercus sp. (oak)	-	48	1	
170:108	170	596	Unworked roundwood	Quercus sp. (oak)	-	35	1 - 2	
170:109	170	265	Split timber	Quercus sp. (oak)	-	60+	1 - 3	
170:110	170	367	Split timber	Quercus sp. (oak)	-	59	0.5 - 5	
170:111	170	206	Split wood	Quercus sp. (oak)	-	22	0.5	
170:112	170	368	Split wood	Quercus sp. (oak)	165	78	1 - 4	
170:113	170	597	Split wood	Quercus sp. (oak)	100	69	0.4 - 1	
170:114	170	205	Split wood	Quercus sp. (oak)	-	11	0.3	Slow growth
170:115	170	294	Unworked brushwood	Quercus sp. (oak)	34	25	1 - 1.5	
170:116	170	295	Unworked brushwood	Quercus sp. (oak)	56	80	0.3 -1	Very slow growth
170:117	170	296	Unworked brushwood	Betula sp. (birch)	31	28	1 - 2	
170:118	170	248	Unworked brushwood	Betula sp. (birch)	32	13	2 - 4	
170:119	170	297	Unworked brushwood	Quercus sp. (oak)	-	21	1	
170:120	170	164	Unworked wood	Quercus sp. (oak)	65	56	1 - 1.4	
170:121	170	1655	Unworked brushwood	Quercus sp. (oak)	31	39	1 - 1.5	Two samples
170:121	170	175	Roundwood	Quercus sp. (oak)	22	11	1 - 2	Two samples
170:122	170	163	Unworked brushwood	Quercus sp. (oak)	29	31	0.5 - 1.6	Degraded
170:123	170	439	Unworked roundwood	Alnus glutinous (alder)	-	33	1 - 1.5	
170:124	170	161	Unworked roundwood	Quercus sp. (oak)	-	6	3	
170:125	170	162	Unworked brushwood	Quercus sp. (oak)	-	18	1 - 2	
170:126	170	298	Split wood	Quercus sp. (oak)	-	12	2 - 3	
170:127	170	186	Unworked wood	Quercus sp. (oak)	-	-	0.5	Degraded
170:128	170	369	Unworked roundwood	Quercus sp. (oak)	55	49	1 - 2	
170:129	170	598	Unworked brushwood	Quercus sp. (oak)	41	59	0.5 - 1	
170:130	170	-	Unworked brushwood	Quercus sp. (oak)	46	34	1 - 2	

Timber No.	Deposit No.	Sample No	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
170:131	170	163	Split wood	Quercus sp. (oak)	-	16	0.3 - 0.8	Slow growth
170:132	170	530	Split timber	Quercus sp. (oak)	-	39	2 - 3	
170:133	170	370	Unworked roundwood	Betula sp. (birch)	-	18	2 - 3	
170:134	170	371	Unworked roundwood	Quercus sp. (oak)	50	33	0.5 - 1.8	
170:135	170	372	Unworked roundwood	Betula sp. (birch)	170	-	-	Degraded
170:136	170	599	Unworked roundwood	Quercus sp. (oak)	89 (rad)	52	0.4 - 2.8	
170:137	170	600	Unworked roundwood	Alnus glutinous (alder)	128	72	2 - 3	
170:138	170	601	Split timber	Betula sp. (birch)	46 (rad)	32 - 34	0.5 - 1	
170:139	170	602	Unworked roundwood	Betula sp. (birch)	60	31	2	
170:140	170	603	Unworked roundwood	Quercus sp. (oak)	-	69	1 - 2.4	
170:141	170	605	Unworked roundwood	Quercus sp. (oak)	51 (rad)	30+/- 5	1 - 2	
170:142	170	604	Unworked roundwood	Betula sp. (birch)	58	18-22	2 - 4	
170:143	170	606	Split wood	Betula sp. (birch)	-	12	1.2 - 1.5	
170:144	170	607	Unworked brushwood	Alnus glutinous (alder)	30	18	1 - 1.5	
170:145	170	373	Unworked roundwood	Quercus sp. (oak)	-	58	0.2	Slow growth
170:146	170	388	Unworked wood	Corylus avellana (hazel)	-	12	2 - 2.5	Degraded
170:147	170	608	Split wood	Quercus sp. (oak)	33 (rad)	38	0.5 - 1	
170:148	170	531	Split wood	Quercus sp. (oak)	17 (rad)	21	0.5 - 1	
170:149	170	609	Split timber	Quercus sp. (oak)	67	32	1.5 - 2	
170:150	170	374	Unworked roundwood	Quercus sp. (oak)	70	36	1 - 2.6	
170:151	170							Missing
170:152	170	610	Unworked roundwood	Quercus sp. (oak)	198	65-75	2 - 3	Scar through cross section
170:153	170	-	Split timber	Quercus sp. (oak)	-	-	-	
170:154	170	611	Unworked roundwood	Quercus sp. (oak)	48	23	2 - 4	
170:155	170	-	Unworked brushwood	Salix sp. (willow)	20	10	1 - 1.2	Coppiced
170:156	170	440	Split wood	Quercus sp. (oak)	50	42	1 - 1.2	
170:157	170	612	Unworked wood	Quercus sp. (oak)	-	18	0.5	
170:158	170	613	Unworked roundwood	Quercus sp. (oak)	56	28	2	
170:159	170	-	Unworked brushwood	Quercus sp. (oak)	-	-	-	
170:160	170	614	Unworked roundwood	Quercus sp. (oak)	124	50-55	1 - 3.2	
170:161	170	532	Unworked wood	Quercus sp. (oak)	-	-	0.3 -0.5	Very slow growth
170:162	170	533	Unworked roundwood	Quercus sp. (oak)	60	37	0.5 - 1.5	
170:163	170	428	Unworked brushwood	Quercus sp. (oak)	46	56	1 - 1.6	
170:164	170	615	Unworked roundwood	Betula sp. (birch)	22 (rad)	10	2 - 3	
170:165	170	429	Unworked roundwood	Quercus sp. (oak)	107	53	1 - 3.4	

Timber No.	Deposit No.	Sample No	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
170:166	170	375	Unworked roundwood	Quercus sp. (oak)	48	52	0.5 - 1	
170:167	170	616	Split timber	Quercus sp. (oak)	26	29	0.4 - 0.6	
170:168	170	617	Split timber	Quercus sp. (oak)	46	33?	1 - 1.5	
170:169	170	376	Unworked roundwood	Quercus sp. (oak)	106	64	0.5 - 2	Degraded
170:170	170	275	Unworked roundwood	Quercus sp. (oak)	50	42-44	1	
170:171	170	447	Unworked roundwood	Quercus sp. (oak)	60	48+/- 4	0.4 - 1	
170:172	170	-	Wedge point	Corylus avellana (hazel)	24	12	2 - 2.5	
170:173	170	377	Unworked roundwood	Quercus sp. (oak)	79 (rad)	52 - 55	1.2 - 3	
170:174	170	618	Unworked roundwood	Quercus sp. (oak)	50 (rad)	33	2 - 3	
170:175	170	450	Unworked roundwood	Quercus sp. (oak)	75	52	0.5 - 1	
170:176	170	-	Split timber	Quercus sp. (oak)	-	52	1 - 3	
170:177	170	619	Unworked roundwood	Quercus sp. (oak)	-	52	0.5 - 0.8	
170:178	170	378	Unworked roundwood	Quercus sp. (oak)	-	73+	0.3	Slow growth
170:179	170	830	Unworked wood	Quercus sp. (oak)	90	79	0.3 - 1.8	
170:180	170	620	Split timber	Quercus sp. (oak)	-	42	1 - 2	
170:181	170	621	Split timber	Quercus sp. (oak)	62 (rad)	42+/-2	1 - 2	
170:182	170	831	Unworked roundwood	Pomoideae spp.	-	-	1 - 2	Degraded
170:183	170	622	Split timber	Alnus glutinous (alder)	-	16-19	3 - 6	
170:184	170	-						Same as 170:179
170:185	170	441	Unworked wood	Quercus sp. (oak)	24 (rad)	22	0.5 - 1	Felled in late wood
170:186	170	379	Unworked brushwood	Quercus sp. (oak)	32	30	0.5 - 1	
170:187	170	380	Unworked roundwood	Quercus sp. (oak)	102	69	0.5 - 2	
170:188	170	-	Split wood	Quercus sp. (oak)	-	-	-	Degraded
170:189	170	-	Wood working waste	Quercus sp. (oak)	-	12	2 - 2.5	
170:190	170	-	Split wood	Quercus sp. (oak)	45	20 - 26	1 - 2	

Appendix 6: Wood species analysis results from Annaholty Site 8: Phase 2 (255)

Timber No.	Deposit No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
255:1	255	-	Possible cart fargment	Alnus glutinous (alder)	-	-	-	
255:1	255	-	Worked item (dowel)	Fraxinus excelsior (ash)	22	14	2 - 2.5	
255:2	255	-	Wooden object with 3 dowels/dowel holes	Salix sp. (willow)	-	-	-	
255:2	255	-	2x dowels associated with above	Corylus avellana (hazel)	-	-	-	
255:3	255	421	Unworked roundwood	Betula sp. (birch)	34	17	1 - 1.5	
255:4	255	709	Split timber	Betula sp. (birch)	50 (rad)	18	2 - 3.5	
255:5	255		Split timber	Quercus sp. (oak)	366	100+	1.5 - 3	
255:6	255	710	Unworked roundwood	Quercus sp. (oak)	111	41	0.5 - 6	
255:7	255	711	Unworked roundwood	Betula sp. (birch)	-	34	1 - 5	
255:8	255	712	Unworked roundwood	Quercus sp. (oak)	42 (rad)	27	1.5 - 3.5	
255:9	255	381	Wedge point	Corylus avellana (hazel)	71	51	1 - 3	
255:10	255		Unworked roundwood					Missing
255:11	255	713	Unworked brushwood	Quercus sp. (oak)	16	28	0.3 - 0.6	
255:12	255	803	Unworked brushwood	Betula sp. (birch)	10	8	1	
255:13	255	487	Unworked brushwood	Corylus avellana (hazel)	-	19	1 - 1.2	
255:14	255	-	Unworked brushwood	Betula sp. (birch)	20 (rad)	14	1- 2	
255:15	255	414	Brushwood cut to a chisel point	Betula sp. (birch)	39	19	0.25 - 0.5	Slow growth
255:16	255	714	Unworked roundwood	Quercus sp. (oak)	85	41-43	0.3 - 1	
255:17	255	715	Unworked roundwood	Quercus sp. (oak)	62	40-42	0.5 - 2	
255:18	255	716	Unworked brushwood	Betula sp. (birch)	40	27	1 - 2	
255:19	255	415	Split timber	Betula sp. (birch)	44	21	2 - 4	
255:20	255	382	Pencil point	Fraxinus excelsior (ash)	70	14-16	3 - 5	Felled in late wood
255:21	255	488	Worked roundwood	Corylus avellana (hazel)	52	42	0.8 - 1.5	
255:22	255	717	Split wood	Quercus sp. (oak)	89 (rad)	88	0.5 - 2.5	
255:23	255	383	Wedge point	Alnus glutinous (alder)	107	56	1 - 2.6	
255:24	255	489	Unworked roundwood	Corylus avellana (hazel)	-	18	1 - 1.2	
255:25	255	-	Pencil point	Corylus avellana (hazel)	48	26	1 - 2	
255:26	255	805	Split wood	Quercus sp. (oak)	41 (rad)	31	1 - 3	
255:27	255	718	Split timber	Quercus sp. (oak)	-	72	1 -2	
255:28	255	719	Split timber	Quercus sp. (oak)	-	-	1 - 4	Double pith

Timber No.	Deposit No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
255:29	255	308	Split wood	Betula sp. (birch)	-	20-24	0.5 - 1	
255:30	255	-	Pencil point	Corylus avellana (hazel)	23	9	2 - 2.5	Coppiced
255:31	255	-	Chisel point	Corylus avellana (hazel)	20	14	0.8 - 1.2	Coppiced
255:32	255	-	Wedge point	Corylus avellana (hazel)	28	12	2 - 2.5	
255:33	255	-	Pencil point	Corylus avellana (hazel)	32	18	1 - 2	
255:34	255	-	Wedge point	Corylus avellana (hazel)	28	8	2 - 3	Coppiced
255:35	255	490	Split wood	Quercus sp. (oak)	-	44	0.4 - 0.7	
255:36	255	491	Bark fragment	Betula sp. (birch)	28 (rad)	14	1.5 - 2.5	
255:37	255	720	Split wood	Betula sp. (birch)	-	-	-	Degraded
255:38	255	-	Pencil point	Corylus avellana (hazel)	36	12	2 - 3	Coppiced
255:39	255	-	Chisel point	Corylus avellana (hazel)	27	12	2	Coppiced
255:40	255	-	Chisel point	Corylus avellana (hazel)	38	19	1 - 2.5	
255:41	255	384	Chisel point	Corylus avellana (hazel)	68	12	4 - 5	Fast growth
255:42	255	-	Split timber	Quercus sp. (oak)	-	-	-	
255:43	255	721	Unworked roundwood	Corylus avellana (hazel)	36 (rad)	17	1 - 2	
255:44	255	-	Chisel point	Betula sp. (birch)	29	22	1 - 2	
255:45	255	722	Split wood	Alnus glutinous (alder)	62	36	2 - 3	
255:46	255	723	Split wood	Betula sp. (birch)	46	17	1.5 - 3	
255:47	255	806	Unworked brushwood	Quercus sp. (oak)	30	40	0.5 - 1	
255:48	255	724	Unworked roundwood	Quercus sp. (oak)	68	41	1.5 - 2	
255:49	255	807	Unworked brushwood	Ilex aquilifolium (holly)	35	12	1.5 - 2.5	
255:50	255	808	Unworked brushwood	Quercus sp. (oak)	34	29	0.4 - 0.8	
255:51	255	-	Chisel point	Alnus glutinous (alder)	61	30 - 33	2	
255:52	255	725	Chisel point	Salix sp. (willow)	36 (rad)	19	1 - 2	
255:53	255	-	Chisel point	Corylus avellana (hazel)	32	18	1 - 2	
255:54	255	809	Chisel point	Salix sp. (willow)	28	16 +/- 2	1 - 2.5	
255:55	255	-	Wedge point	Prunus avium (wild cherry)	39	23	1 - 1.5	
255:56	255	492	Unworked roundwood	Betula sp. (birch)	65	25 - 28	2 - 3	
255:57	255	-	Wedge point	Betula sp. (birch)	42	21	2 - 2.5	
255:58	255	-	Pencil point	Betula sp. (birch)	60	22-26	1 - 3	
255:59	255	726	Unworked brushwood	Corylus avellana (hazel)	30	12	1 - 2.5	Coppiced
255:60	255	727	Unworked roundwood	Betula sp. (birch)	-	-	-	Degraded
255:61	255	-	Pencil point	Corylus avellana (hazel)	-	-	1 - 2.5	
255:62	255	810	Unworked brushwood	Betula sp. (birch)	-	22	0.5 - 1	

Timber No.	Deposit No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
255:63	255	728	Unworked brushwood	Corylus avellana (hazel)	25	10	2 - 2.5	
255:64	255	729	Unworked brushwood	Betula sp. (birch)	54	31	1 - 2	
255:65	255	-	Pencil point	Betula sp. (birch)	33	18	1 - 3	
255:66	255	-	Wedge point	Betula sp. (birch)	27	17	1 - 1.5	
255:67	255	811	Unworked brushwood	Betula sp. (birch)	31	20	1 - 1.5	
255:68	255	-	Chisel point	Corylus avellana (hazel)	22	8 - 10	1 - 2	
255:69	255	-	Chisel point	Corylus avellana (hazel)	24	7	2 - 3	
255:70	255	812	Split wood	Quercus sp. (oak)	-	31	1 - 2	
255:71	255	730	Unworked brushwood	Betula sp. (birch)	-	14	0.5 - 1	
255:72	255	813	Unworked brushwood	Quercus sp. (oak)	-	13	0.5 - 1	
255:73	255	731	Split wood	Quercus sp. (oak)	86	87	0.5 - 2	
255:74	255	732	Unworked roundwood	Betula sp. (birch)	79	43+/-3	0.5 - 2	
255:75	255	733	Unworked brushwood	Pomoideae cf sorbus (rowan)	42	22	0.4 - 0.6	
255:76	255	734	Split wood	Quercus sp. (oak)	-	21	1	Degraded
255:77	255	735	Unworked brushwood	Pomoideae sp.	28	17	1.5	Degraded
255:78	255	814	Split timber	Quercus sp. (oak)	72	-	-	
255:79	255	736	Split timber	Quercus sp. (oak)	-	69	2 - 4	
255:80	255	737	Unworked roundwood	Betula sp. (birch)	38	24	1 - 2	
255:81	255	815	Unworked roundwood	Quercus sp. (oak)	50 (rad)	27	1 - 2	
255:82	255	738	Unworked roundwood	Betula sp. (birch)	41	32	0.4 - 0.8	
255:83	255	-	Chisel point	Betula sp. (birch)	46	31	0.4 - 2.5	
255:84	255		Unworked roundwood					Missing
255:85	255	816	Unworked brushwood	Quercus sp. (oak)	34 (rad)	30 +/- 2	1 - 1.2	
255:86	255	-	Chisel point	Betula sp. (birch)	50	20-24	2 - 3	
255:87	255	493	Unworked roundwood	Quercus sp. (oak)	45 (rad)	15	2 - 4	Two ID's made
255:87	255	493	Roundwood	Betula sp. (birch)	100	28	1 - 3.5	
255:88	255	739	Unworked roundwood	Quercus sp. (oak)	80	60 - 65	0.3 - 1.8	
255:89	255	817	Split timber	Quercus sp. (oak)	50+	-	1 - 3	
255:90	255	740	Split timber	Quercus sp. (oak)	-	72	0.5 - 3	
255:91	255	741	Split wood	Quercus sp. (oak)	40 (rad)	28	1 - 2	
255:92	255	742	Split timber	Quercus sp. (oak)	-	83	0.5 - 1	
255:93	255	743	Unworked brushwood	Betula sp. (birch)	36	18	0.7 - 1.2	
255:94	255	744	Unworked brushwood	Betula sp. (birch)	38	21	0.5 - 2	
255:95	255	-	Split timber	cf Sorbus sp. (sorbus)	97	70	1 - 2	

Timber No.	Deposit No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
255:96	255	389	Unworked brushwood	Quercus sp. (oak)	42	11	3.2 - 4	
255:97	255	-	Chisel point	Betula sp. (birch)	25	16	1 - 2	
255:98	255	745	Unworked brushwood	Betula sp. (birch)	35	10	1 - 3	Degraded
255:99	255	-	Chisel point	Corylus avellana (hazel)	30	15	1 - 2	
255:100	255	494	Unworked roundwood	cf Rhamnus sp. (buckthorn)	-	6	1 - 2	
255:101	255	495	Split timber	Pomoideae cf sorbus (rowan)	84	31-33	1 - 3	
255:102	255	-	Pencil point	Corylus avellana (hazel)	38	19	1.5 - 2.5	
255:103	255	431	Split timber	Quercus sp. (oak)	-	18	2 - 3	
255:104	255	818	Unworked wood	Quercus sp. (oak)	62 (rad)	33	3.2 - 4.2	
255:105	255	432	Split timber	Quercus sp. (oak)	65	32	2 - 3	Insect damage
255:106	255	496	Unworked roundwood	Pomoideae cf crataegus (hawthorn)	50	28	1.5 - 2	
255:107	255	497	Unworked brushwood	Betula sp. (birch)	31	18	2 - 3	
255:108	255	498	Unworked brushwood	Quercus sp. (oak)	42	38	1 - 2	Coppiced
255:109	255	499	Split wood	Quercus sp. (oak)	-	15	1	
255:110	255	500	Unworked brushwood	Corylus avellana (hazel)	60	-	-	Degraded
255:111	255	501	Unworked wood	Quercus sp. (oak)	54	33	0.5 - 1	
255:112	255	433	Unworked roundwood	Alnus glutinous (alder)	-	41	2 - 4	
255:113	255	-	Chisel point	Quercus sp. (oak)	25 (rad)	14 - 16	1	
255:114	255	746	Chisel point	Quercus sp. (oak)	33	18	1 - 1.5	
255:115	255	819	Unworked brushwood	Quercus sp. (oak)	36 (rad)	16	2 - 3	
255:116	255	502	Unworked brushwood	Betula sp. (birch)	38	42	0.5 - 0.8	
255:117	255	416	Split timber	Quercus sp. (oak)	-	24	2 - 4	
255:118	255	820	Chisel point	Corylus avellana (hazel)	22	18	1 - 2	
255:119	255	-	Chisel point	Sorbus sp. (sorbus)	30	33	0.5 - 1	
255:120	255	503	Unworked brushwood	Corylus avellana (hazel)	39	10	2 - 3	
255:121	255	747	Unworked wood	Betula sp. (birch)	-	30-32	1 - 2	Degraded
255:122	255	504	Unworked brushwood	Corylus avellana (hazel)	31	18	0.5 - 2	
255:123	255	748	Split wood	Quercus sp. (oak)	48 (rad)	56	0.5 - 2	
255:124	255	821	Unworked wood	Quercus sp. (oak)	9 (rad)	10	1 - 1.5	
255:125	255	505	Split wood	Betula sp. (birch)	75	38	1 - 2	
255:126	255	749	Unworked brushwood	Quercus sp. (oak)	-	32	0.5 - 1	
255:127	255	750	Unworked brushwood	Quercus sp. (oak)	28	32 - 34	0.5 - 1	
255:128	255	751	Unworked wood	Betula sp. (birch)	26	19	1 - 1.2	

Timber No.	Deposit No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
255:129	255	752	Split timber	Quercus sp. (oak)	-	38	1 - 2	
255:130	255	506	Split wood	Quercus sp. (oak)	-	11	1 - 2	
255:131	255	507	Split wood	Quercus sp. (oak)	42 (rad)	25+/-5	1.5 - 2.5	
255:132	255	753	Unworked brushwood	Betula sp. (birch)	-	15	0.8 - 1	
255:133	255	434	Unworked roundwood	Corylus avellana (hazel)	-	22	1 - 1.2	
255:134	255	754	Unworked brushwood	Alnus glutinous (alder)	32	13	1 - 2	
255:135	255	-	Chisel point	Betula sp. (birch)	38	24	0.5 - 2	
255:136	255	-	Chisel point	Alnus glutinous (alder)	40	21	1 - 2.5	
255:137	255	755	Unworked wood	Quercus sp. (oak)	28	32	0.5 - 1	
255:138	255	-	Chisel point	Quercus sp. (oak)	33	25	1 - 1.5	
255:139	255	756	Unworked brushwood	Alnus glutinous (alder)	30	17	1 - 2	
255:140	255	822	Unworked brushwood	Quercus sp. (oak)	40	16	2 - 3	
255:141	255	417	Unworked wood	Betula sp. (birch)	-	12	2 - 10	
255:142	255	418	Split wood	Betula sp. (birch)	-	24	3	
255:143	255	390	Split wood	Quercus sp. (oak)	-	-	2 - 3.5	
255:144	255	508	Split timber	Quercus sp. (oak)	-	24	1 - 3	
255:145	255	509	Unworked brushwood	Betula sp. (birch)	34	15	1.5 - 2.5	
255:146	255	757	Split wood	Pomoideae sp.	-	-	-	Degraded
255:147	255	758	Unworked brushwood	Betula sp. (birch)	-	27	0.5 - 1	
255:148	255	759	Unworked brushwood	Betula sp. (birch)	37	26	1 - 1.5	
255:149	255	760	Unworked brushwood	Betula sp. (birch)	35	17	2	
255:150	255	-	Pencil point	Fraxinus excelsior (ash)	41	16	2 - 2.5	
255:151	255	422	Unworked wood	Betula sp. (birch)	-	66+	2.2 - 4.4	
255:152	255	761	Unworked brushwood	Quercus sp. (oak)	35	16 - 18	1 - 2	
255:153	255	762	Unworked brushwood	Betula sp. (birch)	-	16	0.8 - 1.2	
255:154	255	763	Unworked brushwood	Quercus sp. (oak)	41	26	1 - 1.8	
255:155	255	764	Unworked brushwood	Quercus sp. (oak)	-	25	1	
255:156	255	765	Split wood	Quercus sp. (oak)	-	18	1 - 2	
255:157	255	823	Unworked brushwood	Pomoideae sp.	15	8	1.5 - 2	
255:158	255	419	Split timber	Quercus sp. (oak)	-	62	1 - 3	
255:159	255	510	Split wood	Quercus sp. (oak)	-	72	1.4 - 2.2	
255:160	255	-	Chisel point	Quercus sp. (oak)	26	13+	1-1.8	
255:161	255	-	Pencil point	Corylus avellana (hazel)	30	14	1 - 2	
255:162	255	511	Split wood	Quercus sp. (oak)	-	25	1	
255:163	255	766	Unworked brushwood	Alnus glutinous (alder)	28	21	1 - 1.2	Early felling

Timber No.	Deposit No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
255:164	255	512	Unworked roundwood	Quercus sp. (oak)	-	41	0.5 - 0.8	
255:165	255	420	Worked roundwood	Betula sp. (birch)	56	32	1 - 2.5	
255:166	255	767	Split wood	Quercus sp. (oak)	20 (rad)	20	1 - 2	
255:167	255	768	Split wood	Quercus sp. (oak)	-	72	0.5 - 2	
255:168	255		Chisel point					Missing
255:169	255		Unworked brushwood					Missing
255:170	255	513	Unworked brushwood	Betula sp. (birch)	46	26	1 - 3	
255:171	255	769	Split wood	Quercus sp. (oak)	-	22	0.6 - 1.2	
255:172	255	770	Unworked brushwood	Betula sp. (birch)	31	16	1 - 2	
255:173	255	-	Unworked brushwood	Quercus sp. (oak)	-	61	1.5 - 2	
255:174	255	-	Split wood	Quercus sp. (oak)	-	50+	1 - 2.5	
255:175	255	771	Unworked brushwood	Quercus sp. (oak)	34 (rad)	12	2 - 3	
255:176	255	514	Split wood	Quercus sp. (oak)	66	46	1.5 - 3	
255:177	255	515	Split wood	Quercus sp. (oak)	11 (rad)	8	1	
255:178	255	772	Unworked brushwood	Betula sp. (birch)	-	14	0.8 - 1	
255:179	255	-	Unworked brushwood	Quercus sp. (oak)	32	18	<1-1.5	
255:180	255	516	Split wood	Quercus sp. (oak)	-	48	1 - 2	
255:181	255	773	Unworked brushwood	Quercus sp. (oak)	-	21	0.5 - 1	
255:182	255	824	Unworked brushwood	Corylus avellana (hazel)	14 (rad)	9	0.5 - 1	Coppiced
255:183	255	774	Unworked brushwood	Betula sp. (birch)	29	12	2 - 2.5	
255:184	255	517	Split wood	Quercus sp. (oak)	-	42	0.5 - 0.8	
255:185	255	523	Split wood	Quercus sp. (oak)	-	56	0.5 - 1	
255:186	255	518	Split timber	Betula sp. (birch)	-	21	2	
255:187	255	519	Split wood	Quercus sp. (oak)	-	29	0.6 - 1.2	
255:188	255	775	Unworked brushwood	Corylus avellana (hazel)	41	31	0.5 - 1	
255:189	255	825	Split wood	Betula sp. (birch)	32	21	1 - 2	
255:190	255	520	Split wood	Quercus sp. (oak)	-	15	0.5 - 1	
255:191	255		Unworked brushwood					Missing
255:192	255	776	Unworked brushwood	Betula sp. (birch)	25	15	0.5 - 1.5	
255:193	255	-	Chisel point	Corylus avellana (hazel)	36	14	2	Coppiced
255:194	255	777	Split wood	Quercus sp. (oak)	-	18	1 - 1.3	
255:195	255	778	Unworked brushwood	Quercus sp. (oak)	30	21	0.5 - 1	
255:196	255	521	Unworked roundwood	Quercus sp. (oak)	-	41	1 - 3	
255:197	255	522	Split wood	Betula sp. (birch)	42	38	1 - 2	
255:198	255	-	Split timber	Quercus sp. (oak)	70	61	0.5 - 1	
255:199	255	-	Chisel point	Betula sp. (birch)	42	20	1 - 2.5	

Timber No.	Deposit No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
255:200	255	-	Chisel point	Fraxinus excelsior (ash)	27	8-10	2 - 2.5	
255:201	255	-	Wood working waste	Quercus sp. (oak)	-	61	1 - 2	
255:202	255	826	Wood working waste	Quercus sp. (oak)	76	56 +/-4	1 - 2	
255:203	255	-	Wood working waste	Quercus sp. (oak)	68 (rad)	58	1 - 2.5	Two id's
255:203	255	-		Quercus sp. (oak)	32	25	1	Two id's

Appendix 7: Wood species analysis results from Annaholty Site 8: Phase 2 (295)

Find no.	Context no.	Sample No.	Description	Type	Wood species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
295:1	295	848	Branch	Unworked roundwood	Betula sp. (birch)	84	41	1.5 - 3	
295:2	295	353	Branch	Wedge point	Quercus sp. (oak)	60	39-42	0.5 - 2	
295:3	295	354	Log/branch	Split timber	Quercus sp. (oak)	-	11	2 - 5	
295:4	295	442	Branch/log	Unworked roundwood	Quercus sp. (oak)	76	82 - 87	0.3 - 3	
295:5	295	846	Branch	Unworked roundwood	Pomoideae cf sorbus (rowan)	50 (rad)	38	1 - 2	
295:6	295	-	Small piece of branch	Split wood					Same as 298:103
295:7	295	443	Branch/fragment of wedge	Split wood	Quercus sp. (oak)	-	16	1 - 2.5	
295:8	295	849	Branch	Unworked roundwood	Quercus sp. (oak)	86	57	0.5 - 2	
295:9	295	400	Branch fragment	Split wood	Pomoideae cf sorbus (rowan)	-	23	1 - 3	

Appendix 8: Wood species analysis results from Annaholty Site 8: Phase 2 (297)

Timber No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
297:1	297	395	Unworked roundwood	Quercus sp. (oak)	56	67	0.5 - 1	
297:2	297	453	Unworked brushwood	Betula sp. (birch)	-	21	0.8 - 1.2	
297:3	297	635	Unworked brushwood	Betula sp. (birch)	44	24	1.5 - 2.5	
297:4	297	444	Split wood	Quercus sp. (oak)	8 (rad)	8	1	
297:5	297	396	Unworked roundwood	Quercus sp. (oak)	70	76	1	
297:6	297	454	Unworked brushwood	Corylus avellana (hazel)	32	19	1 - 2	
297:7	297	397	Unworked roundwood	Quercus sp. (oak)	38	24	1 - 2	Insect damage
297:8	297	455	Unworked roundwood	Quercus sp. (oak)	-	81	0.5 - 1	
297:9	297	550	Unworked roundwood	Quercus sp. (oak)	38 (rad)	34	0.8 - 1.2	Degraded
297:10	297	832	Split wood	Corylus avellana (hazel)	48	33	1 - 1.2	
297:11	297	636	Unworked roundwood	Quercus sp. (oak)	-	28	0.5 - 1	
297:12	297	402	Split wood	Betula sp. (birch)	32	23	0.5 - 1.5	
297:13	297	403	Split wood	Quercus sp. (oak)	-	12	2 - 3	
297:14	297	456	Split wood	Betula sp. (birch)	30	24	1 - 1.5	
297:15	297	309	Split wood	Quercus sp. (oak)	-	-	-	Degraded
297:16	297	404	Split wood	Quercus sp. (oak)	-	31	0.5 - 1	
297:17	297	405	Split wood	Quercus sp. (oak)	-	48	1 - 2	
297:18	297	303	Split wood	Pomoideae spp.	-	-	-	Degraded
297:19	297	310	Split wood	Betula sp. (birch)	-	-	-	Degraded
297:20	297	311	Unworked brushwood	Salix sp. (willow)	28	14 +/-2	1.5 - 1.8	
297:21	297	637	Split wood	Quercus sp. (oak)	14 (rad)	20	1	
297:22	297	312	Split wood	Quercus sp. (oak)	-	21	0.3	Slow growth
297:23	297	833	Split wood	Quercus sp. (oak)	-	12	2 - 4	
297:24	297	-	Chisel point	Quercus sp. (oak)	52	72	0.3 - 0.5	Felled in latewood
297:25	297	313	Unworked brushwood	Betula sp. (birch)	22	13	1 - 1.5	
297:26	297	314	Unworked brushwood	Betula sp. (birch)	-	24	2 - 4	
297:27	297	406	Split wood	Quercus sp. (oak)	-	14	0.8 - 2.2	
297:28	297	407	Split wood	Quercus sp. (oak)	-	18	0.5	
297:29	297	-	Unworked wood	Quercus sp. (oak)	24	15	<1	
297:30	297	638	Chisel point	Quercus sp. (oak)	90	93+/-5	0.3 - 0.8	
297:31	297	408	Split wood	Quercus sp. (oak)	-	36	0.2 - 0.5	Slow growth
297:32	297	398	Unworked brushwood	Pomoideae cf sorbus (rowan)	50	24	2 - 3	
297:33	297	834	Unworked roundwood	Quercus sp. (oak)	124	126	1 - 1.5	

Timber No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
297:34	297	445	Unworked roundwood	Quercus sp. (oak)	69	44	0.5 - 2.5	
297:35	297	-	Unworked wood	Quercus sp. (oak)	46	21+	1 - 3	
297:36	297	835	Split wood	Quercus sp. (oak)	56 (rad)	17	-	
297:37	297	850	Split wood	Fraxinus excelsior (ash)	-	52	0.2 - 0.6	
297:38	297	639	Unworked roundwood	Quercus sp. (oak)	38	48	1	
297:39	297	409	Split wood	Quercus sp. (oak)	-	6	1 - 2	
297:40	297	410	Split wood	Quercus sp. (oak)	-	33	0.8 - 1	
297:41	297	836	Split wood	Quercus sp. (oak)	29 (rad)	16	1 - 2	
297:42	297	411	Unworked roundwood	Quercus sp. (oak)	40	38	1 - 2	
297:43	297	-	Worked brushwood	Betula sp. (birch)	39	7	3 - 4	Same as 297:34?
297:44	297	837	Unworked roundwood	Quercus sp. (oak)	35	49	0.5 - 0.8	
297:45	297	304	Unworked roundwood	Pomoideae cf sorbus (rowan)	25	11	2 - 3	
297:46	297	305	Split wood	Quercus sp. (oak)	-	28	0.3	Slow growth
297:47	297	306	Unworked brushwood	Quercus sp. (oak)	32	51	0.5	
297:48	297	640	Unworked roundwood	Quercus sp. (oak)	-	25	0.8 - 1.2	
297:49	297	641	Split wood	Quercus sp. (oak)	-	22	2 - 3	
297:50	297	315	Unworked roundwood	Quercus sp. (oak)	-	25	1	
297:51	297	316	Unworked brushwood	Pomoideae cf sorbus (rowan)	41	24	1 - 2.2	
297:52	297	642	Unworked roundwood	Quercus sp. (oak)	58	51	1 -1.5	
297:53	297	299	Split wood	Betula sp. (birch)	-	-	1 - 2	Degraded
297:54	297	300	Split wood	Quercus sp. (oak)	-	-	-	Degraded
297:55	297	551	Split timber	Quercus sp. (oak)	-	59	0.5 - 2	
297:56	297	838	Split wood	Betula sp. (birch)	-	-	-	
297:57	297	307	Unworked brushwood	Corylus avellana (hazel)	30	15	1 - 2	
297:58	297	317	Unworked roundwood	Quercus sp. (oak)	-	22	2 - 4	Two ID's made
297:58	297	317	Roundwood	Corylus avellana (hazel)	58	21	1 - 2.8	
297:59	297	301	Unworked wood	Quercus sp. (oak)	32	41	0.5 - 0.8	
297:60	297	839	Split wood	Quercus sp. (oak)	36	16	2 - 3	

Appendix 9: Wood species analysis results from Annaholty Site 8: Phase 3 (90)

