



**ARO14: Pits, pots and pitchstone: excavation  
of a multi-phase site at Main Street, Monkton**

by Christine Rennie

with contributions from

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**ARO14: Pits, pots and pitchstone: excavation of a multi-phase site at Main Street, Monkton**

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Figure 1: Site location plan.

## Abstract

*This publication describes excavations carried out in advance of a housing development at Main Street, Monkton, Ayrshire. The excavation was preceded by a trial trench evaluation that indicated the presence of prehistoric and medieval/post-medieval features. The earliest identifiable activity on the site was an accumulation or deposit of charcoal-rich material dated to the Mesolithic that overlay a circular pit. Artefacts recovered from the site, along with radiocarbon dates from secure contexts, indicate phases of occupation from the early Mesolithic, early to late Neolithic, the early Bronze Age and the Iron Age. The single structure that could be identified was an Iron Age ring-groove roundhouse with an interior post circle. This feature had been truncated by medieval and post-medieval cultivation furrows. The project was funded by David Wilson Homes Ltd.*

## Introduction

In autumn 2011, GUARD Archaeology Ltd carried out the excavation of a previously unrecorded multi-phase site at Main Street, Monkton in advance of house building (Figure 1). Some of its features were uncovered during an evaluation of the proposed development site (Hunter Blair 2011), but numerous additional pits and postholes were located during the excavation. All of the excavated features were dug into the subsoil and, with very few exceptions, bore no stratigraphic relationship to one another. Agricultural use of the land from the medieval period onwards had truncated the earlier archaeological remains and removed ground surfaces contemporary with the prehistoric features.

The archaeological site was located in fields at the north-western end of Main Street, Monkton (NGR: NS 3567 2814). It was situated on a raised beach with subsoil deposits of sand and bands of gravel that sloped down to the north from a central plateau at 24 m OD, but also had a gentle incline from the central area down to the south. The topography reflects the geological bedrock units that comprise Scottish Coal Measures Formation at the north and south of the site with an igneous intrusion of Prestwick-Mauchline Sill forming the higher central plateau (British Geological Survey 1998).

The work was conducted according to Terms of Reference from the local authority, using in-house procedures and the ClfA standards and Guidance. The data structure reports and full details of the specialist analysis form part of the site archive, which will be lodged with the RCAHMS. The finds will be declared to the Treasure Trove Unit.

## The Archaeological Context

Although no archaeological remains were known at the Main Street site prior to the evaluation and excavation, prehistoric activity had been documented in the vicinity. Recorded sites include the cropmark of a palisaded homestead (SAM 4488) at Nethermuir, about 800 m north-west of the site, lithic scatters at Monktonhill (NMRS NS32NW 3), Monktonhead Farm (NMRS NS32NE 15 and 26) and Station Road (NS32NE 27), and pits containing Neolithic pottery (NMRS NS32NE 102) were uncovered at Baird Road, Monkton, along with rig and furrow cultivation marks. Writing in the late eighteenth century, the Rev Andrew Mitchell reported that "Upon digging for materials for making roads, several urns containing human bones were found" (Mitchell 1797-99, 402). No location was given for them.

The prehistoric phases of activity on the site have been broadly determined by both radiocarbon dates and artefactual comparison. Grouping and dating of prehistoric remains by proximity was not considered to be useful as it was established early in the post-excavation process that adjacent features were often from different periods.

### The earlier prehistoric period (Figures 2a and 2b and Plate 1)

The remains that could be positively identified as early prehistoric were found at the northern end of the site and comprised a disparate assortment of postholes, pits (020, 022, 092, 094, 100, 219, 225 and 227) and a deposit (212). The features in this part of the site had no clear focus or grouping and the function of many of the pits could not be established. None of the pits or postholes formed identifiable patterns that suggested they belonged to structures, and almost without exception, they contained single fills of hearth waste and re-deposited spoil.

The earliest known use of the site was during the Mesolithic, when a charcoal-rich sand deposit



Figure 2a: GPS survey plan of features at north of site.



Figure 2b: GPS survey plan of features at south of site.

(context 212) was formed. It measured 2.9 m by 1.4 m and was up to 0.11 m thick. It completely overlay pit 094 and partially pit 092, although it proved impossible during the excavation to distinguish this deposit from the fill (093) of the latter pit (092). Microliths (CATs 37, 46 and 59) retrieved from the fills of these and another pit (022, 092 and 094) during post-excavation analysis indicate that they are the result of Mesolithic activity (see Ballin, below)



Plate 1: Excavation view of pits 092, 094 and deposit 212.

Evidence for early Neolithic activity was found in pit 020 (Figure 3), a possible fire pit, where three undecorated pottery sherds from a single vessel (Vessel 14) were found within its fill (021). The pit measured 0.93 m by 0.72 m and was 0.17 m deep with a single fill of brown sand (021) that included frequent pockets of charcoal and carbonised hazelnut shells. Its east side was truncated by a later pit (134). The early Neolithic date ascribed to Vessel 14 was confirmed by radiocarbon dating.

Four pits contained sherds of vessels that were typologically dated to the middle Neolithic. Oval-shaped pit 022 (Figure 3) measured 1.0 m by 0.8 m and was up to 0.2 m deep. Its sides and base were scorched, indicating that it had been a fire pit. Its main fill of brown sand (023) included fragments of burnt bone and a decorated rim sherd from Vessel 1. Its basal fill of black sand (209) also contained charcoal and burnt bone,

indicating that burning had taken place on more than one occasion.

Pits 225 and 227 lay adjacent to each other but had no stratigraphic relationship. Pit 225 (Figure 3) measured 1.22 m by 0.68 m and was 0.12 m deep. Its fill (226) of silty-sand included patches of charcoal and also sherds from Vessels 9 and 10. Pit 227 measured 0.62 m by 0.42 m by 0.12 m deep. Its sandy fill (228) also contained sherds from Vessel 12 and a flint combination tool (CAT 15). All of the above ceramics were decorated rim or collar pieces that date to the middle to late Neolithic (see Ballin Smith, below).

Late Neolithic activity is indicated by the analysis of the lithic and ceramic artefacts found primarily in the fill of pit 092, another possible fire pit. The pit (Figure 3) measured 0.97 m by 0.91 m and was 0.27 m deep. Its fill 093 was silty with charcoal deposits and flecks of burnt bone. It contained a broken chisel-shaped arrowhead (CAT 6) in Yorkshire flint, along with a vitrified flint flake (CAT 7) and two split pebbles that had been exposed to fire (CATs 19 and 20). The arrowhead has been dated by typology to the earlier part of the late Neolithic, while pottery Vessels 8 and 11 were identified as the remains of middle to late Neolithic Impressed wares. The artefactual dating, along with the botanical evidence, indicates that pit 092 is significantly later than the adjacent Mesolithic pit 094. Deposit 212, which overlay both of these pits, may have been the result of later, agricultural activity.

The early Bronze Age is represented by a radiocarbon date from the fill of posthole 219, and from pit 227, where sherds of a Beaker (Vessel 5) were found, and from unstratified Vessels 2, 3 and 4.

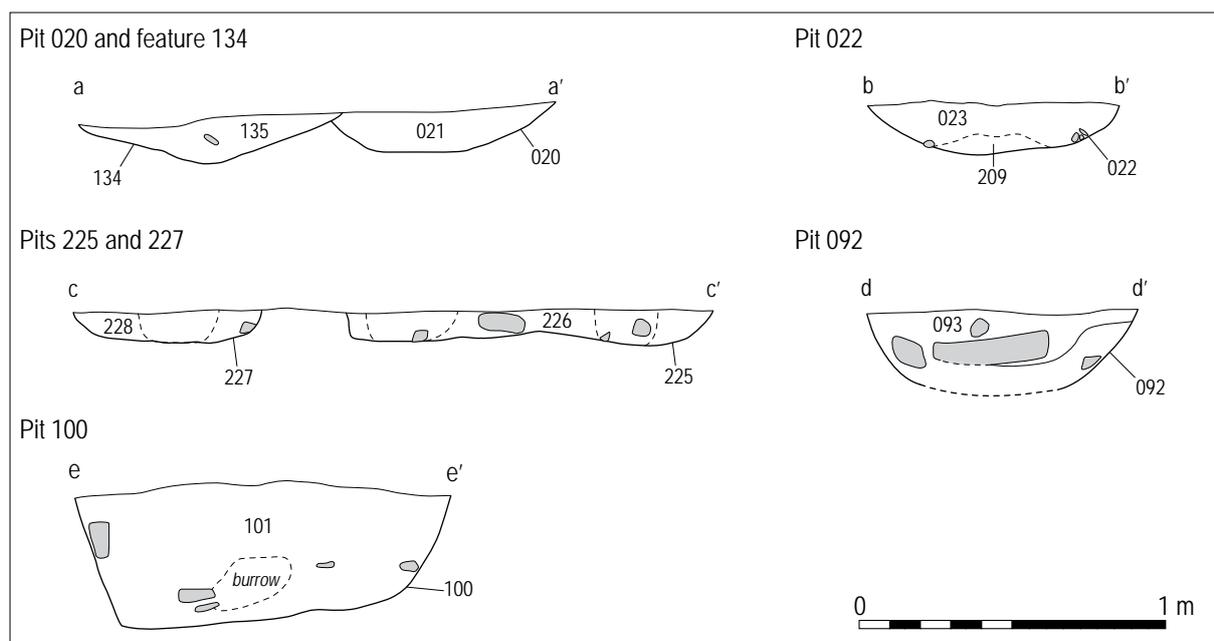


Figure 3: Sections through pits described in the text.

