

7. TEST PITTED SITES

7.1 Nethermills Farm (NM4)

NGR: NO 76069 96524

Test pitting took place at Nethermills Farm, in field NM4, over four days at the end of February 2019, during a period of unusually warm sunny weather. The team comprised members of Mesolithic Deeside together with students from the University of Aberdeen. The aim of the test pitting was to assess the preservation of Mesolithic and other archaeology across the field in order to inform future planning and land management decisions as well as archaeological potential and priorities.

7.1.1 Geomorphology

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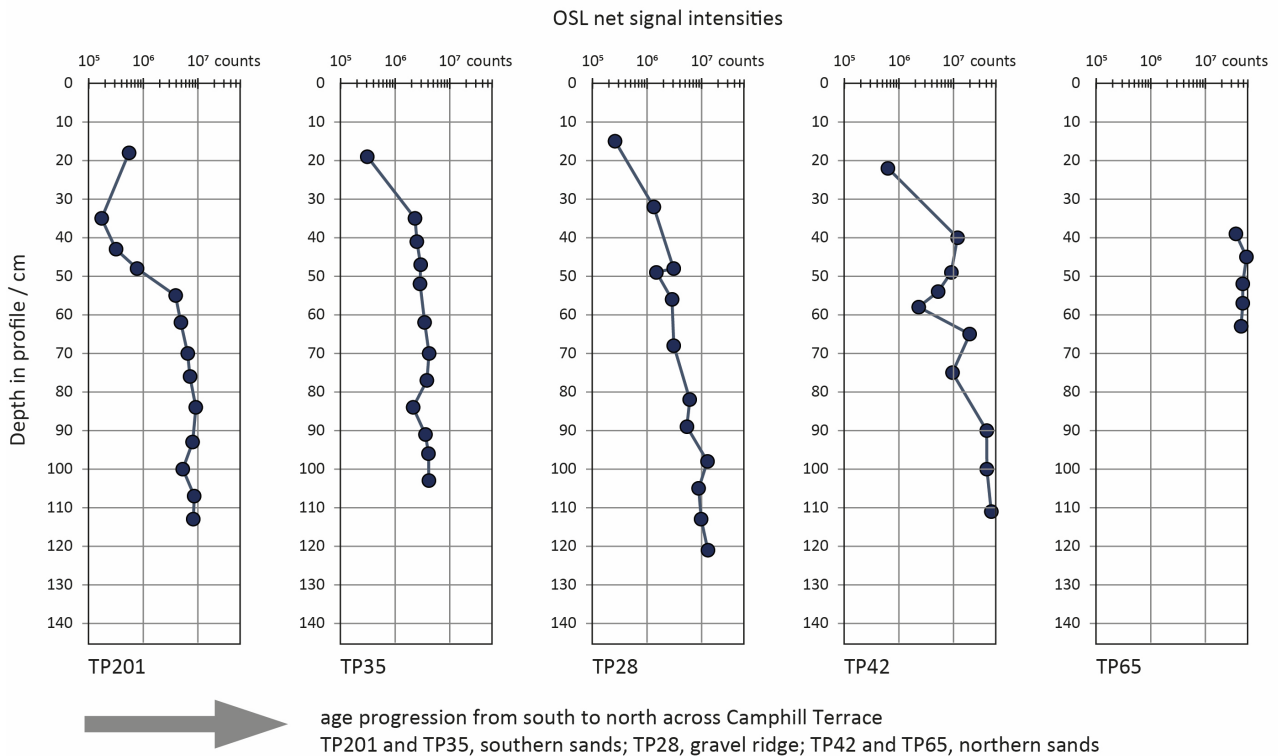
Nethermills Farm 4 (Illus 7.1) lies on a broad section of the Camphill Terrace comprising coarse gravels that lie slightly lower than the general trend along this reach of the river. The gravel here is partially covered by sand, in two broad bands

that run roughly south-west/north-east and are separated by a subdued gravel ridge, likely to be a river bar. The sand may date to deglaciation, but it may represent postglacial, Late Devensian, fluvial sediment, laid down when the river crossed this surface. Ten of the test pits were sampled for optically stimulated luminescence (OSL) profiling (Munyikwa et al 2020) to test whether these sands across the terrace surface were of different relative ages: five OSL profiles are depicted in Illus 7.2 in relation to the southern and northern sand sheets and the intervening gravel ridge. Luminescence results from energy retained in certain minerals, typically quartz and feldspar, as a consequence of naturally occurring ionising radiation in both the sample and their environment. Luminescence grows in situ: so, net signal intensities may act as a proxy for age, with older materials having larger signal intensities.