Find No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
90:1	90	4	Split timber	Quercus sp. (oak)	-	53	2 - 3	
90:2	90	56	Split timber	Quercus sp. (oak)	-	82	1 - 3	
90:3	90	52	Split timber	Quercus sp. (oak)	-	50	1 - 4	
90:4	90	69	Split timber	Quercus sp. (oak)	-	61	1.8- 4	
90:5	90	29	Split timber	Quercus sp. (oak)	-	72	1 - 3	Insect damage
90:6	90	11	Split timber	Pomoideae cf sorbus (rowan)	72	39	2 - 3	
90:7	90	10	Split timber	Betula sp. (birch)	-	22	2 - 2.8	
90:8	90	60	Split timber	Quercus sp. (oak)	-	81	1 - 2.2	
90:9	90	67	Split timber	Quercus sp. (oak)	-	88	2 - 5	
90:10	90	30	Split timber	Quercus sp. (oak)	-	47-50	1 - 3	
90:11	90	19	Split timber	Quercus sp. (oak)	-	89	1 - 4	
90:12	90	20	Split timber	Quercus sp. (oak)	-	90+	1 - 2.5	
90:13	90	21, 169	Split timber	Quercus sp. (oak)	-	74	1 - 2.8	
90:14	90	22	Split timber	Quercus sp. (oak)	234	100+	1 - 3	
90:15	90	68	Split timber	Quercus sp. (oak)	-	100+	0.5 - 1.5	
90:16	90	53	Split timber	Quercus sp. (oak)	121 (rad)	80-90	0.5 - 4	
90:17	90	23	Split timber	Quercus sp. (oak)	-	17	2 - 3	
90:18	90	24	Unworked roundwood	Quercus sp. (oak)	-	13	1 - 1.5	
90:19	90	-	Worked brushwood	Betula sp. (birch)	26	-	-	Degraded
90:20	90	25	Split timber	Quercus sp. (oak)	332	89	1 - 5	
90:21	90	26	Split timber	Quercus sp. (oak)	-	34	1 - 2	
90:22	90	27	Split timber	Quercus sp. (oak)	138 (rad)	89-90	0.5 - 4	
90:23	90	28	Split timber	Quercus sp. (oak)	-	79	0.5 - 2.5	
90:24	90	70	Split timber	Quercus sp. (oak)	339	97	1 - 5	
90:25	90	33	Unworked roundwood	Quercus sp. (oak)	-	86	1 - 4	
90:26	90	-	Roundwood with a chisel point at one end and a degraded wedge point at the other	Quercus sp. (oak)	42 (rad)	33+	2 - 3	
90:27	90	54	Split timber	Quercus sp. (oak)	-	96	0.5 - 1.5	
90:28	90	45	Split timber	Quercus sp. (oak)	-	72	1.6 - 3	
90:29	90	31	Split timber	Quercus sp. (oak)	-	90+	1 - 2.8	
90:30	90	57	Split timber	Quercus sp. (oak)	-	64	1 - 2.2	

Find No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
90:31	90	13	Split timber	Quercus sp. (oak)	-	58	2 - 4	
90:32	90	12	Split timber	Quercus sp. (oak)	-	52+	1 - 2	Insect damage
90:33	90	55	Worked roundwood	Quercus sp. (oak)	-	38	1.8 - 4	
90:34	90	7	Split timber	Quercus sp. (oak)	-	38	2 - 5.2	
90:35	90	9	Split timber	Quercus sp. (oak)	-	76	1 - 3	
90:36	90	14	Split timber	Quercus sp. (oak)	-	90 - 95	1 - 3.2	
90:37	90	61	Split timber	Quercus sp. (oak)	-	100+	1 - 2.8	
90:38	90	-	Wood working waste	Quercus sp. (oak)	120 (rad)	121	0.8 - 2.5	
90:39	90	32	Split timber	Quercus sp. (oak)	-	12	2	
90:40	90	8	Split timber	Quercus sp. (oak)	-	74	1	
90:41	90	200	Split timber	Quercus sp. (oak)	-	71	1 -2	
90:42	90	46	Split timber	Quercus sp. (oak)	-	31	1 - 2	
90:43	90	62	Split timber	Quercus sp. (oak)	-	79	2 - 4	
90:44	90	47	Split timber	Quercus sp. (oak)	-	85+	1 - 4	
90:45	90	93	Split timber	Quercus sp. (oak)	-	32	2 - 5	
90:46	90	326	Split timber	Quercus sp. (oak)	-	70-80	1 - 4	
90:47	90	50	Split timber	Quercus sp. (oak)	-	36	1.8 - 8	
90:48	90	216	Unworked roundwood	Quercus sp. (oak)	121	28	2.2 - 4.2	
90:49	90	214	Split timber	Quercus sp. (oak)	-	81	1 - 1.6	
90:50	90	76	Split timber	Quercus sp. (oak)	-	49	2 - 4	
90:51	90	115	Split timber	Betula sp. (birch)	70	36-40	1 - 1.5	
90:52	90	236	Split timber	Quercus sp. (oak)	-	36-40	0.5 - 3	
90:53	90	116	Split timber	Quercus sp. (oak)	-	69	1 - 2	
90:54	90	250	Split timber	Quercus sp. (oak)	-	17	2 - 4	
90:55	90	63	Split timber	Quercus sp. (oak)	-	82	2 - 4	
90:56	90	117	Split timber	Quercus sp. (oak)	-	61	0.5 - 2	
90:57	90	539	Split timber	Quercus sp. (oak)	-	28	2 - 4	
90:58	90	94	Degraded chisel point	Quercus sp. (oak)	130	31	2 - 5.5	
90:59	90	327	Split timber	Quercus sp. (oak)	-	41	1 - 3	
90:60	90	535	Split timber	Quercus sp. (oak)	188 (rad)	100+	0.5 - 3	
90:61	90	97	Split timber	Quercus sp. (oak)	-	82	1 - 3.4	
90:62	90	71	Lap joint and wedge point	Quercus sp. (oak)	-	32	5 - 9.5	
90:63	90	15	Split timber	Quercus sp. (oak)	-	58	0.8 - 1	
90:64	90	16	Split timber	Quercus sp. (oak)	-	42	1 - 2	
90:65	90	34	Split timber	Quercus sp. (oak)	-	68	1 - 2	
90:66	90	3	Split timber	Quercus sp. (oak)	-	18	1 - 2	

Find No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
90:67	90	17	Split timber	Quercus sp. (oak)	-	82	1	
90:68	90	18	Split timber	Quercus sp. (oak)	-	23	2 - 4.8	
90:69	90	-	Wedge point	Quercus sp. (oak)	58	31	1 - 3	
90:70	90	51	Unworked roundwood	Quercus sp. (oak)	-	32	0.5 - 3	
90:71	90	534	Split timber	Quercus sp. (oak)	-	100+	0.5 - 1	
90:72	90	37	Split timber	Quercus sp. (oak)	-	72-76	1 - 3	
90:73	90	35	Split timber	Quercus sp. (oak)	-	21	2 - 4	
90:74	90	36	Unworked brushwood	Betula sp. (birch)	-	35	0.5 - 1	
90:75	90	45	Split timber	Quercus sp. (oak)	-	-	-	Same as 90:28
90:76	90	38	Split timber	Quercus sp. (oak)	-	60 - 63	2	
90:77	90	58	Worked roundwood	Quercus sp. (oak)	71	17	2 - 5	
90:78	90	59	Split timber	Betula sp. (birch)	-	24	1 - 3	
90:79	90	39	Split timber	Quercus sp. (oak)	-	67	1	
90:80	90	40	Split timber	Quercus sp. (oak)	-	95+	1	
90:81	90	41	Worked roundwood	Quercus sp. (oak)	-	82	1 - 4	
90:82	90	42	Split timber	Quercus sp. (oak)	-	31	1 - 1.8	
90:83	90	43	Split timber	Quercus sp. (oak)	-	69	1 - 3	
90:84	90	44	Split timber	Quercus sp. (oak)	-	56+	2 - 3.8	Insect damage
90:85	90	64	Worked brushwood	Betula sp. (birch)	51	19	2.5 - 3	
90:86	90	118	Split timber	Quercus sp. (oak)	-	62	0.5 - 4	
90:87	90	72	Split timber	Quercus sp. (oak)	-	-	1	Insect damage
90:88	90	119	Unworked roundwood	Quercus sp. (oak)	-	68	1 - 1.6	
90:89	90	219	Split timber	Betula sp. (birch)	-	48	2 - 4	
90:90	90	120	Split timber	Pomoideae cf sorbus (rowan)	120	69	2	
90:91	90	65	Unworked roundwood	Quercus sp. (oak)	116	82 - 85	0.5 - 1	
90:92	90	95	Split timber	Quercus sp. (oak)	114	67	1 - 2	
90:93	90	96	Split timber	Quercus sp. (oak)	-	98	0.5 - 3	
90:94	90	231	Split timber	Quercus sp. (oak)	-	41	3 - 5	
90:95	90	66	Split timber	Quercus sp. (oak)	-	80-83	1 - 3	
90:96	90	77	Split timber	Quercus sp. (oak)	-	53	2 - 3	
90:97	90	78	Split timber	Quercus sp. (oak)	-	18	2 - 3	
90:98	90	121	Split timber	Quercus sp. (oak)	62	48	1 - 2.2	
90:99	90	-	Wood working waste	Quercus sp. (oak)	-	-	0.5	
90:100	90	225	Split timber	Quercus sp. (oak)	-	81	1	
90:101	90	122	Split timber	Quercus sp. (oak)	-	42	1	

Find No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
90:102	90	123	Split timber	Quercus sp. (oak)	-	68	1	
90:103	90	124	Split timber	Quercus sp. (oak)	66	36	1 - 3	
90:104	90	82	Split timber	Quercus sp. (oak)	-	12	2	
90:105	90	125	Split timber	Quercus sp. (oak)	-	71	0.5 - 2	
90:106	90	92	Split timber	Fraxinus excelsior (ash)	10	6	1 - 3	
90:107	90	81	Split timber	Sorbus sp. (rowan)	87	49	1 - 2	
90:108	90	221	Split timber	Quercus sp. (oak)	-	52	1 - 2	
90:109	90	201	Split timber	Quercus sp. (oak)	-	69	1 - 2	
90:110	90	126	Unworked roundwood	Quercus sp. (oak)	-	10	3.4 - 6	
90:111	90	204	Split timber	Quercus sp. (oak)	142	87	1 - 3	
90:112	90	183	Split timber	Quercus sp. (oak)	-	17	2 - 3	
90:113	90	281	Split timber	Quercus sp. (oak)	-	68	2 - 4	
90:114	90	328	Split timber	Quercus sp. (oak)	-	90-100	0.5 - 2	
90:115	90	278	Unworked roundwood	Quercus sp. (oak)	-	33	2 - 2.6	
90:116	90	329	Split timber	Quercus sp. (oak)	120	99	0.5 - 2	
90:117	90	286	Split timber	Quercus sp. (oak)	-	100+	2 - 3	
90:118	90	287	Split timber	Quercus sp. (oak)	-	96	1 - 2	
90:119	90	127	Split timber	Quercus sp. (oak)	-	71	1 - 2	
90:120	90	290	Split timber	Quercus sp. (oak)	138 (rad)	100+	1 - 3	
90:121	90	291	Split timber	Quercus sp. (oak)	-	35	3 - 4.4	
90:122	90	277	Split timber	Quercus sp. (oak)	65	34	1 - 2	
90:123	90	202	Split timber	Quercus sp. (oak)	-	60	1 - 2.5	
90:124	90	170	Split timber	Quercus sp. (oak)	-	45	1	
90:125	90	330	Split timber	Quercus sp. (oak)	-	61	0.5 - 1	
90:127	90	84	Split timber	Quercus sp. (oak)	-	29	2 - 4	
90:128	90	331	Split timber	Quercus sp. (oak)	-	38	2.8 - 4.2	
90:129	90	843	Split timber	Quercus sp. (oak)	-	49 - 51	2	Multiple sample
90:129	90	223	Split timber	Betula sp. (birch)	42	24	1 - 3	Multiple sample
90:129	90	223, 843	Split timber	Quercus sp. (oak)	165 (rad)	72	1 - 4	Multiple sample
90:130	90	128	Split timber	Quercus sp. (oak)	60	14	4.2 - 5	
90:131	90	536	Unworked roundwood	Quercus sp. (oak)	140 (rad)	96 (min)	0.5 - 3	
90:132	90	332	Split timber	Quercus sp. (oak)	144	94 (min)	0.5 - 2	
90:133	90	215	Unworked wood	Quercus sp. (oak)	-	0	1 - 2	Insect damage
90:134	90	239	Unworked roundwood	Quercus sp. (oak)	-	27	2 - 3	
90:135	90	333	Worked roundwood	Quercus sp. (oak)	106 (rad)	90-95	0.5 - 4	
90:136	90	222	Unworked roundwood	Quercus sp. (oak)	-	72	0.8 - 1.4	

Find No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
90:137	90	85	Split wood	Quercus sp. (oak)	-	16	2	
90:138	90		Split timber					Missing
90:139	90	87	Unworked wood	Betula sp. (birch)	34	20	0.5 - 1.5	
90:140	90	88	Unworked wood	Quercus sp. (oak)	-	32	0.8	
90:141	90	255	Unworked roundwood	Pomoideae spp.	-	-	-	Degraded
90:141	90	89		Betula sp. (birch)	40	18	2 - 3	
90:142	90	90	Split timber	Quercus sp. (oak)	-	8	4	
90:143	90	129	Split timber	Quercus sp. (oak)	130	64	2.2 - 3	
90:144	90	334	Unworked roundwood	Quercus sp. (oak)	-	72	2 - 3.2	
90:145	90	130	Split timber	Quercus sp. (oak)	-	69	1 - 5	
90:146	90	99	Unworked roundwood	Quercus sp. (oak)	-	6	4 - 6	
90:147	90	100	Split timber	Quercus sp. (oak)	-	-	3	
90:148	90	101	Split timber	Betula sp. (birch)	-	-	-	
90:149	90	285	Unworked roundwood	Quercus sp. (oak)	140 (rad)	99 (min)	1 - 2.6	
90:150	90	102	Unworked roundwood	Quercus sp. (oak)	-	-	-	Degraded
90:151	90	103	Unworked roundwood	Quercus sp. (oak)	-	16	2	
90:152	90	104	Split timber	Quercus sp. (oak)	-	-	-	Degraded
90:153	90	105	Split timber	Quercus sp. (oak)	-	19	1 - 2	
90:154	90	106	Split timber	Betula sp. (birch)	-	-	-	Degraded
90:155	90	107	Split timber	Quercus sp. (oak)	-	17	2 - 3.2	
90:156	90	108	Split timber	Quercus sp. (oak)	-	-	3 - 4	Degraded
90:157	90	109	Split timber	Quercus sp. (oak)	-	-	0.5	Slow growth
90:158	90	110	Split timber	Quercus sp. (oak)	-	22	1 - 2.8	
90:159	90	131	Split timber	Quercus sp. (oak)	-	10	1 - 2	
90:160	90	132	Split timber	Quercus sp. (oak)	-	84	1 - 2	
90:161	90	335	Worked roundwood	Quercus sp. (oak)	228	100+	1 - 4	
90:162	90	111	Split timber	Betula sp. (birch)	36	17	1.4 - 2	
90:163	90	112	Split timber	Betula sp. (birch)	38	12 - 15	2 - 2.8	
90:164	90	113	Split timber	Betula sp. (birch)	38	-	-	Degraded
90:165	90	91	Unworked roundwood	Quercus sp. (oak)	-	61	1 - 1.5	
90:166	90	391	Chisel point	Quercus sp. (oak)	113 (rad)	76	0.5 - 1	
90:167	90	570	Worked branch	Corylus avellana (hazel)	50	21	1.5 - 2	
90:168	90	133	Split wood	Quercus sp. (oak)	72 (rad)	37	2 - 3	
90:169	90	134	Unworked wood	Betula sp. (birch)	-	31	1 - 3	
90:170	90	336	Split timber	Quercus sp. (oak)	-	61	0.5 - 1.4	
90:171	90	233	Split timber	Quercus sp. (oak)	-	44-46	2 - 3	

Find No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
90:172	90	-	Chisel point	Quercus sp. (oak)	20 (rad)	16	1-2.2	
90:173	90	242	Split timber	Quercus sp. (oak)	-	18	2 - 2.5	
90:174	90	135	Unworked brushwood	Betula sp. (birch)	45	10	2 - 3	
90:175	90	571	Split timber	Quercus sp. (oak)	-	27	2 - 4	
90:176	90	189	Split timber	Quercus sp. (oak)	-	81	1 - 3.2	
90:177	90	179	Split timber	Quercus sp. (oak)	-	48+	2 - 2.6	Insect damage
90:178	90	136	Split timber	Quercus sp. (oak)	-	95 (min)	1 - 2	
90:179	90	237	Unworked roundwood	Betula sp. (birch)	72	34	1 - 2	
90:180	90	-	Split timber	Quercus sp. (oak)	56 (rad)	59-65	1 - 3	
90:181	90	197	Unworked brushwood	Betula sp. (birch)	30	12-16	1 - 3	
90:182	90		Unworked wood					Missing
90:183	90	337	Split timber	Quercus sp. (oak)	-	75	1 - 2.8	
90:184	90	173	Split timber	Quercus sp. (oak)	100	62	1 - 2	
90:185	90	203	Split timber	Betula sp. (birch)	81	18	3 - 5	
90:186	90	280	Split timber	Quercus sp. (oak)	-	100+	1.2 - 3	
90:187	90	572	Split timber	Quercus sp. (oak)	-	29	1 - 3	
90:188	90	251	Unworked roundwood	Betula sp. (birch)	106	68	0.5 - 2	
90:189	90	213	Split timber	Quercus sp. (oak)	-	80	1 - 1.8	
90:190	90	338	Split timber	Quercus sp. (oak)	-	90	0.5 - 2.2	
90:191	90	171	Split timber	Quercus sp. (oak)	-	59	1.4 - 2.8	
90:192	90	485	Unworked roundwood	Quercus sp. (oak)	109	76	0.5 -3	
90:193	90	195	Chisel point	Salix sp. (willow)	55	31	1 - 2	Coppiced
90:194	90	339	Split timber	Quercus sp. (oak)	-	37	2 - 3	
90:195	90	573	Split wood	Quercus sp. (oak)	-	14	1	
90:196	90	208	Chisel point	Sorbus sp. (rowan)	148	56	2 - 3	
90:197	90	399	Split timber	Quercus sp. (oak)	-	27	1	
90:198	90	340	Chisel point	Salix sp. (willow)	38	19	1 - 2	Degraded
90:199	90	574	Split timber	Quercus sp. (oak)	-	34	1	
90:200	90	228	Unworked brushwood	Betula sp. (birch)	36	18	1 - 2	
90:201	90	167	Split timber	Quercus sp. (oak)	106	30	2 - 4	Insect damage
90:202	90	181	Split timber	Quercus sp. (oak)	-	-	-	Insect damage
90:203	90	235	Split timber	Quercus sp. (oak)	-	43	2	
90:204	90	174	Split timber	Quercus sp. (oak)	-	62	1	
90:205	90	540	Split timber	Quercus sp. (oak)	-	48	1.5 - 3	
90:206	90	341	Split timber	Quercus sp. (oak)	-	13	2 - 3	
90:207	90	541	Split timber	Quercus sp. (oak)	-	31	1 - 3	

Find No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
90:208	90	542	Split timber	Quercus sp. (oak)	29 (rad)	27	0.5	
90:209	90	-	Chisel point	Betula sp. (birch)	63 (rad)	28	1 - 3	
90:210	90	-	Split timber	Betula sp. (birch)	30 (rad)	12-15	1 - 2	
90:211	90	238	Split timber	Quercus sp. (oak)	-	62	1 - 3	
90:212	90	187	Split timber	Quercus sp. (oak)	91	52	1 - 2	
90:213	90	482	Unworked brushwood	Betula sp. (birch)	14	9	0.5 - 0.8	
90:214	90	342	Split timber	Quercus sp. (oak)	-	86-90	1 - 3	
90:215	90	543	Split timber	Quercus sp. (oak)	-	29	0.8 - 1.2	
90:216	90	575	Unworked brushwood	Corylus avellana (hazel)	34	18	1 - 2	
90:217	90	257	Unworked roundwood	Salix sp. (willow)	20	10	2	
90:218	90	192	Unworked roundwood	Betula sp. (birch)	81	18	2 - 4	
90:219	90	343	Unworked roundwood	Betula sp. (birch)	-	72	1 - 3	
90:220	90	193	Split timber	Quercus sp. (oak)	32 (rad)	61	0.5	
90:221	90	268	Split timber	Quercus sp. (oak)	24	16	1 - 2	
90:222	90	486	Split timber	Betula sp. (birch)	55	22	2 - 4	
90:223	90	524	Unworked brushwood	Alnus glutinous (alder)	-	10	0.7 - 1.2	
90:224	90	-	Split timber	Betula sp. (birch)	32	16+	1 - 2	
90:225	90	544	Unworked roundwood	Betula sp. (birch)	46 (rad)	-	-	Degraded
90:226	90	263	Split timber	Betula sp. (birch)	60	40	1 - 2	
90:227	90	576	Chisel point	Sorbus sp. (rowan)	90	42	1.5 - 2.5	
90:228	90	177	Split timber	Alnus glutinous (alder)	120	38	2 - 4	
90:229	90	-	Chisel point	Betula sp. (birch)	42 (rad)	19	1 - 3	
90:230	90	545	Split timber	Quercus sp. (oak)	100	62+/-10	0.5 - 1	Degraded
90:231	90	577	Split timber	Quercus sp. (oak)	62	421	1 - 2	
90:232	90	-	Chisel point	Betula sp. (birch)	-	-	-	Difficult to section
90:233	90	180, 191	Split timber	Quercus sp. (oak)	-	69	2 - 5	
90:234	90	546	Split timber	Quercus sp. (oak)	-	-	1 - 3	
90:235	90	344	Split timber	Quercus sp. (oak)	-	30+	0.4 - 1	
90:236	90	168	Split timber	Quercus sp. (oak)	-	33	1 - 2	
90:237	90	-	Split timber	Quercus sp. (oak)	142	64	1 - 3	
90:238	90	345	Split timber	Quercus sp. (oak)	-	-	-	Insect damage
90:239	90	578	Split timber	Quercus sp. (oak)	-	100+	1 - 3	
90:240	90	452	Unworked roundwood	Quercus sp. (oak)	72	61	1 - 2	
90:241	90	-	Unworked roundwood	Quercus sp. (oak)	66	34	1 - 2.5	
90:242	90	166	Split timber	Quercus sp. (oak)	-	58	1 - 5	

Find No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
90:243	90	274	Split timber	Pomoideae cf sorbus (rowan)	-	-	-	Degraded
90:244	90	283	Split timber	Alnus glutinous (alder)	144	68	2 - 3	
90:245	90	346	Wedge or possible pencil point	Quercus sp. (oak)	-	41	2 - 4.8	
90:246	90	218	Split timber	Quercus sp. (oak)	-	52	1	
90:247	90	Find	Fragment of an animal yoke	Fraxinus excelsior (ash)	-	-	-	
90:248	90	451	Unworked wood	Betula sp. (birch)	39	21	1 - 2	
90:249	90	273	Split timber	Quercus sp. (oak)	38	20	1 - 1.5	
90:250	90	272	Split timber	Quercus sp. (oak)	-	54	1	
90:251	90		Split timber					Missing
90:252	90	279	Split timber	Betula sp. (birch)	70	29	3	
90:253	90		Split timber					Missing
90:254	90	245	Worked roundwood	Salix sp. (willow)	79	26	2 - 4	
90:255	90	284	Split timber	Quercus sp. (oak)	-	88+	2 - 3.6	
90:256	90	347	Split timber	Quercus sp. (oak)	78	-	-	Degraded
90:257	90	240, 249	Split timber	Quercus sp. (oak)	-	36	2 - 4	
90:258	90	199	Split timber	Betula sp. (birch)	100	26	2.2 - 3.5	
90:259	90	348	Split timber	Quercus sp. (oak)	-	70	0.5 -1	
90:260	90	579	Unworked roundwood	Pomoideae sp.	45	28	1.5 - 2.5	
90:261	90	266	Split timber	Quercus sp. (oak)	110	39	3 - 4	
90:262	90	580	Unworked brushwood	Betula sp. (birch)	18	-	-	Degraded
90:263	90	581	Split timber	Quercus sp. (oak)	-	44	1.5 - 2	
90:264	90	582	Chisel point	Betula sp. (birch)	51 (rad)	24	1 - 3	
90:265	90	844	Split wood	Betula sp. (birch)	66	32	1 - 2	
90:266	90	276	Chisel point	Betula sp. (birch)	62	42	0.5 - 2	
90:267	90	243	Unworked roundwood	Alnus glutinous (alder)	64	38	1 - 2	
90:268	90	182	Split timber	Quercus sp. (oak)	-	100+	1 - 2	
90:269	90	549	Split wood	Alnus glutinous (alder)	33 (rad)	21	1 - 1.5	
90:270	90	349	Split timber	Quercus sp. (oak)	-	81	0.5 - 3	
90:271	90	392	Split timber	Quercus sp. (oak)	-	38	1	
90:272	90	547	Split timber	Quercus sp. (oak)	-	23	1 - 1.5	
90:273	90	548	Split timber	Quercus sp. (oak)	-	48	0.5 - 1.5	
90:274	90	188	Split timber	Quercus sp. (oak)	-	58	0.5 - 1	
90:275	90	-	Split timber	Quercus sp. (oak)	-	89	1 - 3	

Find No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
90:276	90	350	Unworked roundwood	Quercus sp. (oak)	70	61	0.5 - 1	
90:277	90	525	Split wood	Quercus sp. (oak)	-	48	0.7 - 1	
90:278	90	198	Split timber	Quercus sp. (oak)	-	88	0.5	Slow growth

Appendix 10: Wood species analysis results from Annaholty Site 8: Phase 3 (95)

Find no.	Context no.	Sample No.	Description	Type	Wood species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
95:1	95	5	Stake	Unworked wood	Betula sp. (birch)	-	-	-	Degraded
95:2	95	6	Wood	Unworked wood	Betula sp. (birch)	78	14	3 - 4	Fast growth
95:3	95	48	Wood	Worked roundwood	Alnus glutinous (alder)	142	67	1 - 3	
95:4	95	49	Branch or log	Pencil point	Quercus sp. (oak)	58	38	1 - 2	
95:5	95	114	Branch or small log	Unworked roundwood	Quercus sp. (oak)	-	10 - 15	2 - 3	

Appendix 11: Wood species analysis results from Annaholty Site 8: Phase 3 (97)

Timber No.	Context No.	Sample No.	Description	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
97:1	97	-	Piece of tub handle	Fragment of a wooden tube, joins together with 97:2 and comprises part of the vessel wall and a carved handle	Alnus glutinous (alder)	-	-	-	Same piece
97:2	97	-	Piece of tub handle	Fragment of a wooden tube, joins together with 97:1 and comprises part of the vessel wall and a carved handle	Alnus glutinous (alder)	-	-	-	
97:3	97	-	Cut branch	Wedge point	Alnus glutinous (alder)	27	26	1 - 2	
97:4	97	79	Branch - cut from tree	Chisel point	Salix sp. (willow)	34	12	1 - 2	
97:5	97	-	Cut branch	Chisel point	Salix sp. (willow)	19	10	1 - 1.5	Felled in latewood
97:6	97	-	Cut branch	Branch with pencil points both ends	Corylus avellana (hazel)	32	15-18	1 - 2	Coppiced
97:7	97	-	Cut branch	Branch with pencil point & wedge or chisel points	Corylus avellana (hazel)	-	-	-	
97:8	97	-	Cut wedge	Wood working waste	Quercus sp. (oak)	-	81	0.5 - 1	
97:9	97	-	Cut branch	Chisel point	Betula sp. (birch)	75	35 - 40	1 - 2	
97:10	97	-	Cut branch	Chisel point	Sorbus sp. (sorbus)	36	22	1 - 2	
97:11	97	-	Flat cut piece	Wood working waste	Betula sp. (birch)	-	-	-	
97:12	97	-	Cut branch	Split timber	Quercus sp. (oak)	108	82	1 - 2	
97:13	97	-	Plank fragment?	Wood working waste	Quercus sp. (oak)	-	8	3 - 4	
97:14	97	-	Cut branch	Wood working waste	Quercus sp. (oak)	-	4	3 - 5	
97:15	97	-	Cut branch	Wood working waste	Quercus sp. (oak)	47	52	0.4 - 0.8	
97:16	97	-	Cut branch brushwood	Wedge point	Salix sp. (willow)	28	12	2 - 3	
97:17	97	-	Cut branch	Chisel point	Betula sp. (birch)	-	-	-	Difficult to section
97:18	97	-	Piece of tub handle	Fragment of a wooden vessel comprising part of the vessel wall and carved handle	Alnus glutinous (alder)	-	-	-	Same piece

Timber No.	Context No.	Sample No.	Description	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
97:19	97	-	Piece of tub wall	Fragment of a wooden tub which joins with 97:20, a short section of the croze	Alnus glutinous (alder)	-	-	-	
97:20	97	-	Piece of barrel	Fragment of a wooden tub which joins with 97:19, a short section of the croze	Alnus glutinous (alder)	-	-	-	
97:21	97	-	Piece of tub wall	A small fragment of split wood, possibly part of a wooden vessel	Alnus glutinous (alder)	-	-	-	Same piece
97:22	97	-	Piece of tub wall	A small fragment of split wood, possibly part of a wooden vessel	Alnus glutinous (alder)	-	-	-	

Appendix 12: Wood species analysis results from Annaholty Site 8: Phase 3 (160)

Timber No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
160:1	160	320	Unworked roundwood	Betula sp. (birch)	-	48	2.6 - 4.3	
160:2	160	227	Unworked roundwood	Pomoideae cf sorbus (rowan)	55	36	1 - 2	
160:3	160	224	Unworked roundwood	Pomoideae cf sorbus (rowan)	92	57	1 - 4	
160:4	160	232	Unworked roundwood	Quercus sp. (oak)	74	70-72	1	
160:5	160	220	Unworked roundwood	Betula sp. (birch)	162	61	1 - 3.2	
160:6	160	226	Unworked roundwood	Quercus sp. (oak)	48	60	0.5	
160:7	160	137	Unworked brushwood	Betula sp. (birch)	32	14	2 - 3	
160:8	160	138	Unworked brushwood	Pomoideae spp.	48	32	1 - 2	
160:9	160	624	Unworked wood	Quercus sp. (oak)	-	40	1 - 3	
160:10	160	194	Unworked roundwood	Quercus sp. (oak)	58	39	0.5 - 2	2 samples
160:10	160	211	Roundwood	Quercus sp. (oak)	-	22	1 - 2	2 samples
160:11	160	241	Unworked roundwood	Betula sp. (birch)	64	27	1 - 3	
160:12	160	139	Unworked roundwood	Betula sp. (birch)	90	29	1 - 3	
160:13	160	321	Unworked roundwood	Betula sp. (birch)	142	45	1 - 3	
160:14	160	625	Unworked brushwood	Betula sp. (birch)	70	38	1.5 - 2.5	
160:15	160	217	Split timber	Quercus sp. (oak)	-	59	0.5 - 2	
160:16	160	626	Split timber	Betula sp. (birch)	112	38	2 - 4	
160:17	160	318	Unworked roundwood	Quercus sp. (oak)	56	31	1 - 2	
160:18	160	140	Unworked wood	Quercus sp. (oak)	-	10	5 - 6	Fast growth
160:19	160	627	Unworked wood	Betula sp. (birch)	-	35	0.5 - 2	
160:20	160	190	Split wood	Quercus sp. (oak)	52	32	1 - 2.2	
160:21	160	212	Unworked roundwood	Betula sp. (birch)	44	42	0.3 - 0.8	
160:22	160	259	Split wood	Corylus avellana (hazel)	-	-	-	Degraded
160:23	160	628	Split wood	Quercus sp. (oak)	-	-	-	Degraded
160:24	160	-	Roundwood with wedge point	Corylus avellana (hazel)	42	25 - 28	1 - 1.5	
160:25	160	457	Unworked roundwood	Alnus glutinous (alder)	88	35	2 - 3	
160:26	160	446	Unworked roundwood	Quercus sp. (oak)	79	29	2 - 4	
160:27	160	271	Unworked roundwood	Quercus sp. (oak)	89	42	2 - 2.8	
160:28	160	322	Split timber	Quercus sp. (oak)	146	90	0.5 - 2	
160:29	160	323	Unworked wood	Betula sp. (birch)	-	48 - 50	3 - 4	
160:30	160	629	Unworked wood	Betula sp. (birch)	68 (rad)	32	1.8 - 4	
160:31	160	458	Unworked brushwood	Betula sp. (birch)	21	19	1	
160:32	160	324	Split timber	Quercus sp. (oak)	115	48	2 - 3	

Timber No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
160:33	160	209	Split timber	Betula sp. (birch)	-	39	3 - 5	
160:34	160	630	Unworked roundwood	Betula sp. (birch)	63	31	1.6 - 3	
160:35	160	537	Unworked roundwood	Betula sp. (birch)	65	27	1 - 2	
160:36	160	840	Unworked roundwood	Betula sp. (birch)	93	46	1 - 2	
160:37	160	841	Unworked roundwood	Quercus sp. (oak)	115	72	0.5 - 2	
160:38	160	325	Split timber	Quercus sp. (oak)	-	75	1 - 3	
160:39	160	437	Unworked roundwood	Quercus sp. (oak)	-	31	0.8 - 1	
160:40	160	631	Unworked roundwood	Quercus sp. (oak)	-	48	0.5 - 2	
160:41	160	538	Unworked roundwood	Quercus sp. (oak)	132	81	1 - 3	
160:42	160	-	Wood working waste	Quercus sp. (oak)	-	-	-	Degraded
160:43	160	229	Unworked roundwood	Betula sp. (birch)	141	69	2 - 4	
160:44	160	234	Unworked roundwood	Quercus sp. (oak)	62	28	1 - 3	
160:45	160	147	Unworked wood	Quercus sp. (oak)	31	11	2 - 3	
160:46	160	172	Unworked roundwood	Quercus sp. (oak)	-	11	3.4 - 4	
160:47	160	632	Unworked roundwood	Betula sp. (birch)	-	-	-	Degraded
160:48	160	633	Split timber	Betula sp. (birch)	61	39	1 - 2	
160:49	160	634	Unworked roundwood	Quercus sp. (oak)	72	62	0.5 - 0.8	
160:50	160	293	Unworked roundwood	Quercus sp. (oak)	-	21	1 - 3	
160:51	160	319	Unworked roundwood	Quercus sp. (oak)	68	80-83	0.5	Slow growth
160:52	160	-	Unworked roundwood	Quercus sp. (oak)	21	10+	1 - 2	
160:53	160	483	Split wood	Betula sp. (birch)	24	16	1 - 2	
160:54	160	842	Unworked roundwood	Betula sp. (birch)	91	58	1.6 - 3.2	
160:55	160	-	Wood working waste	Quercus sp. (oak)	38	14	2 - 3	
160:56	160	401	Unworked wood	Fraxinus excelsior (ash)	-	12	3 - 3.8	Degraded
160:57	160	484	Split wood	Corylus avellana (hazel)	-	-	-	Degraded

Appendix 13: Wood species analysis results from Annaholty Site 8: Phase 3 (179)

Timber No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
-	179	142	Degraded fragment	Quercus sp. (oak)	-	10+	1mm - 2mm	Degraded

Appendix 14: Wood species analysis results from Annaholty Site 8: Phase 3 (262)

Timber No.	Context No.	Type	Wood species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
262:1	262	Chisel point	Betula sp. (birch)	-	-	-	
262:2	262	Chisel point	Corylus avellana (hazel)	42	26	1.5 - 2	
262:3	262	Wooden object with a carved shaft and perforated head	Fraxinus excelsior (ash)	42	24 - 28	1 - 2	
262:4	262	Chisel point	Quercus sp. (oak)	-	-	-	
262:5	262	Chisel point	Corylus avellana (hazel)	24	11	2	Coppiced
262:6	262	Wedge point	Betula sp. (birch)	32	16	1.5 - 2	
262:7	262	Chisel point	Quercus sp. (oak)	40	27	1 - 2	
262:8	262	Wood working waste	Alnus glutinous (alder)	112	72+	1 - 1.5	
262:9	262	Chisel point	Corylus avellana (hazel)	24	12	1.5 - 2	Coppiced
262:10	262	Chisel point	Corylus avellana (hazel)	18	5	2.5 - 3	Coppiced
262:11	262	Chisel point	Betula sp. (birch)	36	18	1 - 2	
262:12	262	Wedge point	Betula sp. (birch)	35	24	0.8 - 1	
262:13	262	Chisel point	Betula sp. (birch)	29	12-14	1 - 2	
262:14	262	Chisel point	Betula sp. (birch)	52	22	1 - 2	
262:15	262	Split timber	Quercus sp. (oak)	-	25-30	2 - 2.5	
262:16	262	Chisel point	Betula sp. (birch)	25	17	1 - 1.2	
262:17	262	Chisel point	Betula sp. (birch)	38	28	0.7 -1.2	
262:18	262	Wood working waste	Quercus sp. (oak)	81 (rad)	52	1 - 3	
262:19	262	Chisel point	Betula sp. (birch)	25	12+	1 - 3	

Appendix 15: Wood species analysis results from Annaholty Site 8: Phase 3 (282)

Timber No.	Context No.	Sample No.	Type	Wood Species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
282:1	282	253	Unworked roundwood	Alnus glutinous (alder)	84	50	1 - 2.2	Degraded
282:2	282	448	Split timber	Quercus sp. (oak)	-	100+	1	
282:3	282	230	Unworked roundwood	Betula sp. (birch)	90	41	2 - 3	
282:4	282	464	Unworked brushwood	Betula sp. (birch)	60	28	2 - 3	
282:5	282	449	Split timber	Quercus sp. (oak)	70	92	1 - 1.5	
282:6	282	435	Split wood	Quercus sp. (oak)	-	50 - 55	0.4 - 1	
282:7	282	845	Split timber	Quercus sp. (oak)	160	91 (min)	1	
282:8	282	436	Split wood	Quercus sp. (oak)	72	45 (min)	1 - 2	

Appendix 16: Wood species analysis results from Annaholty Site 8: Individual worked wood