### The Iron Age roundhouse (Figure 4)

Definite evidence of Iron Age settlement came from the discovery of a roundhouse in the south of the site. Prior to cleaning and excavating this feature the fills of two cultivation furrows that cut through the structure were removed by hand. The roundhouse was defined by a ring-ditch (070) 10.9 m in diameter that was 0.2 to 0.3 m wide and varied in depth from 0.12 to 0.23 m. The ditch was excavated in eight slot trenches, 2 and 3 m long. Its homogenous fill (071) was of sand with packing stones, many of which were placed in an upright position to form a double row (Figure 5), that may have contained wattle-work panels. One piece of worked quartz (CAT 22) were recovered from the fill. The ring-ditch may have required some strengthening towards the north-east, where a large flat stone lay at the base of the cut, making this section shallower, and therefore, less structurally stable than elsewhere. Posthole 178 exterior to the ditch, and stakeholes 254 and 256, may have been used for additional support at this point along the ditch's circuit, although there is no further evidence to support this. A circle of eight fairly evenly spaced postholes (268, 279, 281, 285, 289, 299, 301 and 328) for structural timbers in the interior of the enclosed area undoubtedly supported the roof, which was most likely a conical wooden frame with thatch or turf. Several of these postholes had been truncated by a later broad-rig cultivation furrow, and gaps in the circle to the west and east strongly suggest that the same furrow destroyed at least one

posthole at each of these locations.

Evidence for an entrance to the dwelling is not clear-cut. Although a narrow gap in the ditch circuit lies to the west side of the roundhouse, and three small stakeholes (332, 334 and 336) were found within the gap, no structural postholes were present. The above-mentioned cultivation furrow had effectively removed about 3 m of the ditch at its easternmost point and about 2 m at its westernmost extremity, and may also have destroyed any remains of an entrance that existed at either of these points.

Aside from the posthole circle, nine postholes (184, 186, 188, 293, 277, 303, 340 and 342) were found at the north and north-east interior of the structure and one at the west (177). During the excavation, these were thought to represent interior divisions, creating activity zones within the dwelling. However, charcoal from the fill of posthole 303 produced a radiocarbon date of 1735-1806 cal AD and, given the clustering of similar postholes, it is possible that some of these are of equally late date.

### Other Iron Age features

Circular pit 100 (Figure 3) lay at the north of the site and contained a significant amount of hazel round-wood, a fill that was unlike that of any other excavated feature on the site.



## Medieval, post-medieval and modern features (Plate 2)

The most obvious remains of later land use are the residual cultivation furrows (Figures 2a and 2b, context 018) found across the project area, with the exception of the northern terrace that marked the lowest part of the site. The furrows were 2-3 m wide and were evenly spaced about 5 m apart. Their east/west orientation is significant as the furrows would probably have drained into Dow's Burn at the west of the site. The fill of all of the excavated furrows was homogenous sandy silt (019) and, although no botanical remains were recovered, several pieces of fourteenth-fifteenth century green glaze vessels (SF 3, 5, 9, 13, 26 and 35) were. While the rig and furrow produced medieval artefacts, the cultivation practise continued to be used into the post-medieval period, and the final turning of the rig could have been as late as the nineteenth century.

Two linear features (016 and 138) pre-date the rig and furrow, and may be the remains of open drainage channels. Both of these commenced at the central plateau and ran down slope to the south-east, becoming increasingly deeper on the sloping ground. The fills of these ditches were sterile and no datable artefacts were recovered from them.

A single feature radiocarbon dated to the later medieval period was posthole 042, one of a cluster of seven (038, 040, 042, 044, 046, 048 and 050) located towards the south end of the site. Its fill of silty sand (043) was identical to the fills of the nearby postholes and, by association, may indicate that these features may also date from the later medieval period.



Plate 2: View of cultivation furrows and associated north/south aligned drains.

Associated with the rig and furrow were a series of north/south and one east/west aligned linear cuts (010-015, 126, 127, 190-201, 204, 205, 241, 242). These features were found between the cultivation furrows at the north end and centre of the site, frequently appearing to continue into the furrow. In order to understand their function and their relationship to the rig and furrow, 12 investigation slots were excavated. The results were inconclusive. While in some of the slots, the agricultural features appeared to pre-date the rig and furrow, in others, the opposite was the case. The similarity in their fills made it difficult to establish which of these features was earlier, and although they were clearly agricultural, their precise function was not established during the excavation.

A single feature positively dated to the post-medieval period was posthole 303, located within the roundhouse.

Modern features comprised drainage channels (008, 010, 233), and a pit (120) that had been dug into a cultivation furrow.

## Radiocarbon Dates

It was apparent during the excavation that Main Street, Monkton was a multi-phase site, and the primary aim of the radiocarbon dating programme was to establish which archaeological time periods were represented by the excavated features. AMS radiocarbon dates were obtained from Scottish Universities Environmental Research Centre (SUERC) and, where possible, shorter-lived species such as hazel and alder were chosen as dating samples (Table 1).

Table 1: Radiocarbon dates from Main Street, Monkton.

Sample	Material	Context	Description	Depositional context	Uncal.	Calibrated 2-sigma	Delta 13C
SUERC-44640	Charcoal: Alnus	021	Fill of pit 020	Primary	4750 ±29	3637-3510 BC	-27.3%
SUERC-44641	Charcoal: Salix	043	Fill of posthole 042	Primary	334± 29	AD 1476-1641	-26.9%
SUERC-44642	Charcoal: Salix	071	Fill of ring-groove 070	Primary	2102± 29	198-48 BC	-27.1%
SUERC-44643	Charcoal: Corylus	101	Fill of pit 100	Primary	1881± 29	AD 66-221	-28.8%
SUERC-44647	Charcoal: Salix	212	Spread above pit 94	Primary	7920± 29	6848-6678 BC	-25.6%
SUERC-44648	Charcoal: Alnus	220	Fill of posthole 219	Primary	3782± 29	2296-2133 BC	-26.1%
SUERC-44649	Charcoal: Salix	286	Fill of posthole 285 within ring-groove	Primary	2028± 29	111BC-AD 53	-26.2%
SUERC-44650	Charcoal: Corylus	304	Fill of posthole 303 within ring-groove	Primary	207± 29	AD 1735-1806	-26.0%
SUERC-44651	Charcoal: Alnus	327	Pit/posthole	Primary	2108± 29	202-47BC	-26.8%

The calibrated dates indicate that activity on the site encompassed a long time-scale. The radiocarbon date obtained for deposit 212, along with the microliths, are the only indication of Mesolithic activity, although other un-dated features may also date to this period. The dates relating to the Iron Age suggest that the ring-ditch structure, the interior posthole 286 and pit/posthole 327 are contemporary, but that pit 100 dates from about a century later.

## Specialist Contributions

*(For the full details of all of the specialist analyses, tables and catalogues, please refer to the project archive)*

### Carbonised Plant Remains

By Susan Ramsay

A total of 112 samples, representing 101 contexts, were processed by flotation or wet sieving for the recovery of carbonised remains, which were then examined using a binocular microscope at variable magnifications of x4 - x45. The testa characteristics of small seeds and the internal anatomical features of all charcoal fragments were further identified at x200 magnification using the reflected light of a metallurgical microscope. Reference was made to Schweingruber (1990) and Cappers *et al* (2006) to aid identifications, and vascular plant nomenclature follows Stace (1997).

### Earlier prehistoric features

The carbonised remains from the large number of pits and postholes on the central plateau of the site produced little evidence to link any of these features. Neolithic activity is suggested by the assemblage from pit 020 that comprised large quantities of alder charcoal, traces of barley and wheat, and a significant number of hazel nutshell fragments. The only possible indication of in-situ burning of a post was found in pit 086, where oak charcoal with indeterminate cinder was included in its fill (087).

Pits 092 and 094 contained charcoal-rich fills that underlay an accumulation of burnt material (212). The charcoal assemblage from 092 contained large quantities of alder charcoal, with traces of hazel, willow and hazel nutshell. As prehistoric pottery and lithics were also recovered from this pit fill, it seems likely that it was a dump for midden or hearth waste. The fill of pit 094 contained a more diverse charcoal assemblage comprising alder, birch, hazel, willow and elm, along with hazel nutshell. It would appear that this pit fill is also the remains of hearth waste or midden material but is significantly different in composition to that from pit 092. However, the charcoal from pit 094 is very similar to the carbonised assemblage recorded for the burnt material 212, and it is possible that they have a common origin.

The fills of postholes 210 and 219 contained very small quantities of alder charcoal, which might suggest alder posts were once present but the trace nature of this evidence could also mean that the charcoal is simply scatter from elsewhere. Carbonised plant remains from the fills of the remaining features for which radiocarbon dates were obtained (022, 084, 088, 096, 098, 102, 112, 114, 223, 225 and 227) are most probably midden or hearth waste.

### Later prehistoric features

Large pit 100 contained large quantities of hazel roundwood, and smaller quantities of birch, alder and ash, along with single grains of oats and barley, and traces of hazel nutshell. The large amount of hazel roundwood may suggest that a wicker structure or object was burnt, with the resulting debris placed into the pit. Aside from the ring-ditch to the south, no structures were found associated with pit 100, and the nature and function of this wickerwork cannot be ascertained from the available evidence.

The fills of pits/postholes 052, 054 and 066 produced very little in the way of charcoal, although pit 054 had a similar assemblage to the pits and postholes immediately north of the roundhouse, suggesting a possible temporal link with the Iron Age structure.

### Roundhouse and related features

There is evidence for prehistoric settlement at Monkton in the form of a roundhouse and associated features. The roundhouse was defined by a ring-groove (070), with evidence for the timber structure having been built largely of oak and possibly with willow wattle work also present. Within the roundhouse were eight structural postholes (268, 279, 281, 285, 289, 299, 301 and 328) thought to have supported the roof. The posts within these were also probably oak, although again there is some evidence for willow wattle work being present close by. There was no evidence from the carbonised assemblages to suggest the presence of roofing material or thatch. There was little evidence for any food plant remains within the roundhouse, with only traces of indeterminate cereal grains recorded. A series of postholes and stakeholes within the interior of the roundhouse (172, 184, 186, 188, 277, 293, 297, 273, 301, 303, 308, 310,

312, 314, 316, 320, 340 and 342) were thought to represent the remains of internal divisions within the structure, but the paucity of carbonised material recovered from these features makes it impossible to confirm this suggestion.

The fills of four small postholes (244, 306, 326 and 338) a short distance to the north of the roundhouse produced carbonised assemblages that were dominated by oak charcoal with smaller amounts of willow and alder. These assemblages are very similar to those recorded for the central posthole fills within the roundhouse and may indicate that these exterior features are related to the roundhouse.