The detail of the interpretation is complex, but it is possible to conclude that the northern sand sheet on the terrace began to accumulate first,



Illus 7.1 Nethermills Farm, NM4, during test pitting from the west



Illus 7.2 Nethermills Farm, NM4, pOSL photon counts across the site from the south (river) to the north (northern palaeochannel) with depth in cm

probably just before or during the Early Holocene (before *c* 9700 BC), from an active channel running to the north of the gravel ridge. It is probable, though unproven, that sand also accumulated in the southern sand sheet at this time, being fed by a channel close to, if not in, the position still occupied by the River Dee today. However, given that much of the sediment in the southern sand sheet accumulated much later, it is likely that by the time of Mesolithic occupation, activity at Nethermills took place on a terrace surface that was only rarely inundated by floods.

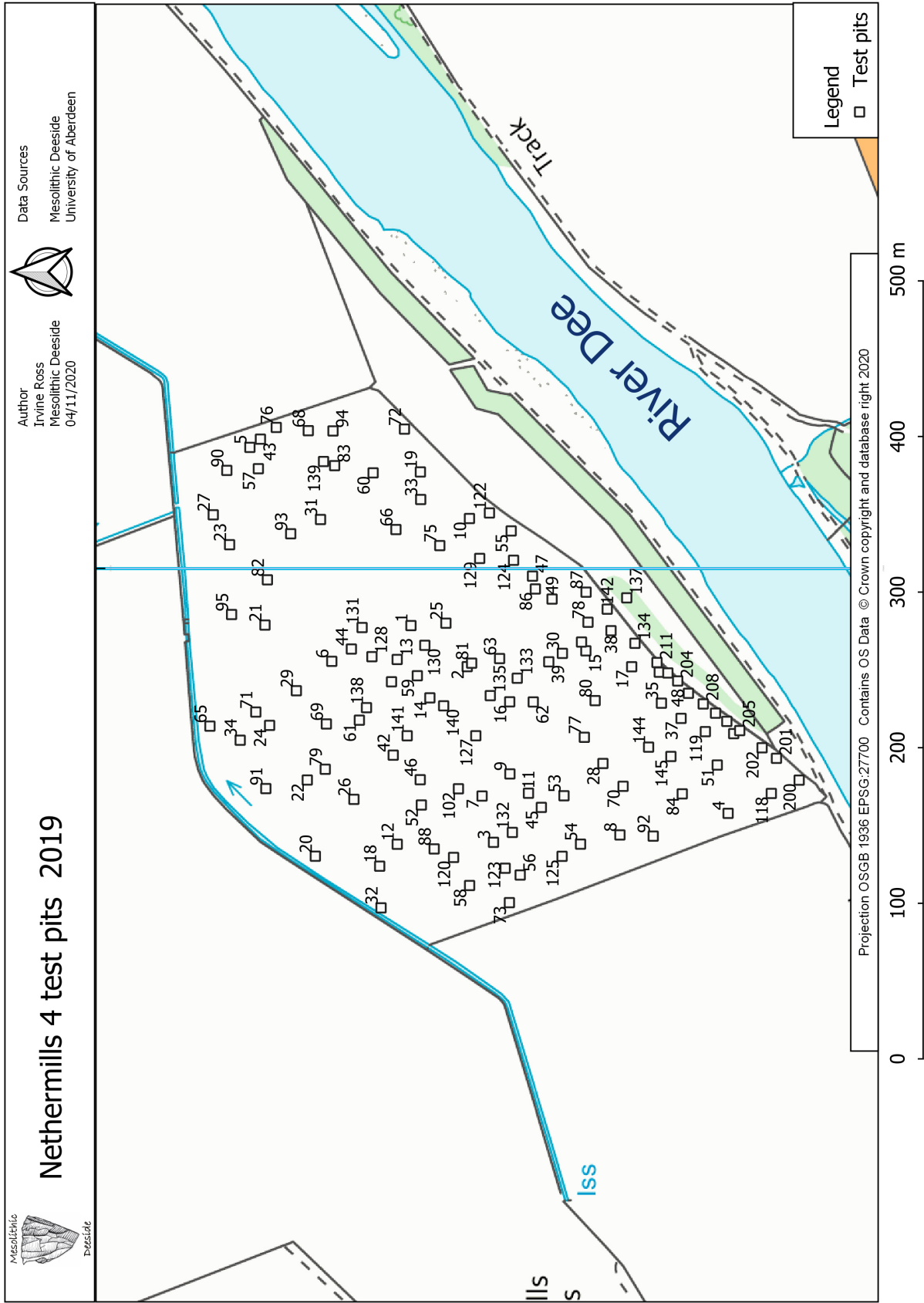
This interpretation is supported by other investigation in the northern channel. While Ewan’s pollen-analytical study indicated that the basal peat is Early Holocene in date (before *c* 9700 BC; Ewan 1981; Tipping 2007; Wickham-Jones et al 2017), the radiocarbon determination of *Betula* (birch) charcoal in TP69 (from the loam fill of the same palaeochannel) yielded a date of *c* 3900 BC (SUERC 93098; see Table 7.2 below). It would seem, therefore, that this channel had begun to dry early on in the Holocene and, though conditions

remained damp, only the highest floods deposited sediment on the terrace surface by this stage. The wider analysis of the local woodland indicates that generally dry conditions persisted throughout the Holocene, able to support *Corylus* and later *Quercus* (Ewan 1981).