Find No.	Context No.	Sample No.	Description	Type	Wood species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
54:1	54	-	Wedge beneath 90:32	Wood working waste	Quercus sp. (oak)	-	28	2	
54:2	54	-	Brushwood beneath 90:32	Twig with worked end	Betula sp. (birch)	16	8	2	
54:3	54	-	Brushwood beneath 90:32	Unworked twig	Salix sp. (willow)	8	7	1	
55:1	55	-	Cut brushwood piece	Damage chisel point	Corylus avellana (hazel)	16	7	2 - 2.5	Coppiced
55:2	55	-	Wedge beneath 90:14	Wood working waste	Quercus sp. (oak)	110 (rad)	108	0.3 - 1	
55:3	55	-	Wedge beneath 90:14	Wood working waste	Quercus sp. (oak)	-	63	0.5	
55:4	55	-	Cut brushwood piece	Chisel point	Quercus sp. (oak)	18 (rad)	21	1 - 1.5	
55:5	55	-	Wedge	Wood working waste	Quercus sp. (oak)	60+	-	0.4 - 0.8	
55:6	55	-	Wedge beneath 90:37	Wood working waste	Quercus sp. (oak)	-	32	2 - 4	
55:7	55	-	Cut brushwood piece next to 99:1	Brushwood possibly worked	Corylus avellana (hazel)	10	8	1 - 1.5	
55:8	55	-	Cut brushwood piece next to 99:1	Unworked brushwood	Salix sp. (willow)	16	7	2 - 3	
55:9	55	-	Cut brushwood piece	Degraded chisel	Corylus avellana (hazel)	35	14	1 - 3	Coppiced
55:10	55	-	Part of vessel	Fragment of a wooden vessel, likely a trough or losset	Alnus glutinous (alder)	-	-	-	
55:11	55	-	Cut brushwood	Degraded chisel	Corylus avellana (hazel)	28	13	1 - 2	
55:12	55	-	Cut brushwood	Wood working waste	Corylus avellana (hazel)	-	-	-	
55:13	55	-	Cut brushwood	Wedge point	Corylus avellana (hazel)	30	13	1.5 - 2.5	Coppiced
55:14	55	-	Cut brushwood	Wedge point	Corylus avellana (hazel)	30	8	2 - 3	Coppiced
55:15	55	-	Cut brushwood	Pencil point	Corylus avellana (hazel)	22	9	1 - 2	Coppiced
55:16	55	-	Cut brushwood	Damaged chisel point	Corylus avellana (hazel)	26	7	2 - 3	Coppiced

Find No.	Context No.	Sample No.	Description	Type	Wood species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
55:17	55	-	Tip of stake	Tip of worked end	Corylus avellana (hazel)	-	-	-	
55:18	55	-	Cut branch	One end cut to wedge the other to chisel point	Corylus avellana (hazel)	-	-	-	Degraded
55:19	55	-	Cut branch	Unworked wood	Betula sp. (birch)	-	-	-	
55:20	55	-	Cut piece	Wood working waste	Quercus sp. (oak)	-	31	0.5 - 0.8	
55:21	55	-	Cut flat piece	Wood working waste	Betula sp. (birch)	9	6	1 - 1.5	
55:22	55	-	Peg	A dressed peg	Corylus avellana (hazel)	23	11	1.5 - 2	Coppiced
55:23	55	-	Plank/wedge piece	Wood working waste	Quercus sp. (oak)	-	100+	0.5 - 0.8	
55:24	55	-	Tip of stake	Pencil point	Betula sp. (birch)	18 (rad)	17	1	
56:1	56	-	Cut brushwood	Chisel point	Corylus avellana (hazel)	26	9	1 - 3	Coppiced
56:2	56	-	Cut brushwood	Wedge point	Corylus avellana (hazel)	44	16	2 - 3	Coppiced
62:1	62	-	Cut brushwood	Chisel point	Betula sp. (birch)	30	22	1.5	
91:1	91	-	Stake	Post with pencil point	Quercus sp. (oak)	36	-	-	Degraded
92:1	92	-	Stake	Post with pencil point	Corylus avellana (hazel)	62	20-25	2 - 3	Coppiced
93:1	93	-	Stake	Stake with wedge point	Corylus avellana (hazel)	36	18	1 - 2	
96:1	96	-	Stake	Post with pencil point	Sorbus sp. (sorbus)	60	26	1 - 3	
98:1	98	-	Stake	Stake with pencil point	Corylus avellana (hazel)	-	-	-	
99:1	99	-	Stake	Post with pencil point	Sorbus sp. (sorbus)	63	-	-	
150:1	150	-	Stake	Post with pencil point	Pomoideae spp. (pomaceous)	32	19	1 - 2.5	
151:1	151	-	Stake	Stake with wedge point	Pomoideae spp. (pomaceous)	35	21	1 - 2	
152:1	152	-	Stake	Stake with wedge point	Corylus avellana (hazel)	36	18	1 - 3	
153:1	153	-	Stake	Post with pencil point	Corylus avellana (hazel)	55	28	1 - 2	
154:1	154	-	Stake	Post with pencil point	Corylus avellana (hazel)	50	24-28	1 - 2	
154:2	154	-	Stake	Stake with pencil point	Corylus avellana (hazel)	44	26	1 - 2.5	
155:1	155	-	Stake	Stake with wedge point	Quercus sp. (oak)	30	19-21	1 - 1.5	Forked-shaped piece
156:1	156	-	Stake	Stake with pencil point	Corylus avellana (hazel)	31	16	1 - 2	Coppiced
157:1	157	-	Stake	Post with pencil point	Corylus avellana (hazel)	61	30-32	1 - 2	
157:2	157	-	Stake	Stake with wedge point	Corylus avellana (hazel)	38	-	-	Degraded
158:1	158	-	Stake	Post with chisel point	Quercus sp. (oak)	-	60-64	1 - 2	
159:1	159	-	Stake	Stake with wedge point	Betula sp. (birch)	40	19	2 - 2.5	
161:1	161	-	Stake	Stake with pencil point	Quercus sp. (oak)	34	12	2 - 2.5	

Find No.	Context No.	Sample No.	Description	Type	Wood species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
162:1	162	-	Stake	Post with pencil point	Corylus avellana (hazel)	22	20+	0.5 - 1	
163:1	163	-	Stake	Post with wedge point	Quercus sp. (oak)	52	32	1 - 2	
164:1	164	-	Stake	Post with pencil point	Pomoideae spp. (pomaceous)	58	32	1 - 2	
165:1	165	-	Stake	Post with pencil point	Corylus avellana (hazel)	58	30+	1 - 2	
166:1	166	-	Stake	Stake with chisel point	Corylus avellana (hazel)	46	22	1 - 3	
167:1	167	83	Cut brushwood	Chisel point	Corylus avellana (hazel)	28	12	1 - 2	
168:1	168	-	Stake	Post with pencil point	Sorbus sp. (sorbus)	-	55-60	0.5 - 2	
169:1	169	-	Stake	Stake with pencil point	Betula sp. (birch)	50	20-24	2 - 3	
171:1	171	-	Stake	Stake with pencil point	Betula sp. (birch)	-	15-20	1 - 2	
171:2	171	-	Stake	Stake with pencil point	Quercus sp. (oak)	56	12-14	1 - 2	
172:1	172	-	Stake	Post with pencil point	Quercus sp. (oak)	56	12-14	2 - 4	
173:1	173	-	Stake	Post with pencil point	Sorbus sp. (sorbus)	50	25 - 30	1 - 2	
174:1	174	-	Stake	Post with pencil point	Quercus sp. (oak)	78	65	1 - 1.5	
175:1	175	-	Stake	Stake with pencil point	Quercus sp. (oak)	50	39 - 42	1 - 2	
176:1	176	-	Stake	Stake with pencil point	Corylus avellana (hazel)	45	14-18	1 - 2.5	
177:1	177	-	Stake	Stake with pencil point	Betula sp. (birch)	46	25-28	1 - 2	
178:1	178	-	Stake	Post with pencil point	Prunus avium (wild cherry)	49	21	1 - 1.5	
180:1	180	-	Stake	Post with pencil point	Sorbus sp. (sorbus)	56	20-24	1 - 2	
181:1	181	-	Stake	Stake with wedge point	Pomoideae spp. (pomaceous)	32	20+	1 - 2	Degraded
182:1	182	-	Stake	Stake with chisel point	Corylus avellana (hazel)	45	19	1.5 - 2.5	
183:1	183	-	Stake	Stake with chisel point	Corylus avellana (hazel)	30	17	1 - 2	
184:1	184	-	Stake	Stake with pencil point	Fraxinus excelsior (ash)	30	15	1.5 - 2.5	
185:1	185	-	Stake	Stake	Fraxinus excelsior (ash)	39	8	2 - 3.5	
186:1	186	-	Stake	Stake with pencil point	Corylus avellana (hazel)	35	18	1 - 2.5	
187:1	187	-	Stake	Chisel point	Corylus avellana (hazel)	38	15	2 - 2.5	
188:1	188	-	Stake	Stake with chisel point	Corylus avellana (hazel)	41	22	1.5 - 2.5	
189:1	189	-	Barrel plank	Portion of a wooden vessel comprising a long, narrow section of the vessel wall with an intact rim and base	Alnus glutinous (alder)	-	-	-	

Find No.	Context No.	Sample No.	Description	Type	Wood species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
190:1	190	-	Stake	Stake with wedge point	Corylus avellana (hazel)	40	28	1 - 2	
191:1	191	-	Stake	Post with wedge point	Corylus avellana (hazel)	65	22 - 26	1 - 2.5	
192:1	192	-	Stake	Stake with wedge point	Betula sp. (birch)	54	20	1 - 2	
193:1	193	-	Stake	Stake with pencil point	Salix sp. (willow)	29	17	1.5 - 2	
193:2	193	-	Stake	Post with pencil point	Corylus avellana (hazel)	60	30+	1.5 - 2.5	
194:1	194	-	Stake	Stake with pencil point	Alnus glutinous (alder)	45	24 - 28	1.5 - 2	
195:1	195	-	Stake tip	Stake	Quercus sp. (oak)	-	-	-	
196:1	196	-	Stake	Post with chisel point	Salix sp. (willow)	-	-	-	
197:1	197	-	Stake	Stake with chisel	Corylus avellana (hazel)	12 (rad)	7	1 - 3	Coppiced
198:1	198	-	Stake tip	Stake tip with possible wedge point	Pomoideae spp. (pomaceous)	35	12-14	1.5 - 2	
199:1	199	-	Stake	Post with pencil point	Corylus avellana (hazel)	50	26	1.5 - 2	
250:1	250	-	Stake tip	Stake tip	Corylus avellana (hazel)	-	-	1	
251:1	251	-	Stake	Post with wedge point	Quercus sp. (oak)	56	25	1 - 3	
252:1	252	-	Stake	Stake with wedge point	Corylus avellana (hazel)	24 (rad)	12 - 15	1 - 1.5	Coppiced
253:1	253	-	Stake	Stake with chisel point	Corylus avellana (hazel)	38	18	1 - 2	Coppiced
254:1	254	-	Stake	Stake with chisel point	Corylus avellana (hazel)	27	13	1 - 1.5	Coppiced
256:1	256	-	Stake	Post with pencil point	Sorbus sp. (sorbus)	52	30-33	1 - 2	
257:1	257	-	Stake	Post with wedge point	Alnus glutinous (alder)	39	40+	1 - 1.5	End degraded
258:1	258	-	Stake	Post with wedge point	Sorbus sp. (sorbus)	67	25-30	1 - 2	
259:1	259	-	Stake	Post with chisel point	Betula sp. (birch)	50	21	1.5 - 2.5	
260:1	260	-	Stake	Post with wedge point	Quercus sp. (oak)	51	42	1 - 1.2	
261:1	261	-	Stake	Stake with pencil point	Quercus sp. (oak)	55	21	1.5 - 3	
263:1	263	-	Stake	Stake	Corylus avellana (hazel)	10 (rad)	8	0.5 - 1	
264:1	264	-	Stake	Stake with pencil point	Corylus avellana (hazel)	42	18	1 - 2	Coppiced
265:1	265	-	Stake	Stake with pencil point	Corylus avellana (hazel)	32	22	1 - 2	Coppiced
266:1	266	-	Stake	Stake with pencil point	Corylus avellana (hazel)	31	19	1 - 2	Coppiced
267:1	267	-	Stake	Post with pencil point	Quercus sp. (oak)	61	36	0.5 - 2	
268:1	268	-	Stake	Stake with pencil point	Corylus avellana (hazel)	28	14-16	1 - 2	Coppiced
269:1	269	-	Stake	Stake with pencil point	Betula sp. (birch)	56	22	1.5 - 2.5	
270:1	270	-	Stake	Post with wedge point	Quercus sp. (oak)	52	30	1 - 2.5	
271:1	271	-	Stake	Stake with pencil point	Betula sp. (birch)	33	22	0.8 - 1.2	
272:1	272	-	Stake	Post with chisel point	Sorbus sp. (sorbus)	56	16-20	2 - 3	

Find No.	Context No.	Sample No.	Description	Type	Wood species	Diameter/ radius (mm)	No. of rings	Ring width (mm)	Comments
273:1	273	-	Stake	Stake	Pomoideae spp. (pomaceous)	26	8-10	2 - 2.5	
274:1	274	-	Stake	Stake with wedge point	Corylus avellana (hazel)	35	16 - 20	1 - 2	Coppiced
275:1	275	-	Stake tip	Stake tip	cf Quercus sp. (oak)	-	-	-	
276:1	276	-	Stake	Post with wedge point	Sorbus sp. (sorbus)	64	34	1 - 2.5	
277:1	277	-	Stake	Post with pencil point	Corylus avellana (hazel)	57	12	1 - 1.5	Coppiced
278:1	278	-	Stake	Stake with pencil point	Quercus sp. (oak)	24	12	1 - 2	
279:1	279	-	Stake	Stake with pencil point	Quercus sp. (oak)	32	14	1.5 - 2.5	
280:1	280	-	Stake	Stake with pencil point	Quercus sp. (oak)	28	19	1 - 3	
281:1	281	351	Branch	Unworked roundwood	Quercus sp. (oak)	100+	79-81	1 - 3	Degraded
281:2	281	352	Branch	Split timber	Quercus sp. (oak)	-	100+	1	
283:1	283	-	Stake	Stake with chisel point	Corylus avellana (hazel)	54	18-22	1 - 3	Coppiced
284:1	284	-	Stake	Post with wedge point	Quercus sp. (oak)	52	39	1 - 2	
285:1	285	-	Stake	Worked wood	Betula sp. (birch)	-	-	-	
286:1	286	-	Stake	Stake with wedge point	Corylus avellana (hazel)	40	11	2 - 3	Coppiced
287:1	287	-	Stake	Post with chisel point	Corylus avellana (hazel)	50	16 - 20	1.5 - 2.5	Coppiced
288:1	288	-	Stake	Post tip with pencil point	Quercus sp. (oak)	66	15	3 - 5	
289:1	289	-	Stake tip	Stake tip	Corylus avellana (hazel)	34	16-18	1 - 2	Coppiced
290:1	290	-	Stake	Stake with pencil point	Corylus avellana (hazel)	56	25	2 - 2.5	Coppiced
291:1	291	-	Stake	Post with wedge point	Corylus avellana (hazel)	50	26 - 30	1 - 2	Coppiced
292:1	292	-	Stake	Stake with pencil point	Corylus avellana (hazel)	30	10	2 - 3	Coppiced
293:1	293	-	Stake	Post with pencil point	Prunus avium (wild cherry)	34	23	1 - 2	
294:1	294	-	Stake	Pencil point (possible post)	Sorbus sp. (sorbus)	29	41	0.5 - 1	
296:1	296	-	Stake	Post with pencil point	Sorbus sp. (sorbus)	56	32-35	0.5 - 1.5	
350:1	350	-	Stake	Chisel point	Corylus avellana (hazel)	35	18	1 - 2	Coppiced
351:1	351	-	Stake	Chisel point	Corylus avellana (hazel)	41	21	1 - 2	Coppiced
352:1	352	-	Stake	Wedge point	Prunus avium (wild cherry)	36	19	1 - 2	
353:1	353	-	Stake	Chisel point	Prunus avium (wild cherry)	21	18	1 - 1.5	
354:1	354	-	Stake	Pencil point	Corylus avellana (hazel)	32	18	1 - 2	Coppiced

Appendix 17: Catalogue of samples

Sample No.	Cut	Deposit	Type of sample	Find No.
1	-	50-57	Column sample	-
2	-	58, 62, 64, 65, 67, 72, 78, 80, 81, 82, 94	Column sample	-
3	-	90	Wood	90:66
4	-	90	Wood	90:1
5	-	95	Wood	95:1
6	-	95	Wood	95:2
7	-	90	Wood	90:34
8	-	90	Wood	90:40
9	-	90	Wood	90:35
10	-	90	Wood	90:7
11	-	90	Wood	90:6
12	-	90	Wood	90:32
13	-	90	Wood	90:31
14	-	90	Wood	90:36
15	-	90	Wood	90:63
16	-	90	Wood	90:64
17	-	90	Wood	90:67
18	-	90	Wood	90:68
19	-	90	Wood	90:11
20	-	90	Wood	90:12
21	-	90	Wood	90:13
22	-	90	Wood	90:14
23	-	90	Wood	90:17
24	-	90	Wood	90:18
25	-	90	Wood	90:20
26	-	90	Wood	90:21
27	-	90	Wood	90:22
28	-	90	Wood	90:23
29	-	90	Wood	90:5
30	-	90	Wood	90:10
31	-	90	Wood	90:29
32	-	90	Wood	90:39
33	-	90	Wood	90:25
34	-	90	Wood	90:65
35	-	90	Wood	90:73
36	-	90	Wood	90:74
37	-	90	Wood	90:72
38	-	90	Wood	90:76
39	-	90	Wood	90:79
40	-	90	Wood	90:80
41	-	90	Wood	90:81
42	-	90	Wood	90:82
43	-	90	Wood	90:83
44	-	90	Wood	90:84
45	-	90	Wood	90:28
46	-	90	Wood	90:42
47	-	90	Wood	90:44
48	-	95	Wood	95:3
49	-	95	Wood	95:4

Sample No.	Cut	Deposit	Type of sample	Find No.
50	-	90	Wood	90:47
51	-	90	Wood	90:70
52	-	90	Wood	90:3
53	-	90	Wood	90:16
54	-	90	Wood	90:27
55	-	90	Wood	90:33
56	-	90	Wood	90:2
57	-	90	Wood	90:30
58	-	90	Wood	90:77
59	-	90	Wood	90:78
60	-	90	Wood	90:8
61	-	90	Wood	90:37
62	-	90	Wood	90:43
63	-	90	Wood	90:55
64	-	90	Wood	90:85
65	-	90	Wood	90:91
66	-	90	Wood	90:95
67	-	90	Wood	90:9
68	-	90	Wood	90:15
69	-	90	Wood	90:4
70	-	90	Wood	90:24
71	-	90	Wood	90:62
72	-	90	Wood	90:87
73	-	59	Soil	-
74	-	54	Soil	-
75	-	55	Soil	-
76	-	90	Wood	90:50
77	-	90	Wood	90:96
78	-	90	Wood	90:97
79	-	97	Wood	97:4
80	-	97	Section of wood	-
81	-	90	Wood	90:107
82	-	90	Wood	90:104
83	-	167	Wood	167:1
84	-	90	Wood	90:127
85	-	90	Wood	90:137
86	-	170	Wood	170:14
87	-	90	Wood	90:139
88	-	90	Wood	90:140
89	-	90	Wood	90:141
90	-	90	Wood	90:142
91	-	90	Wood	90:165
92	-	90	Wood	90:106
93	-	90	Wood	90:45
94	-	90	Wood	90:58
95	-	90	Wood	90:92
96	-	90	Wood	90:93
97	-	90	Wood	90:61
98	-	170	Wood	170:9
99	-	90	Wood	90:146
100	-	90	Wood	90:147
101	-	90	Wood	90:148

Sample No.	Cut	Deposit	Type of sample	Find No.
102	-	90	Wood	90:150
103	-	90	Wood	90:151
104	-	90	Wood	90:152
105	-	90	Wood	90:153
106	-	90	Wood	90:154
107	-	90	Wood	90:155
108	-	90	Wood	90:156
109	-	90	Wood	90:157
110	-	90	Wood	90:158
111	-	90	Wood	90:162
112	-	90	Wood	90:163
113	-	90	Wood	90:164
114	-	95	Wood	95:5
115	-	90	Wood	90:51
116	-	90	Wood	90:53
117	-	90	Wood	90:56
118	-	90	Wood	90:86
119	-	90	Wood	90:88
120	-	90	Wood	90:90
121	-	90	Wood	90:98
122	-	90	Wood	90:101
123	-	90	Wood	90:102
124	-	90	Wood	90:103
125	-	90	Wood	90:105
126	-	90	Wood	90:110
127	-	90	Wood	90:119
128	-	90	Wood	90:130
129	-	90	Wood	90:143
130	-	90	Wood	90:145
131	-	90	Wood	90:159
132	-	90	Wood	90:160
133	-	90	Wood	90:168
134	-	90	Wood	90:169
135	-	90	Wood	90:174
136	-	90	Wood	90:178
137	-	160	Wood	160:7
138	-	160	Wood	160:8
139	-	160	Wood	160:12
140	-	160	Wood	160:18
141	-	170	Wood	170:16
142	-	179	Wood	-
143	-	170	Wood	170:36
144	-	170	Wood	170:37
145	-	170	Wood	170:63
146	-	170	Wood	170:64
147	-	160	Wood	160:45
148	-	61	Soil	-
149	-	170	Wood	170:52
150	-	170	Wood	170:58
151	-	170	Wood	170:60
152	-	170	Wood	170:67
153	-	170	Wood	170:68

Sample No.	Cut	Deposit	Type of sample	Find No.
154	-	170	Wood	170:72
155	-	170	Wood	170:74
156	-	170	Wood	170:77
157	-	170	Wood	170:78
158	-	170	Wood	170:79
159	-	170	Wood	170:80
160	-	170	Wood	170:81
161	-	170	Wood	170:124
162	-	170	Wood	170:125
163	-	170	Wood	170:131
164	-	170	Wood	170:120
165	-	170	Wood	170:121
166	-	90	Wood	90:242
167	-	90	Wood	90:201
168	-	90	Wood	90:236
169	-	90	Wood	90:13
170	-	90	Wood	90:124
171	-	90	Wood	90:191
172	-	160	Wood	160:46
173	-	90	Wood	90:184
174	-	90	Wood	90:204
175	-	170	Wood	170:121
176	-	170	Wood	170:98
177	-	90	Wood	90:228
178	-	170	Wood	170:4
179	-	90	Wood	90:177
180	-	90	Wood	90:233
181	-	90	Wood	90:202
182	-	90	Wood	90:268
183	-	90	Wood	90:112
184	-	170	Wood	170:120
185	-	170	Wood	170:18
186	-	170	Wood	170:127
187	-	90	Wood	90:212
188	-	90	Wood	90:274
189	-	90	Wood	90:176
190	-	160	Wood	160:20
191	-	90	Wood	90:233
192	-	90	Wood	90:218
193	-	90	Wood	90:220
194	-	160	Wood	160:10
195	-	90	Wood	90:193
196	-	170	Wood	170:87
197	-	90	Wood	90:181
198	-	90	Wood	90:278
199	-	90	Wood	90:258
200	-	90	Wood	90:41
201	-	90	Wood	90:109
202	-	90	Wood	90:123
203	-	90	Wood	90:185
204	-	90	Wood	90:111
205	-	170	Wood	170:114

Sample No.	Cut	Deposit	Type of sample	Find No.
206	-	170	Wood	170:111
207	-	170	Wood	170:71
208	-	90	Wood	90:196
209	-	160	Wood	160:33
210	-	170	Wood	170:66
211	-	160	Wood	160:10
212	-	160	Wood	160:21
213	-	90	Wood	90:189
214	-	90	Wood	90:49
215	-	90	Wood	90:133
216	-	90	Wood	90:48
217	-	160	Wood	160:15
218	-	90	Wood	90:246
219	-	90	Wood	90:89
220	-	160	Wood	160:5
221	-	90	Wood	90:108
222	-	90	Wood	90:136
223	-	90	Wood	90:129
224	-	160	Wood	160:3
225	-	90	Wood	90:100
226	-	160	Wood	160:6
227	-	160	Wood	160:2
228	-	90	Wood	90:200
229	-	160	Wood	160:43
230	-	282	Wood	282:3
231	-	90	Wood	90:94
232	-	160	Wood	160:4
233	-	90	Wood	90:171
234	-	160	Wood	160:44
235	-	90	Wood	90:203
236	-	90	Wood	90:52
237	-	90	Wood	90:179
238	-	90	Wood	90:211
239	-	90	Wood	90:134
240	-	90	Wood	90:257
241	-	160	Wood	160:11
242	-	90	Wood	90:173
243	-	90	Wood	90:267
244	-	170	Wood	170:62
245	-	90	Wood	90:254
246	-	170	Wood	170:33
247	-	170	Wood	170:73
248	-	170	Wood	170:118
249	-	90	Wood	90:257
250	-	90	Wood	90:54
251	-	90	Wood	90:188
252	-	170	Wood	170:83
253	-	282	Wood	282:1
254	-	170	Wood	170:61
255	-	90	Wood	90:141
256	-	170	Wood	170:86
257	-	90	Wood	90:217

Sample No.	Cut	Deposit	Type of sample	Find No.
258	-	170	Wood	170:84
259	-	160	Wood	160:22
260	-	170	Wood	170:10
261	-	170	Wood	170:89
262	-	170	Wood	170:15
263	-	90	Wood	90:226
264	-	170	Wood	170:88
265	-	170	Wood	170:109
266	-	90	Wood	90:261
267	-	170	Wood	170:82
268	-	90	Wood	90:221
269	-	170	Wood	170:35
270	-	170	Wood	170:45
271	-	160	Wood	160:27
272	-	90	Wood	90:250
273	-	90	Wood	90:249
274	-	90	Wood	90:243
275	-	170	Wood	170:170
276	-	90	Wood	90:266
277	-	90	Wood	90:122
278	-	90	Wood	90:115
279	-	90	Wood	90:252
280	-	90	Wood	90:186
281	-	90	Wood	90:113
282	-	170	Wood	170:2
283	-	90	Wood	90:244
284	-	90	Wood	90:255
285	-	90	Wood	90:149
286	-	90	Wood	90:117
287	-	90	Wood	90:118
288	-	64	Soil	-
289	-	65	Soil	-
290	-	90	Wood	90:120
291	-	90	Wood	90:121
292	-	64, 66-67, 73-74, 76-79	Column sample	-
293	-	160	Wood	160:50
294	-	170	Wood	170:115
295	-	170	Wood	170:116
296	-	170	Wood	170:117
297	-	170	Wood	170:119
298	-	170	Wood	170:126
299	-	297	Wood	297:53
300	-	297	Wood	297:54
301	-	297	Wood	297:59
302	-	299	Soil	-
303	-	297	Wood	297:18
304	-	297	Wood	297:45
305	-	297	Wood	297:46
306	-	297	Wood	297:47
307	-	297	Wood	297:57
308	-	255	Wood	255:29
309	-	297	Wood	297:15

Sample No.	Cut	Deposit	Type of sample	Find No.
310	-	297	Wood	297:19
311	-	297	Wood	297:20
312	-	297	Wood	297:22
313	-	297	Wood	297:25
314	-	297	Wood	297:26
315	-	297	Wood	297:50
316	-	297	Wood	297:51
317	-	297	Wood	297:58
318	-	160	Wood	160:17
319	-	160	Wood	160:51
320	-	160	Wood	160:1
321	-	160	Wood	160:13
322	-	160	Wood	160:28
323	-	160	Wood	160:29
324	-	160	Wood	160:32
325	-	160	Wood	160:38
326	-	90	Wood	90:46
327	-	90	Wood	90:59
328	-	90	Wood	90:114
329	-	90	Wood	90:116
330	-	90	Wood	90:125
331	-	90	Wood	90:128
332	-	90	Wood	90:132
333	-	90	Wood	90:135
334	-	90	Wood	90:144
335	-	90	Wood	90:161
336	-	90	Wood	90:170
337	-	90	Wood	90:183
338	-	90	Wood	90:190
339	-	90	Wood	90:194
340	-	90	Wood	90:198
341	-	90	Wood	90:206
342	-	90	Wood	90:214
343	-	90	Wood	90:219
344	-	90	Wood	90:235
345	-	90	Wood	90:238
346	-	90	Wood	90:245
347	-	90	Wood	90:256
348	-	90	Wood	90:259
349	-	90	Wood	90:270
350	-	90	Wood	90:276
351	-	281	Wood	281:1
352	-	281	Wood	281:2
353	-	295	Wood	295:2
354	-	295	Wood	295:3
355	-	170	Wood	170:19
356	-	170	Wood	170:23
357	-	170	Wood	170:25
358	-	170	Wood	170:40
359	-	170	Wood	170:53
360	-	170	Wood	170:59
361	-	170	Wood	170:69

Sample No.	Cut	Deposit	Type of sample	Find No.
362	-	170	Wood	170:90
363	-	170	Wood	170:96
364	-	170	Wood	170:100
365	-	170	Wood	170:106
366	-	170	Wood	170:107
367	-	170	Wood	170:110
368	-	170	Wood	170:112
369	-	170	Wood	170:128
370	-	170	Wood	170:133
371	-	170	Wood	170:134
372	-	170	Wood	170:135
373	-	170	Wood	170:145
374	-	170	Wood	170:150
375	-	170	Wood	170:166
376	-	170	Wood	170:169
377	-	170	Wood	170:173
378	-	170	Wood	170:178
379	-	170	Wood	170:186
380	-	170	Wood	170:187
381	-	255	Wood	255:9
382	-	255	Wood	255:20
383	-	255	Wood	255:23
384	-	255	Wood	255:41
385	-	298	Wood	298:28
386	-	170	Wood	170:94
387	-	170	Wood	170:95
388	-	170	Wood	170:146
389	-	255	Wood	255:96
390	-	255	Wood	255:143
391	-	90	Wood	90:166
392	-	90	Wood	90:271
393	-	170	Wood	170:13
394	-	170	Wood	170:105
395	-	297	Wood	297:1
396	-	297	Wood	297:5
397	-	297	Wood	297:7
398	-	297	Wood	297:32
399	-	90	Wood	90:197
400	-	295	Wood	295:9
401	-	160	Wood	160:56
402	-	297	Wood	297:12
403	-	297	Wood	297:13
404	-	297	Wood	297:16
405	-	297	Wood	297:17
406	-	297	Wood	297:27
407	-	297	Wood	297:28
408	-	297	Wood	297:31
409	-	297	Wood	297:39
410	-	297	Wood	297:40
411	-	297	Wood	297:42
412	-	298	Wood	298:97
413	-	298	Wood	298:106

Sample No.	Cut	Deposit	Type of sample	Find No.
414	-	255	Wood	255:15
415	-	255	Wood	255:19
416	-	255	Wood	255:117
417	-	255	Wood	255:141
418	-	255	Wood	255:142
419	-	255	Wood	255:158
420	-	255	Wood	255:165
421	-	255	Wood	255:3
422	-	255	Wood	255:151
423	-	298	Wood	298:5
424	-	298	Wood	298:137
425	-	170	Wood	170:28
426	-	170	Wood	170:99
427	-	170	Wood	170:104
428	-	170	Wood	170:163
429	-	170	Wood	170:165
430	-	170	Wood	170:102
431	-	255	Wood	255:103
432	-	255	Wood	255:105
433	-	255	Wood	255:112
434	-	255	Wood	255:133
435	-	282	Wood	282:6
436	-	282	Wood	282:8
437	-	160	Wood	160:39
438	-	170	Wood	170:34
439	-	170	Wood	170:123
440	-	170	Wood	170:156
441	-	170	Wood	170:185
442	-	295	Wood	295:4
443	-	295	Wood	295:7
444	-	297	Wood	297:4
445	-	297	Wood	297:34
446	-	160	Wood	160:26
447	-	170	Wood	170:171
448	-	282	Wood	282:2
449	-	282	Wood	282:5
450	-	170	Wood	170:175
451	-	90	Wood	90:248
452	-	90	Wood	90:240
453	-	297	Wood	297:2
454	-	297	Wood	297:6
455	-	297	Wood	297:8
456	-	297	Wood	297:14
457	-	160	Wood	160:25
458	-	160	Wood	160:31
459	-	298	Wood	298:7
460	-	298	Wood	298:8
461	-	298	Wood	298:13
462	-	298	Wood	298:15
463	-	298	Wood	298:136
464	-	282	Wood	282:4
465	-	170	Wood	170:7

Sample No.	Cut	Deposit	Type of sample	Find No.
466	-	170	Wood	170:12
467	-	170	Wood	170:26
468	-	170	Wood	170:27
469	-	170	Wood	170:30
470	-	170	Wood	170:41
471	-	170	Wood	170:46
472	-	170	Wood	170:47
473	-	170	Wood	170:48
474	-	170	Wood	170:49
475	-	170	Wood	170:50
476	-	170	Wood	170:51
477	-	170	Wood	170:54
478	-	170	Wood	170:56
479	-	170	Wood	170:57
480	-	170	Wood	170:70
481			Cancelled	
482	-	90	Wood	90:213
483	-	160	Wood	160:53
484	-	160	Wood	160:57
485	-	90	Wood	90:192
486	-	90	Wood	90:222
487	-	255	Wood	255:13
488	-	255	Wood	255:21
489	-	255	Wood	255:24
490	-	255	Wood	255:35
491	-	255	Wood	255:36
492	-	255	Wood	255:56
493	-	255	Wood	255:87
494	-	255	Wood	255:100
495	-	255	Wood	255:101
496	-	255	Wood	255:106
497	-	255	Wood	255:107
498	-	255	Wood	255:108
499	-	255	Wood	255:109
500	-	255	Wood	255:110
501	-	255	Wood	255:111
502	-	255	Wood	255:116
503	-	255	Wood	255:120
504	-	255	Wood	255:122
505	-	255	Wood	255:125
506	-	255	Wood	255:130
507	-	255	Wood	255:131
508	-	255	Wood	255:144
509	-	255	Wood	255:145
510	-	255	Wood	255:159
511	-	255	Wood	255:162
512	-	255	Wood	255:164
513	-	255	Wood	255:170
514	-	255	Wood	255:176
515	-	255	Wood	255:177
516	-	255	Wood	255:180
517	-	255	Wood	255:184

Sample No.	Cut	Deposit	Type of sample	Find No.
518	-	255	Wood	255:186
519	-	255	Wood	255:187
520	-	255	Wood	255:190
521	-	255	Wood	255:196
522	-	255	Wood	255:197
523	-	255	Wood	255:185
524	-	90	Wood	90:223
525	-	90	Wood	90:277
526	-	170	Wood	170:20
527	-	170	Wood	170:38
528	-	170	Wood	170:42
529	-	170	Wood	170:43
530	-	170	Wood	170:132
531	-	170	Wood	170:148
532	-	170	Wood	170:161
533	-	170	Wood	170:162
534	-	90	Wood	90:71
535	-	90	Wood	90:60
536	-	90	Wood	90:131
537	-	160	Wood	160:35
538	-	160	Wood	160:41
539	-	90	Wood	90:57
540	-	90	Wood	90:205
541	-	90	Wood	90:207
542	-	90	Wood	90:208
543	-	90	Wood	90:215
544	-	90	Wood	90:225
545	-	90	Wood	90:230
546	-	90	Wood	90:234
547	-	90	Wood	90:272
548	-	90	Wood	90:273
549	-	90	Wood	90:269
550	-	297	Wood	297:9
551	-	297	Wood	297:55
552	-	298	Wood	298:1
553	-	298	Wood	298:20
554	-	298	Wood	298:29
555	-	298	Wood	298:36
556	-	298	Wood	298:37
557	-	298	Wood	298:50
558	-	298	Wood	298:56
559	-	298	Wood	298:61
560	-	298	Wood	298:64
561	-	298	Wood	298:68
562	-	298	Wood	298:79
563	-	298	Wood	298:84
564	-	298	Wood	298:93
565	-	298	Wood	298:114
566	-	298	Wood	298:121
567	-	298	Wood	298:129
568	-	298	Wood	298:132
569	-	298	Wood	298:135

Sample No.	Cut	Deposit	Type of sample	Find No.
570	-	90	Wood	90:167
571	-	90	Wood	90:175
572	-	90	Wood	90:187
573	-	90	Wood	90:195
574	-	90	Wood	90:199
575	-	90	Wood	90:216
576	-	90	Wood	90:227
577	-	90	Wood	90:231
578	-	90	Wood	90:239
579	-	90	Wood	90:260
580	-	90	Wood	90:262
581	-	90	Wood	90:263
582	-	90	Wood	90:264
583	-	170	Wood	170:1
584	-	170	Wood	170:3
585	-	170	Wood	170:6
586	-	170	Wood	170:21
587	-	170	Wood	170:22
588	-	170	Wood	170:29
589	-	170	Wood	170:31
590	-	170	Wood	170:32
591	-	170	Wood	170:75
592	-	170	Wood	170:91
593	-	170	Wood	170:92
594	-	170	Wood	170:93
595	-	170	Wood	170:97
596	-	170	Wood	170:108
597	-	170	Wood	170:113
598	-	170	Wood	170:129
599	-	170	Wood	170:136
600	-	170	Wood	170:137
601	-	170	Wood	170:138
602	-	170	Wood	170:139
603	-	170	Wood	170:140
604	-	170	Wood	170:142
605	-	170	Wood	170:141
606	-	170	Wood	170:143
607	-	170	Wood	170:144
608	-	170	Wood	170:147
609	-	170	Wood	170:149
610	-	170	Wood	170:152
611	-	170	Wood	170:154
612	-	170	Wood	170:157
613	-	170	Wood	170:158
614	-	170	Wood	170:160
615	-	170	Wood	170:164
616	-	170	Wood	170:167
617	-	170	Wood	170:168
618	-	170	Wood	170:174
619	-	170	Wood	170:177
620	-	170	Wood	170:180
621	-	170	Wood	170:181