### Medieval and post-medieval remains

The carbonised remains from the medieval and post-medieval features are difficult to interpret as they do not contain any carbonised material that is definitely associated with those or a later period. Much of the material is similar in nature to the prehistoric carbonised assemblages and it is possible that the carbonised material in the medieval and later features is largely redeposited from the earlier features.

### Prehistoric Pottery

#### By Beverley Ballin Smith

Fifty-four sherds of coarse hand-made pottery and three fragments of unfired clay or daub were recovered from pits and the ring-ditch of a roundhouse. For a small collection, the assemblage is unusual in containing sherds of an early Neolithic carinated bowl, rare sherds of highly decorated middle to late Neolithic Impressed Wares, a number of other sherds with random surface ornamentation identified as cooking pot belonging to the same period, and a few small sherds of late Neolithic/Bronze Age Beakers. In addition, there are plain sherds, probably from a Bronze Age urn.

### Analysis and description of the pieces

The assemblage includes seven rims and 15 decorated sherds, including decorated rims. The percentage of rims and decorated sherds is higher than expected for a small prehistoric assemblage, and may indicate special selection of pieces for burial (see *Discussion*). A full catalogue of the pottery forms part of the archive.

All the pottery was recovered from pits, except for five, which were unstratified. Included in the samples are three fragments of daub or unburnt clay (see below).

The assemblage includes seven rims and 15 decorated sherds, including decorated rims. The rest are plain body sherds (forming 91% of the total assemblage). No base sherds or other diagnostic pieces were recovered. The percentage of rims at c. 13% and decorated sherds at c. 28% in this small assemblage is higher than expected for a small prehistoric assemblage, and may indicate special selection of pieces for burial (see *Discussion*).

Sherds range in thickness from 5.5 mm to 21 mm. The average thickness amongst those sherds which could be measured is 13.1 mm. This measurement emphasises that sherds, and therefore pots, were generally heavy in construction. Only three samples, from sherds that measured 6 mm in thickness or less, indicated thinner vessels. The total weight of the assemblage (including daub) is 908 g. The average weight of individual sherds is 16.8 g.

### Temper

The stone temper or grit that was deliberately added to the clay by the potter to form the vessels is generally exceptionally coarse, contributing significantly to the weight and the thickness of the sherds. Some fragments are as large as c. 10 by 9 mm. The temper is varied and includes coal, mudstone or siltstone, sandstone and quartz, some of which are large rounded grits as well as broken rock. Other grits are irregular in shape such as white quartz/feldspar/amphibole. In addition, sand grains were also noted in a few sherds. Each sherd includes a variety of temper, but those comprising vessels 8 (SF 40) and 13 (SF 24) were mainly quartz/feldspar amphibolites accounting for c. 5-10% of the clay matrix. In these latter examples, the choice of temper may have been deliberate, and reflects the utilisation of different resources from those used in other vessels, such as a beach boulder or an erratic.

The sand and gravel marine subsoils on the raised beach include mudstone, siltstone, sandstone and coal, which are all represented in the temper (British Geological Survey [bgs.ac.uk](http://bgs.ac.uk)). It is likely that the grits, both rounded and broken rock,

will have derived from deposits or rock outcrops along the sides of local streams such as the Pow Burn and from the coast, a kilometre or less from the site. Clay may have originated in the same general area or from streams or subsoils inland.

### Post-depositional changes

Some sherds have been damaged and fragmented by the use of mechanical equipment during the excavation. Others have fragmented during and after burial due to the large size of grits and the poor adhesion of clay and temper during firing. Sherds with rounded edges are present and indicate disturbance of the burial context, or of the pottery before burial. Rarely are sherds damaged by grass or other herb roots. Surface loss, cracking around grits and spalling is common, again most likely due to poor firing conditions, the high percentage of grits and subsequent weathering of the pottery. SF 7 is an example of a sherd where no surface finish survives and grits have been weathered from its surface.

### Manufacture of the pottery

Occasional evidence survives in the assemblage of the manufacture detail of the vessels. Some vessels have broken along the joins of coils resulting in smaller sherds and fragments, and rims are mostly detached single pieces, elaborately moulded and decorated in some examples.

Some sherds were slipped to provide a more even surface than the temper and clay allowed during forming, but in spite of this, finger moulding of the clay is still visible on the surface of SF 18, for example. Often the slip is cracked around larger grits due to wear and use of the vessel.

Marks are also preserved on some sherd surfaces, such as SF 7 made by wiping or smoothing the clay with grass, but in general this is rare. A thick layer of carbonised food remains still adhered to the internal or external surface of SF 24, 39 and 40, indicating their use as cooking pots. In general, the manufacturing details have been obscured by the application of decorative motifs (see below).

The colour of the vessels range from reddish yellow/yellowish red to brown, SF 40 is pinkish/grey to light brown. All the sherds have reduced dark grey cores and oxidised surfaces. SF 29 appears to be harder fired than the rest of the assemblage.

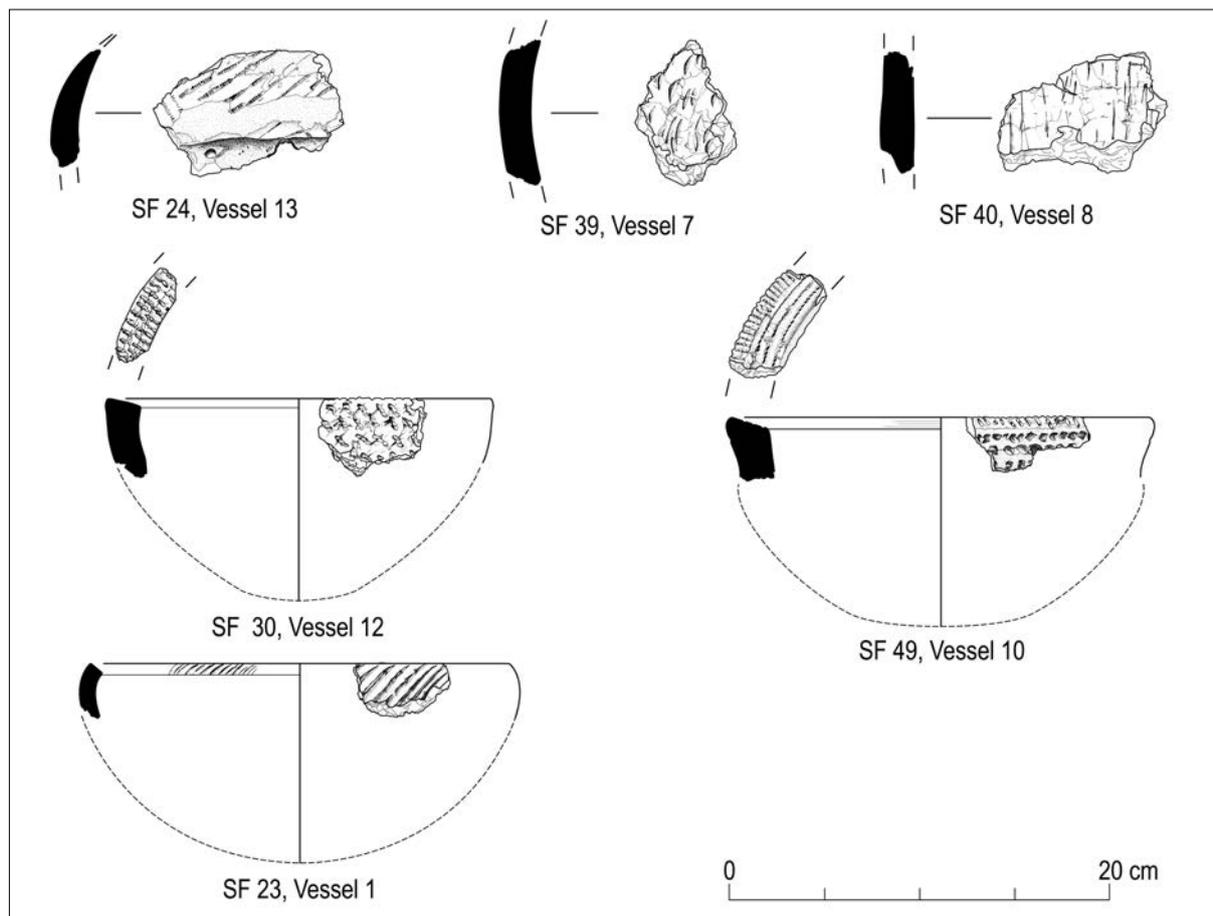


Figure 6: Prehistoric ceramic illustrations.

**Description of individual vessels** (see archive for full details)

**Vessel 1** (Figure 6)

SF 18 is from fill 023 of fire pit 022, and includes one small fragment, a partial sherd and a decorated rim sherd. The latter represents c. 7% of a vessel with a rim diameter of 220 mm. The fabric, although temper-rich, has slightly smaller pieces of rock grit than the majority of the Monkton assemblage. It is 9 mm in thickness and its weight is 16.6 g. The rim is convex, pointed and slightly inturned, with an 8 mm wide, sloping internal bevel. The rim, which may have been the top of a deeper collar, survives up to 30 mm in length. The rim bevel is decorated with close-set oblique incisions oriented top right to bottom left, c. 1 mm wide, probably made by a finger nail. The external surface of the rim is also decorated with parallel oblique incisions about 4 mm apart. Each incision is c. 1-2 mm wide but made of 6 mm short lengths joined together and also probably made by a finger nail. This rim sherd, or fragment of collar is probably middle Neolithic in date.

**Vessels 2, 3 and 4**

SF 56 is a collection of unstratified sherds which includes two decorated rims and two body sherds, all of which measure c. 5 mm in thickness. Their total weight is 8.8 g. These small sherds are all from different vessels and are all weathered.

Vessel 2 is an eroded sherd of a Beaker vessel of late Neolithic/early Bronze Age date, cautiously identified as a rim, with surface spalling. It has close set vertical shell-edge (*Cerastium*) impressions on one edge, with a slight, incised cross on the reverse.

Vessel 3 is a plain, thin, dark-grey sherd with sandstone grits, with two faint lines made by a cord impression. It is probably of the same period as Vessel 2.