7.1.2 Excavation results

A full Data Structure Report of the Nethermills test pitting has been submitted to the Aberdeenshire Historic Environment Record and Historic Environment Scotland.

Test pit locations were identified prior to excavation (Illus 7.3) from a stratified random sample across the field in order to provide unbiased coverage across the field. A total of 150 pits were laid out, each measuring 2m × 2m, of which 102 were dug with a mini-digger (Illus 7.4), under archaeological supervision, in order to remove the upper layer of the ploughsoil (labelled upper topsoil), down to an arbitrary layer about 100mm above the subsoil (estimated with a probe or from



Illus 7.3 Nethermills Farm, NM4, location of the test pits



Illus 7.4 Nethermills Farm, NM4, digger opening a test pit



Illus 7.5 Nethermills Farm, NM4, cleaning down to the bottom of the ploughsoil

adjacent pits). After this each test pit was hand cleaned (labelled lower topsoil) down to the bottom of the ploughsoil (Illus 7.5). Two standard buckets (roughly 28 litres in total) from both upper and lower topsoil within each test pit were dry sieved through a 5mm mesh, and any worked lithics and other finds removed. Finds were catalogued and then returned to the test pit to be buried with the backfill. Only exceptional material was retained; defined as typologically distinctive material such as pieces possibly indicative of a Late Upper Palaeolithic date.

Once the surface of the subsoil had been identified and cleaned, all possible features were half-sectioned and excavated by hand. All spoil was dry sieved. Features not deemed to be natural or animal in origin were planned and photographed. Finds were catalogued and retained. Test pits were extended where it was deemed necessary in order to explore the subsoil features. One larger trench (202, 12m × 3m) was opened in the south of the site to examine a series of possible features (Illus 7.6) and, in addition, ten deeper pits were excavated into stratified sediment for geoscience purposes.

Many test pits revealed evidence of intense agricultural activities at their base. Much of this comprised modern (20th- and 21st-century) plough marks (Illus 7.7) but older (possibly medieval) evidence of rig and furrow cultivation was also present (Illus 7.8). Other features were often agricultural in origin. In TP202, the larger trench opened to investigate a cluster of lithic finds, all of the anomalies were animal or agricultural in origin. Nevertheless, five test pits revealed potentially older features which were all half-sectioned, sampled and recorded (Illus 7.9, 7.10, 7.11 & 7.12; Table 7.1). This excavation resulted in the selection of three samples for radiocarbon assay, two from TP68 and one from TP69 (Table 7.2).

TP68 lay towards the eastern edge of the field, near the boundary with NM5. A small cut feature (6801; Illus 7.10), visible below the lower ploughsoil, and itself 0.1m deep (Illus 7.13), yielded a single piece of *Salix* (willow) and some *Betula* (birch) charcoal from flotation and this has been dated to 6830–6640 cal BC (SUERC-93093, 7868±31 BP;



Illus 7.6 Nethermills Farm, NM4: TP202 opened as a larger trench at the south of the field to investigate the location of a cluster of lithics

Table 7.1 Nethermills Farm 4, test pits with features of interest. Further information on the radiocarbon determinations is given in Table 7.2

Test pit	Feature
TP9	A single possible feature (910) (Illus 7.9), 0.4m long, 0.25m wide and 0.1m deep, filled with dark loam with charcoal
TP29	A section of palaeochannel, containing wood and twigs in the basal layer of the feature and charcoal in the upper level
TP68	A single cut feature (6801) within a coarse gravel subsoil (Illus 7.10) from which a small fragment of charcoal was recovered during flotation. This feature has been dated to 6830–6640 cal BC (SUERC-93093, 7868±31 BP; SUERC-93097, 7887±31 BP)
TP69	A palaeochannel (6902; Illus 7.11), 0.2m deep, filled with black loam. This feature has been dated to 3950–3780 cal BC (SUERC-93098, 5055±31 BP)
TP77	A possible cut feature (7701; Illus 7.12) from which tiny fragments of charcoal were recovered



Illus 7.7 Nethermills Farm, NM4: TP10, modern plough marks in the sandy natural subsoil, from the north

SUERC-93097, 7887±31 BP). While it was not possible to interpret Feature 6801, this is a classic date for a narrow-blade Mesolithic lithic assemblage such as that from Nethermills Farm and it was reassuring to note that some indication of Mesolithic deposits had survived in addition to the stone tools.