Sample No.	Cut	Deposit	Type of sample	Find No.
622	-	170	Wood	170:183
623	-	170	Wood	170:8
624	-	160	Wood	160:9
625	-	160	Wood	160:14
626	-	160	Wood	160:16
627	-	160	Wood	160:19
628	-	160	Wood	160:23
629	-	160	Wood	160:30
630	-	160	Wood	160:34
631	-	160	Wood	160:40
632	-	160	Wood	160:47
633	-	160	Wood	160:48
634	-	160	Wood	160:49
635	-	297	Wood	297:3
636	-	297	Wood	297:11
637	-	297	Wood	297:21
638	-	297	Wood	297:30
639	-	297	Wood	297:38
640	-	297	Wood	297:48
641	-	297	Wood	297:49
642	-	297	Wood	297:52
643	-	298	Wood	298:3
644	-	298	Wood	298:10
645	-	298	Wood	298:14
646	-	298	Wood	298:16
647	-	298	Wood	298:18
648	-	298	Wood	298:19
649	-	298	Wood	298:24
650	-	298	Wood	298:25
651	-	298	Wood	298:27
652	-	298	Wood	298:32
653	-	298	Wood	298:40
654	-	298	Wood	298:41
655	-	298	Wood	298:42
656	-	298	Wood	298:44
657	-	298	Wood	298:45
658	-	298	Wood	298:46
659	-	298	Wood	298:48
660	-	298	Wood	298:49
661	-	298	Wood	298:51
662	-	298	Wood	298:52
663	-	298	Wood	298:53
664	-	298	Wood	298:54
665	-	298	Wood	298:57
666	-	298	Wood	298:59
667	-	298	Wood	298:60
668	-	298	Wood	298:65
669	-	298	Wood	298:66
670	-	298	Wood	298:67
671	-	298	Wood	298:69
672	-	298	Wood	298:73
673	-	298	Wood	298:75

Sample No.	Cut	Deposit	Type of sample	Find No.
674	-	298	Wood	298:77
675	-	298	Wood	298:78
676	-	298	Wood	298:80
677	-	298	Wood	298:81
678	-	298	Wood	298:82
679	-	298	Wood	298:83
680	-	298	Wood	298:86
681	-	298	Wood	298:87
682	-	298	Wood	298:88
683	-	298	Wood	298:90
684	-	298	Wood	298:91
685	-	298	Wood	298:92
686	-	298	Wood	298:98
687	-	298	Wood	298:99
688	-	298	Wood	298:100
689	-	298	Wood	298:101
690	-	298	Wood	298:102
691	-	298	Wood	298:103
692	-	298	Wood	298:108
693	-	298	Wood	298:109
694	-	298	Wood	298:110
695	-	298	Wood	298:115
696	-	298	Wood	298:117
697	-	298	Wood	298:118
698	-	298	Wood	298:120
699	-	298	Wood	298:122
700	-	298	Wood	298:128
701	-	298	Wood	298:130
702	-	298	Wood	298:131
703	-	298	Wood	298:133
704	-	298	Wood	298:134
705	-	298	Wood	298:138
706	-	298	Wood	298:140
707	-	298	Wood	298:141
708	-	298	Wood	298:142
709	-	255	Wood	255:4
710	-	255	Wood	255:6
711	-	255	Wood	255:7
712	-	255	Wood	255:8
713	-	255	Wood	255:11
714	-	255	Wood	255:16
715	-	255	Wood	255:17
716	-	255	Wood	255:18
717	-	255	Wood	255:22
718	-	255	Wood	255:27
719	-	255	Wood	255:28
720	-	255	Wood	255:37
721	-	255	Wood	255:43
722	-	255	Wood	255:45
723	-	255	Wood	255:46
724	-	255	Wood	255:48
725	-	255	Wood	255:52

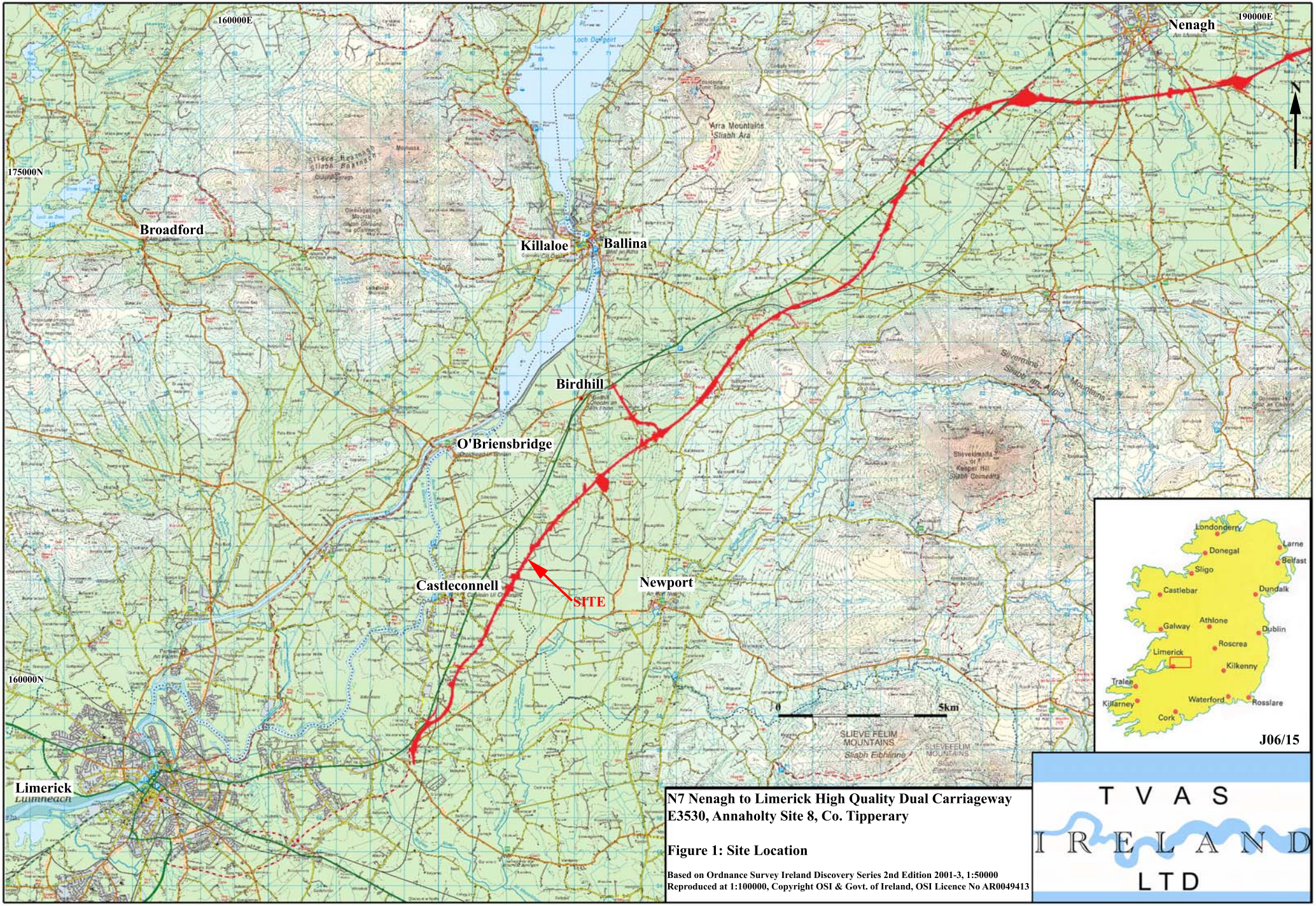
Sample No.	Cut	Deposit	Type of sample	Find No.
726	-	255	Wood	255:59
727	-	255	Wood	255:60
728	-	255	Wood	255:63
729	-	255	Wood	255:64
730	-	255	Wood	255:71
731	-	255	Wood	255:73
732	-	255	Wood	255:74
733	-	255	Wood	255:75
734	-	255	Wood	255:76
735	-	255	Wood	255:77
736	-	255	Wood	255:79
737	-	255	Wood	255:80
738	-	255	Wood	255:82
739	-	255	Wood	255:88
740	-	255	Wood	255:90
741	-	255	Wood	255:91
742	-	255	Wood	255:92
743	-	255	Wood	255:93
744	-	255	Wood	255:94
745	-	255	Wood	255:98
746	-	255	Wood	255:114
747	-	255	Wood	255:121
748	-	255	Wood	255:123
749	-	255	Wood	255:126
750	-	255	Wood	255:127
751	-	255	Wood	255:128
752	-	255	Wood	255:129
753	-	255	Wood	255:132
754	-	255	Wood	255:134
755	-	255	Wood	255:137
756	-	255	Wood	255:139
757	-	255	Wood	255:146
758	-	255	Wood	255:147
759	-	255	Wood	255:148
760	-	255	Wood	255:149
761	-	255	Wood	255:152
762	-	255	Wood	255:153
763	-	255	Wood	255:154
764	-	255	Wood	255:155
765	-	255	Wood	255:156
766	-	255	Wood	255:163
767	-	255	Wood	255:166
768	-	255	Wood	255:167
769	-	255	Wood	255:171
770	-	255	Wood	255:172
771	-	255	Wood	255:175
772	-	255	Wood	255:178
773	-	255	Wood	255:181
774	-	255	Wood	255:183
775	-	255	Wood	255:188
776	-	255	Wood	255:192
777	-	255	Wood	255:194

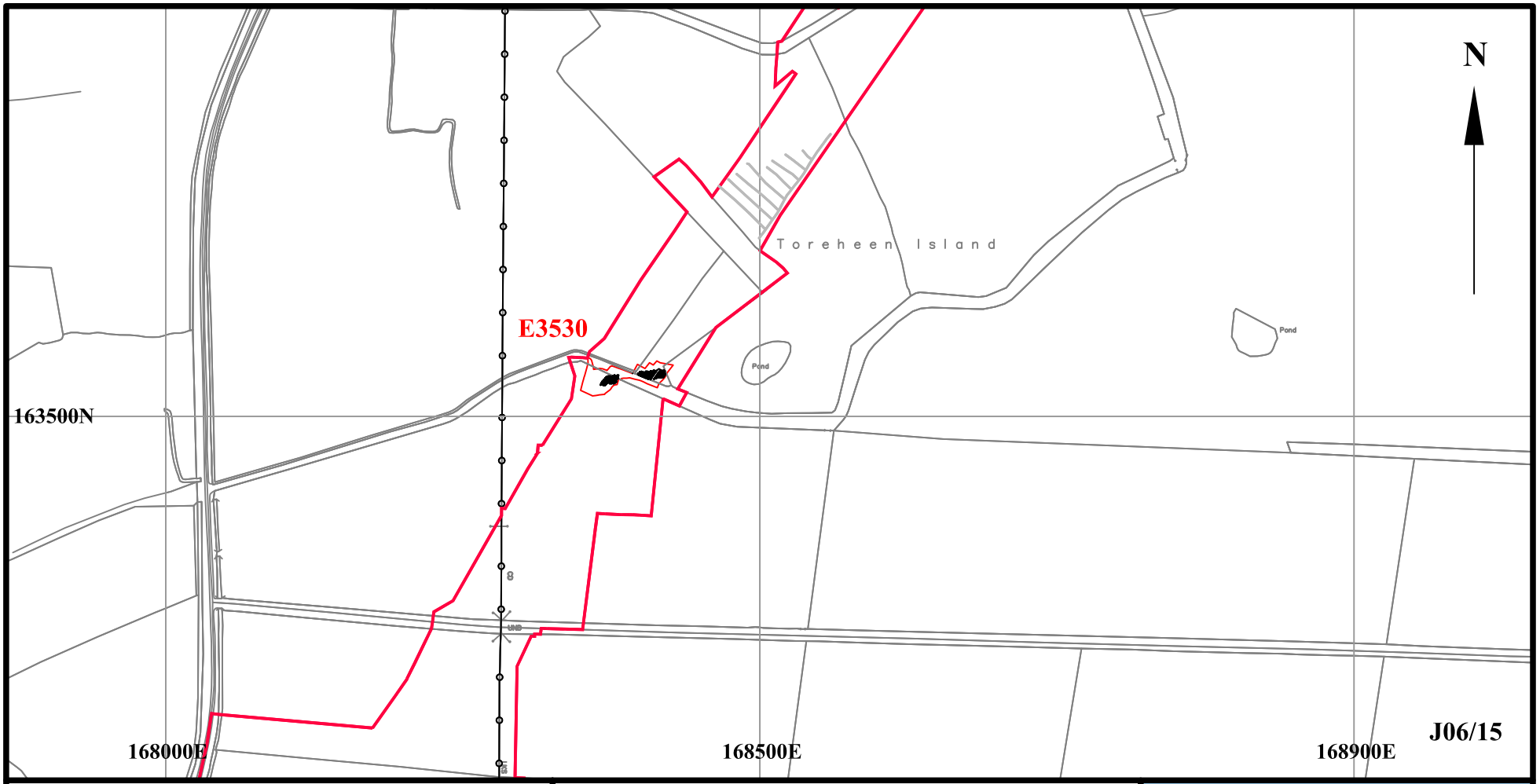
Sample No.	Cut	Deposit	Type of sample	Find No.
778	-	255	Wood	255:195
779	-	298	Wood	298:2
780	-	298	Wood	298:4
781	-	298	Wood	298:6
782	-	298	Wood	298:12
783	-	298	Wood	298:17
784	-	298	Wood	298:21
785	-	298	Wood	298:30
786	-	298	Wood	298:31
787	-	298	Wood	298:33
788	-	298	Wood	298:35
789	-	298	Wood	298:38
790	-	298	Wood	298:43
791	-	298	Wood	298:47
792	-	298	Wood	298:62
793	-	298	Wood	298:63
794	-	298	Wood	298:71
795	-	298	Wood	298:72
796	-	298	Wood	298:76
797	-	298	Wood	298:96
798	-	298	Wood	298:105
799	-	298	Wood	298:112
800	-	298	Wood	298:123
801	-	298	Wood	298:127
802	-	298	Wood	298:139
803	-	255	Wood	255:12
804	-	255	Wood	255:14
805	-	255	Wood	255:26
806	-	255	Wood	255:47
807	-	255	Wood	255:49
808	-	255	Wood	255:50
809	-	255	Wood	255:54
810	-	255	Wood	255:62
811	-	255	Wood	255:67
812	-	255	Wood	255:70
813	-	255	Wood	255:72
814	-	255	Wood	255:78
815	-	255	Wood	255:81
816	-	255	Wood	255:85
817	-	255	Wood	255:89
818	-	255	Wood	255:104
819	-	255	Wood	255:115
820	-	255	Wood	255:118
821	-	255	Wood	255:124
822	-	255	Wood	255:140
823	-	255	Wood	255:157
824	-	255	Wood	255:182
825	-	255	Wood	255:189
826	-	255	Wood	255:202
827	-	170	Wood	170:17
828	-	170	Wood	170:24
829	-	170	Wood	170:103

Sample No.	Cut	Deposit	Type of sample	Find No.
830	-	170	Wood	170:179
831	-	170	Wood	170:182
832	-	297	Wood	297:10
833	-	297	Wood	297:23
834	-	297	Wood	297:33
835	-	297	Wood	297:36
836	-	297	Wood	297:41
837	-	297	Wood	297:44
838	-	297	Wood	297:56
839	-	297	Wood	297:60
840	-	160	Wood	160:36
841	-	160	Wood	160:37
842	-	160	Wood	160:54
843	-	90	Wood	90:129
844	-	90	Wood	90:265
845	-	282	Wood	282:7
846	-	295	Wood	295:5
847	-	298	Wood	298:94
848	-	295	Wood	295:1
849	-	295	Wood	295:8
850	-	297	Wood	297:37
851	-	355	Wood	-

Appendix 18: Archive contents

Category	Item	Quantity	Condition
Paper records	Number allocation sheet	1	Good
	Context index sheets	7	Good
	Context sheets	56	Good
	Timber sheets	1112	Good
	Section index sheets	1	Good
	Plan keys	1	Good
	Sample index sheets	23	Good
	Level sheets	39	Good
	Finds index sheets	36	Good
Plans	1:200 site outline plan (A2)	1	Good
	1:20 plans (A2)	47	Good
Sections	Section sheets (A2)	5	Good
	1:10 section drawings (on those sheets)	3	Good
Photographs	Digital photographs	3614	Digitally stored & backed-up


160000E
190000E
Nenagh
175000N
Broadford
Killaloe
Ballina
Birdhill
O'Briensbridge
Castleconnell
Newport
SITE
160000N
Limerick
Lumneach
Arra Mountains
Sliabh Ara
SLIEVE FELIM
MOUNTAINS
Sliabh Eibhlinne
0
5km
Londonderry
Larne
Donegal
Belfast
Sligo
Castlebar
Dundalk
Athlone
Galway
Dublin
Roscrea
Limerick
Kilkenny
Tralee
Killarney
Waterford
Rosslare
Cork
J06/15
N7 Nenagh to Limerick High Quality Dual Carriageway
E3530, Annaholty Site 8, Co. Tipperary
Figure 1: Site Location
Based on Ordnance Survey Ireland Discovery Series 2nd Edition 2001-3, 1:50000
Reproduced at 1:100000, Copyright OSI & Govt. of Ireland, OSI Licence No AR0049413
TVAS
IRELAND
LTD



0 250 m

N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 2: Site location

Scale 1:5000
Based on Ordnance Survey Ireland digital mapping

TVAS IRELAND LTD

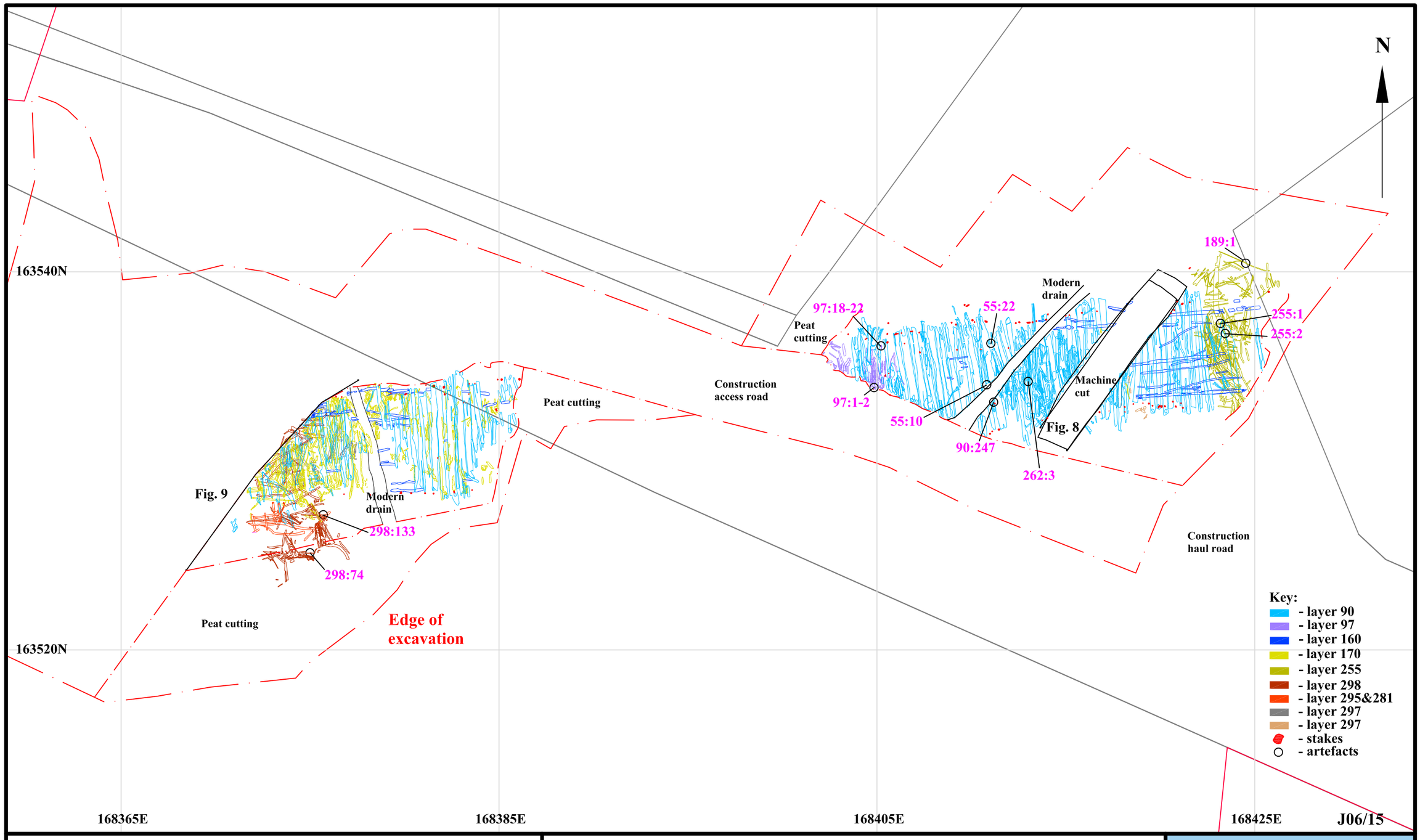
0 250 m

N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 3: Ordnance Survey 1st Edition Map, 1841&1843

Scale 1:5000
Based on OS 1st Edition, Co. Tipperary sheet 31 & Co. Limerick Sheet 1, 6" to mile, LCCPermit: 2010/09/CCMA/Tipperary & Limerick County Council

TVAS IRELAND LTD



N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 4: Plan of site showing all phases and areas of truncation

Scale 1:200

TVAS IRELAND LTD

168370E

168375E

168380E

Fig. 9

N

Peat cutting

Construction access road

163530N

Modern drain

298:133

298:74

Edge of excavation

163525N

Key:
- layer 90
- layer 160
- layer 170
- layer 298
- layer 295&281
- layer 297
- stakes
- artefacts

J06/15

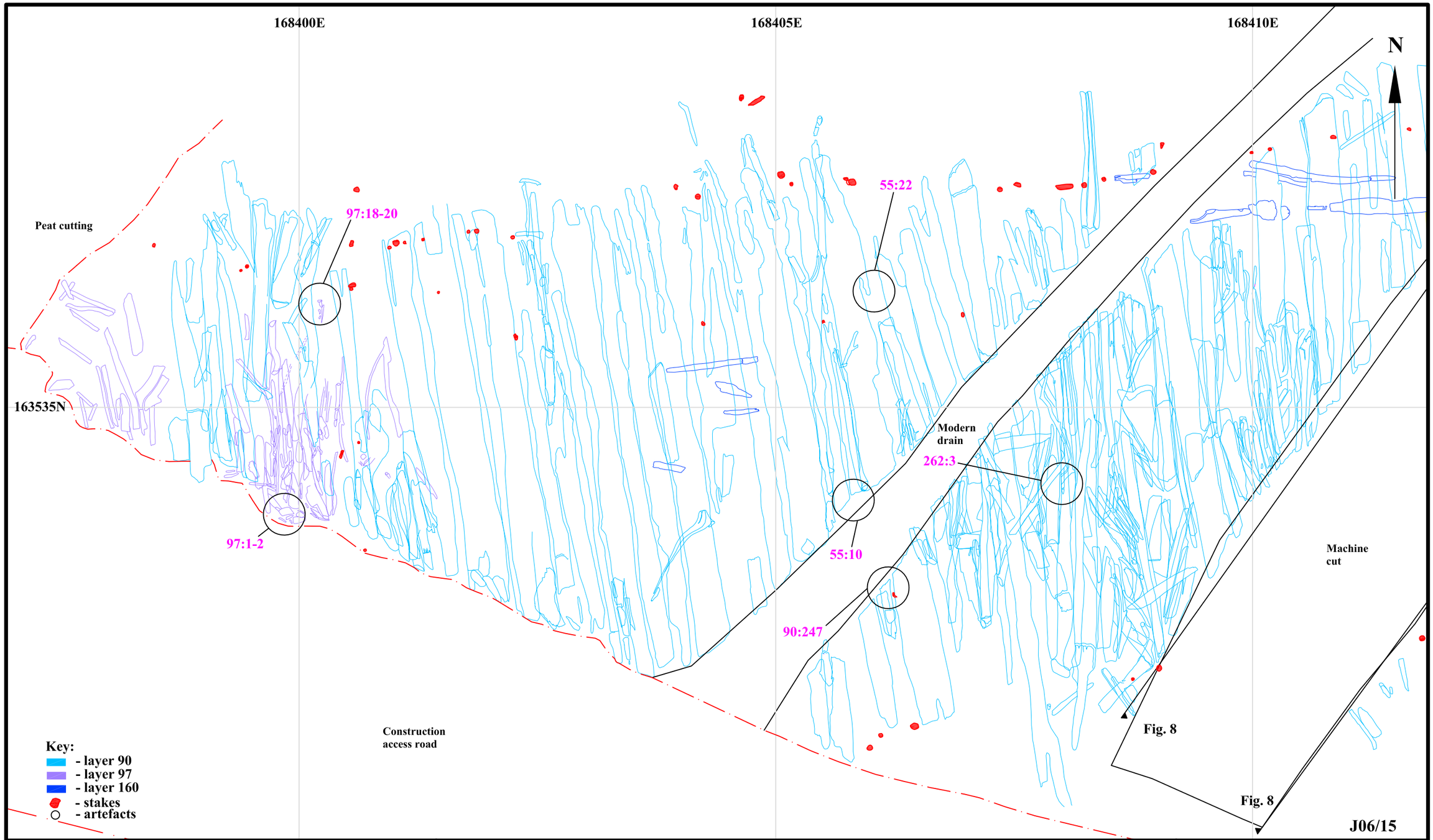
0 2.5 m

N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 5: Western end of site showing all phase

Scale 1:50

TVAS IRELAND LTD



0 2 m

N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 6: Central eastern end of site showing all phases

Scale 1:40

TVAS IRELAND LTD

168410E

168415E

168420E

163540N

163535N

189:1

255:1

255:2

262:3

N

Modern drain

Machine cut

Edge of excavation

Construction haul road

Fig. 8

Fig. 8

Construction access road

Key:
- layer 90
- layer 160
- layer 170
- layer 255
- stakes
- artefacts

J06/15

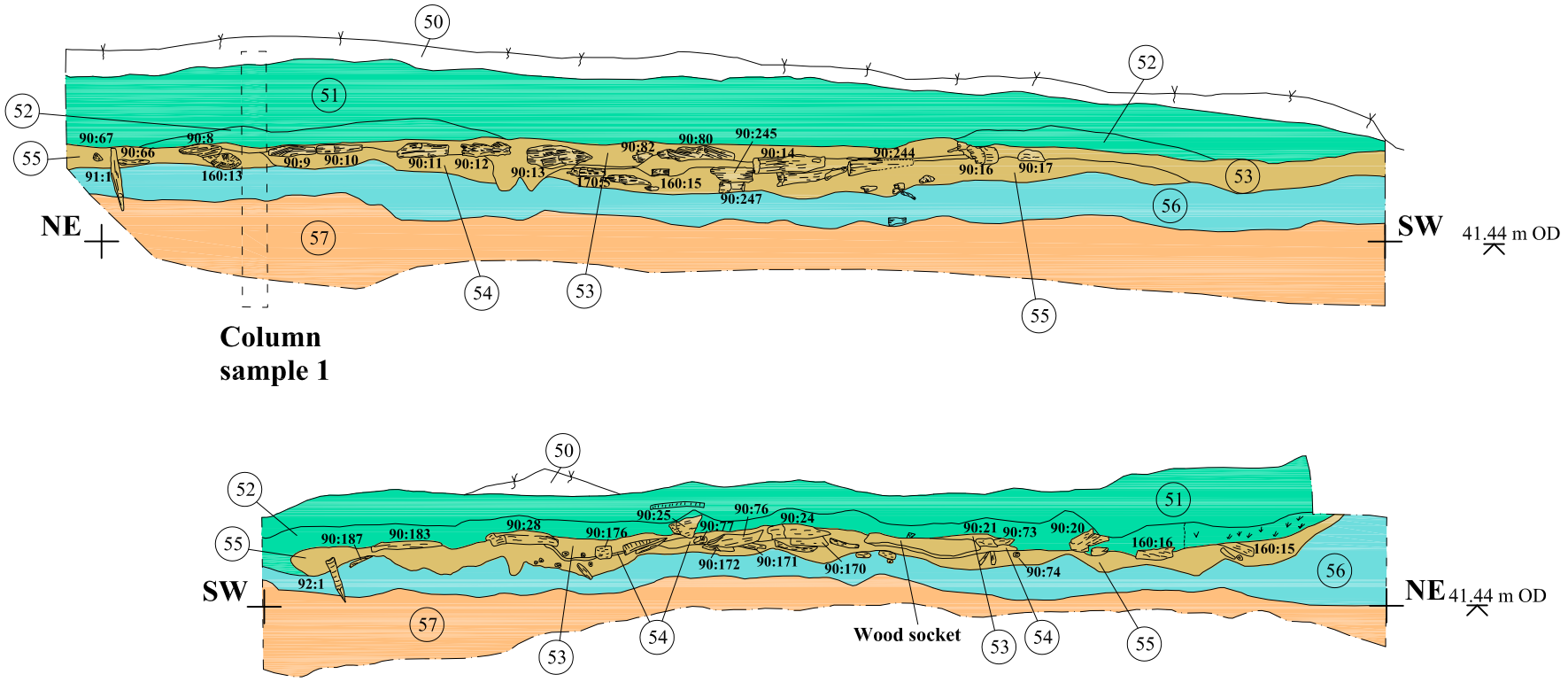
0 2.5 m

N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 7: Eastern end of site showing all phases

Scale 1:50

TVAS IRELAND LTD



Key:

- raised bog
- mineral rich archaeological horizons
- fen bog transitions
- fen peat

J06/15

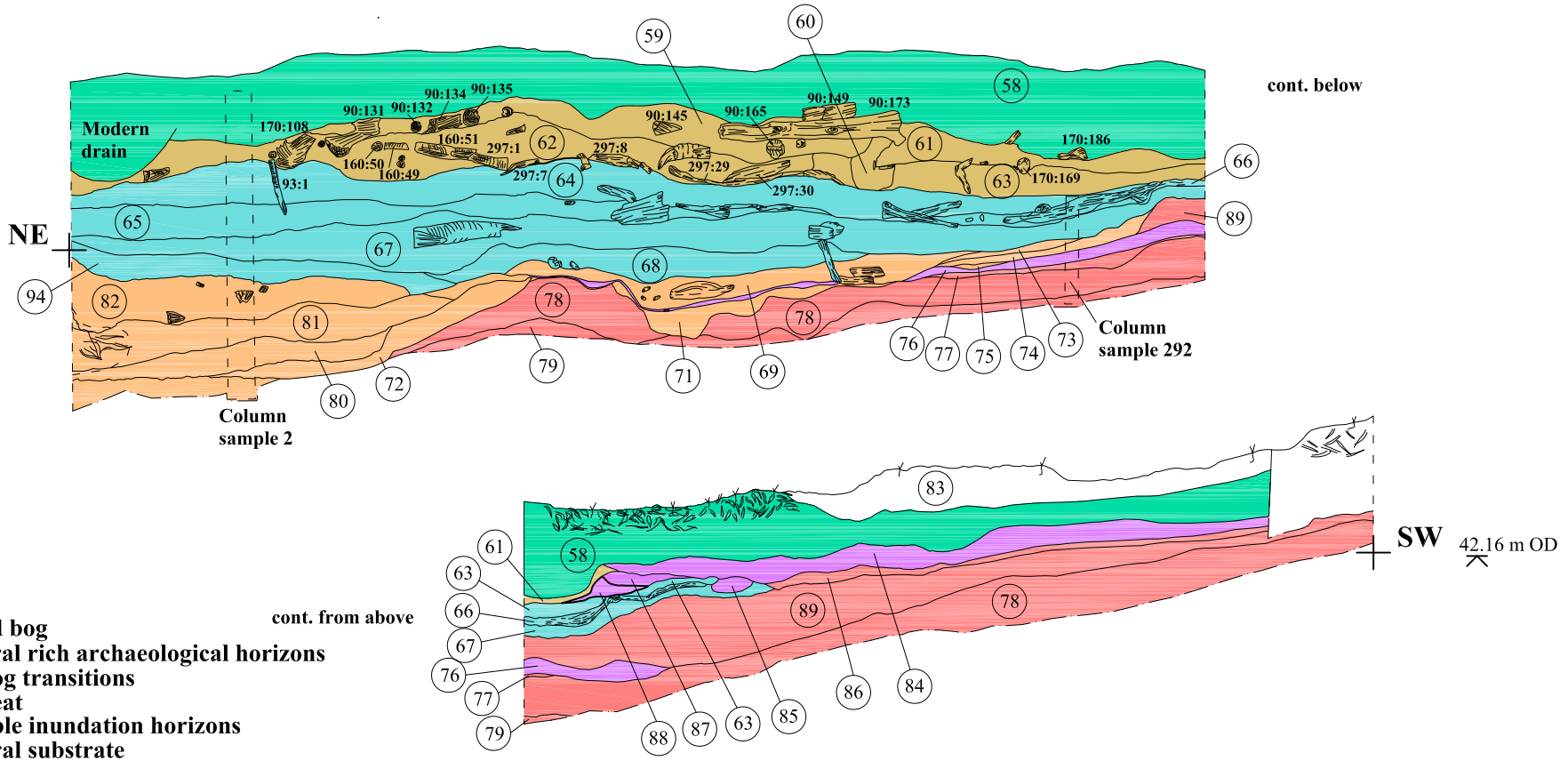
0 2 m

N7 Nenagh-Limerick HQDC
E3530 Annaholty Site 8, Co. Tipperary

Figure 8: North-west and south-east facing sections through eastern end of causeway