Vessel 4 is another Beaker sherd whose rim edge has a fine herringbone design comprising two sets of toothed impressions, accompanied by another oblique toothed design. It was not possible to measure its rim diameter. This vessel is also late Neolithic/early Bronze Age in date.

### Vessel 5

Sample 50 is from fill 228 of fire pit 227. It includes a small Beaker fragment weighing c. 3 g, which has probably sandstone grits. The sherd is burnt, and decorated with three incised lines, which have been made by a toothed implement.

### Vessel 6

SF 8 was retrieved from fill 023 of fire pit 022. Fragmentation of one large sherd into two and damage to its external surface is a result of mechanical disturbance of this feature. The sherds weigh 191.6 g, and are plain, but they have a pink coloured slip and were smoothed internally. There is evidence of a finger tip indentation on the exterior surface of the largest piece. The sherds contain 10-15% large grits, most likely coal. The fabric is dense and measures c. 14.5 mm in thickness. This heavy vessel is of uncertain date but is possibly represents a Bronze Age Urn.

### Vessel 7 (Figure 6)

SF 39, together with sample 28, derives from the fill of the same fire pit as Vessel 6. Both pieces are decorated body sherds, probably from the same vessel, and weigh 93.4 g. The pottery measures 17 mm in thickness and contains large angular grits of fine-grained, grey siltstone. The smallest sherd has a thick internal deposit of carbonised food and the larger piece has been slipped. The latter is decorated with approximately 18 finger nail impressions (probably a thumb nail) distributed both horizontally and randomly across its surface. The vessel is of uncertain date.

### Vessel 8 (Figure 6)

SF 40 came from fill 093 of fire pit 092 and comprises two decorated body sherds, probably from the same heavy-walled vessel of 16-18 mm thickness and a combined weight of 131.5 g. Food deposits are present on the internal surface of the largest sherd, and a slip had been added to its external surface to mask the grits. However, the size of the rock temper, which is identified as broken fragments of quartz/feldspar/amphibolites, has led to cracking of the slip around them. Both sherds are pinkish grey/light brown in colour, with clearly visible grits on the interior surface of the smaller sherd. The decoration, comprising random horizontal incisions up to 35 mm in length, was executed

by a fine tool. The design was possibly incised all over the pot. The vessel is of uncertain date but may be part of the same pot as Vessel 13.

### Vessel 9

SF 29 from fill 226 of possible fire pit 225 includes a decorated rim and five body sherds weighing a total of 135 g. The sherds are very fragmentary with some surface loss. The temper of very coarse, mixed grits was clearly visible on the surface of the pot, which had been fired to a yellowish/red colour with a reduced core. This vessel is harder fired than the majority of the assemblage but marks on the internal surfaces of the larger sherds indicate that they are the result of the vessel's use.

The rim is straight, badly formed, but with an irregular rounded top, which measures 260 mm in diameter and 16 mm in thickness. Approximately 7% of it is present. The decoration is randomly executed, but it is formed by a toothed implement producing incisions in three horizontal, but only partial, parallel lines. The vessel is of uncertain date.

### Vessel 10 (Figure 6)

SF 49 from fill 226 of fire pit 225 includes a decorated rim/collar and two other sherds weighing 71 g. This pottery is 13 mm in thickness, very fragmentary and with large angular grits. Its colour is reddish-brown with a reduced interior and a slipped exterior.

The rim was 220 mm in diameter and c. 8% of it is present. The rim bevel is decorated by 8 mm lengths of parallel and closely positioned vertical twine impressions, accompanied by three parallel lines made by twine impressions around the perimeter of the bevel. The rim edge is slightly denticulated due to the decoration. The collar of the rim has three surviving rows of close set deeply incised irregular parallelograms, each motif measures 4 by 3 mm, and is oriented top right to bottom left. The may have continued further down the pot. This vessel is middle Neolithic in date.

### Vessel 11

SF 24 is a sherd weighing 29.4 g, from fill 093 of fire pit 092. It is a decorated body sherd with coarse grits of silt/mudstone and coal, 19.5 mm

thick, which broke at a coil join. It also has thick internal food deposits and is slipped. The sherd has two clear linear incisions on its surface. The vessel is of uncertain date.

#### **Vessel 12** (Figure 6)

SF 30 is a decorated rim and collar sherd weighing 38.4 g from, fill 228 of fire pit 227. The rim is straight and is from a large heavy vessel in reddish-brown fabric. Its diameter was 200 mm and the sherd represents 9% of the rim. A variety of temper is present in the fabric including quartz, sandstone, and mud/siltstone.

The rim bevel has a deep incised cord decoration executed in parallel short lengths 2-3 mm apart, but slightly offset from the next. The exterior collar to the rim has a double decoration. The first design of incised lines, c. 10 mm long and c. 5-8 mm apart, are oriented top right to bottom left. Over the top of these are deeply incised marks made by a flat-ended bone or twig 2 mm wide. They were made over the middle of the earlier incised lines but oriented top left to bottom right, forming a cross-type design. This double pattern is quite unusual. The vessel is middle Neolithic in date.

#### **Vessel 13** (Figure 6)

SF 24 from fill 093 of fire pit 092 is a decorated rim and collar weighing 94 g, but is from a different pot than Vessel 11. This vessel is thinner than the average for this assemblage, measuring only c. 10 mm in thickness. It has c. 5-10% coarse, irregular quartz/feldspar/amphibolite grits, which are clearly visible when exposed in section or on the eroded internal surface where there is much cracking of the fabric around the temper. The exterior of the sherd is better preserved and supports a thick layer of food deposits.

This sherd is identified as a rim and collar to a middle Neolithic collared vessel. Unusually, its rim is thin and pointed with a diameter of 240 mm, but only c. 7% of it is present. The external surface of the collar and the rim is decorated with an oblique fine-toothed and parallel incised design, aligned top right to bottom left. The incised marks are placed c. 8 mm apart and continue onto the body of the vessel beneath the layer of food remains, and below a narrow hollow or cavetto neck. The interior surface of the rim, a misshapen or malformed bevel, contains faint

evidence of four to five parallel, vertical toothed incisions c. 7 mm long. The internal surface of the vessel is partly spalled resulting in the loss of both decoration and rim form. Vessel 8 could be considered part of this vessel.

#### **Vessel 14**

SF 7 and sample 46 are from fill 021 of fire pit 020. The three sherds weigh a total of 16 g and measure between 5 and 6 mm in thickness. They are well made, thin sherds with a fine temper of sand and coal. The fabric is reduced (a very dark grey) with a light yellowish/brown exterior, which was possibly slipped. They are also distinguished also from the rest of the assemblage by their weathered appearance and the loss of surface finishing as well as grits, which has left them pitted. A radiocarbon date from this pit (SUERC-44640(GU29596) 4750±29, 3637-3510 cal BC at 2 sigma) indicates that these sherds were probably part of an early Neolithic bowl.

#### **Vessel form and function**

These thirteen vessels form an interesting collection which includes a plain early Neolithic bowl, four well-decorated middle Neolithic pots, small fragments of decorated late Neolithic/early Bronze Age Beakers, and a variety of other pots with slight ornamentation. These latter were considered to be generally from the Bronze Age period but equally could be contemporary with the middle Neolithic decorated vessels.

Vessel 14, an early Neolithic carinated bowl found has few distinguishing characteristics, but its fine fabric and well-made appearance distinguishes it from the rest of the assemblage. Early Neolithic bowls usually have rounded bases, a carination and gently flaring rims. These sherds suggest the bowl was plain.

Vessels 1, 10, 12 and 13 are identified as middle Neolithic Impressed Wares. In this ceramic tradition, conical or round based bowls were produced which were highly decorated. They are often defined by the term Peterborough Ware in England, or more recently Fengate Ware (Sheridan 2008 in archive). Their ornate surfaces were matched by their heavily patterned thick rims (Gibson 2002, 78). Each of the Monkton examples are highly ornate, but only Vessel 13 shows the full depth of the collar. All are made using a range of local temper.

The Beaker sherds (Vessels 2, 3, 4 and 5) are very small and weathered, and were either unstratified or found within pits. Vessel 5 is burnt due to its inclusion within the fill of a fire pit. The lack of ritual contextual evidence, such as cist burials, indicates that all the Beaker sherds were residual, and were products of domestic or ritual activities that had been disturbed by later events.

It is clear from the evidence of carbonised food deposits that Vessels 7, 8 and 11 were most likely used on the hearth as cooking pots. They are all thick-walled body sherds indicating they were from heavy pots. These sherds have some external decoration suggesting that it was not necessary for pots to be plain to be used for cooking. The designs are simple, comprising random fingernail or other minimal incisions, which differentiate them from the more ornate vessels in the assemblage. From the lack of other supporting evidence such as rims, these vessels are categorised as Bronze Age pottery. However, Vessel 8 contains the same temper as Vessel 13 (quartz/feldspar/amphibolite). This temper is only used in these two vessels, suggesting some contemporary manufacture or that they are part of the same vessel (see below).

Another pot that could be added to this latter group is Vessel 9, which shares a number of characteristics. It is thick-walled with a random decoration of toothed incisions. Vessels 7, 8, 9, 11 and also possibly Vessel 6 lack finesse in their manufacture and finishing. This, combined with the wear marks on the inner surface of Vessel 9, suggests that their function was purely domestic.

### Vessel distribution

The distribution of vessels is as interesting and varied as the vessels themselves (see Table 2). The patterning and distribution of pottery are far from simple and indicate the use and reuse of pits over a long period of time. Where flint tools can be dated, they are included in the table to help elucidate activities (see Ballin, *Lithic Report*).

Each of the fills from the five main fire pits (features 020, 022, 092, 225 and 227) produced pottery. The earliest dated is Vessel 14, an early Neolithic carinated bowl from pit 020. The four remaining pits produced middle to late Neolithic Impressed Wares. However, Mesolithic material was found in pit 092, and an early Neolithic

pitchstone blade in pit 022, suggesting reuse of the pits, or the incorporation of residual artefacts in backfill material. It is also reasonable to suggest that pit 227 was disturbed, possibly re-dug at a later period, to include a fragment of late Neolithic/early Bronze Age Beaker pottery, other small fragments of plain pottery, some daub and a combination flint tool.