TP69 was cut across the edge of a palaeochannel towards the north of the field (Illus 7.3, 7.11 & 7.13), and a sample of *Betula* (birch) charcoal from the black loam fill has been dated to 3950–3780 cal BC (SUERC-93098, 5055±31 BP). This date lies within the Early Neolithic and suggests that the palaeochannel was accumulating peat at this time.



Illus 7.8 Nethermills Farm, NM4: TP37, south-east/north-west furrow from the west



Illus 7.9 Nethermills Farm, NM4: TP9, Feature 910, from the west



Illus 7.10 Nethermills Farm, NM4: TP68, gravel subsoil with Feature 6801, from the north



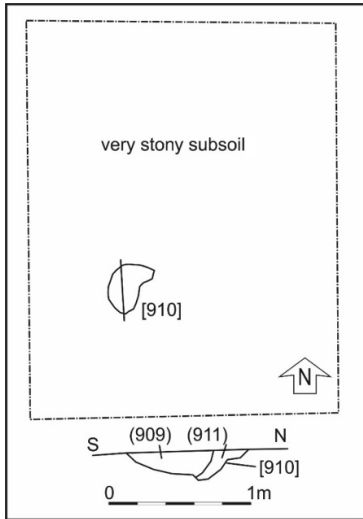
Illus 7.11 Nethermills Farm, NM4: TP69, palaeochannel from the south-east



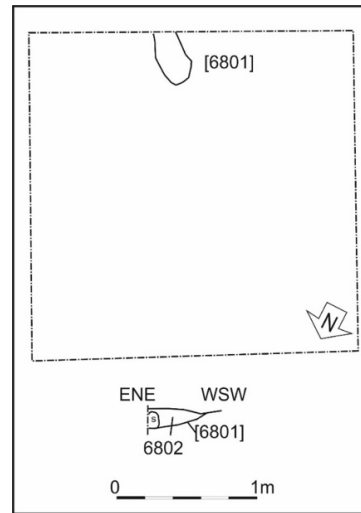
Illus 7.12 Nethermills Farm, NM4: TP77, possible Feature 7701, from the north

Table 7.2 Nethermills Farm 4: radiocarbon determinations

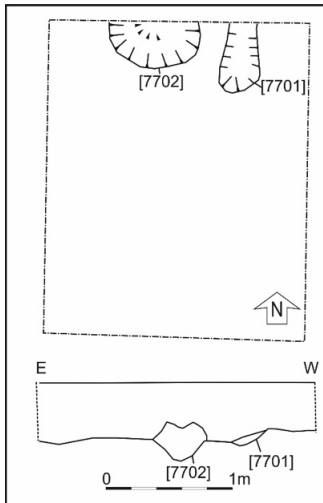
Lab no.	Material	Context/sample	Radiocarbon age (BP)	$\delta^{13}\text{C}$ (‰)	Calibrated date range (95% confidence) (cal BC)	Calibrated date range (68% confidence) (cal BC)
SUERC-93093 (GU55100)	Charcoal: <i>Betula</i> sp	TP68, fill 6802 of cut feature 6801	7868±31	-24.8	6830–6640	6750–6650
SUERC-93097 (GU55101)	Charcoal: <i>Salix</i> sp	TP68, fill 6802 of cut feature 6801	7887±31	-24.7	7000–6640	6770–6660
SUERC-93098 (GU55102)	Charcoal: <i>Betula</i> sp	TP69, loam fill 6902 of palaeochannel	5055±31	-29.6	3950–3780	3940–3800



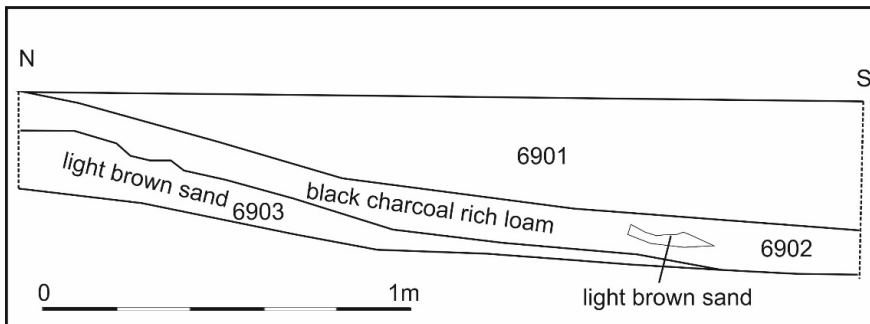
TP9 Feature 910, and section



TP68, Feature 6801, and section



TP77 Possible features 7701 and 7702 and sections



TP69, Section through the palaeochannel

Illus 7.13 Nethermills Farm, NM4: plans and sections of test pits TP9, TP68, TP77 and TP69