Scale 1:50

TVAS IRELAND LTD



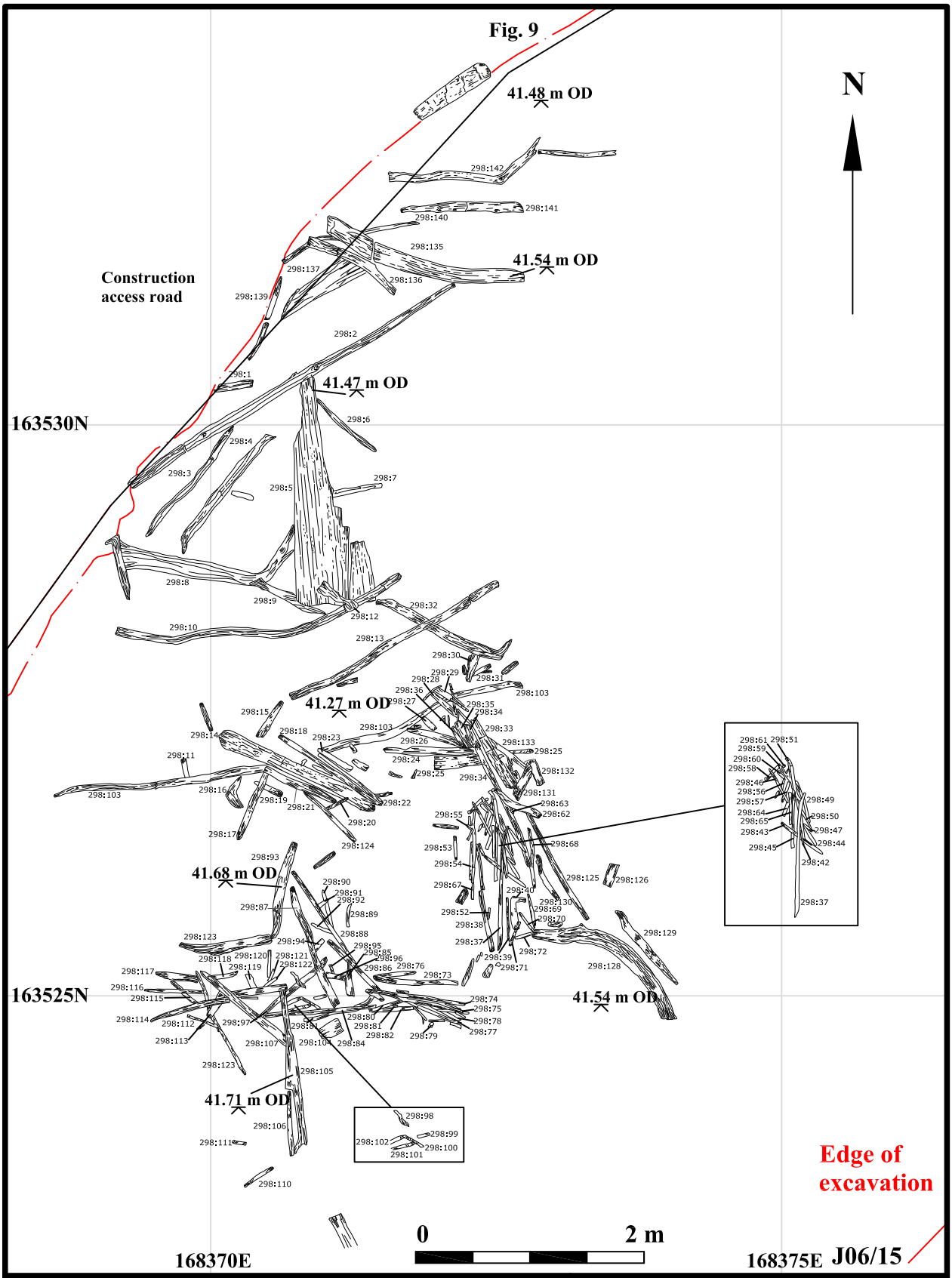
J06/15

N7 Nenagh-Limerick HQDC
E3530 Annaholty Site 8, Co. Tipperary

Figure 9: North-west facing section through western end of causeway

Scale 1:50

TVAS IRELAND LTD



N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 10: Trackway 298

Scale 1:50

TVAS IRELAND LTD

J06/15

168370E

168375E

168380E

Fig. 9

N

Peat cutting

41.48 m OD

41.54 m OD

Construction
access road

41.47 m OD

163530N

41.27 m OD

298:133

41.68 m OD

298:74

163525N

41.54 m OD

41.71 m OD

Edge of
excavation

Key:
- layer 298
- artefacts

J06/15

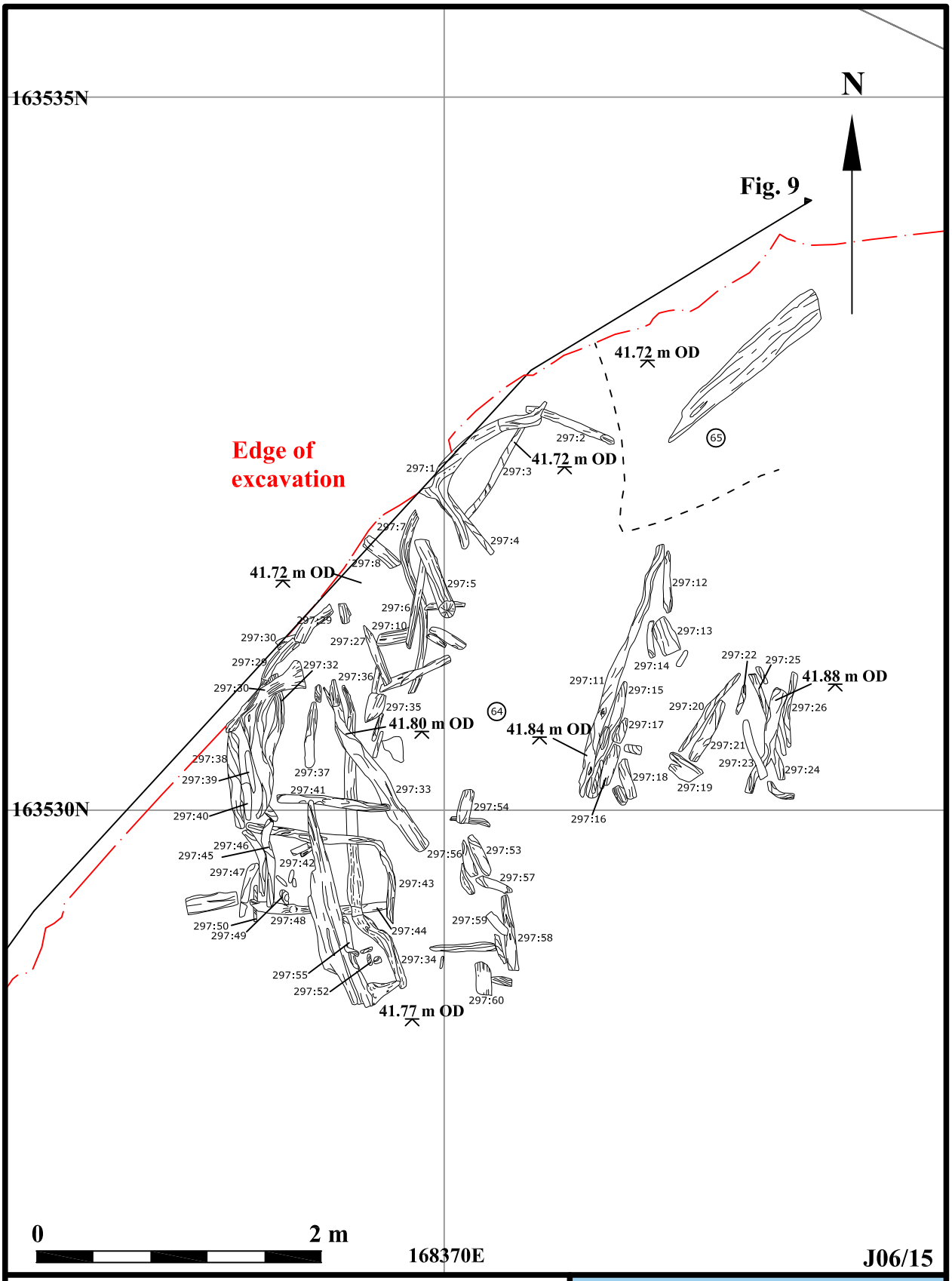
0 2.5 m

N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 11: Phase 1 trackway 298

Scale 1:50

TVAS IRELAND LTD



N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 12: Deposit 297

Scale 1:40

TVAS IRELAND LTD

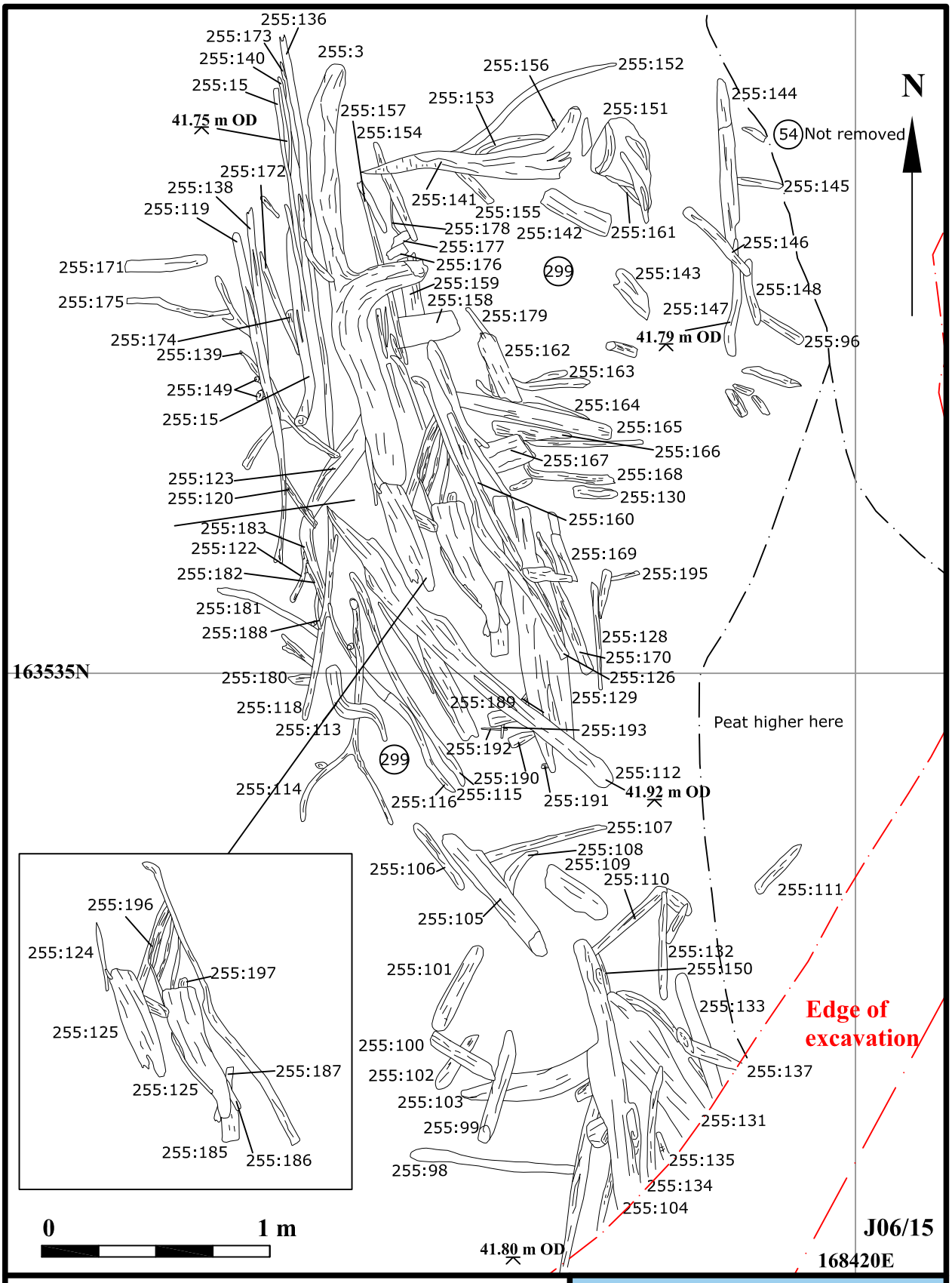


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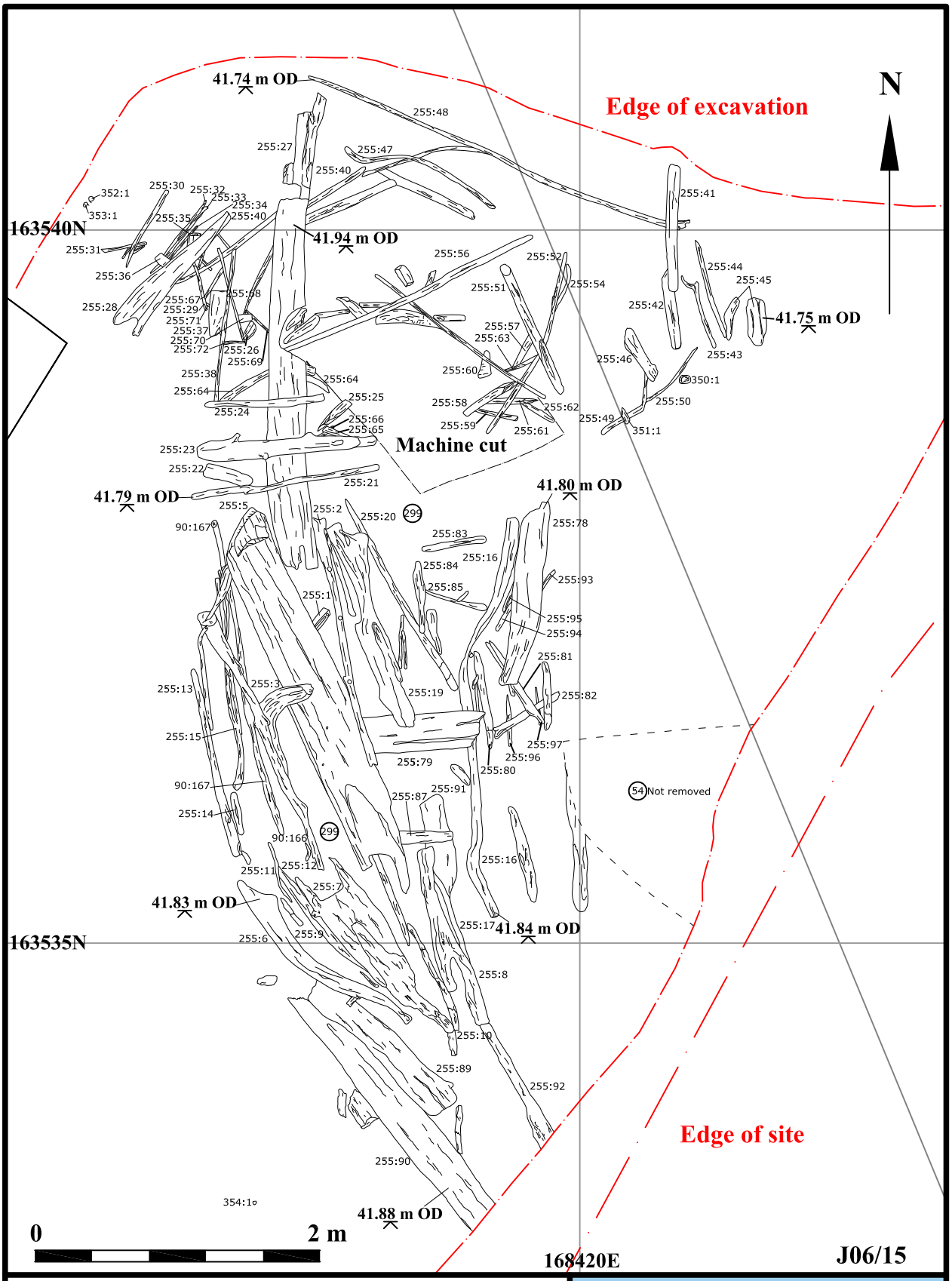
Figure 13: Lower level of deposit 255

Scale 1:25

TVAS IRELAND LTD



N7 Nenagh-Limerick HQDC
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Figure 14: Upper level of deposit 255

Scale 1:40

TVAS IRELAND LTD

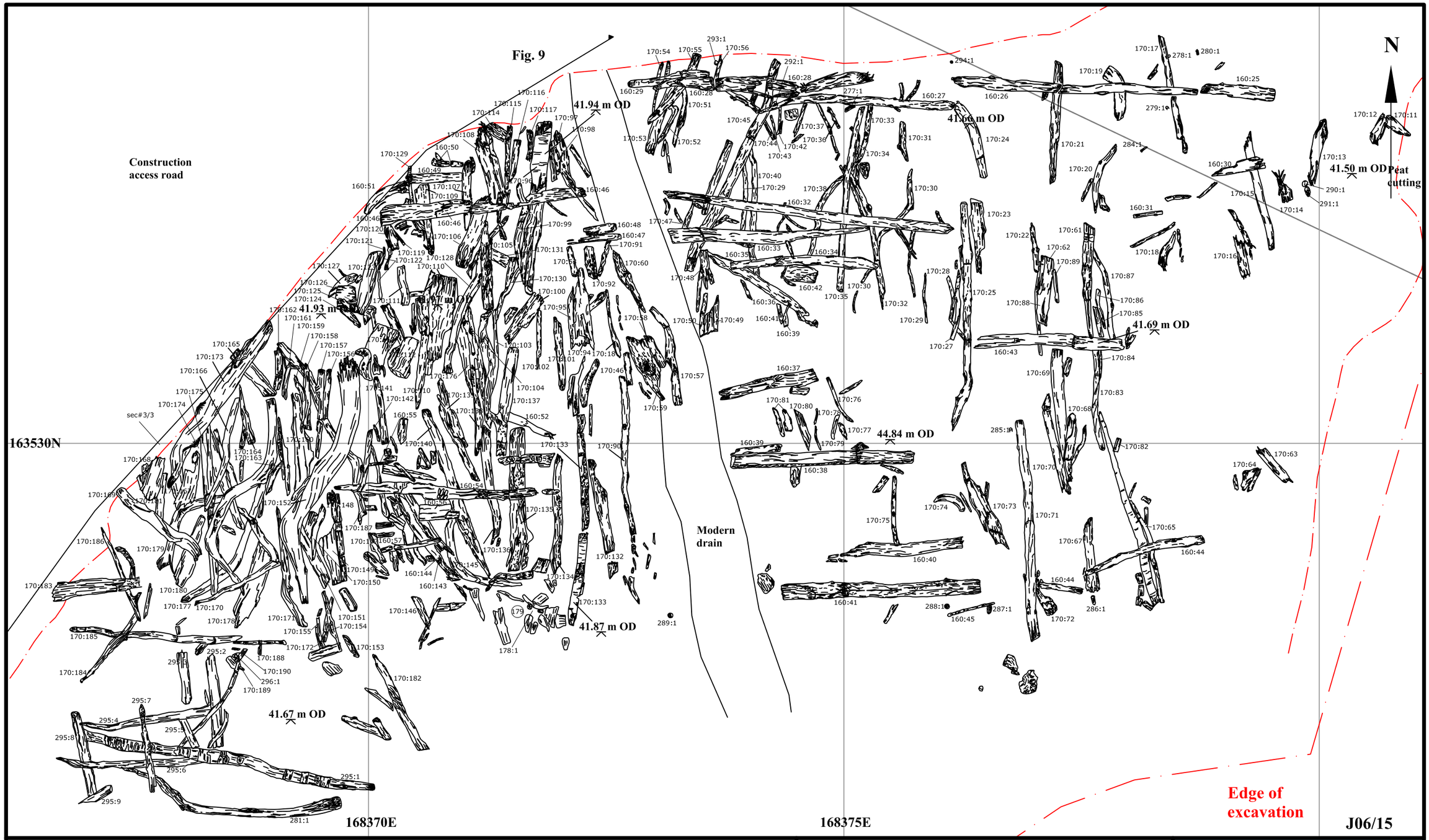

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Figure 15: Western end of deposit 170, deposits 281 & 295, overlain by deposit 160

Scale 1:40

TVAS IRELAND LTD

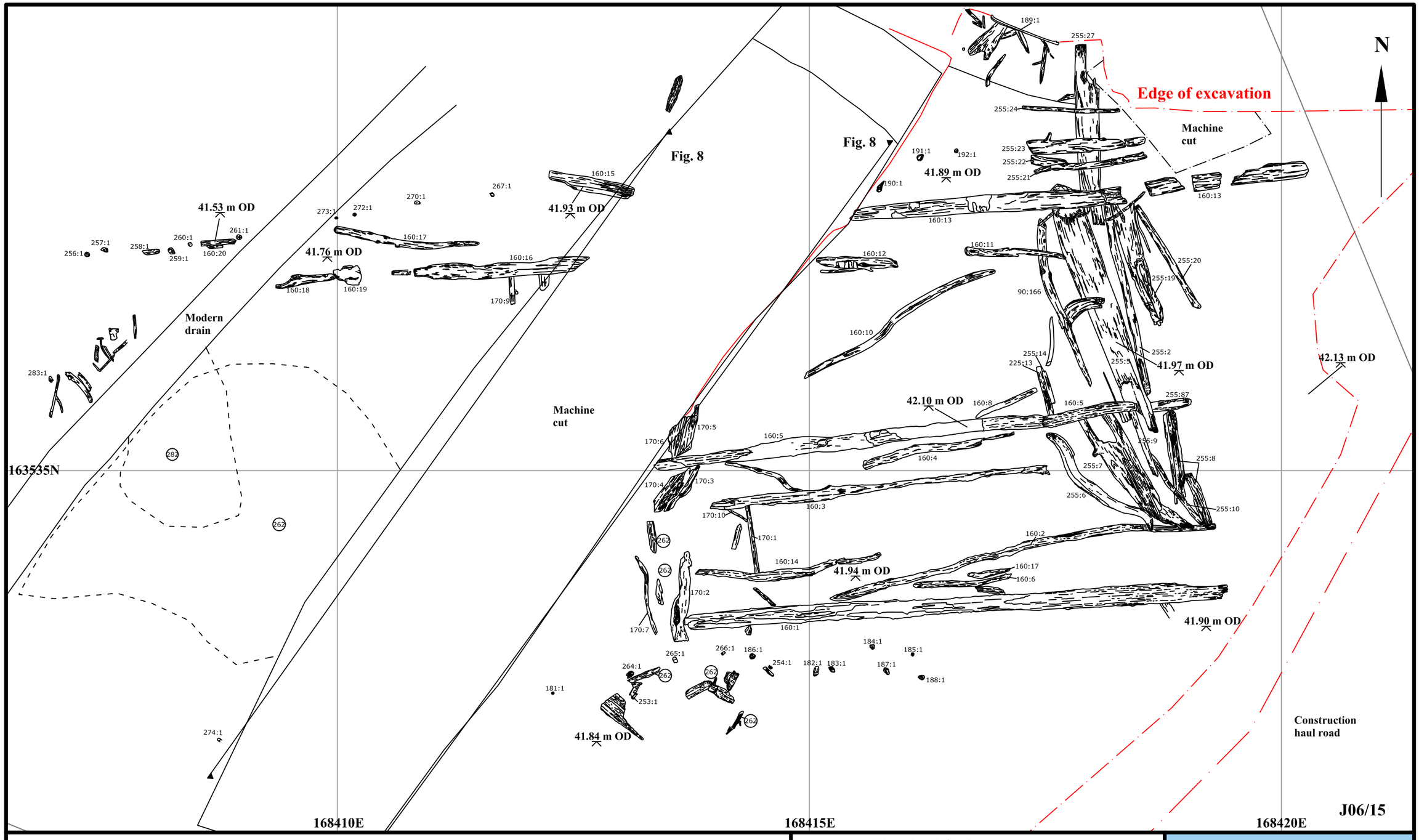

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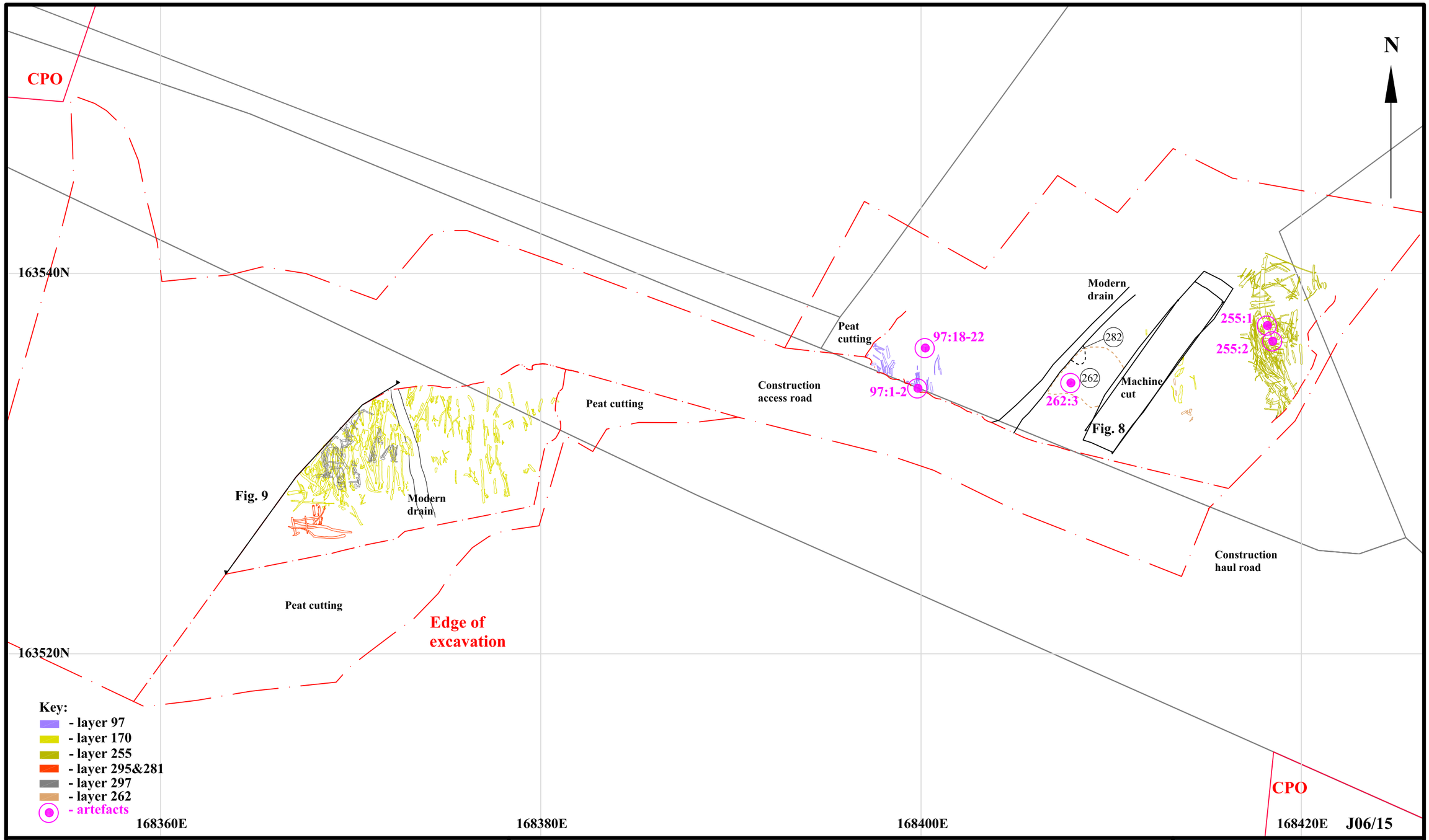
Figure 16: Eastern end of deposit 170, upper part of deposit 255 and location of deposits 262 & 282, overlain by lower parts of deposits 160 and 90

Scale 1:40

TVAS IRELAND LTD



0 10 m

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Figure 17: Phase 2 trackway 170/255/297 also showing possibly associated deposits 97, 262 and 282

Scale 1:200

TVAS IRELAND LTD

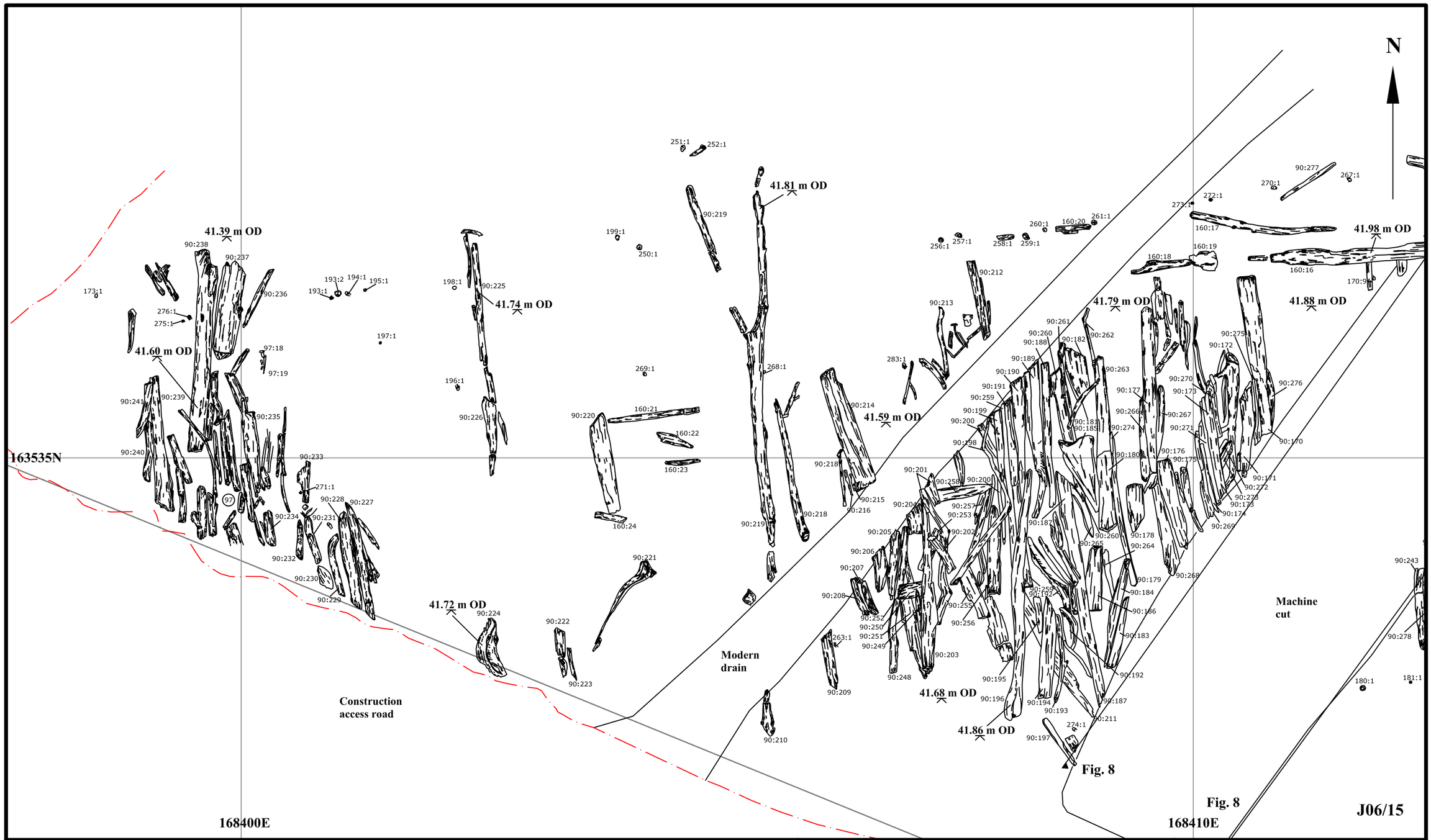

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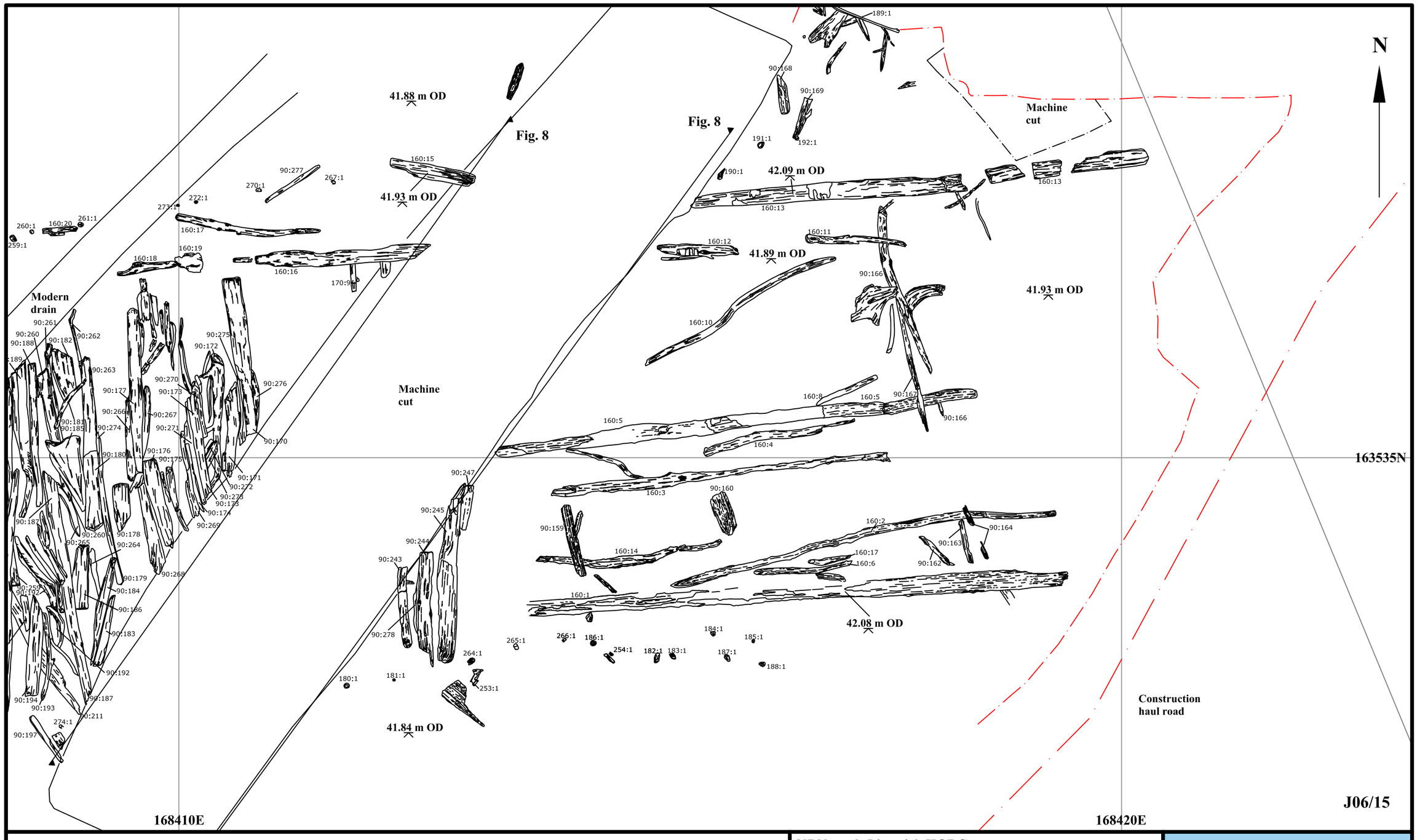
Figure 18: Central eastern deposits 97 and 160 and lower elements of deposit 90

Scale 1:40

TVAS IRELAND LTD



0 2 m

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Figure 19: Eastern part of deposit 160 and lower elements of deposit 90

Scale 1:40

TVAS IRELAND LTD

Fig. 9

Construction access road

N

Peat cutting

163530N

42.19 m OD

42.24 m OD

41.74 m OD

41.83 m OD

41.83 m OD

41.87 m OD

41.54 m OD

41.56 m OD

41.62 m OD

Modern drain

Edge of excavation

Peat cutting

168370E

168380E

J06/15

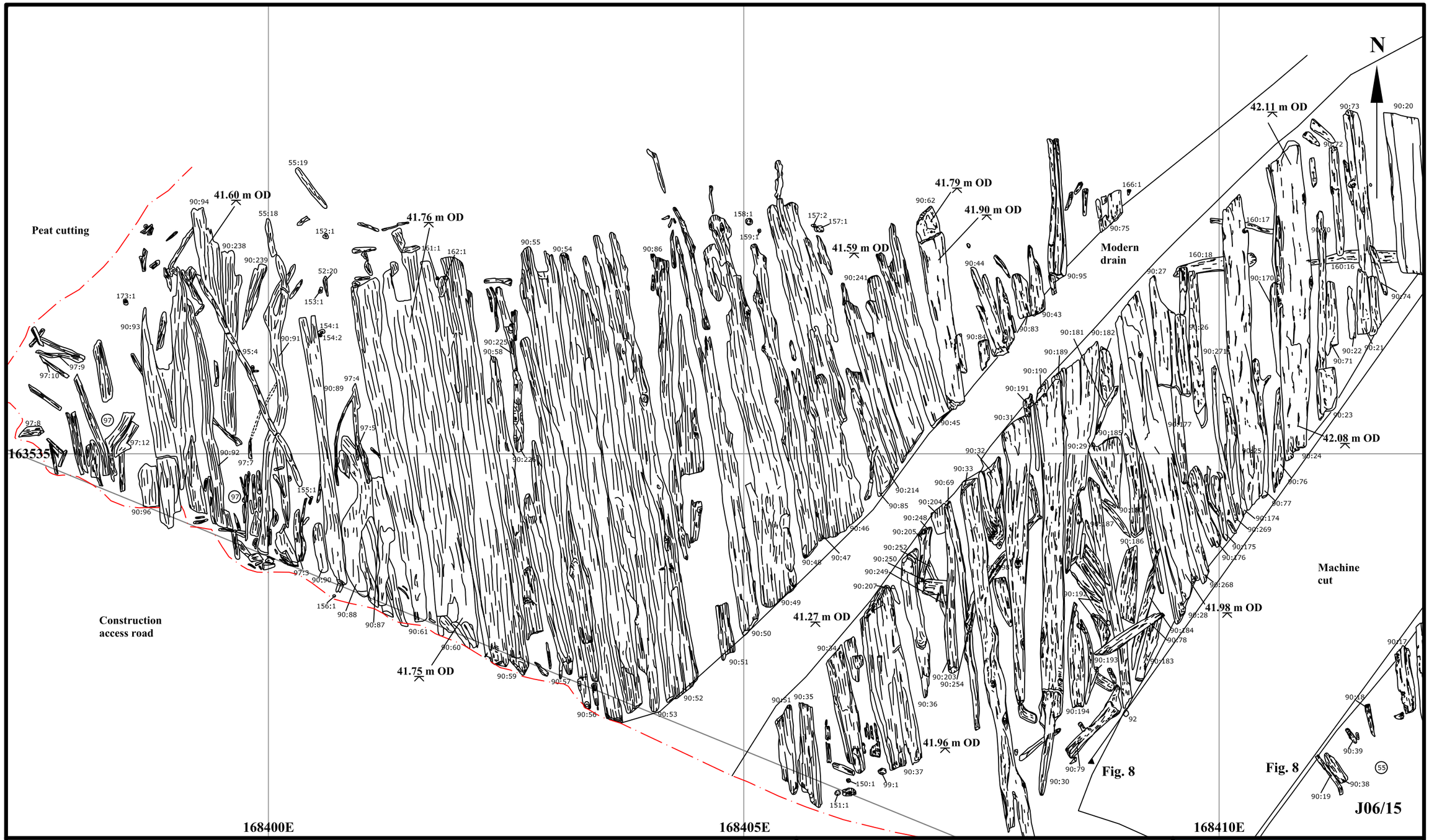
0 2 m

N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 20: Western end of main causeway, upper level of deposit 90