Pit 225 is slightly less complex than pits 022 and 092. It contains pottery from two separate vessels (9 and 10). Vessel 10 is a well manufactured, middle to late Neolithic Impressed Ware pot supporting simple designs but Vessel 9 is poorly finished and coarsely made, with apparently random surface impressions. Although Vessel 9 is described as of uncertain date, it is likely that both vessels are contemporary and were placed in the pit at the same time.

Vessels 1, 6 and 7 were found together in pit 022. The sequence of events is complicated by the inclusion of a residual pitchstone blade from the early Neolithic in the fill of this pit. One interpretation is that Vessels 1 and 7 both middle to late Neolithic Impressed Wares, were placed together in the pit. On a separate, later occasion, Vessel 6, tentatively identified as the remains of a Bronze Age Urn, was introduced. This vessel was quite close to the surface as it suffered damage from machinery.

Pit 092 is complex due to the inclusion of flint artefacts from two different periods. The Mesolithic microliths are most likely residual but the late Neolithic tools are possibly contemporary with the pottery. The three vessels, 8, 11 and 13 are all middle to late Neolithic Impressed Wares. It is highly likely that this pit was reused on several occasions: some of the flint is burnt, one sherd of Vessel 8 is also burnt and there are in addition, two pieces of daub or unfired clay. Vessel 13 has thick carbonised food remains suggesting its use in association with food or drink.

Other diagnostic sherds, such as Vessels 2, 3 and 4 were unstratified. No diagnostic pottery was associated with the roundhouse and the fragments that were found though soil sieving were only c. 1 g in weight.

The distribution of pottery indicates that activities from the early Neolithic, through the middle and later Neolithic and possibly into

the middle of the Bronze Age were taking place across the investigated area on top of the raised beach. Some of the pits were used on more than one occasion, accounting for the variety of vessel fragments and flints within their fills.

Table 2: Vessel distribution reference to lithic artefacts.

Artefacts	Contexts	Date Range
Vessel 14	Fill 021 of fire pit 020	Early Neolithic
Pitchstone blade (CAT 37) Vessel 1 Vessel 6 Vessel 7	Fill 023 of fire pit 022	Early Neolithic Middle to late Neolithic Middle to late Neolithic Bronze Age?
Microliths (CAT 46) Vessel 8 Vessel 11 Vessel 13 Flint blades and flakes (CAT 48-51) Vitrified flint (CAT 7)	Fill 093 of fire pit 092	Mesolithic Middle to late Neolithic Middle to late Neolithic Middle to late Neolithic Late Neolithic Late Neolithic
Vessel 9 Vessel 10	Fill 226 of fire pit 225	Middle to late Neolithic Middle to late Neolithic
Vessel 12 Vessel 5 Combination flint tool (CAT 15)	Fill 228 of fire pit 227	Middle to late Neolithic Late Neolithic/early Bronze Age Late Neolithic
Vessels 2-4	Unstratified	Late Neolithic/early Bronze Age

### Prehistoric pottery discussion

This extremely interesting assemblage of pottery has a range of vessels dominated by Impressed Wares that are relatively rare for the western side of the central region, and uncommon when compared to other types of Neolithic pottery. In the eastern half of Scotland, and including Dumfries and Galloway (see references in Johnson 2010), there is more evidence of Neolithic settlements with pits that have produced Impressed Ware pottery. Many of these sites have accompanying radiocarbon dating evidence where the pottery can be dated accurately.

One of the largest assemblages of Impressed Ware recovered so far in Scotland was found in pits at Meldon, Peebleshire (Johnson 1999, 53-76), which was also discussed by MacSween (1999, 77-79) and was likened to later Neolithic Peterborough wares. The Meldon assemblage was considered to date to the first half of the third millennium cal BC in spite of two earlier dates pushing it back into the previous

millennium. It is only in the last decade or two that the dating of Impressed Ware has attracted further debate in Scotland (see Johnson 1999, MacSween 1999, Sheridan 1997 and Sheridan 2008). It was considered to be a late Neolithic ware, called Peterborough Ware in England and similar pottery has been found in both Wales and Ireland (Gibson 2002, 80). Earlier dates have pushed the manufacture and use of this pottery back into the second half of the fourth millennium BC, into the middle Neolithic. The dating of the Monkton pottery, unfortunately, has little to add to this debate, as it was not possible to achieve radiocarbon dates from many of the pit fills. However, the Monkton assemblage fills a gap in the South Ayrshire area and provides information on a range of different pots and decorative motifs. Pits containing Neolithic ceramic (NMRS NS32NE 102) were uncovered at Baird Road, Monkton, along with rig and furrow cultivation marks, but further information is not available on this material.

One of the geographically closest sites comparable to Monkton is that of Ligh Newton in East Ayrshire (Toolis 2011), where a range of prehistoric sites and pits across the hillside produced early Neolithic pottery, late Neolithic Grooved ware, and Beaker pottery. Amongst this assemblage were a small number of Impressed Ware sherds (Ballin Smith 2011, 21-22).

Monkton Vessel 1, and to some extent Vessel 13, can also be compared in decorative style and rim/collar formation with vessels 1 and 2 from Overhailes, on the A1 (see Sheridan's archived description and analysis in Lelong and MacGregor 2008, Figure 4.6.). These vessels were identified as Fengate Ware, a style of middle Neolithic pottery linked to Peterborough Ware, which is dated to c.3350-2900 cal BC at two sigma. The Overhailes assemblage included a vessel with 'speckled, crystalline, probably igneous rock as filler', similar to the quartz/feldspar/amphibolite found in Vessel 13 from Monkton.

Other Impressed Ware assemblages include sherds from Biggar Common (Sheridan 1997, 210, 220-221), but these were largely stray finds. Similar pottery was also found at Blairhall, Dumfriesshire from what was considered to be late Neolithic pits (Cowie 1998, 73-74, Illus 12, 34) but dated within the second half of the fourth millennium BC. A more recent assemblage was

found at Dubton Farm, Brechin, where Neolithic Impressed ware was recovered from the larger pits and considered to date to a period from the mid fourth millennium to the earlier third millennium BC (MacSween 2002 34-42).

The only radiocarbon date (SUERC-44640 (GU29596) 4750±29, 3637-3510 cal BC at two sigma) from pit 020 did not contain Impressed Ware but the early Neolithic carinated bowl fragments of Vessel 14.

The Monkton Impressed Ware is significant because of the range of rim/collar and body sherds buried and recovered together from pits. The presence of well-formed and highly decorated rim/collars contrasts strikingly with the more sparsely decorated, and less well made body sherds from pots that were in all likelihood cooking vessels. That three pits had this combination of vessels is probably not coincidental, and the sherds could point the way to an understanding of the rituals and meaning associated with the activities in this area. There is a dichotomy between the presence of sherds that are extraordinary and those that are ordinary, those that are unusual and those that are mundane, possibly reflecting broad ritual and domestic activities.

There is much to speculate about how and why these pottery sherds were buried in pits and what human activities were associated with them. During the whole of the Neolithic and well into the Bronze Age, this raised beach area with direct views west to the impressive outline of Holy Island and that of Arran beyond, was party to regional and national trends in the pottery that was made and used there.

Some of these pits were used more than once, perhaps many times, on a seasonal or annual basis, where repetitions of activities took place that may have been marked by the breaking of pots and the inclusion of specific pieces in the closure of the pits. Were pieces from the same vessel deposited in other nearby pits or were they taken away to other areas and other pits to mark other rituals and activities?

### Unburnt clay pieces

Three pieces of unfired clay were identified amongst the pottery.

SF 56 is unstratified and includes a piece of abraded unfired clay. This piece is light in weight with little or no temper.

Sample 24 from fill 93 of fire pit 092 is two pieces of unburnt clay weighing 10 g. It is very pale brown in colour, with a little stone mixed into the clay matrix. Its irregular surfaces are mottled and the pieces are very soft. The smaller of the two is burnt.

## The Lithic Assemblage

By Torben Bjarke Ballin

From the excavations at Main Street, Monkton, 190 lithic artefacts were recovered. They are listed in Table 3. In total, 94% of this small assemblage is debitage, 2% are cores and 4% tools.

Table 3: General artefact list.

	Flint	Quartz	Chert	Pitchstone	Chalcedony	Total
<b>Debitage</b>						
Chips	36	98	4			138
Flakes	19	8				27
Blades	4		1			5
Microblades			1	1		2
Indeterminate pieces		6			1	7
<b>Total debitage</b>	59	112	6	1	1	179
<b>Cores</b>						
Split pebbles		2				2
Bipolar cores	1					1
<b>Total cores</b>	1	2				3
<b>Tools</b>						
Microliths/backed bladelets	2					2
Chisel-shaped arrowheads	2					2
Scale-flaked knives/serrated pieces	1					1
Short end-scrapers	1					1
Pieces w edge-retouch		2				2
<b>Total tools</b>	6	2				8
<b>TOTAL</b>	66	116	6	1	1	190

### Raw materials – types, sources and condition

The assemblage includes a number of different raw materials, with flint (50%) and quartz (39%) dominating. In addition, there were six chert artefacts and one microblade in pitchstone (Catalogue No CAT 37), and one indeterminate piece in chalcedony (CAT 16). Some of the 66 flints are heavily discoloured, either by weathering/cortication (CAT 4) by exposure to fire (CAT 5). The collection includes several different types of flint, such as:

- 1) opaque, yellowish flint, usually referred to as Antrim flint (eg, CAT 11, 13);
- 2) flint with a high content of chalcedony (common to the western and northern parts of Scotland; eg, CAT 1); and
- 3) vitreous, homogeneous or mottled dark-grey flint, frequently referred to as Yorkshire flint (eg, a small group of flakes/blades from Context 093, CAT 48-51).

So-called Antrim flint occurs on either side of the Irish Sea (Smith 1880), and was probably procured from local Ayrshire shores. Chalcedony-rich flint pebbles may have washed onto the Ayrshire shores from deposits at sea, although this flint type is still poorly understood (cf. Ballin 2012). Yorkshire flint was imported into Scotland from the greater Yorkshire area in (mainly) the middle/late Neolithic period (Ballin 2011b).

Many of the larger quartz artefacts have either partial or full cortex-cover (e.g. chunk CAT 184). The smooth, abraded cortex, with the curvature of the objects' outer surfaces, suggests that the raw material was a pebble from river or coastal gravels. CAT 2 is the distal segment of a grey/purple-brown chert blade with small dots, whereas CAT 72 is a microblade in orange-brown, unpatterned chert; the remaining chert artefacts are minuscule chips. The raw material is radiolarian chert, popularly referred to as Southern Uplands chert, procured either locally, by the collection of pebbles or by quarrying primary deposits (Owen et al. 1999; Armstrong et al. 1999). CAT 37 is the proximal segment of a microblade in black, aphyric pitchstone. This material was procured and distributed exclusively from the Isle of Arran, with most of the pitchstone exchange taking place in the early Neolithic period (Ballin 2009, 2015). CAT 16 is chalcedony,

and like most chalcedonies (Pellant 1992), it probably derives from igneous rock, such as the lavas and fossil volcanoes of south-west Scotland (Oliver et al. 2002). It was most likely procured as an erratic pebble, or from river or coastal gravels.

### Debitage and cores

The assemblage includes 179 pieces of debitage: 138 chips, 27 flakes, five blades, two microblades, and seven indeterminate pieces (Table 3). The many chips in flint (36 pieces) and quartz (98 pieces) were recovered from sieved samples. The flakes include 19 pieces in flint and eight in quartz; four of the five blades are in flint, with one being chert; two microblades are chert and pitchstone, respectively; and the indeterminate pieces are all either quartz or chalcedony.

Fourteen intact flakes are mostly squat, with greatest dimensions (GDs) between 11 and 56 mm. Seven of the 18 technologically definable flakes were detached by hard percussion and 11 by bipolar technique. Five pieces were defined as blades, as they are all more than twice as long as they are wide. Some are fairly irregular, with uneven dorsal arrises (CAT 2 and 13), whereas others have roughly parallel lateral sides (CAT 9, 48 and 49); the more regular pieces are associated with Yorkshire flint, and they were produced by the application of the middle/late Neolithic Levallois-like technique. The blades differ considerably in size, with their lengths varying between 21 and 35 mm (scale-flaked blade CAT 15 measures 44 mm), and their widths between 8 and 20 mm. They were generally produced by hard percussion. The two microblades in chert (CAT 72) and pitchstone (CAT 37) are both proximal fragments with GDs of 9 mm and 12 mm and widths of 5 mm and 6 mm. They were both manufactured by soft percussion. The site's indeterminate pieces have GDs between 18 and 50 mm, and they are characterized by faces shaped by either internal fault planes, impurities or possibly exposure to fire. Twelve pieces of debitage have been exposed to fire, with one flint flake and one chip (CAT 7 and 87, both from 093) being vitrified. CAT 7 has soft cortex, suggesting that the raw material was procured from primary sources (probably Yorkshire). Two objects were defined as split pebbles (GDs 25-40 mm; CAT 19, 20). CAT 19 split along the long axis and CAT 20 split across; both have been exposed to fire. One bipolar core was also retrieved from the site (CAT

10). It measures 28 by 24 by 7 mm, and it has one reduction axis (i.e. one set of opposed terminals). CAT 10 has two fully flaked opposed faces or flaking-fronts with a sliver of cortex surviving along one lateral side.

### Tools (Figure 8)

The assemblage includes eight modified pieces: two microliths/backed bladelets (CAT 46, 59), two chisel-shaped arrowheads (CAT 6, 47), one combined tool (CAT 15), one short end-scraper (CAT 12), and two flakes with edge-retouch (CAT 23, 127). Apart from the two edge-retouched pieces in quartz, all the tools are in flint.

In terms of classifying microliths and microlith-related pieces, the following definition was adhered to (Ballin *et al.* forthcoming):

*Microliths are small lithic artefacts manufactured to form part of composite tools, either as tips or as edges/barbs, and which conform to a restricted number of well-known forms, which have had their (usually) proximal ends removed. This definition secures the microlith as a diagnostic (Mesolithic) type. In this report, microliths sensu stricto (ie, pieces which have had their usually proximal ends removed) and backed or truncated microblades are treated as a group ('microlith-related pieces'), as these types are thought to have had the same general function.*

CAT 46 was defined as a backed bladelet, as its bulbar end is intact, although it is not possible to determine the applied percussion technique. This piece is missing its distal end, it has full blunting retouch along one lateral side, and it measures 13 by 3 by 2 mm. CAT 59 may be the fragment of a similar implement, but as both ends have broken off, it was not possible to determine whether the proximal end had been *deliberately* removed, and it was subsequently defined as the *fragment of a microlith or backed bladelet*. It is based on a microblade, and it measures 11 by 3 by 2 mm.

Two *chisel-shaped arrowheads* were recovered from the site. CAT 6 is a left lateral fragment (29 by 17 by 5 mm) in Yorkshire flint. Its dorsal face is partially cortex-covered, and its lateral modification is quite sloppy, alternating between

ventral and dorsal retouch. It has slight use-wear along its leading edge. CAT 47, on the other hand, is intact, although heavily affected by exposure to fire. It is classifiable as a Type C1 in Clark's typology of *petit tranchet* derivative arrowheads (Clark 1934; Ballin 2011b, Panel 1), and it measures 25 by 19 by 4 mm. It is roughly triangular, and it has steep retouch of the lateral sides, dorsal face, as well as invasive retouch of the lateral sides, and ventral face. The purpose of the invasive retouch was to flatten the latter face, partly by removing the bulb of percussion.

The *combined tool* (CAT 15) is a sophisticated piece, based on an irregular blade with converging lateral sides (44 by 20 by 5 mm). Along its entire left lateral side it has a bifacial scale-flaked cutting-edge, and along its entire right lateral side it has fine serration (8-9 teeth per cm). This implement is probably based on Yorkshire flint, and it has notable ventral *gloss* along the proximal half of the serrated edge. The function of serrated pieces has been discussed by Juel Jensen (1994, 68), who found them difficult to interpret, but who concluded that they probably represent a Neolithic 'non-subsistence related element', such as the refining of fibres, and that they were not used for cutting cereals. In the Scottish Neolithic, this function (i.e. sickling) may have been covered by plano-convex/scale-flaked knives (Ballin 2011b, 24).

The *short end-scraper* (CAT 12) is a small squat implement (23 by 23 by 12mm) in local flint. It is based on a primary, bipolar, orange-segment flake, and it has a steep, irregular working-edge at its distal end. The two *edge-retouched pieces* (CAT 23, 127) are both based on quartz flakes. The former is an expedient implement, and it is based on a robust flake (29 by 25 by 22mm) from which small chips were detached in various places. It has sporadic use-wear along one steep, convex, unmodified edge, probably from use as an *ad hoc* scraper. CAT 127 is a small distal fragment of a relatively thin flake (11 by 8 by 4 mm) with steep retouch along the right lateral side. It is possible that this modification represents the backing of a small knife. Both retouched pieces have been exposed to fire.

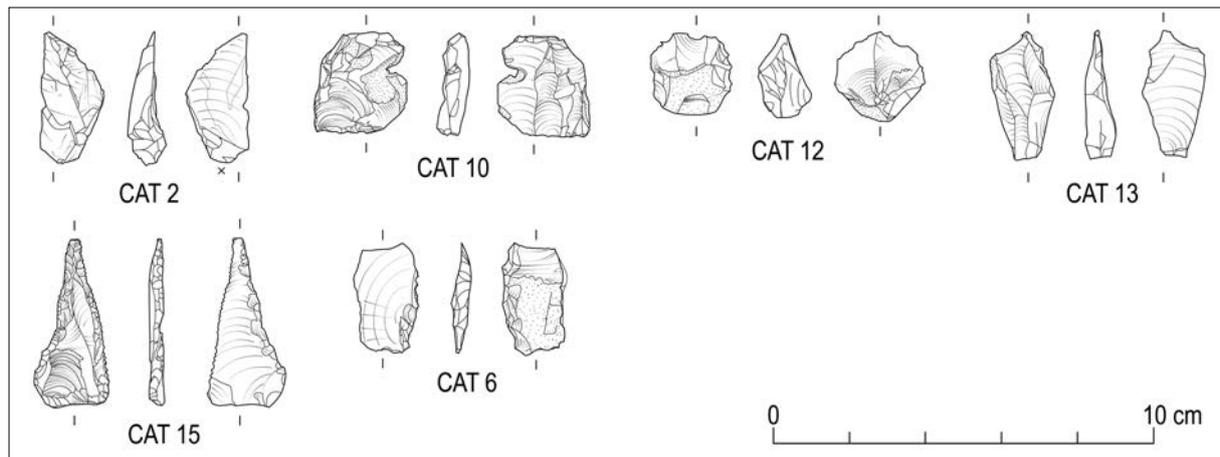


Figure 7: Illustrated lithic artefacts.

## Technology

The character of the lithics – in particular their cortex and surface curvatures – indicates that many of the flint and quartz artefacts are based on relatively small collected pebbles, while larger flint nodules are thought to have been imported from the greater Yorkshire area. Chert may have been quarried or collected locally, whereas pitchstone was quarried or collected on Arran in the Firth of Clyde. Chalcedony was probably procured from local pebble sources.

The assemblage includes artefacts produced by at least three different industries, although one industry appears to dominate the assemblage. In the middle/late Neolithic period, squat flakes and robust blades were produced by the application of hard percussion and Levallois-like technique (Ballin 2011a). At the Monkton site, this approach is associated with Yorkshire flint, finely-faceted Levallois-like flakes and blades (CAT 48-51), two chisel-shaped arrowheads (CAT 6, 47), as well as one scale-flaked/serrated piece (CAT 15). Many of the site's chips are thought to be in Yorkshire flint, and they may be waste from the production of these middle/late Neolithic flakes, blades and implements. The association of some quartz artefacts with the roundhouse suggests that a fourth industry may also be represented at the site, i.e. a mainly quartz flake industry datable to the Bronze Age or later periods (depending on the general date of the house; see distribution section, below).