Scale 1:50

TVAS IRELAND LTD



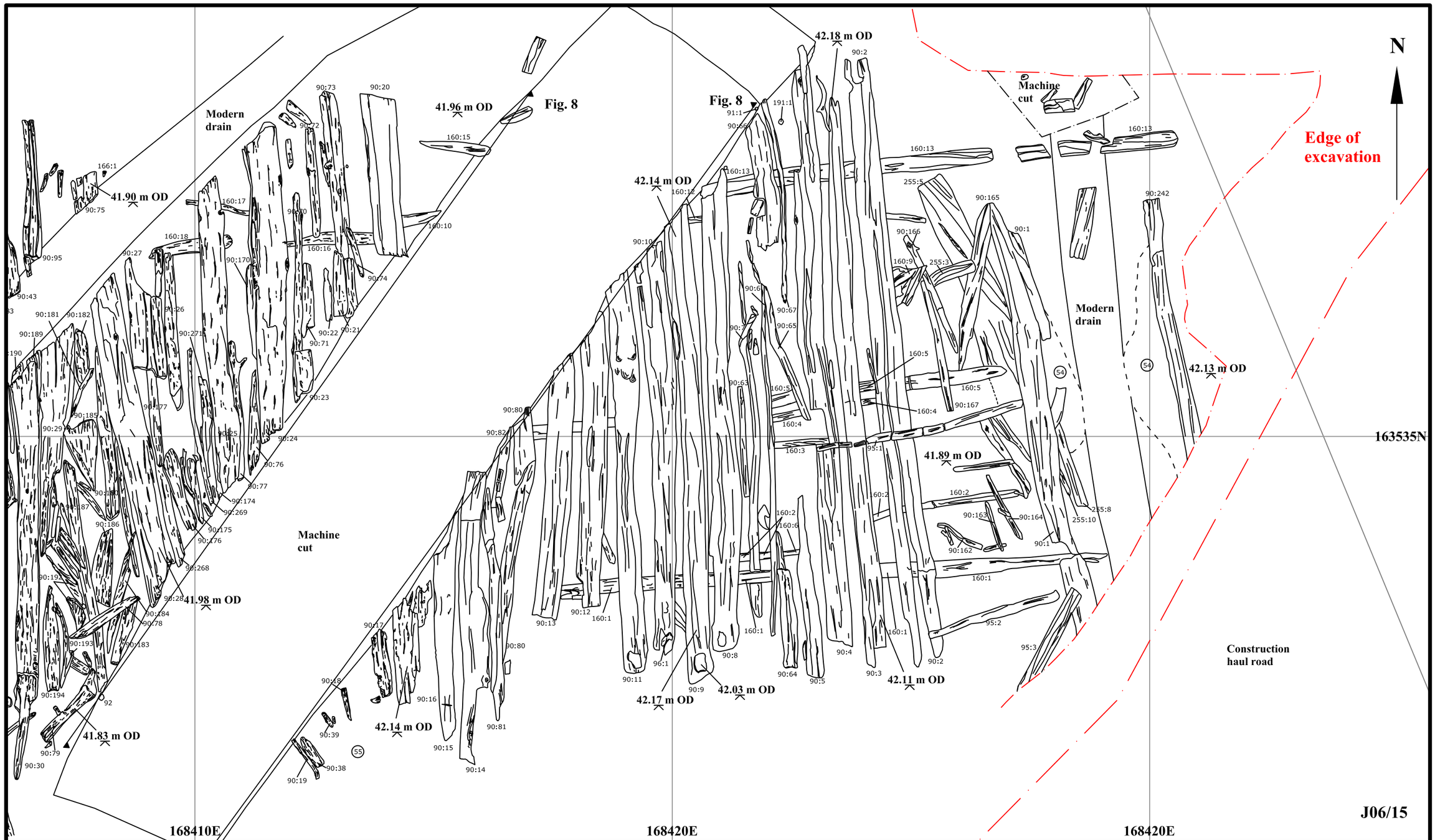
0 2 m

N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 21: Central eastern part of causeway, upper level of deposit 90

Scale 1:40

TVAS IRELAND LTD



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E3530, Annaholty Site 8, Co. Tipperary

Figure 22: Eastern end of causeway, upper level of deposit 90 & deposit 95

Scale 1:40

TVAS IRELAND LTD

N

163540N

189:1

Modern drain

Peat cutting

97:18-22

282

262

Machine cut

97:1-2

262:3

Fig. 8

Construction access road

Peat cutting

Fig. 9

Modern drain

Peat cutting

Edge of excavation

Construction haul road

163520N

Key:

- layer 97
- layer 160
- layer 262
- stakes

168365E

168385E

168405E

168425E

J06/15

0 10 m

N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 23: Phase 3 substructure of causeway, deposits 97, 160, 262, 282

Scale 1:200

TVAS IRELAND LTD

N

163540N

Peat cutting

Peat cutting

Construction access road

97:18-20

97:12

55:22

55:10

Modern drain

Machine cut

90:247

Fig. 8

Fig. 9

Construction haul road

Peat cutting

Edge of excavation

163520N

Key:

- layer 90
- layer 97
- layer 160
- layer 170
- layer 255
- stakes

168360E

168380E

168400E

168420E

J06/15

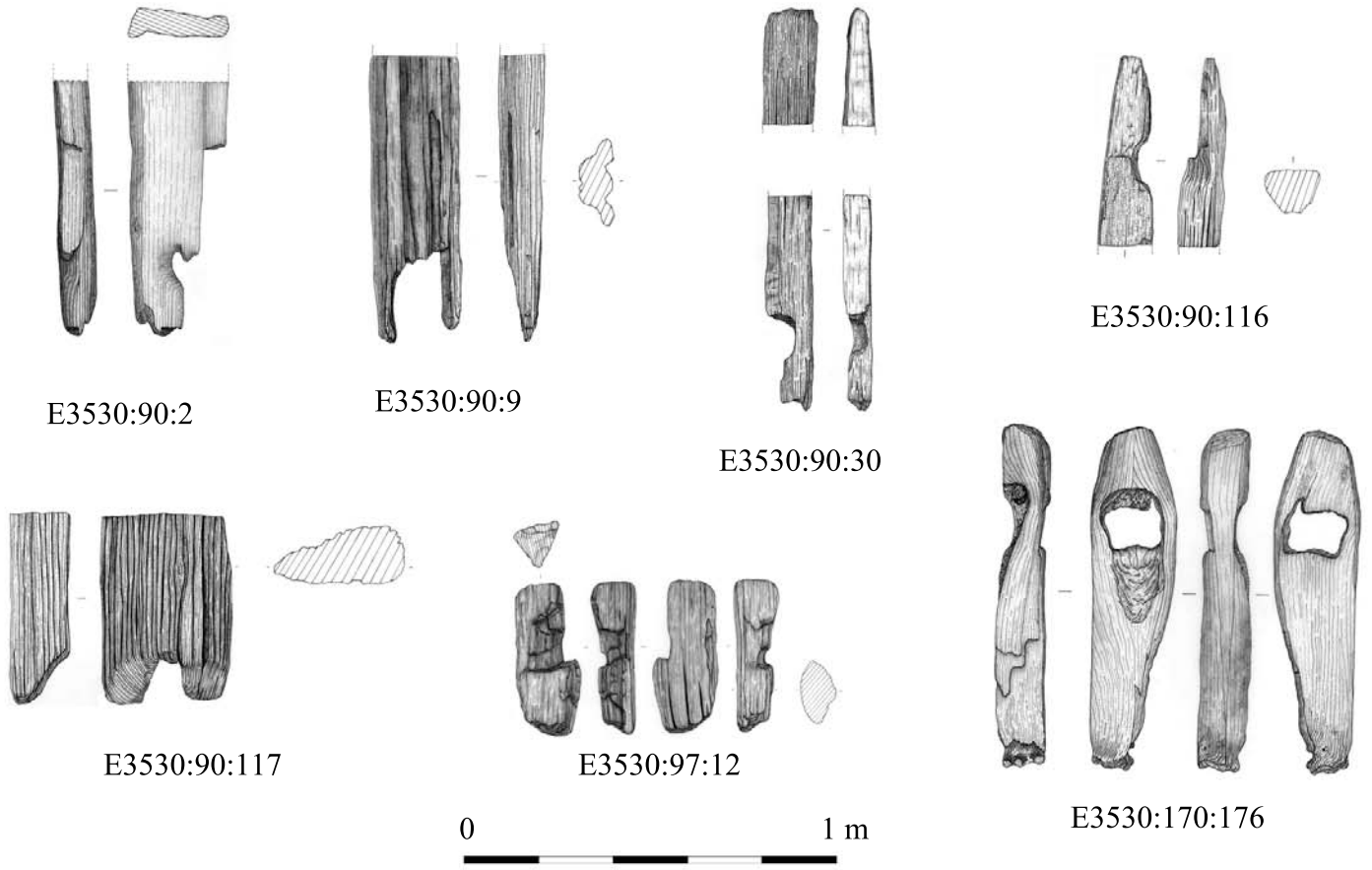
0 10 m

N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 24: Phase 3 upper level of causeway deposit 90

Scale 1:200

TVAS IRELAND LTD



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E3530, Annaholty Site 8, Co. Tipperary

Figure 25: Split timbers 90:2, 90:9, 90:30, 90:116, 90:117, 97:12 and 170:176 showing rectangular sockets

Scale 1:2

TVAS IRELAND LTD

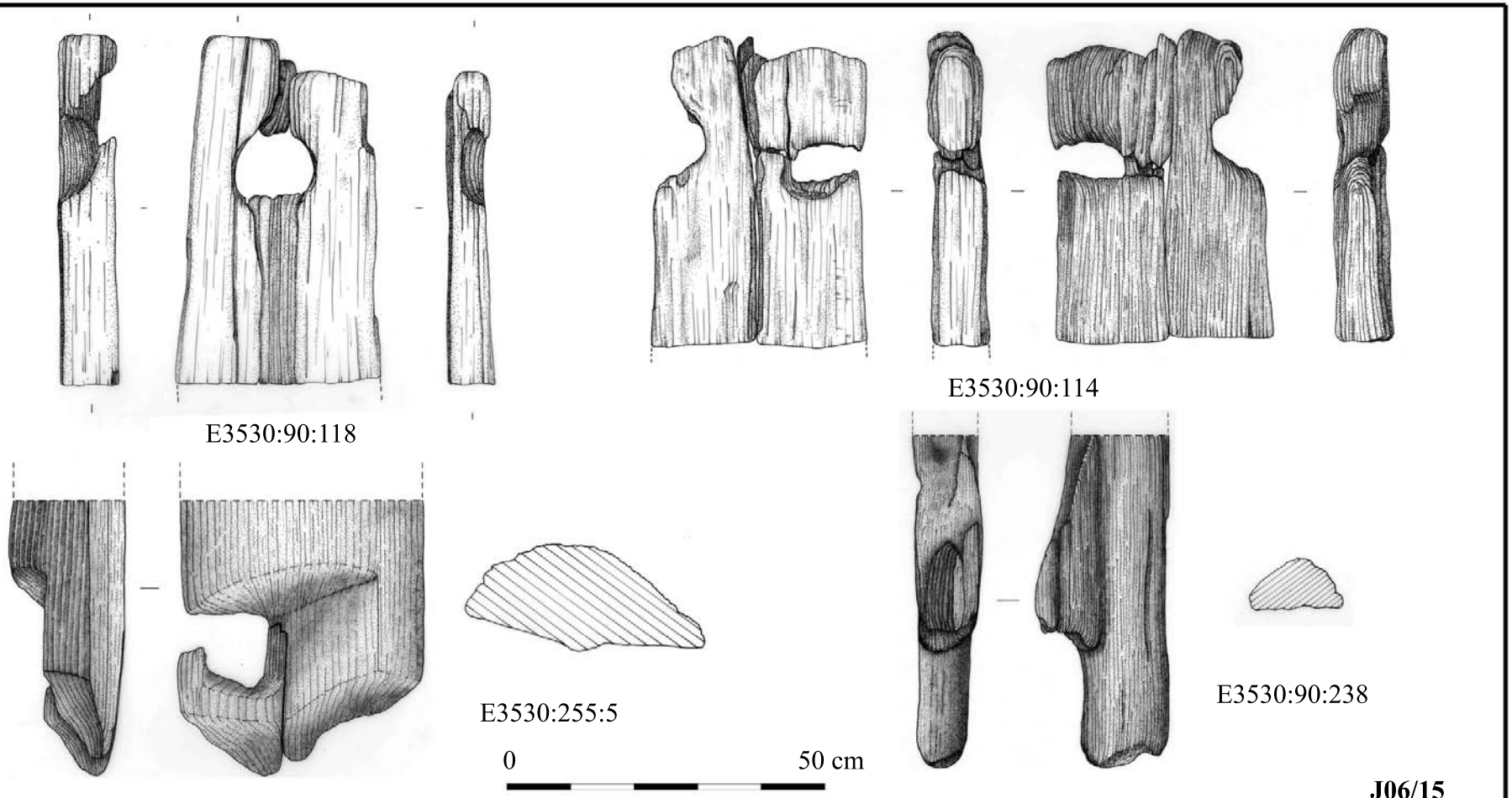

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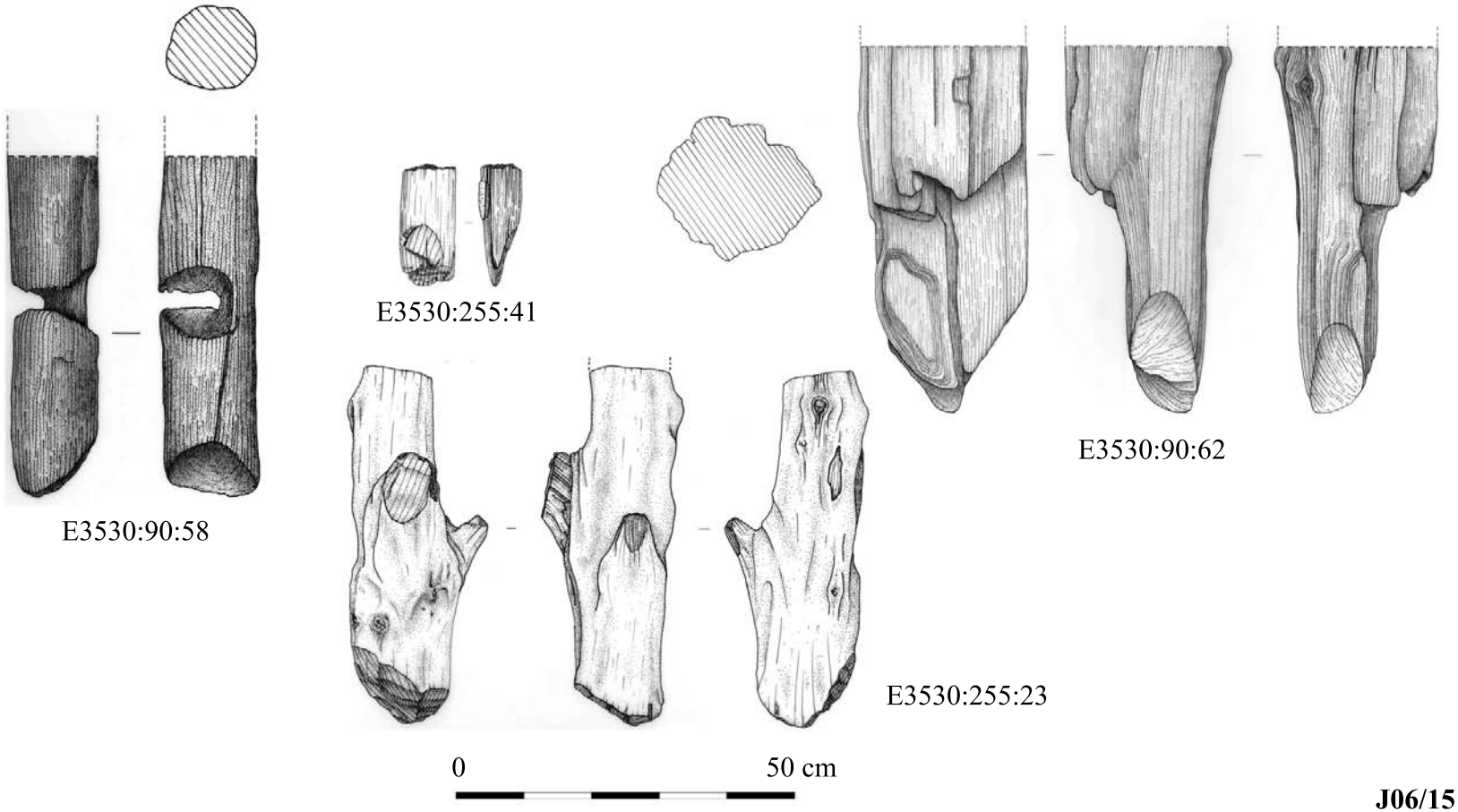
Figure 26: Split timbers 90:118, 90:114, 255:5 and 90:238 showing evidence of joinery

Scale 1:1

TVAS IRELAND LTD



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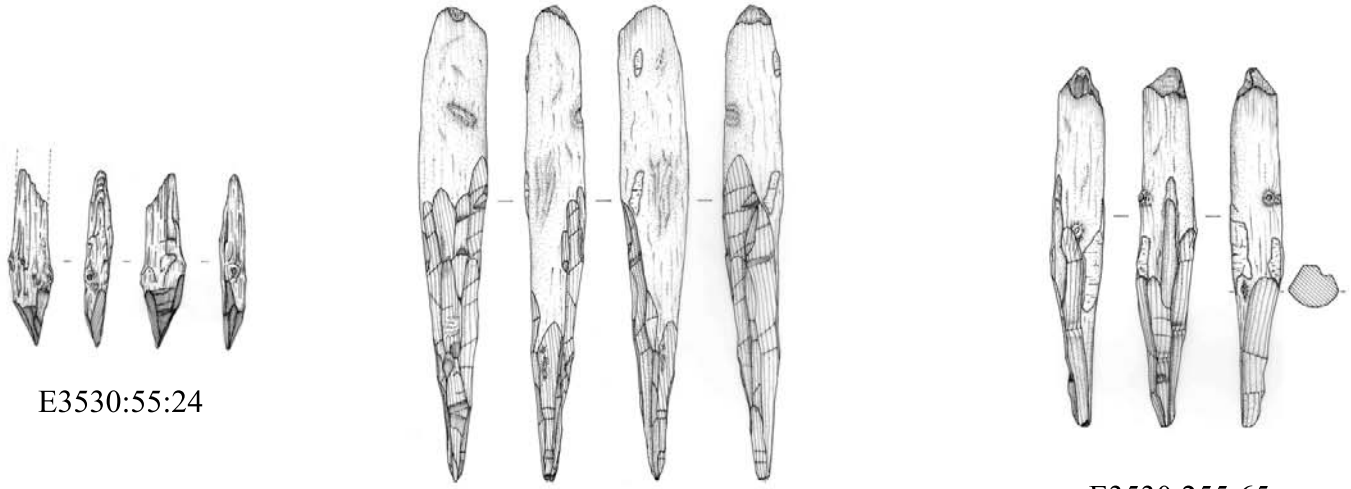
E3530, Annaholty Site 8, Co. Tipperary

Figure 27: Worked ends - chisel points 90:58 and 255:41 and wedge points 90:62 and 255:23

Scale 1:1

TVAS IRELAND LTD



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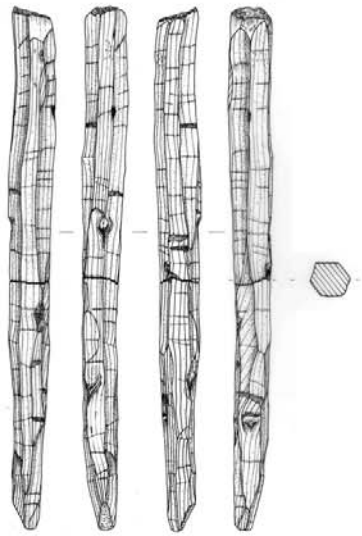
E3530, Annaholty Site 8, Co. Tipperary

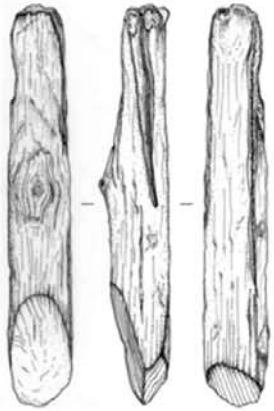
Figure 28: Worked ends - pencil points 55:24, 255:58 and 255:65

Scale 1:1

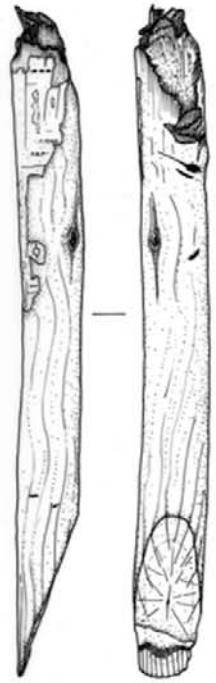
TVAS IRELAND LTD



E3530:177:1



E3530:181:1



E3530:182:1

0 50 cm

0 25 cm

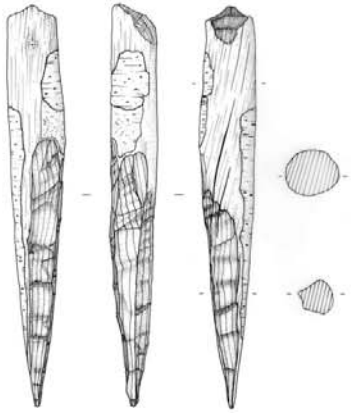
J06/15

N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

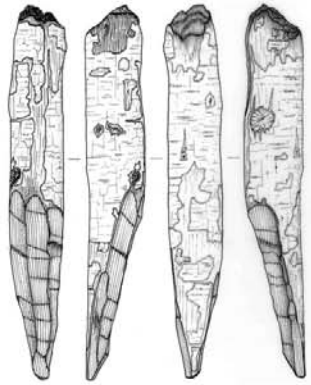
Figure 29: Stakes - pencil point 177:1, wedge point 181:1 and chisel point 182:1

Scales 1:1 and 2:1

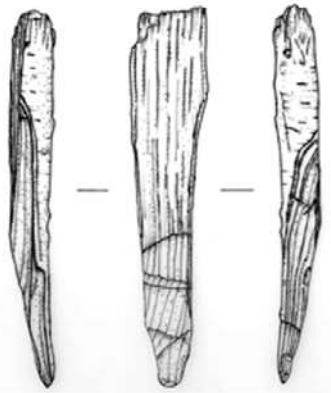
TVAS IRELAND LTD



E3530:92:1



E3530:157:1



E3530:193:1

0 50 cm

0 25 cm

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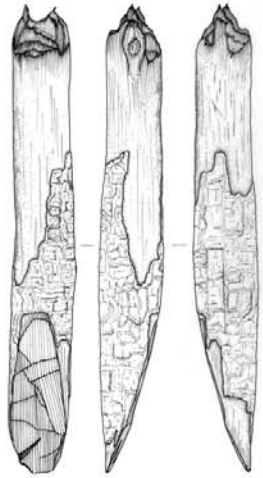
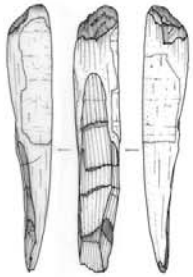
Figure 30: Posts - pencil points 92:1, 157:1 and 193:1

Scales 1:1 and 2:1

TVAS IRELAND LTD



E3530:158:1



E3530:272:1

0 50 cm

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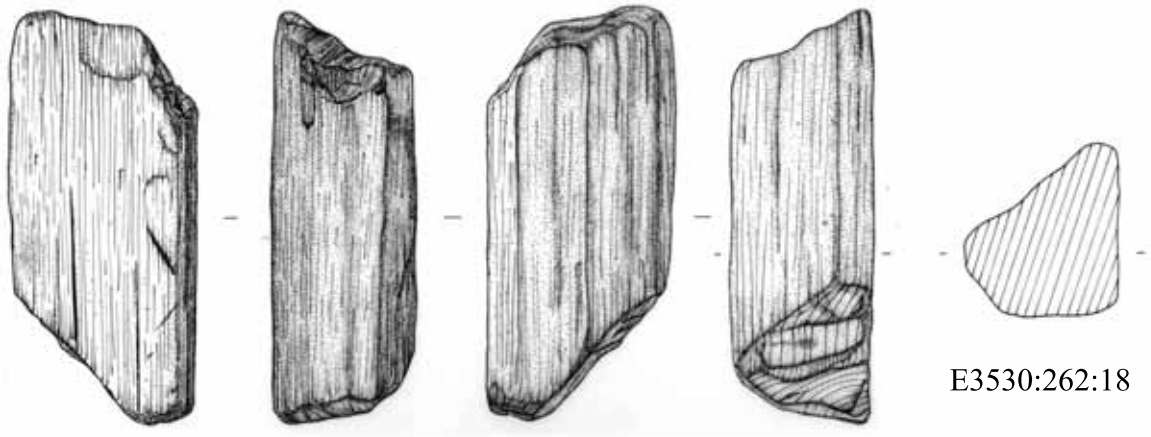
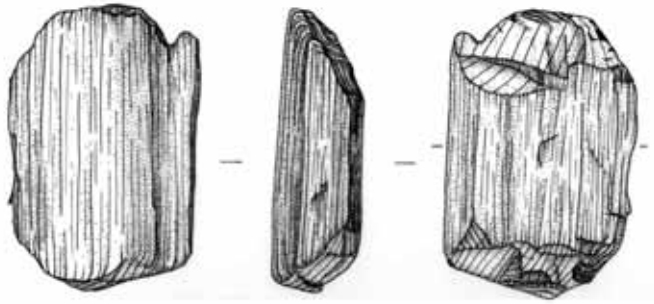
Figure 31: Posts - chisel points 158:1 and 272:1

Scale 1:1

TVAS IRELAND LTD



E3530:262:18



E3530:298:126

0 50 cm

J06/15

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E3530, Annaholty Site 8, Co. Tipperary

Figure 32: Wood working waste 262:18 and 298:126

Scale 1:1

TVAS IRELAND LTD

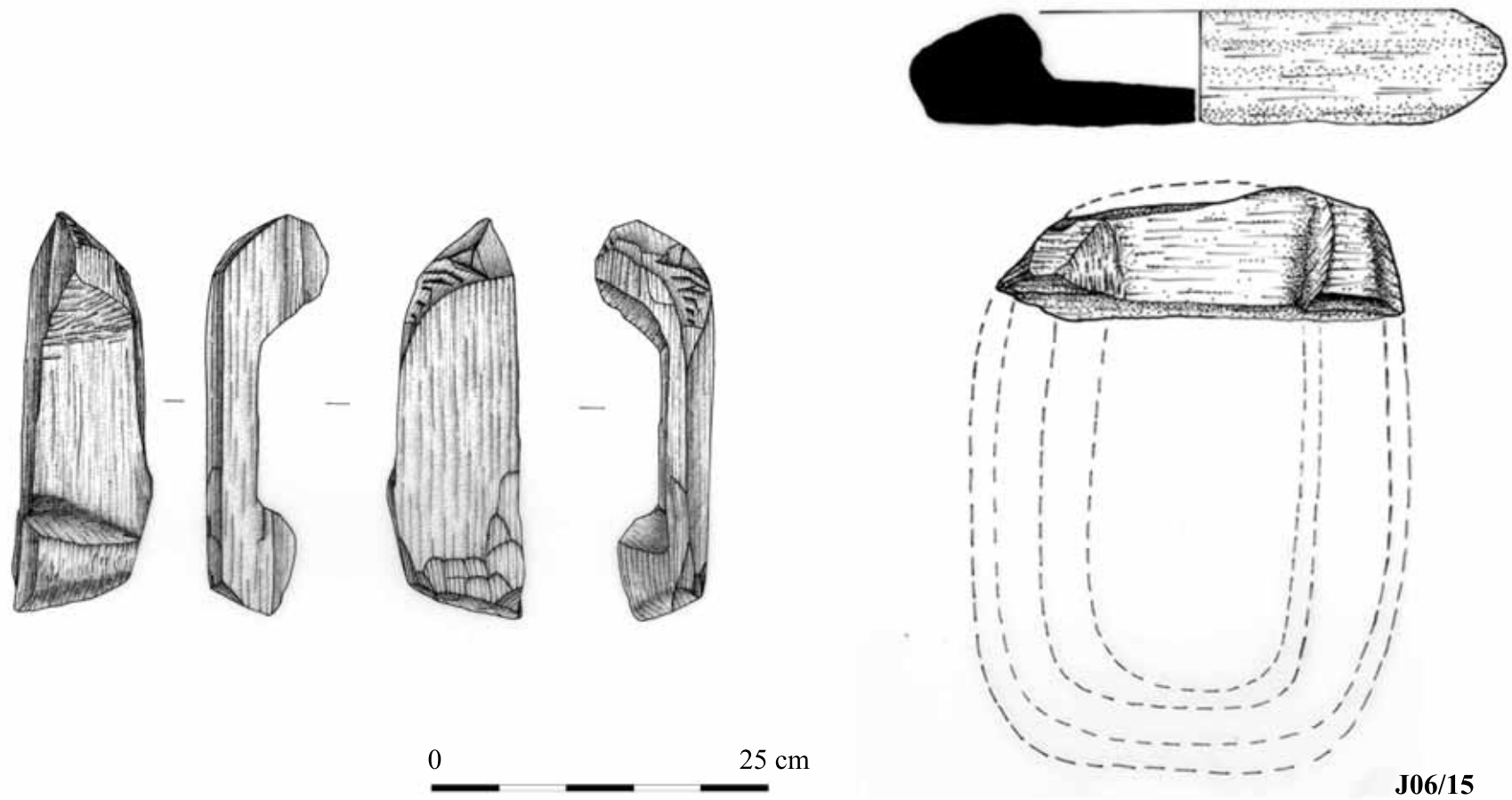

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Figure 33: Losset fragment 55:10

Scale 1:2

TVAS IRELAND LTD

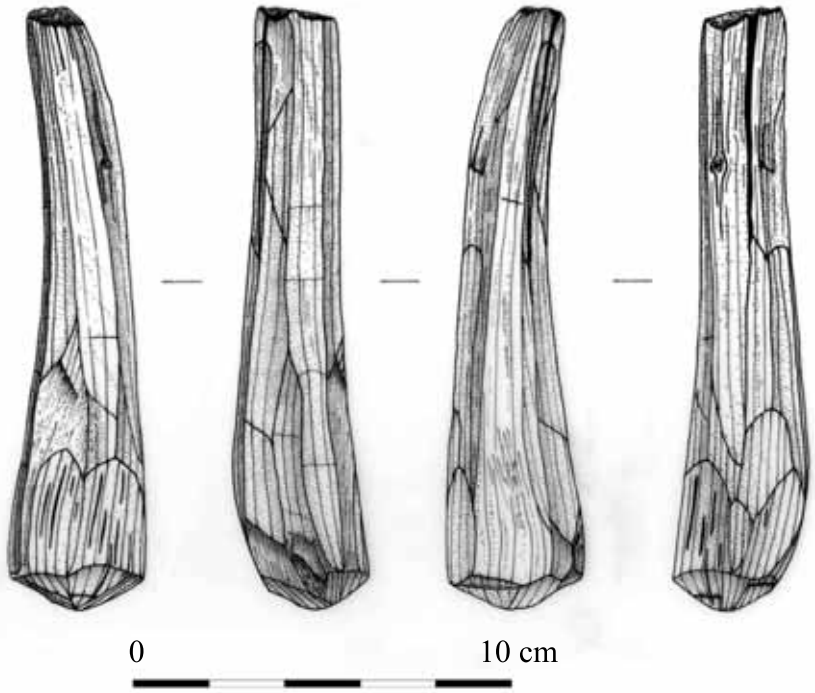

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Figure 34: Dressed peg 55:22

Scale 5:1

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Figure 35: Yoke fragment 90:247

Scale 2:1

TVAS IRELAND LTD

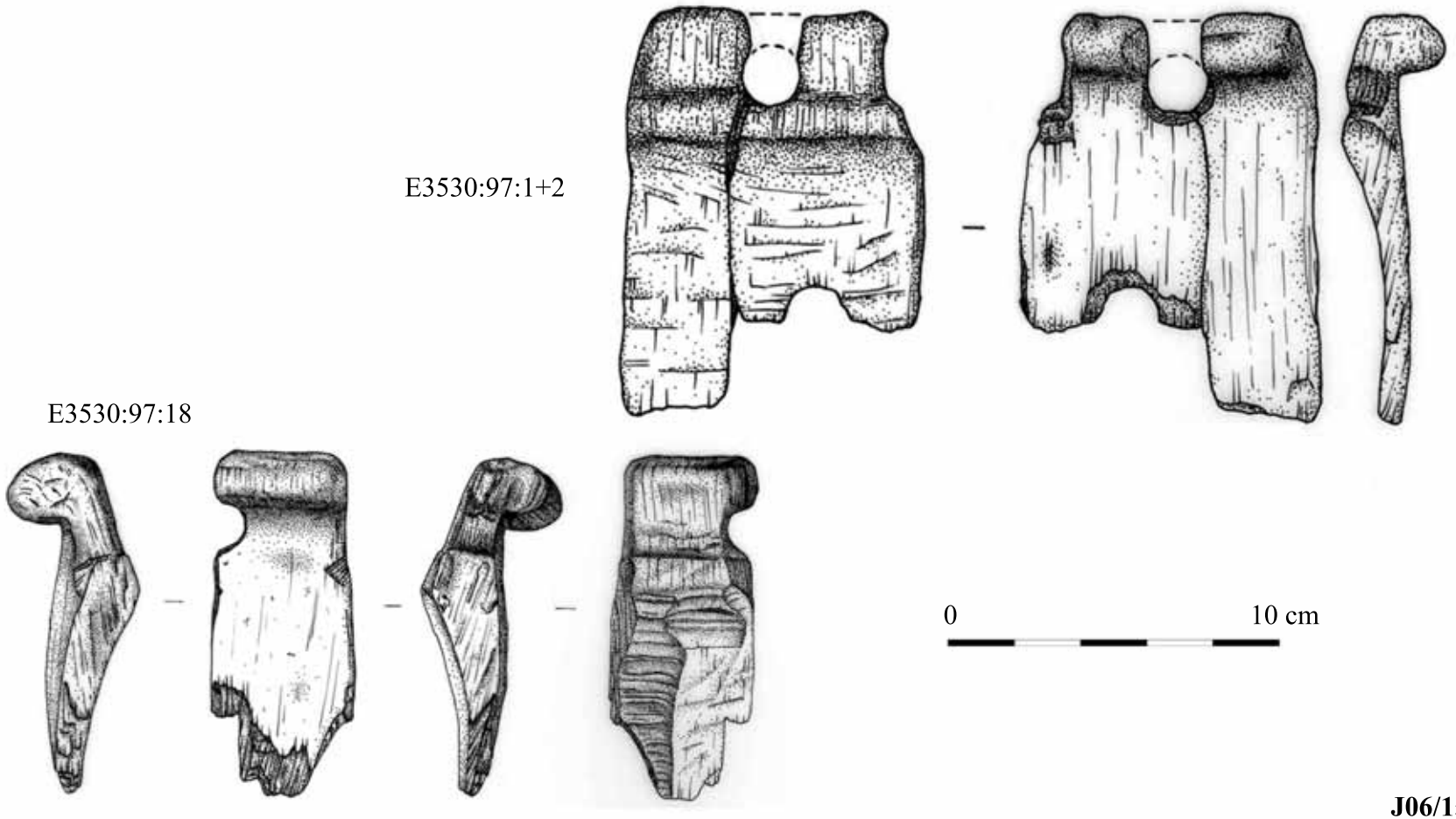

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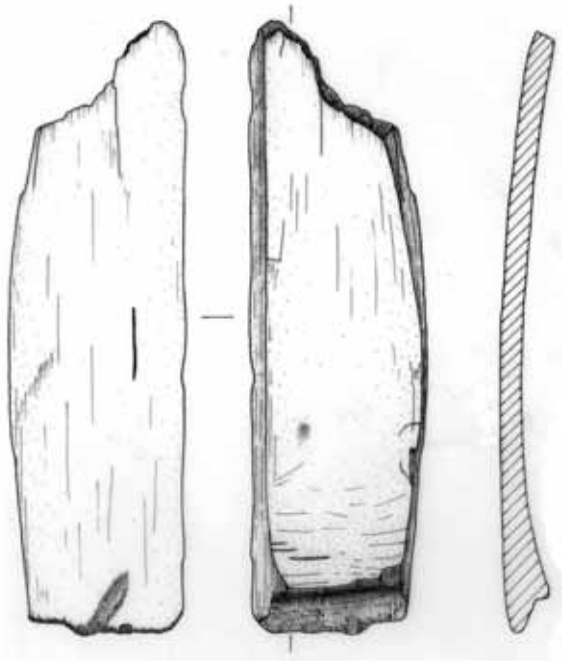
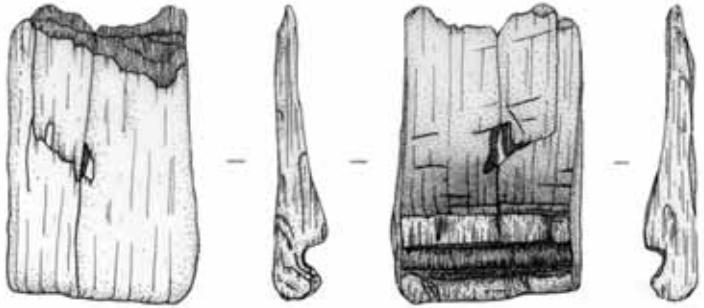
Figure 36: Vessel fragments 97:1+2, and 97:18

Scale 1:5

TVAS IRELAND LTD



E3530:97:19



E3530:97:20

0 12.5 cm

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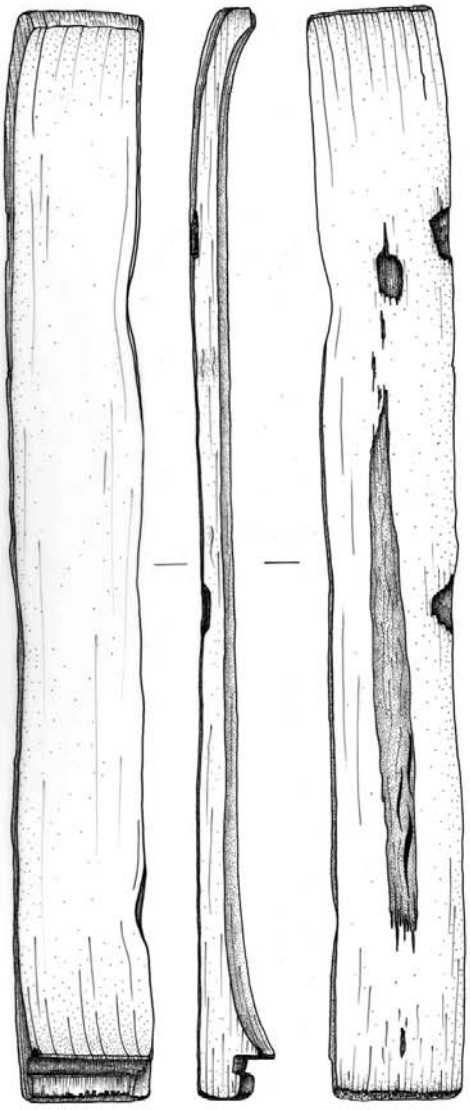
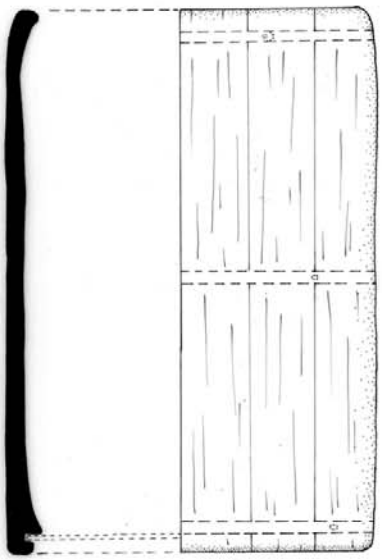
Figure 37: Vessel fragments 97:19 and 97:20

TVAS IRELAND LTD



0 25 cm



0 50 cm

J06/15

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Figure 38: Vessel fragment 189:1

Scales 1:2 and 1:1

TVAS IRELAND LTD

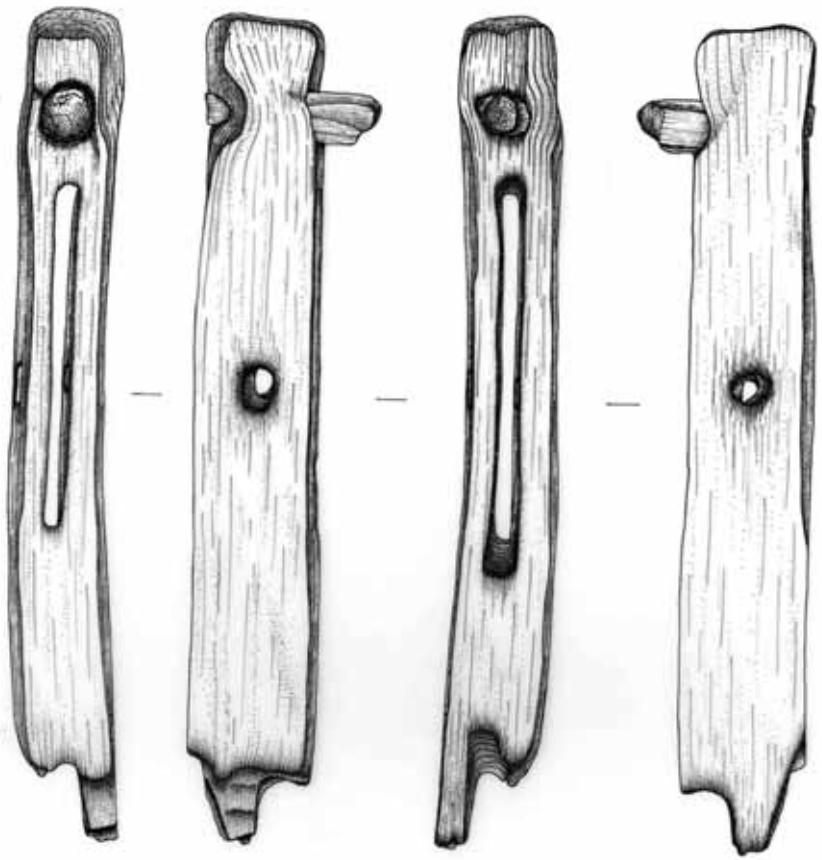

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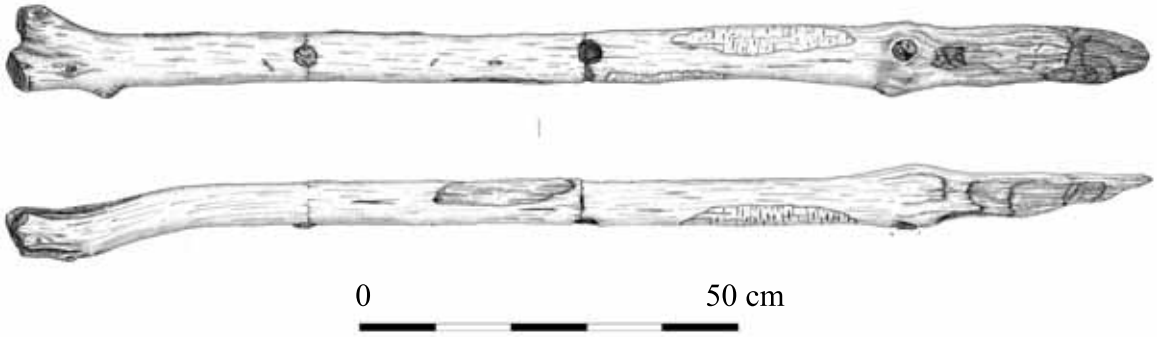
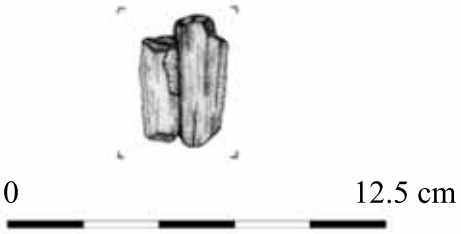
Figure 39: Possible cart fragment 255:1

Scale 1:2

TVAS IRELAND LTD



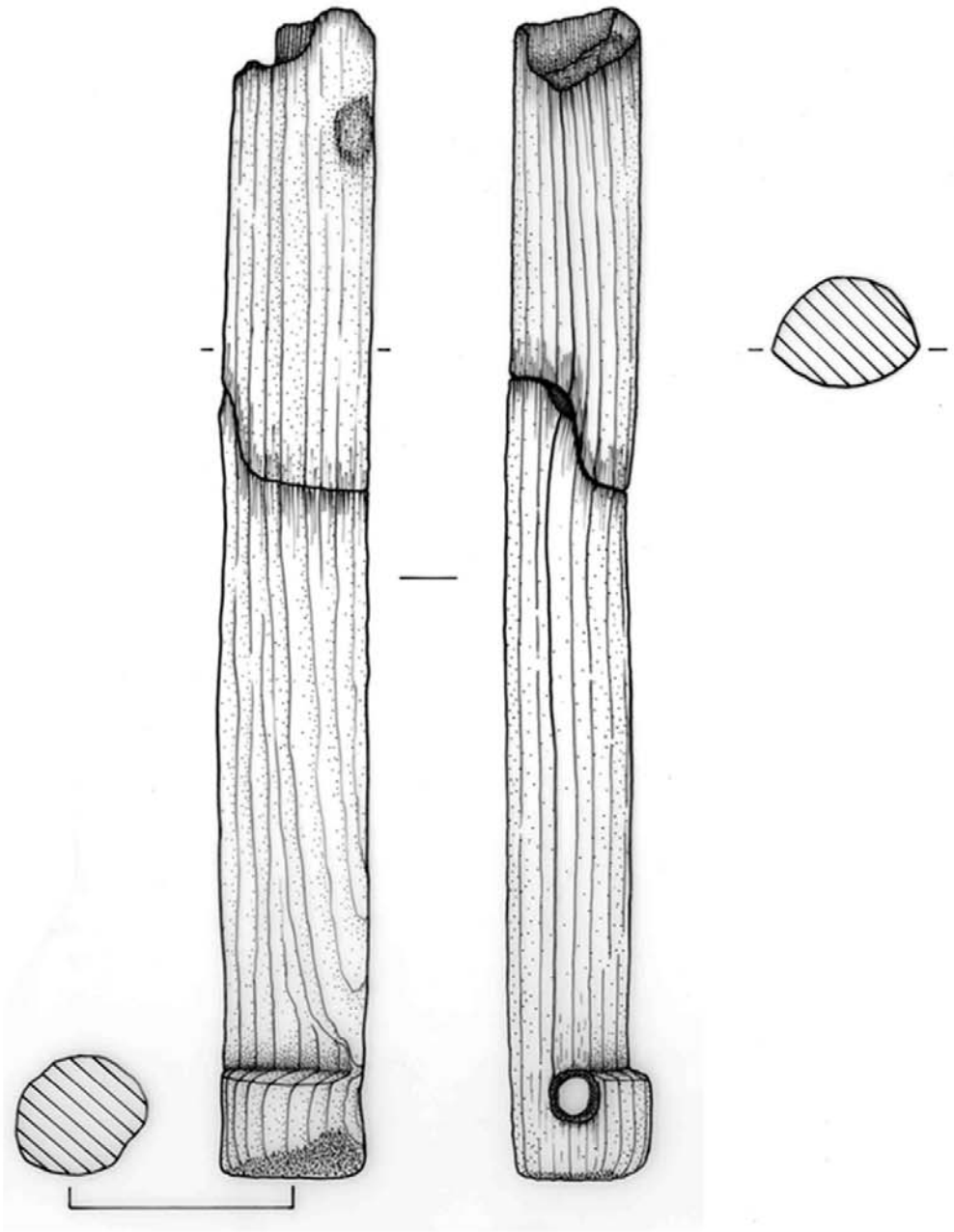


J06/15

N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 40: Perforated and doweled shaft 255:2

TVAS IRELAND LTD

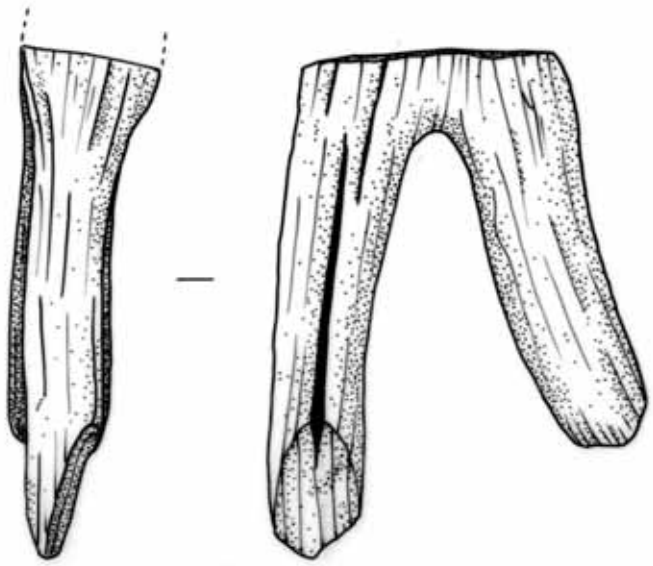


J06/15

N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 41: Carved and perforated shaft 262:3

TVAS IRELAND LTD



J06/15

N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 42: Wooden object 298:13

Scale 1:5

TVAS IRELAND LTD

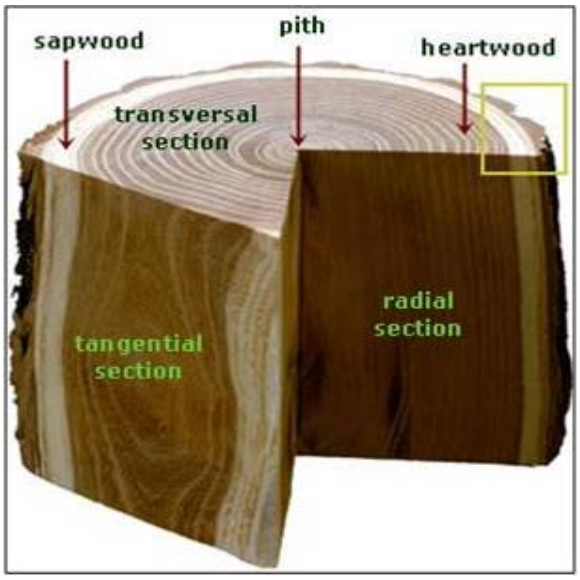


Figure 43: Three sectional planes necessary for wood species identification

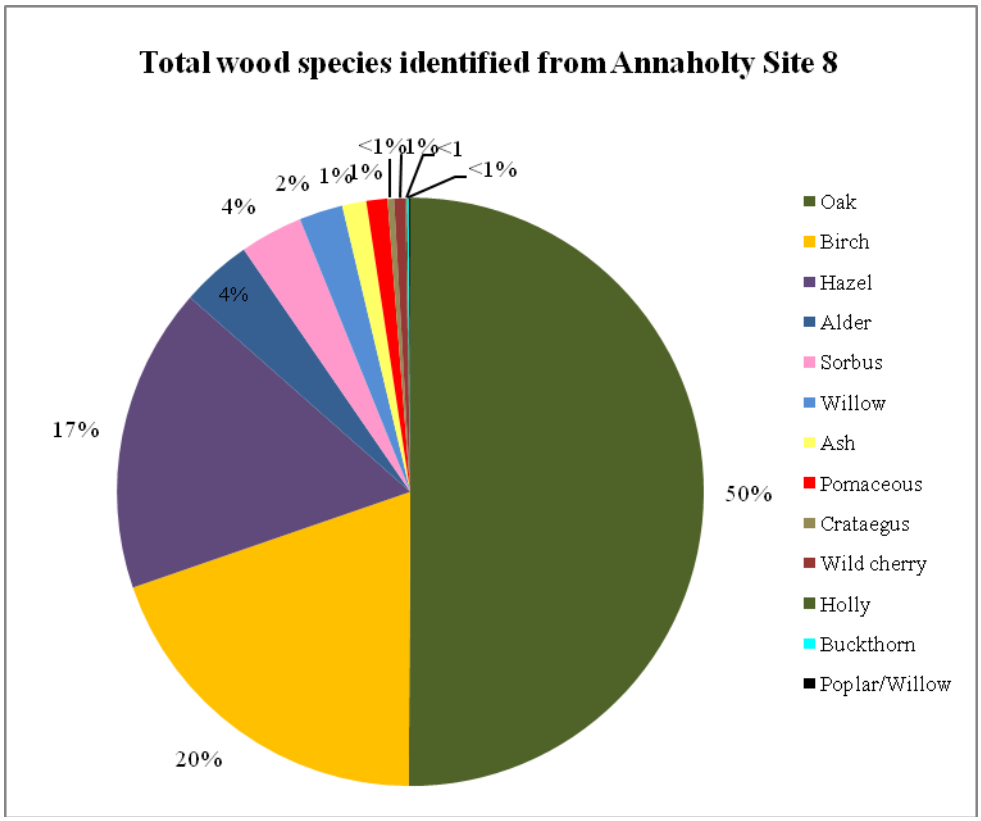


Figure 44: Percentage of wood species identified for Annaholty Site 8

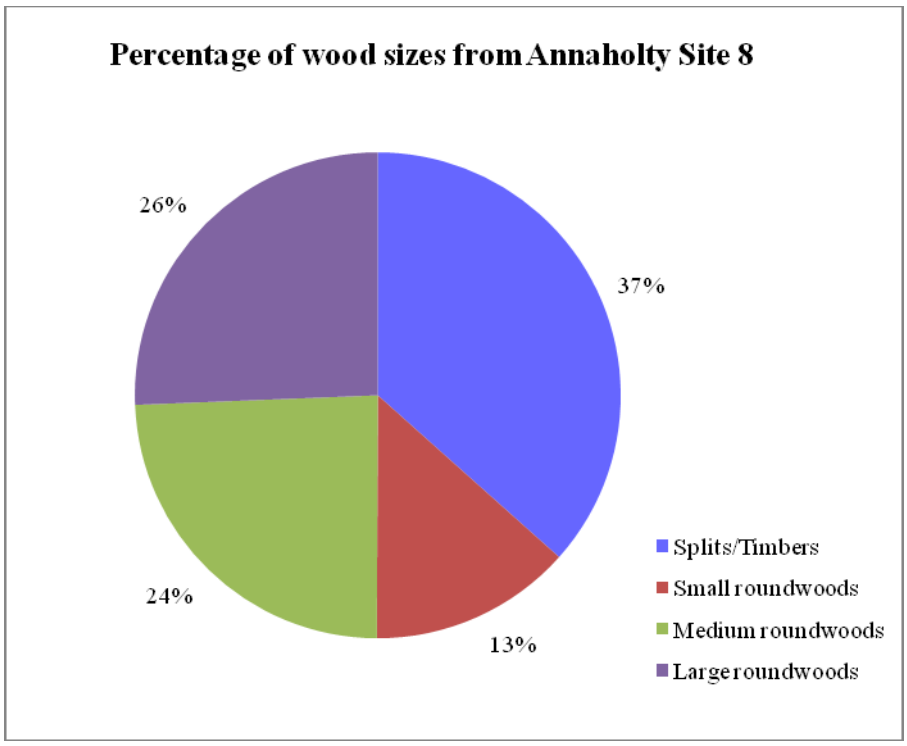


Figure 45: Percentage of wood sizes from Annaholty Site 8

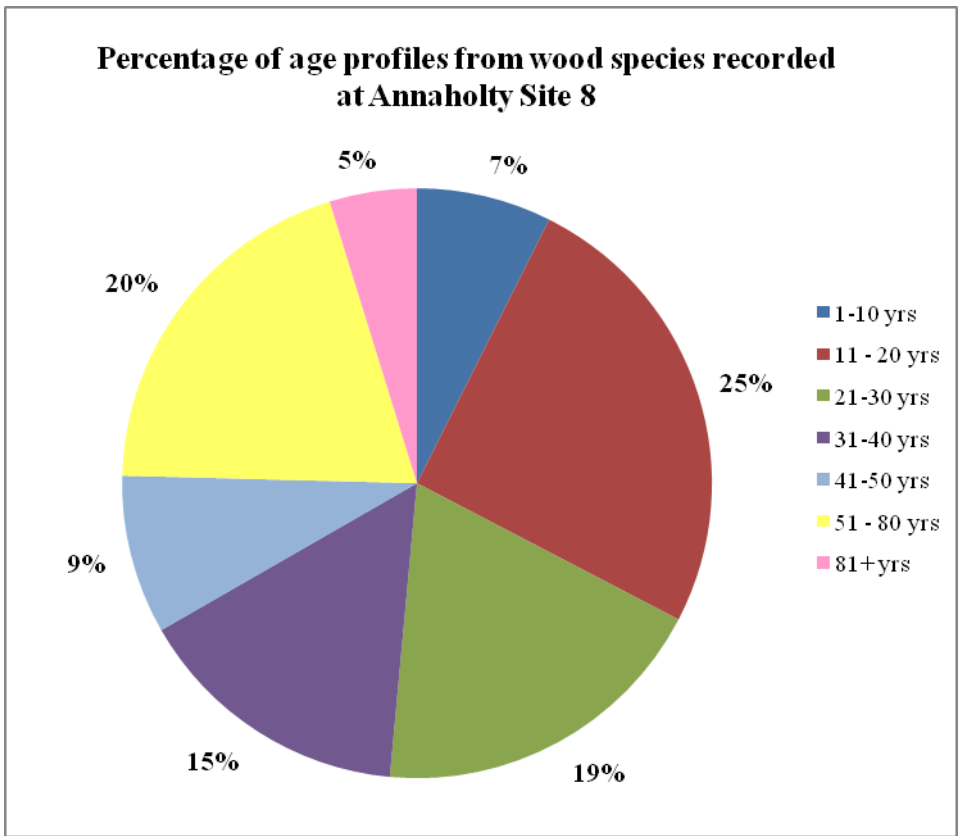


Figure 46: Percentage of age profiles of wood recorded from Annaholty Site 8

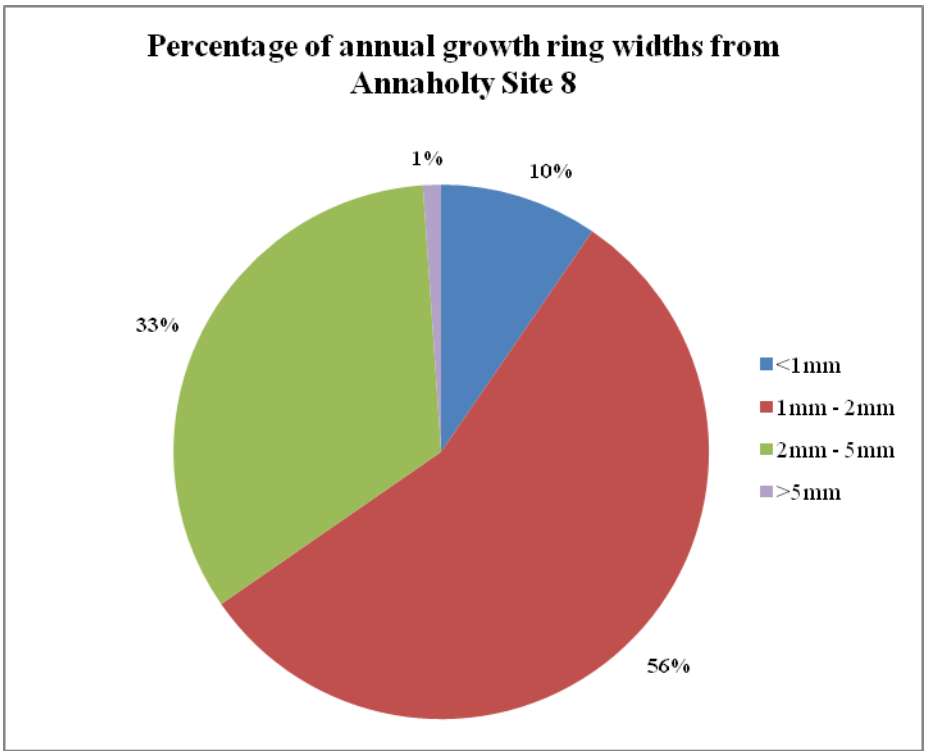


Figure 47: Percentage of annual growth ring widths from Annaholty Site 8

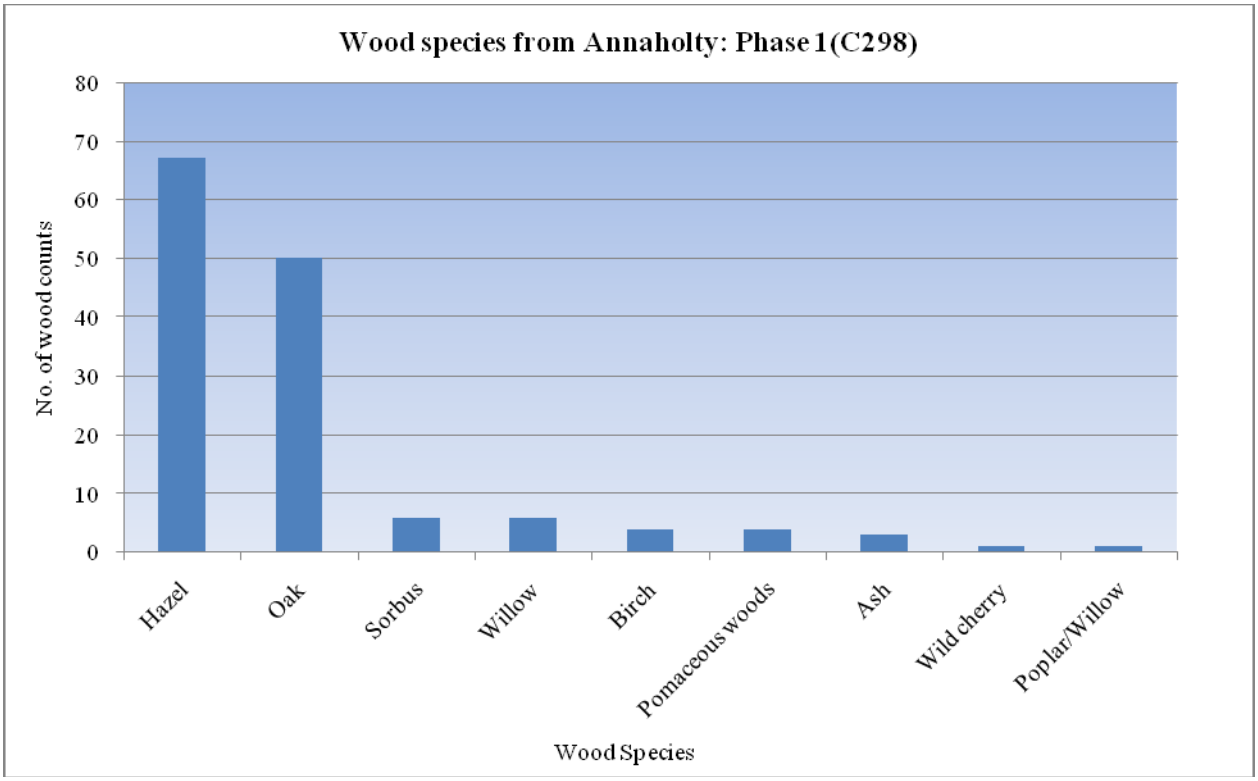


Figure 48: Total wood identifications from Annaholty Site 8: Phase 1 (298)

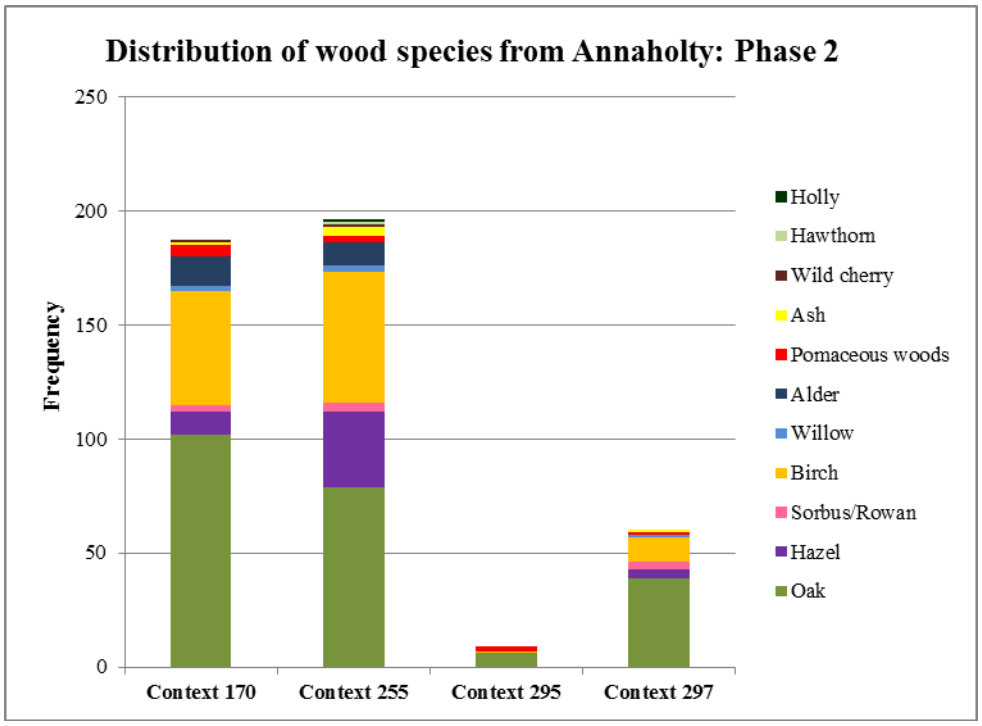


Figure 49: Distribution of wood species from Annaholty Site 8: Phase 2

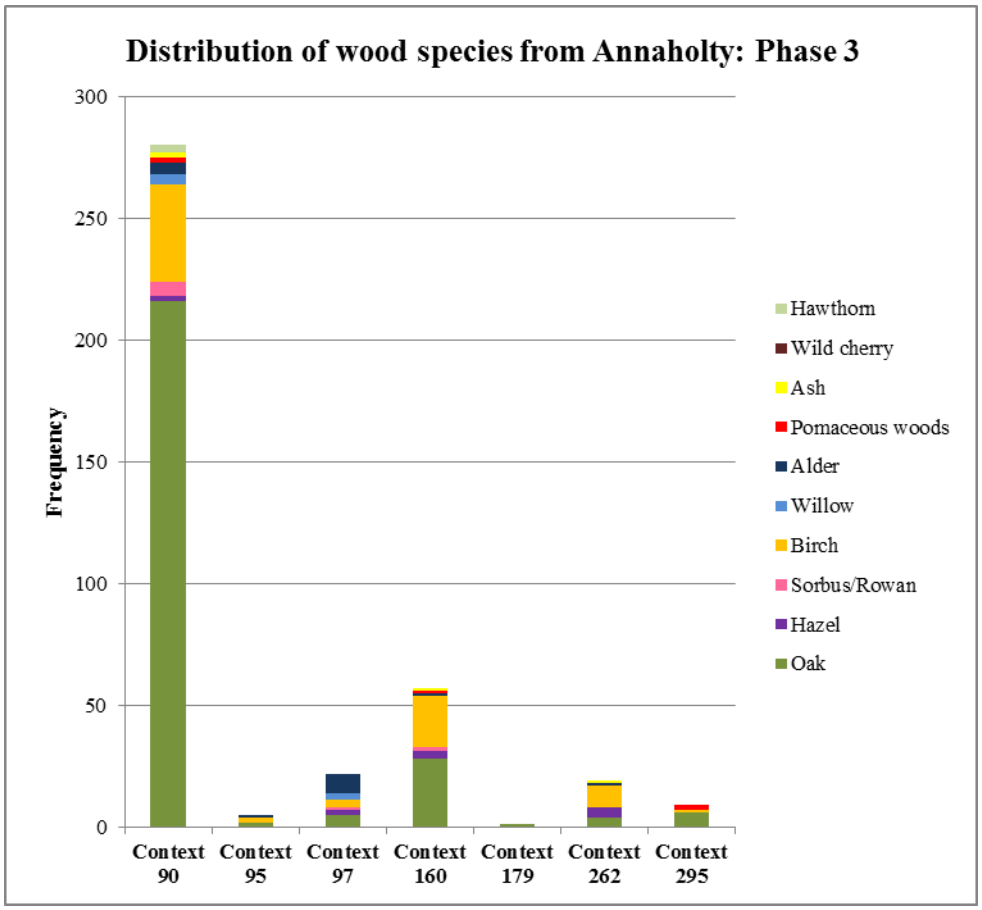


Figure 50: Distribution of wood species from Annaholty Site 8: Phase 3

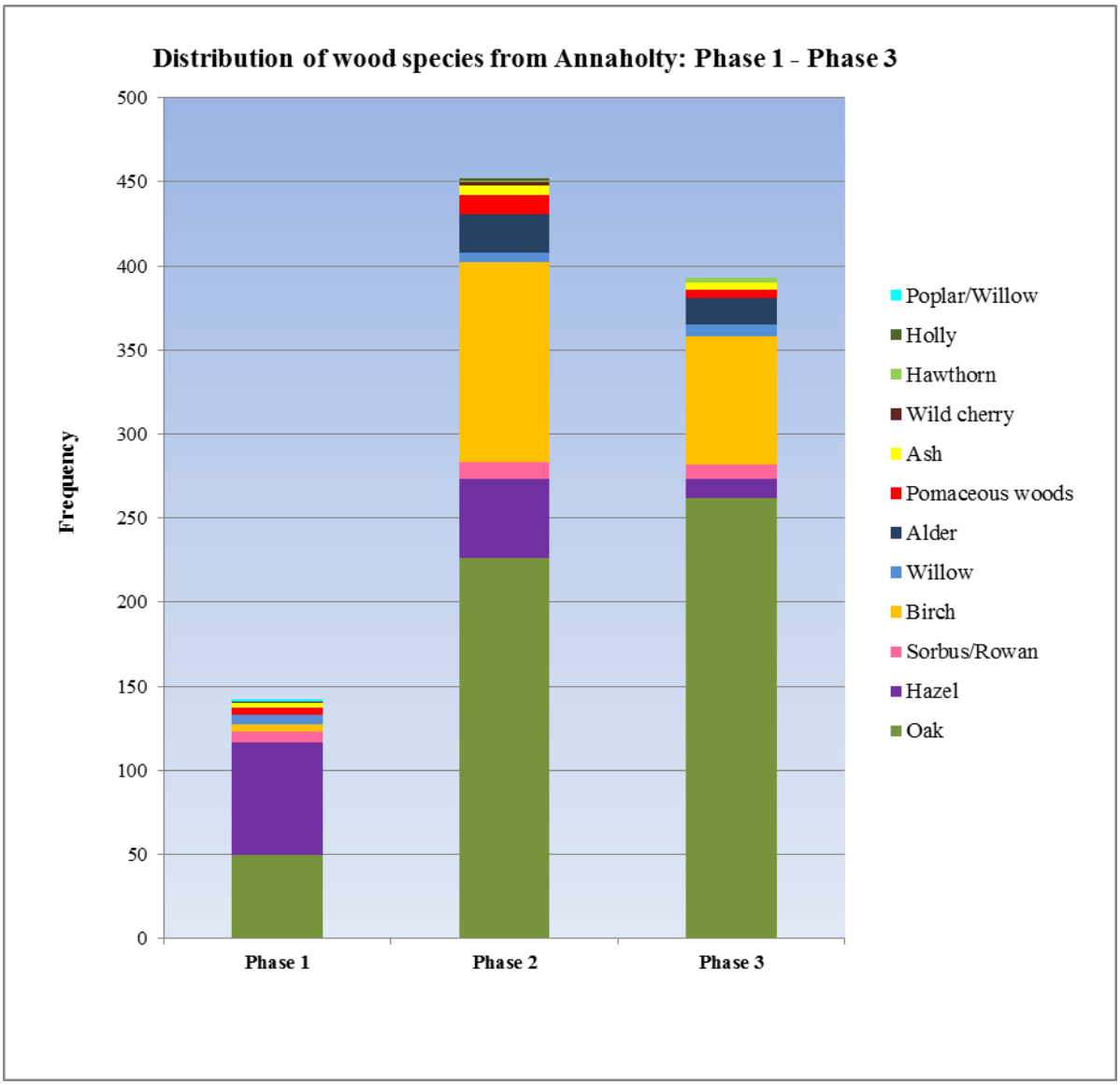


Figure 51: Distribution of wood species from Phase 1 to Phase 3 at Annaholty Site 8