The two microlith-related pieces (CAT 46, 59) represent a soft percussion microblade industry, aiming at producing very narrow microblades

(W = 3 mm) for microliths and microlith-related pieces. The assemblage includes no microlithic waste, or microblade cores, suggesting that these pieces were produced elsewhere and possibly lost during a hunting trip (i.e. a brief stop for armature re-tooling; Keeley 1982). Late Mesolithic scatters have been investigated a few hundred metres north of the present site, at Monktonhead Farm (Cameron 2000). The pitchstone microblade (CAT 37) is slightly broader (W = 6 mm), and probably represents a soft percussion blade-/microblade industry. This probably early Neolithic piece was recovered from pit 022, with the assemblage in general including no waste attributable to this industry.

Secondary modification relating to the site's main middle/late Neolithic industry was carried out in the form of regular edge-retouch as well as scale-flaking/semi-invasive retouch.

## Distribution and activities

Most of the lithic artefacts derive from prehistoric features, with seven flakes and blades having been recovered from cultivation furrows and 26 from 'other' contexts (drains, etc., Table 4). A total of 23% of the lithics were recovered from post- or stakeholes, 35% from fire pits, 17% from 'ordinary' pits (some of which may be postholes), and 7% from the ring ditch (070). Some pieces probably entered the features with the backfill, such as the lithics from the palisade ditch and most finds from post- and stakeholes, but many lithic artefacts are thought to be contemporary with the features they were recovered from.

Table 4: General distribution of the lithic finds.

	Cultivation furrows	Post-/stake-holes	Fire pits	"Ordinary" pits and pits/postholes	Ring ditch	Other contexts	Total
<b>Debitage</b>							
Chips, flint (incl. 4 chert)	2	6	22	8	1	1	40
Chips, quartz		29	6	20	10	23	98
Flakes	4	2	17	1	1	2	27
Blades/microblades	1	1	3	1	1		7
Indeterminate pieces		5		1	1		7
<b>Total debitage</b>	<b>7</b>	<b>43</b>	<b>58</b>	<b>31</b>	<b>14</b>	<b>26</b>	<b>179</b>
<b>Cores</b>							
Split pebbles			2				2
Bipolar cores			1				1
<b>Total cores</b>			<b>3</b>				<b>3</b>
<b>Tools</b>							
Microliths/backed bladelets			1	1			2
Chisel-shaped arrowheads			2				2
Short end-scrapers				1			1
Scale flaked knives/serrated pieces			1				1
Pieces w edge-retouch		1	1				2
<b>Total tools</b>		<b>1</b>	<b>5</b>	<b>2</b>			<b>8</b>
<b>TOTAL</b>	<b>7</b>	<b>44</b>	<b>66</b>	<b>33</b>	<b>14</b>	<b>26</b>	<b>190</b>

In terms of general trends, few lithic artefacts were recovered from the roundhouse or its surroundings, and most of them from this part of the excavation are quartz chips and flakes. Flint in general, as well as more well-executed pieces, was found in the excavation's northern parts where they were mostly associated with various pits. This is shown (Table 4) by the distribution of the site's cores and tools, but probably most clearly by the distribution of the debitage (Table 5).

Table 5: The relative distribution of the site's debitage (per cent). Peaks in the distribution are highlighted.

	Cultivation furrows	Post-/stake-holes	Fire pits	"Ordinary" pits and pits/postholes	Ring ditch	Other contexts	Total
<b>Debitage</b>							
Chips, flint (incl. 4 chert)	5.0	15.0	55.0	20.0	2.5	2.5	100.0
Chips, quartz		29.5	16.4	20.4	10.2	23.5	100.0
Flakes	14.8	7.4	64.0	3.7	3.7	7.4	100.0
Blades/microblades	14.3	14.3	42.8	14.3	14.3		100.0
Indeterminate pieces		71.4		14.3	14.3		100.0
<b>Total debitage</b>	<b>3.9</b>	<b>24.1</b>	<b>32.4</b>	<b>17.3</b>	<b>7.8</b>	<b>14.5</b>	<b>100.0</b>

The flint chips, as well as the flakes and blades/microblades (mostly flint), were predominantly recovered from the fire pits, as well as from some 'ordinary' pits. The quartz chips, as well as the indeterminate pieces (which – apart from one piece of chalcedony – are exclusively in quartz) were recovered predominantly from post- and stakeholes, and from the postholes, which also includes some features which it was only possible to define as either pits or postholes.

The two Mesolithic microlith-related pieces (CAT 46, 59) were recovered from the fire pit 092 and from pit 094 immediately next to it. They may represent a short stay at the location to replace damaged microliths with new ones. As they are not associated with Mesolithic waste, the new microliths must have been brought to the site as finished pieces. Subsequently, they then entered these obviously later features with the backfill. The probably early Neolithic pitchstone microblade was recovered from fire pit 022, almost 50 m west of pits 092/094. This pit contained several bits of very robust, possibly later Neolithic pottery. This suggests that the pit may either have been re-used/re-cut, or that the early Neolithic pitchstone entered a later pit with the backfill.

A number of clearly middle/late Neolithic flint artefacts were recovered from fire pit 092, such as the two chisel-shaped arrowheads, several pieces of Yorkshire flint, and a group of flakes/

blades produced by the application of the diagnostic Levallois-like technique. This feature was also associated with many of the flint chips (which may be Yorkshire flint), as well as two pieces of vitrified (that is, superficially melted) flint (CAT 7 and 87). Generally, burnt flints which may have fallen into domestic hearths only display relatively light discolouration in conjunction with fine crazing, although occasionally fissures develop, but vitrification usually only occurs in connection with cremations, where the flint(s) followed the deceased onto the funeral pyre (cf. Ballin forthcoming), or prehistoric or modern industrial processes (e.g. ceramic, glass, or metal production).

The combination tool CAT 15 derives from fire pit 227 where it was found with bipolar core CAT 10 and both a middle to late Neolithic vessel (Vessel 12) and Vessel 5, probably of late Neolithic/early Bronze Age date. Eleven sherds (Vessels 9 and 10) of middle to late Neolithic date were also recovered from adjacent pit 225, while the short end-scraper CAT 12 was recovered from pit (231).

### Dating

In this analysis, the Neolithic period is subdivided (see ScARF Sheridan and Brophy 2012), into the early (Carinated Bowl Pottery) and middle/late Neolithic (Impressed Ware/Grooved Ware) periods. The transition between these two periods coincides with significant changes in lithic typology, technology and raw material preferences. The following simplified dichotomies are useful early and later Neolithic indicators: soft/hard percussion; 'traditional'/Levallois-like operational schemas; lithic exchange dominated by Arran pitchstone/Yorkshire flint; and leaf-shaped arrowheads/chisel-shaped and oblique arrowheads (Ballin 2014).

The collection includes several diagnostic elements, such as artefact types, technological attributes, and raw material preferences. Two microlith-related pieces (CAT 46 and 59) are definitely datable to the late Mesolithic period. Although some backed bladelets date to later periods (e.g. some pieces in pitchstone; Ballin 2006; 2009), CAT 46 and CAT 59 are based on such narrow microblades (W = 3 mm) that they cannot be later than the late Mesolithic (compare for example with pieces from late Mesolithic sites like Daer Reservoir, South Lanarkshire, and

Cramond, Edinburgh; Saville 2004, Figs 10.19-20). The assemblage includes no waste from microblade or microlith production, and the two pieces probably relate to a brief re-tooling episode, during which they were replaced by new microliths, which were brought into the site in a finished form. As mentioned above, Mesolithic scatters are known from Monktonhead Farm, a few hundred metres north of the present site.

The pitchstone microblade (CAT 37) is a soft percussion blank, and the width of the blade (6 mm), the raw material and the percussion method all indicate a date in the earlier part of the Neolithic period (cf. Ballin 2009; 2011b). This piece was recovered from pit 022 with middle to late Neolithic pottery, and it is presently difficult to interpret the formation of this chronologically complex pit. The site yielded no other lithic artefacts datable to this period.

Most of the assemblage is thought to date to the middle/late Neolithic period, with the following diagnostic elements supporting this date (cf. Ballin 2011b): Yorkshire flint (e.g. CAT 48-51); Levallois-like technique (e.g. CAT 9, 48-51); hard percussion blades (CAT 13, 48 and 49); and chisel-shaped arrowheads (CAT 6 and 47) (cf. Ballin 2011a; 2011b). The scale-flaked/serrated knife CAT 15, which is based on a hard percussion blade in Yorkshire flint, probably also dates to this period. Many of the flint chips may also be in Yorkshire flint. These pieces are concentrated in the excavation's northern part, with middle/late Neolithic finds having been recovered from, among other features, pits 092/094, 102, and 225/227.

The lithic industry associated with the roundhouse at the southern end of the excavation is mainly characterized by undiagnostic quartz chips and flakes. These pieces define a simple flake industry, which may date to the Bronze Age or early Iron Age periods (Ballin 2002; Humphrey & Young 2003).

### Conclusions

Although the present lithic assemblage is numerically small (190 pieces – less chips, 52 pieces), it adds to the general understanding of the region's later Neolithic settlement. Apart from two stray microlith-related pieces, a pitchstone microblade, and a small group of

mainly quartz artefacts from the roundhouse and its surroundings, most finds date to the middle/late Neolithic period. The latter were all recovered from pits, or pit surroundings, in the excavation's northern part.

These finds inform on later Neolithic lithic artefact forms and (Levallois-like) technology; the exchange of Yorkshire flint (it has generally been somewhat uncertain how far into the south-west and west this exchange took place, and whether it might be counter-balanced, or even stopped, by the importation of flint from Antrim); and site activities. Regarding site activities, the scale-flaked/serrated piece CAT 15 relates to the processing of vegetable matter; the site's vitrified pieces (CAT 7 and 87) may inform on burial practices (cremation) or the attaining of very high temperatures in fire pit 092, unless they are residual pieces; the scraper CAT 12 may have been engaged in the processing of hides, although it cannot be ruled out that it was used to process harder materials, like wood, antler or bone; and the two chisel-shaped arrowheads (CAT 6 and 47) relate to either hunting or defence/war.

## Medieval and Later Ceramic

By Bob Will

### Introduction

Twenty-five sherds were recovered from archaeological investigations at Monkton, and represent material from the fourteenth or fifteenth centuries, as well as recent material from 1800 onwards (Table 6). The assemblage comprises eleven sherds in Scottish Medieval Redware fabrics, three in Scottish White Gritty ware, three in industrial stoneware, six in white earthenware and two in red earthenware. The sherds were examined, weighed and recorded according to guidelines and standards produced by the Medieval Pottery Research Group (MPRG 1998 & 2001).

Table 6: Medieval and post-medieval ceramics.

Find No.	Context No.	No. of sherds	Sherd position	Description
<b>Scottish Medieval Redware: late medieval 13<sup>th</sup>-15<sup>th</sup> century</b>				
003	019	2	Rim	Reduced core, orange interior, green glaze
005	019	1	Handle	Grooved strap handle, reduced core, green glaze

Find No.	Context No.	No. of sherds	Sherd position	Description
<b>Scottish Medieval Redware: late medieval 13<sup>th</sup>-15<sup>th</sup> century</b>				
013	019	1	Handle	Strap handle fragment, reduced core, green glaze, abraded
026	019	1	Handle	Grooved strap handle with central thumb decorated panel
035	019	5	Body	Bowl. Contiguous internal green glaze, abraded.
BS23	199	1	Body	Fragment
BS82	284	1	Body	Undecorated, reduced interior
<b>Scottish white gritty ware: late medieval 14<sup>th</sup> or 15<sup>th</sup></b>				
009	019	1	Body	Reduced core, green/brown glaze
032	192	1	Body	Reduced interior, green/brown glaze
038	u/s	1	Base	Jug. Reduced interior, green glaze, flat base
<b>Industrial stoneware: late 18<sup>th</sup> to 19<sup>th</sup> century</b>				
010	001	1	Rim	Moulded decoration from large storage jar; light brown glaze.
011	001	1	Rim	Moulded decoration with pale brown/yellow glaze, large storage jar
054	045	1	Body	Light brown glaze, double groove cordon

### Medieval and later ceramic discussion

This small ceramic assemblage consists of late medieval and modern sherds. The late medieval group comprises 15 sherds, 10 of which came from the fill of cultivation furrows, which provides a good indication of the type of pottery available during the medieval period, with the two main pottery fabrics found in Scotland represented (Scottish Medieval Redware and Scottish White Gritty ware). The sherds represent mainly jugs although a possible bowl or large storage vessel is also present. On the whole, the sherds are consistent with other assemblages in south-west Scotland. The modern sherds probably represent domestic refuse spread on the fields as manure.

## Discussion

### The earlier prehistoric remains

Despite the number of pits and postholes found on the site, the features did not appear to form any particular pattern and no structures could

be identified. Radiocarbon dating and the identification of microliths indicate that the site was used during the Mesolithic, and flint scatters from that period are known in the locality (DES 1974 23; DES 1976 67). Unfortunately, no radiocarbon dates have been associated with the flint scatters and it is not, therefore, possible to extrapolate a sequence of Mesolithic occupation and movement in the Monkton area from the available evidence. Botanical analysis suggests that some Mesolithic occupation took place at Main Street, although the quantity of carbonised material contained in deposit 212 and fire pit 092 may indicate that such occasions were more than transitory or that the location was re-visited on more than one occasion.

Artefactual and botanical evidence for Neolithic activity at Main Street is more apparent, with several excavated pits containing material dating from this period. Five of the pits were found to have been fire pits, indicating that settlement, however transitory, took place at Main Street, or that the site was used during that period for ritual activities that included some form of feasting. The cooking pots represented by Vessels 8 and 11, and the food deposits within Vessels 8, 11 and 13 indicate that food was prepared on the site but, from the available evidence, we cannot know whether this was purely for domestic consumption, for ritual feasting, or a mix of both.

The function of Neolithic pits has been the subject of debate over the preceding decades, with conflicting theories espousing structured deposition (Thomas 1999, 63; Alexander 2000, 66) and the buried remnants of domestic settlement (Conolly and MacSween 2003 43). More recently is the idea that the domestic material found in Neolithic pits may encompass both ritual and mundane activities (Brophy and Noble 2012, 64). At Main Street, the artefacts found in pit 092 may be an example that straddles the domestic/ritual interpretation. A large flat stone (SF 52) had been deliberately positioned mid-way down the pit, partially capping the lower fill (including lithic and ceramic artefacts) and effectively creating a new base for the next use of the pit. While the presence of vitrified flint (lithic CAT 7) within the fill may suggest the type of intense burning associated with cremation or industrial processes (Ballin, above), no other evidence for either of these activities was uncovered during either the

excavation or the post-excavation analysis of soil samples. The burnt bone fragments within the fill were merely undiagnostic flecks, and were not indicative of cremation. The mix of fill material and artefacts associated with both ritual and domestic - vitrified flint, the flat stone, broken ceramics and hearth waste - blurs the boundaries between these two spheres and 'could represent a rule-bound social performance as well as the disposal of gathered material no longer needed' (Brophy and Noble 2012, 66).

Evidence of the re-use of pits from the Neolithic into the Bronze Age was found in pits 022, 092 and 227 where the date-ranges of artefacts strongly suggests that some features (i.e. pit 227) were re-opened for the purpose of deposition. The diverse range of artefacts found in some pits included both highly decorated and plain vessel sherds along with lithic tools caused Ballin Smith to speculate that deposition may have represented some form of domestic or social ritual. The extent of Bronze Age settlement at Main Street is debatable, as evidence dating from this period was found in only two contexts (219 and 227).

Other pits, postholes and stakeholes are likely to date from the earlier prehistoric period, and may be related to those discussed here, but it was not possible to obtain radiocarbon dates for all of the excavated features, and the phases to which these features belong are therefore uncertain.

### The later prehistoric remains

The unenclosed ring-groove roundhouse is one of several known circular or sub-circular structures within about 2 km of Monkton (NMRS: NS23NE 24, NS23NE 124, NS32 NE 126 and NS32NE 136) and is of comparable diameter to the homestead at Nethermuir, about 800 m north-west of Main Street. None of these sites has been excavated, making it impossible to establish a relative dating sequence for the structures.

In Britain, roundhouses often have entrances at the south-east, presumably in order to avoid the prevailing winds, and in order to get light from the rising sun. The entrance is usually visible as a break in the circuit of the building and is often flanked by large structural postholes that would have held the upright timbers for the doorway or a porch. At Main Street, the evidence for an

entrance to the dwelling is not clear. Although a narrow gap in the circuit lies at the west side of the roundhouse, and three small stakeholes were found within the gap, no structural postholes were present. A broadrig furrow had effectively removed about 3 m of the circuit at its easternmost extent and about 2 m at its westernmost extent, and may therefore have destroyed all evidence of an entrance that existed at either of these points.

No further post or stakeholes were found in the ditch, although botanical remains indicate that a palisade of upright timbers and wattle-work woven between these supporting timbers formed the exterior wall of the structure. The timbers and wattle-work would have been held in place by packing stones in the ditch fill.

Very little charcoal was found in the fills of the interior postholes, making it unlikely that the structure was destroyed by fire, while the rotted remains of a wooden post found in posthole 281, suggests that the site fell into disuse through abandonment

### Medieval and post-medieval use

Datable evidence for the late medieval use of the Main Street site is confined to a single radiocarbon date from the fill of posthole 042 and from ceramic artefacts, all of which were recovered from the fills of cultivation furrows 018. That the latter context also yielded modern (nineteenth to twentieth century) ceramics is an indication that the land was repeatedly used for arable farming over several centuries. As any surface evidence for the presence of rigs had been removed by modern agriculture, the excavated remains were confined to the broad, straight cultivation furrows, a form of furrow that 'is almost certainly a manifestation of Improvement' (Halliday 2001: 18). These post-Improvement furrows probably overlie earlier forms of rig, and possible evidence for the curvilinear shape associated with medieval cultivation was found in only three locations (Figure 2), all of which appear to have been disturbed by later features.

The potential structure represented by postholes 038, 040, 042, 044, 046, 048 and 050 is conjectural, as proximal association has not been established on this site. These postholes form a north-east to south-west aligned double line that measures c. 12 m by 2.5 m, and may have

continued in either or both of these directions, but was truncated to the north by a modern pipe trench and to the south by cultivation furrows. Posthole 050 lay at the north-eastern end of the line, and contained a circular arrangement of packing stones, indicating that it may have had a structural function, possibly as part of an animal stockade, and suggesting that medieval activity on the site may not have been confined to cultivation.

The linear features found to run between furrows almost certainly relate to the late eighteenth and early nineteenth century agricultural improvements in the parish. Reverend Thomas Burns, in describing these, related that 'the chief improvement in the husbandry of the parish is the tile-draining in every furrow' (Burns 179). While no tile drains were found in these features, it is most probable that these were drainage channels between the furrows.

### Conclusions

The excavation and post-excavation analysis of the features at Main Street, Monkton in conjunction with the known lithic artefact scatters in the locality, indicates that settlement was first established here from at least the first quarter of the seventh millennium BC until the early first millennium AD. The disparate nature of the excavated features may be an indication that early prehistoric settlement was intermittent, with activity during the early seventh millennium BC, the mid-fourth millennium BC and later third millennium BC being identified.

The pottery vessels recovered during the fieldwork are significant indicators not only for continued occupation of the site, but for highlighting the repeated acts of deposition within specific pits. The lithic assemblage indicates that Monkton was part of an inter-regional exchange network involving imported Yorkshire flint, and also demonstrates the use of local raw material resources.

Main Street, Monkton is one of a small, but increasing, number of excavated sites situated on the raised beaches of the Ayrshire coast. Recent excavations at The Curragh, Girvan also revealed a multi-phase site, with activity during the Neolithic, and Bronze Ages, and early Iron Age settlement (M Kilpatrick, pers. comm.), while

earlier evaluation and excavation at both The Curragh and the nearby site of Ladywell indicate a substantial prehistoric presence encompassing a broad range of periods (*inter alia* Banks, Duffy and MacGregor 2009; Francoz 2007; Sneddon 2007). Further research into the multi-phase sites of Ayrshire, particularly the raised beach coastal sites, is required in order to better understand the patterns of settlement in this relatively neglected area of Scotland.

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