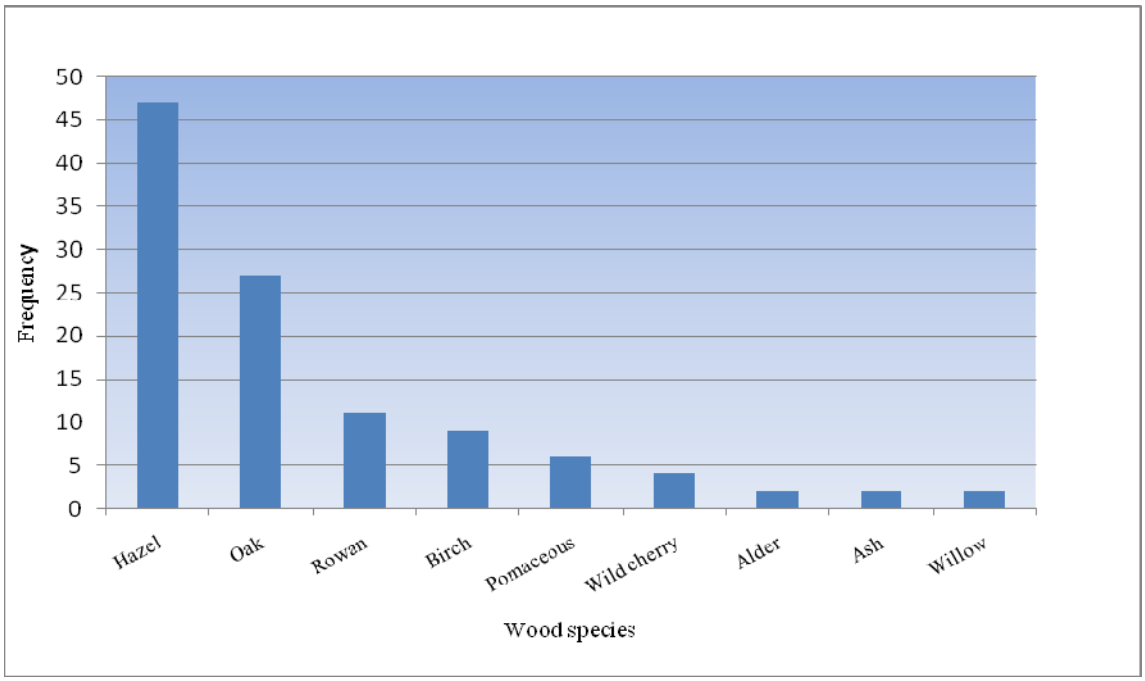


Figure 52: Wood species from individual stake/peg samples from Annaholty Site 8

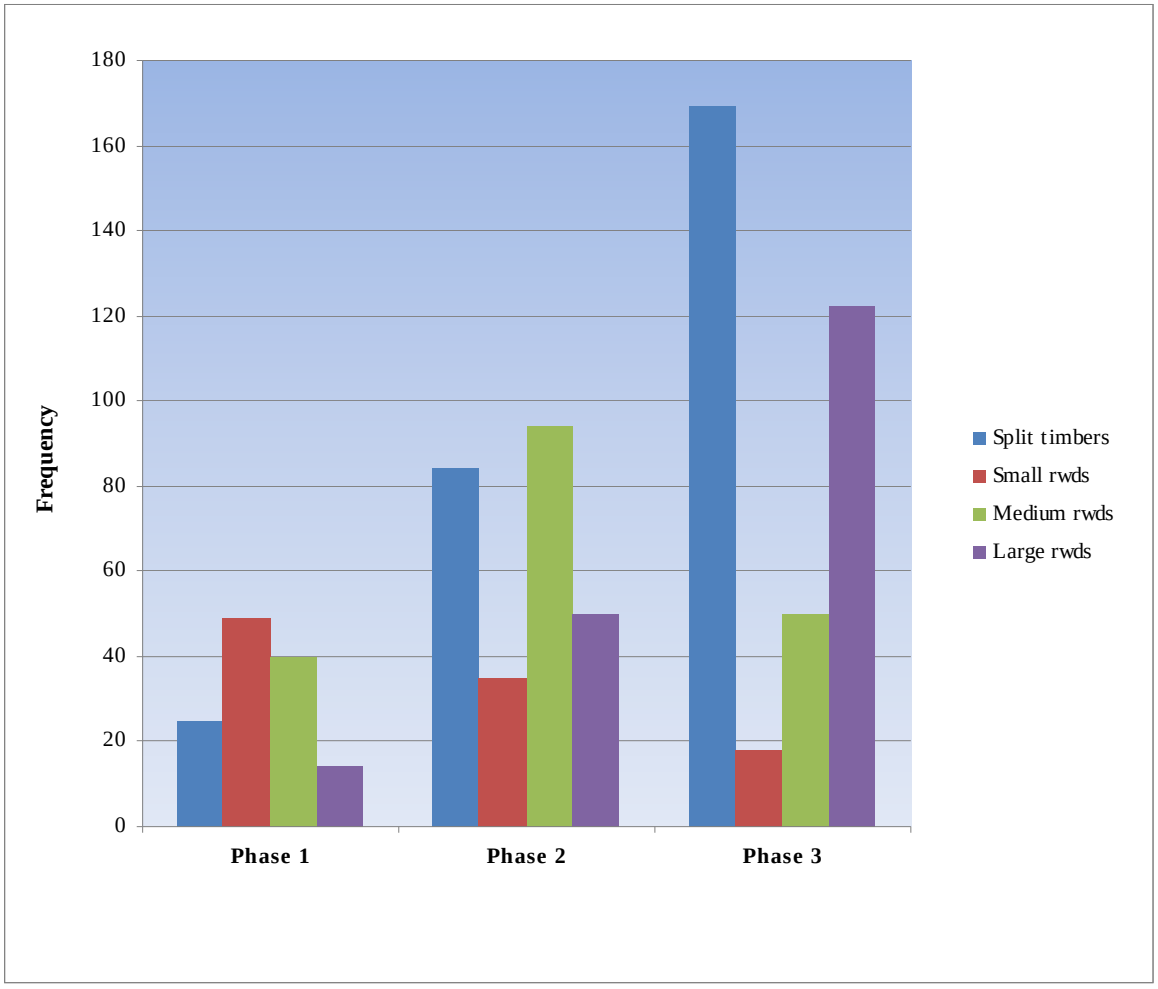


Figure 53: Wood types identified from construction phases recorded at Annaholty Site 8

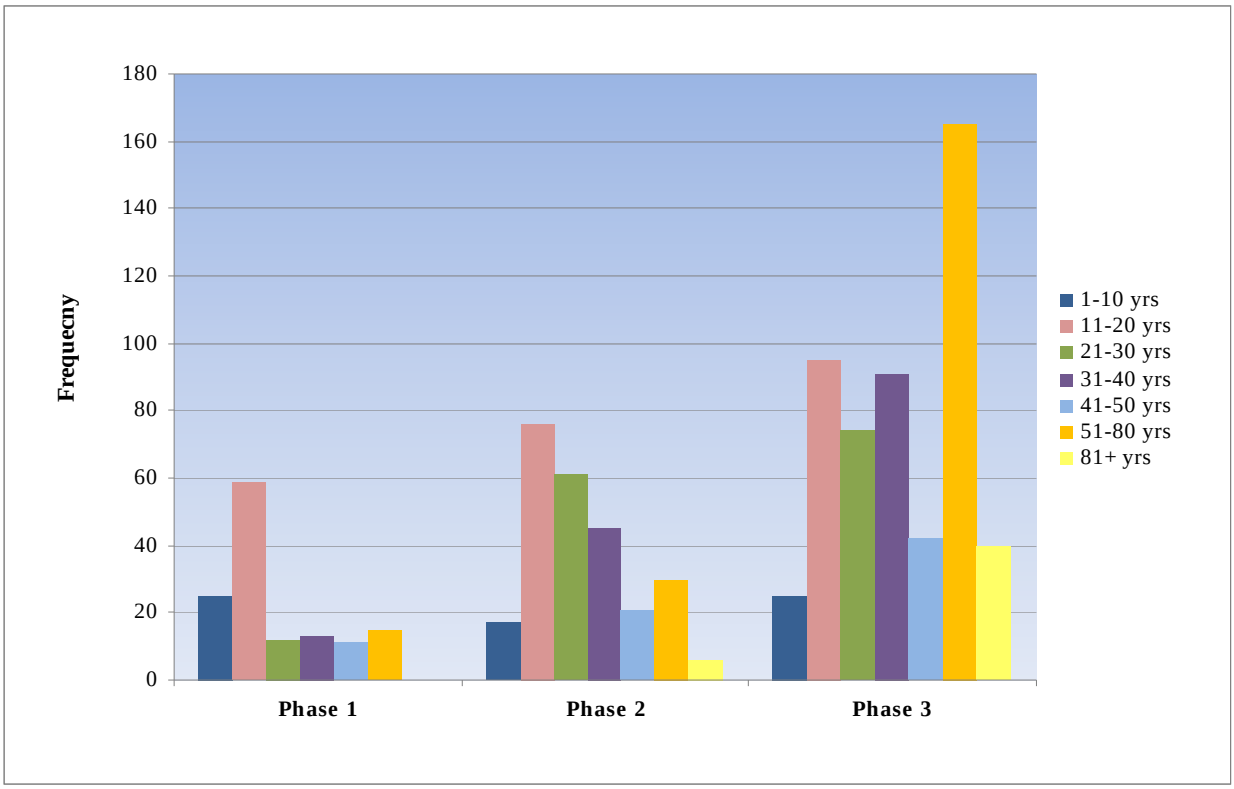


Figure 54: Age profiles of wood identified from the construction phases recorded at Annaholty Site 8

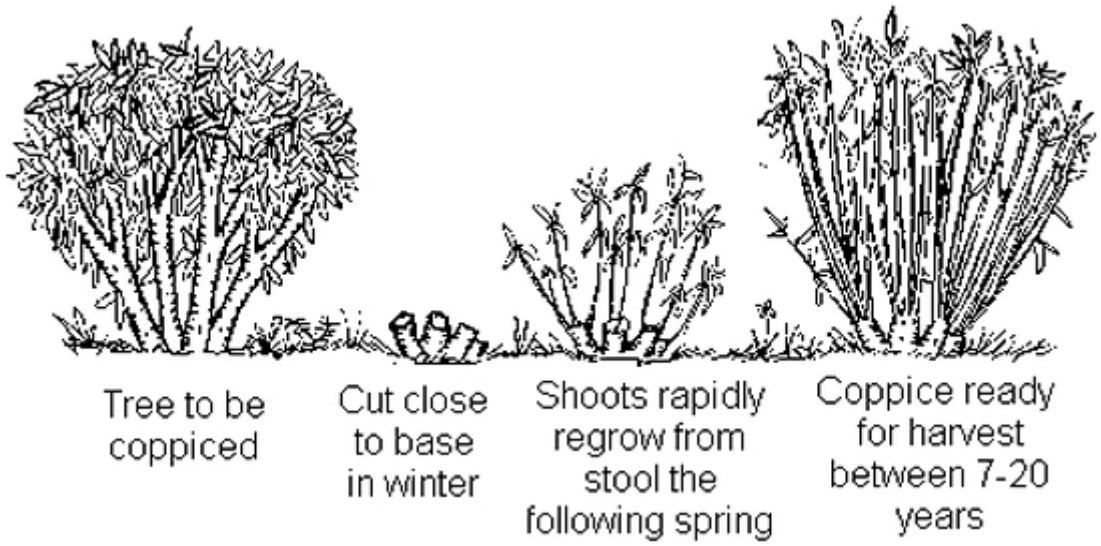


Figure 55: Illustration depicting the stages of coppicing wood

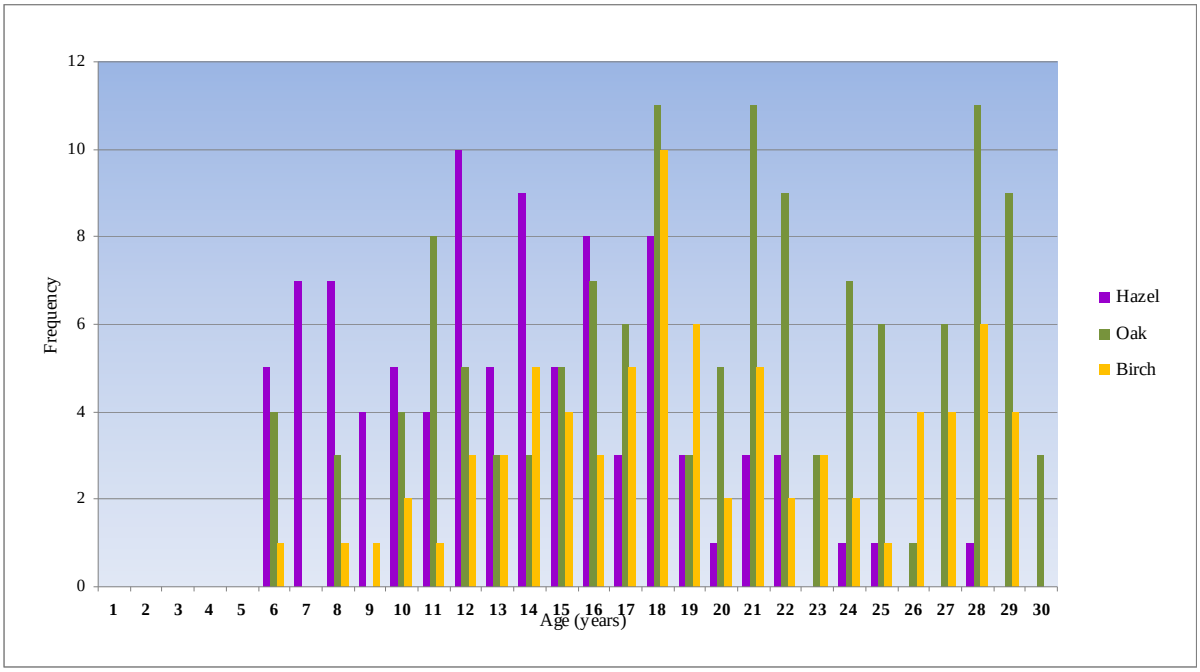


Figure 56: Hazel, oak and birch ages from Annaholty Site 8

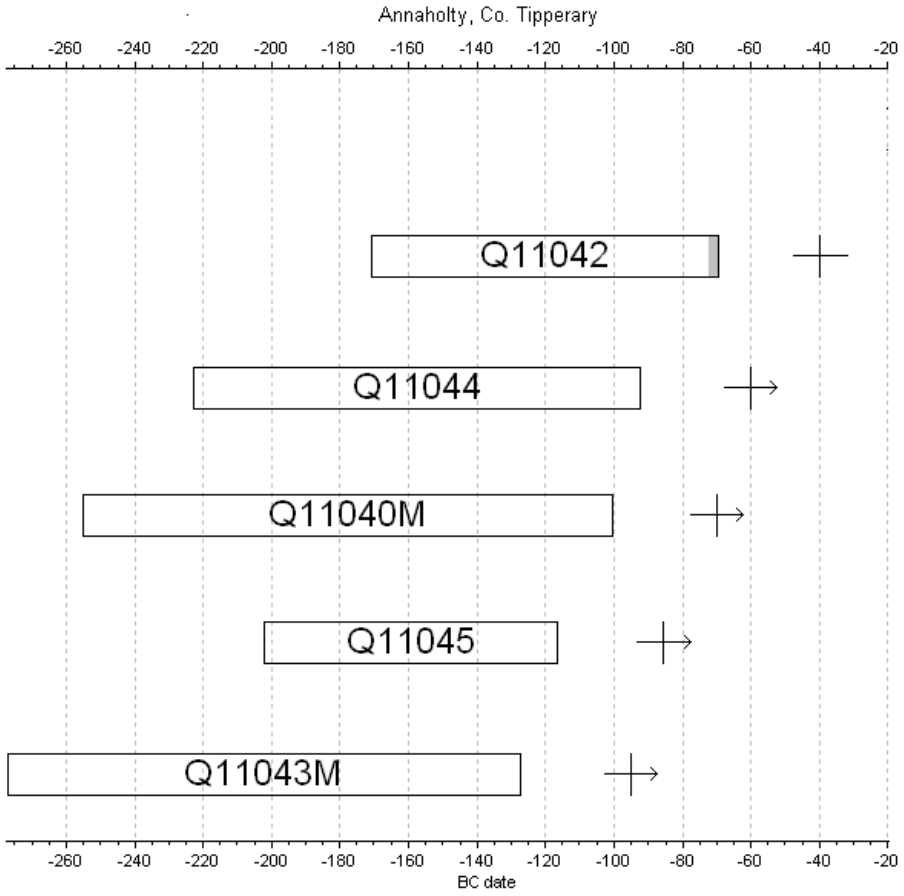


Fig 57: Absolute dates of the samples with reference to the Irish tree-ring chronology and relative position of the samples to each other

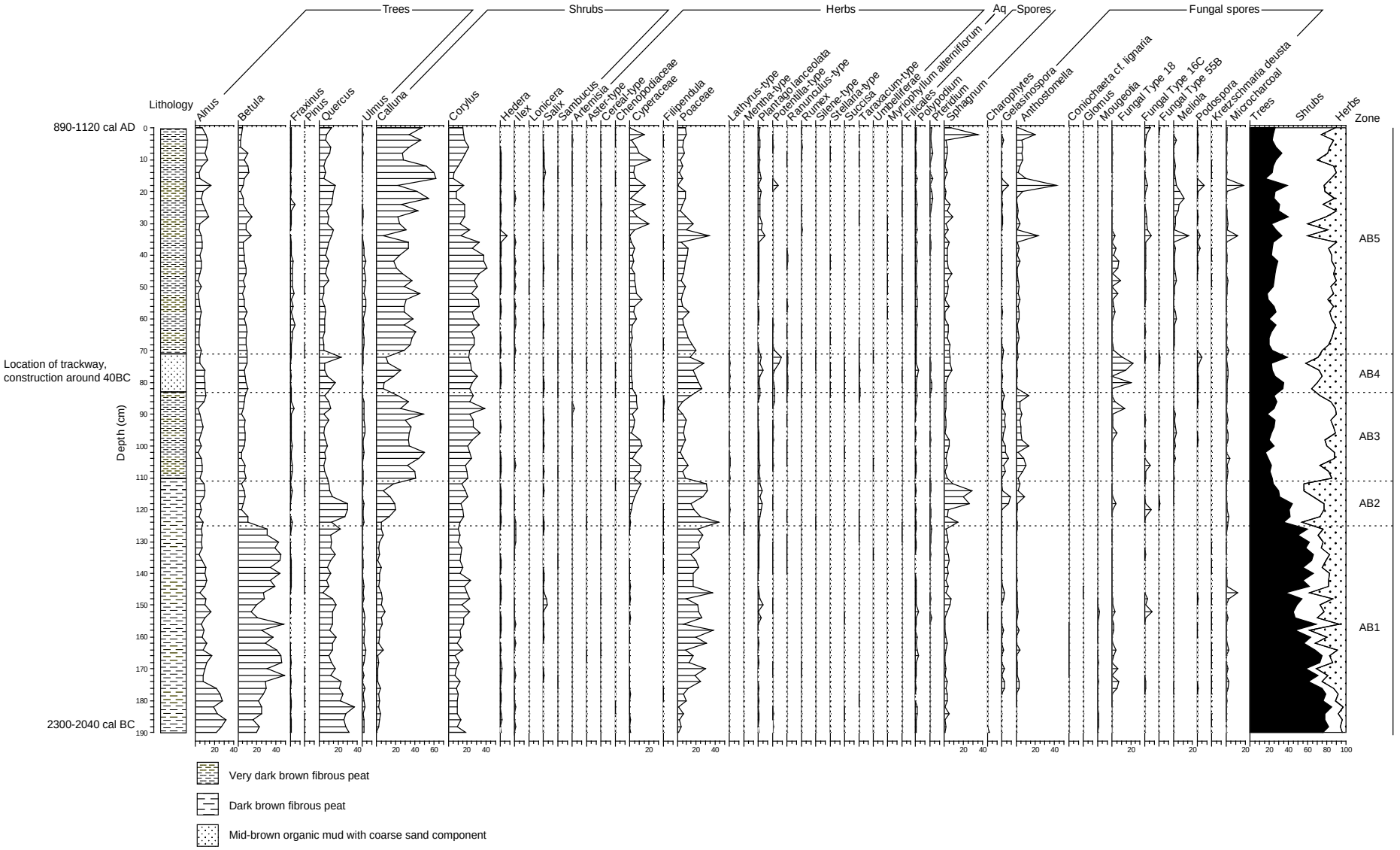
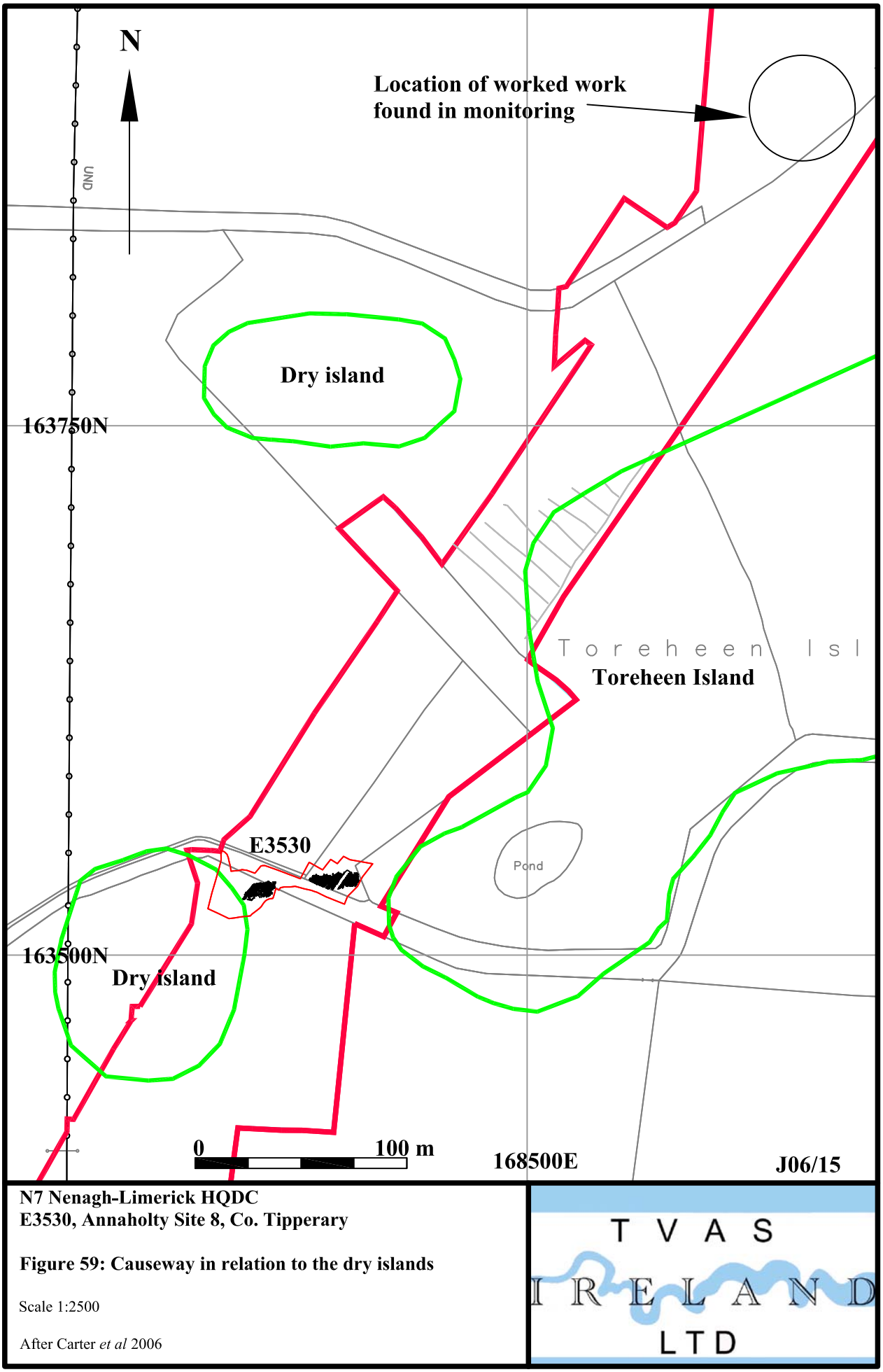


Figure 58: Pollen and spore percentage diagram. The top of the profile is 42.84 m OD



N7 Nenagh-Limerick HQDC
E3530, Annaholty Site 8, Co. Tipperary

Figure 59: Causeway in relation to the dry islands

Scale 1:2500

After Carter *et al* 2006

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Plate 1: View of machine cut trench through east end of excavation area. Looking south-east.

Plate 2: The archaeological and mineral-rich deposits are clearly visible above a band of black peat.

Plate 3: View of machine-cut section through west end of excavation area. Looking south-east.

Plate 4: View of the brushwood and roundwood trackway 298, looking north

Plate 5: View of deposit 297 undergoing excavation.

Plate 6: View of deposit 255 from south

Plate 7: View of find 255:1 *in situ* with the dowelled willow shaft in the foreground (find 255:2)

Plate 8: View of part of trackway 170 looking west (includes roundwood 170:165)

Plate 9: Substructural elements 160 looking west. The causeway superstructure 90 is visible in the background. Deposit 255, part of trackway 170/255/297, is visible in the foreground.

Plate 10: View of causeway substructure 160 with mineral-rich peat clearly visible

Plate 11: Deposit 97 from which several artefacts were retreived. Looking north.

Plate 12: Deposit 262 looking north.

Plate 13: Deposit 282 was situated beneath deposit 262. Looking north.

Plate 14: Aerial view of causeway 90 looking east. The haul road and Toreheen Island are visible in the background. The access road truncates the causeway.

Plate 15: East end of the excavation area showing the causeway *in situ*. Looking south.

Plate 16: West end of the excavation area showing the causeway *in situ*. Looking south.

Plate 17: A typical plank (90:60) within the causeway superstructure. Note the worn surface and possible notch-shaped break in the end.

Plate 18: Sand among the causeway timbers

Plate 19: Notched transverse with peg *in situ*. A substructural runner is also visible.

Plate 20: Roundwood (95) overlying the causeway timbers. The super and substructure of the causeway are clearly visible.

Plate 21: Notched roundwood 90:58.

Plate 22: Worked end (find 298:74), spiral indentation.
Photo: (John Sunderland)

Plate 23: Worked end (find 255:30). (Photo: John Sunderland).

Plate 24: Worked end (find 298:26). (Photo: John Sunderland)

Plate 25: Stake (find 166:1). (Photo: John Sunderland)

Plate 26: Stake (find 194:1). (Photo: John Sunderland)

Plate 27: Stake (find 269:1). (Photo: John Sunderland)

Plate 28: Stake (find 354:1). (Photo: John Sunderland)

Plate 29: Post (find 256:1). (Photo: John Sunderland)

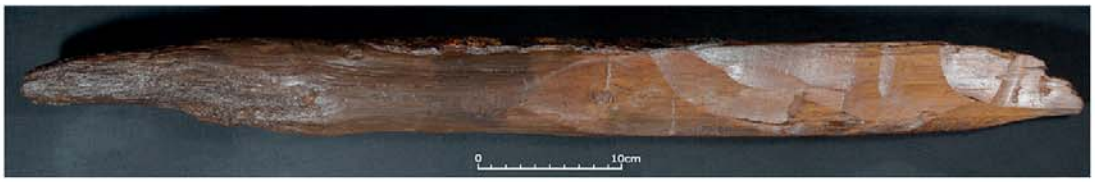

Plate 30: Post (find 267:1). (Photo: John Sunderland)

Plate 31: Post (find 270:1). (Photo: John Sunderland)

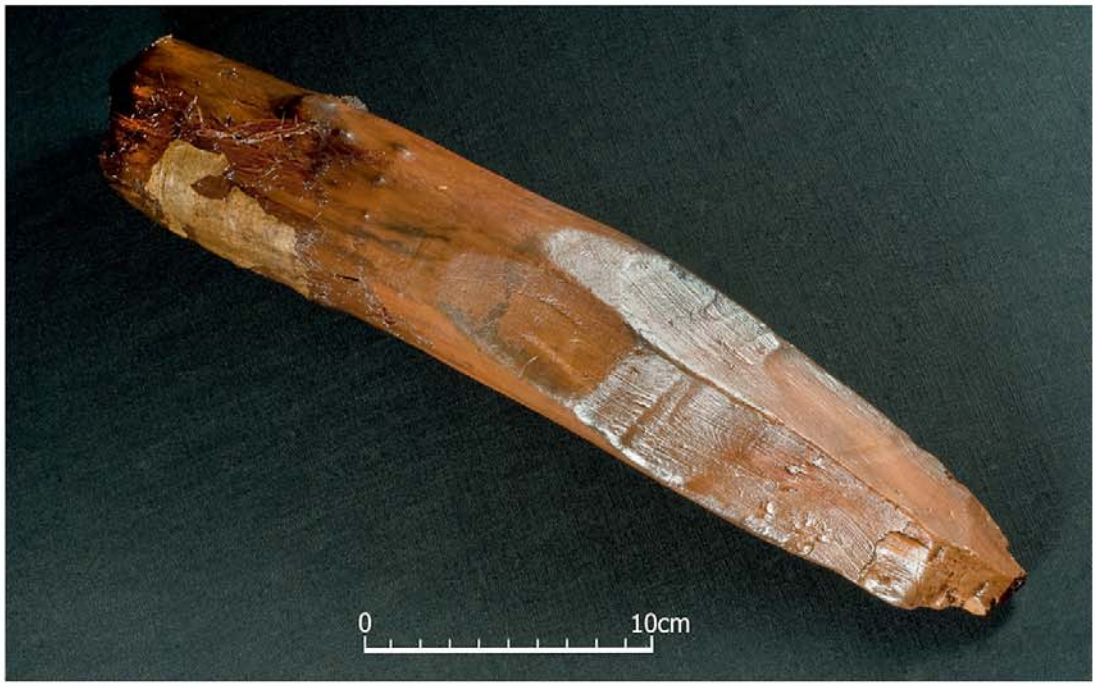

Plate 32: Post (find 276:1). (Photo: John Sunderland)

Plate 33: Post (find 277:1). (Photo: John Sunderland)

Plate 34: Post (find 291:1). (Photo: John Sunderland)

Plate 35: Wood working waste (find 262:8).
(Photo: John Sunderland)

Plate 36: Losset fragment (find 55:10), upper surface.
(Photo: John Sunderland)

Plate 37: Losset fragment (find 55:10). Charred underside of losset fragment. (Photo: John Sunderland)

Plate 38: Carved and dressed peg (find 55:22) (Photo: TVAS Ireland Ltd)

Plate 39 Carved and perforated shaft, possibly the handle of a flail (find 90:247). (Photo: John Sunderland)

Plate 40: Vessel fragment (find 97:1). Exterior view. (Photo: John Sunderland)

Plate 41: Vessel fragment (find 97:1) Interior view.
(Photo: John Sunderland)

Plate 42: Vessel fragment (find 97:2). Interior view.
(Photo: John Sunderland)

Plate 43: Vessel fragment (find 97:18) Interior view.
(Photo: John Sunderland)

Plate 44: Vessel fragment (find 97:19). Interior view.
(Photo: John Sunderland)

Plate 45 : Vessel fragment (find 97:20). Interior view.
(Photo: John Sunderland)

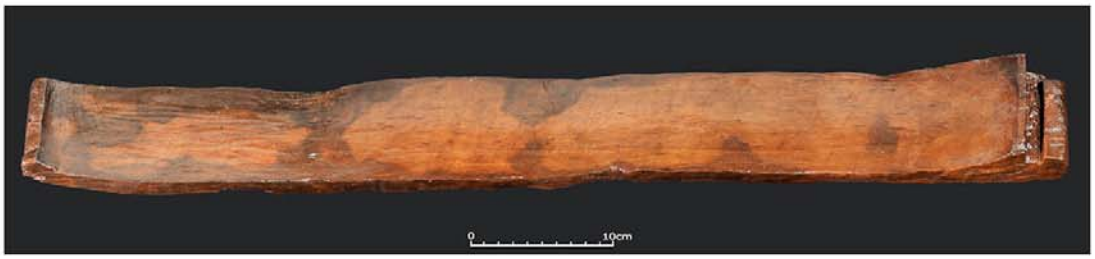

Plate 46: Vessel fragment (find 189:1). Interior view.
(Photo: John Sunderland)

Plate 47 : Detail of croze (find 189:1).
(Photo: John Sunderland)

Plate 48: Possible cart fragment (find 255:1).
(Photo: John Sunderland)

Plate 49 : Possible cart fragment (find 255:1).
(Photo: John Sunderland)

Plate 50: Possible cart fragment (find 255:1).
(Photo: John Sunderland)

Plate 51 : Detail of perforation and slot in the possible cart fragment (find 255:1). (Photo: John Sunderland)

Plate 52: Part of a perforated and dowelled shaft (find 255:2). (Photo: John Sunderland)

Plate 53 : Carved and perforated handle (find 262:3).
(Photo: John Sunderland)

Plate 54: Detail view of perforated handle (find 262:3).
(Photo: John Sunderland)

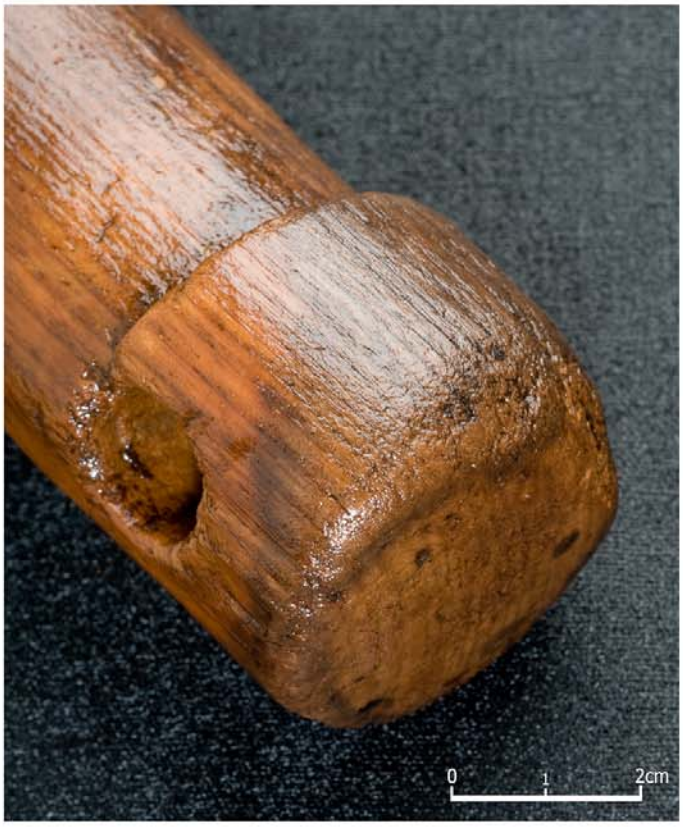

Plate 55 : Detail view of the end or butt of the perforated handle (find 262:3). (Photo: John Sunderland)

Plate 56: Worked forked branch (find 298:133). (Photo: John Sunderland)

Plate 57: Worked forked branch (find 298:133)(Photo: John Sunderland)

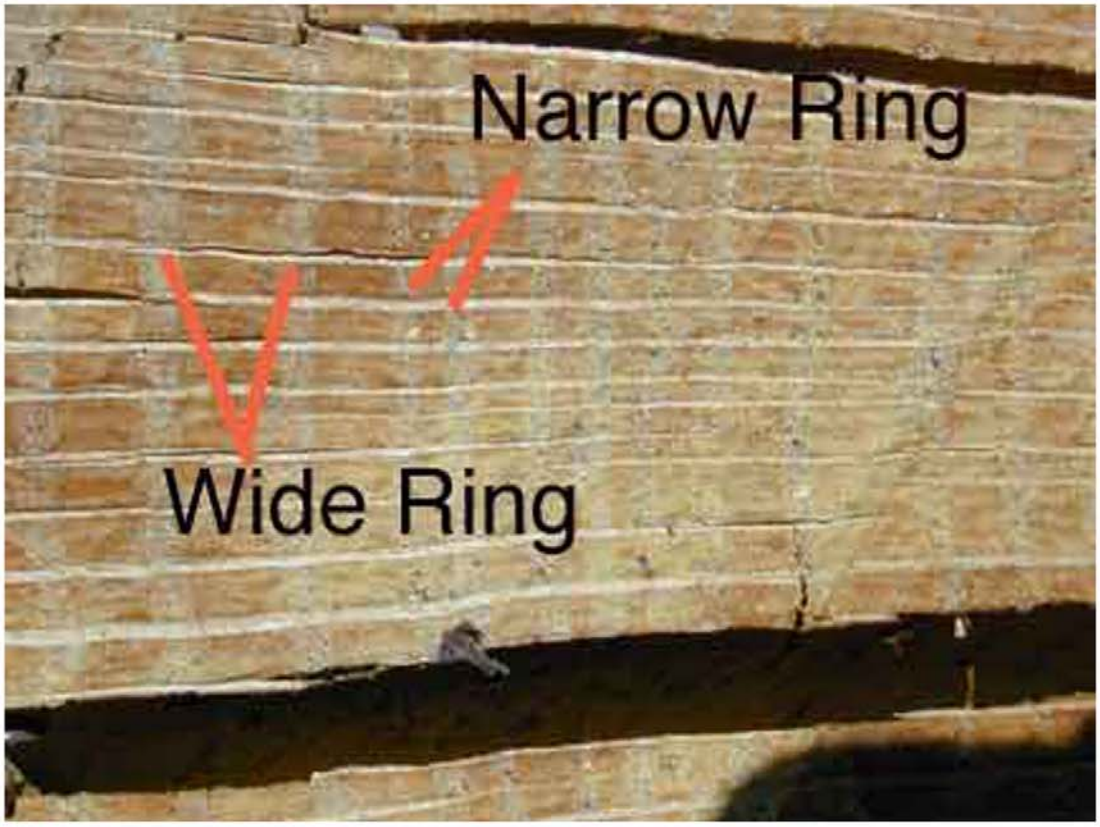

Plate 58: Annual growth rings depicting wide and narrow growth pattern

Plate 59: Sorbus (Rowan or white beam) bark

Plate 60: Crataegus (Hawthorn) bark

Plate 61: Possible coppiced hazel heels from Annaholty Site 8

Plate 62: Birch encroaching bog margins

Plate 63: Scrubby hazel

Plate 64: Alder - carr woodland

Plate 65: Possible landscape at Annaholty

Plate 66: Sampling peat column 1

Plate 67: Aerial view of the causeway showing how the causeway dipped in the middle before rising towards the gravel island in the west. Looking east. (Photo: Hawkeye)

Plate 68: Aerial view of east end of causeway with people included for scale (Photo: Hawkeye)

Plate 69: Aerial view of west end of causeway with people included for scale (Photo: Hawkeye)