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Research **S**ervices

**Assessment of waterlogged preservation of
organic remains from borehole investigations
of the nature and extent of sub-surface
deposits, Nantwich, Cheshire
(project code: SLR 406-0889-003)**

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Assessment of waterlogged preservation of organic remains from borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire (project code: SLR 406-0889-003)

by

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Summary

A programme of geo-archaeological coring and environmental assessment was undertaken during 2007 which was designed to map the extent of waterlogged deposits beneath the historic core of Nantwich, Cheshire. The project was funded by English Heritage in response to a project proposal by Cheshire County Council to assist in the strategic management of well-preserved archaeological remains lying beneath the modern town.

Sequences with waterlogged preservation of identifiable plant macrofossils, microfossils and, less frequently, invertebrate macrofossils associated with archaeological activity were identified within boreholes BH F, N and P and also within single deposits (of those investigated) from boreholes BH M and U. The best preservation of plant remains was observed in borehole BH N, although the greatest ranges of plant taxa were largely recorded from the subsamples from borehole BH F and the subsamples from borehole BH P provided several of the most diverse assemblages of microfossils. Overall, the preservation of organic remains in these deposits may be described as fair to good, but it would appear that this varies considerably between classes of remains and that, in particular, invertebrate macrofossil remains have decayed strongly.

As the purpose of the investigations to determine the extent and quality of preservation of waterlogged organic remains in the deposits under Nantwich encountered by the borehole survey (and, to a lesser degree, establish the character of the assemblages recovered) has been achieved, no further study of the biological remains reported here is warranted.

It would be useful to obtain additional data from deposits west of the River Weaver and two monitoring transects should be established). A west-east transect towards the river along Welsh Row and a second aligned roughly north-south, parallel to the river (between boreholes BH C and D). Multi-level sampling for geochemical assessment and monitoring may be required depending upon the nature of the below ground sediments encountered. Additional or modified monitoring points should be established at several of the current borehole locations some of which will require multi-level sampling tubes – boreholes BH F, M, P, and U.

KEYWORDS: NANTWICH; CHESHIRE; BOREHOLE SURVEY; ASSESSMENT; UNDATED; PLANT REMAINS; CHARRED PLANT REMAINS; CHARRED CEREAL REMAINS; INVERTEBRATE REMAINS; INSECTS; VERTEBRATE REMAINS; MICROFOSSILS; DIATOMS; FUNGAL SPORES; POLLEN GRAINS/SPORES; 'PHYTOLITHS'; INTESTINAL PARASITIC NEMATODE EGGS; WATERLOGGED PRESERVATION

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Introduction

A programme of geo-archaeological coring and environmental assessment was undertaken during 2007 which was designed to map the extent of waterlogged deposits beneath the historic core of Nantwich, Cheshire. The project was funded by English Heritage in response to a project proposal by Cheshire County Council to assist in the strategic management of well-preserved archaeological remains lying beneath the modern town.

Methods

Coring

Twenty-nine boreholes (designated Boreholes BH A-Z and AA-AC) were sunk to depths of between 3 and 6 metres below the current ground level using a sleeved windowless coring rig during two phases of sampling in August and September 2007. In addition, a single small bulk sediment sample recovered from beneath a medieval track during excavations by Earthworks Archaeology at Welsh Row, Nantwich was submitted for investigation.

Sediment descriptions and sampling

The boreholes were extracted in one metre plastic sleeves which had to be split in order to examine and describe the sediment sequences in the field (some were similarly examined at PRS as recording of the cores proved to be a longer process than their recovery).

The properties of the sediments were recorded and a preservation category (PC) assigned to the layers following the state of preservation scale (SOPS) established by the Bergen

excavation office for the recording of borehole samples.

The cores were subdivided into subsamples according to their stratigraphic composition and placed into labelled polythene bags. Where the sediment was consolidated the sampling was undertaken so as to preserve the stratigraphy. Where unconsolidated, the depth range of the sequence was recorded but the internal stratigraphy of the subsample could not be retained.

During recording, subsamples were also extracted for chemical analysis, where possible retaining approximately half of the sediment sequence for the preservation study. The chemical analyses were co-ordinated by Ian Panter (York Archaeological Trust – YAT) and are presented elsewhere.

The positions of organic inclusions (typically of waterlogged wood) within the boreholes were recorded and they were removed as organic ‘spot’ samples (*sensu* Dobney *et al.* 1992) for identification, recording and subsequent submission as possible candidates for radiocarbon dating. The initial identifications and recording were undertaken by (Steve Allen, YAT) and are, again, reported elsewhere (although the species identifications are included in Table 1). The selection and submission of suitable material for radiocarbon dating is ongoing.

Sample selection and processing

Samples were selected for processing based on their potential to address the project aims (i.e. to provide information on the waterlogged preservation of organic remains in the deposits under Nantwich). In addition, some apparently ‘natural’ lower sequence deposits from

Boreholes F, N and P were investigated primarily to ensure the absence of artefactual remains of late date (post-medieval or later) which would preclude radiocarbon dating of remains from higher in the sequences.

A total of 78 subsamples were processed representing deposits within 17 of the boreholes and the additional small bulk sample. The most extensive organic sequences were identified within boreholes BH F, N and P and, consequently, these were the most heavily subsampled. Other boreholes from which smaller numbers of subsamples were processed were BH B, C, D, E, G, M, Q, R, S, T, U, V, Y and AC. The remaining sediment from sequence sections (either 'vouchers' of unprocessed sediment from the subsamples or 'whole' deposit samples of those not selected for investigation at this stage) were retained for cold storage. The exceptions to this were the upper deposits of modern overburden/'hardcore' present (usually in the first metre below the current surface).

Subsamples were processed for the recovery of plant and invertebrate macrofossils, broadly following the techniques of Kenward *et al.* (1980). The weights of the subsamples were recorded prior to processing.

For each of the processed macrofossil subsamples small quantities of sediment (a few tens of grammes) were extracted for a parallel investigation of microfossil preservation.

Macrofossil recording

Plant and invertebrate remains in the processed subsample fractions (washovers and residues) were recorded briefly by 'scanning' (using a low-power microscope where necessary), identifiable taxa and other components being listed on paper. When the fractions were primarily mineral in nature or of charred remains they were dried prior to recording and when predominantly of

waterlogged organic material they were examined wet. A five-point scale was employed to record the proportion of organic material recovered in the washover fraction (see Table 2).

Five-point scales were also employed to record the abundance, diversity and preservation of the plant and invertebrate remains recovered (Table 2); the scales for diversity and preservation following those created by Smit *et al.* (2006) for the recording of botanical macrofossils, with some minor modifications to accommodate their extension to additional classes of remains.

Specific identification of macrofossil remains was undertaken where this was necessary to determine values for abundance and diversity and/or would provide additional information regarding the origin of the material or the nature and depositional environment of the deposit.

During recording, consideration was given to the suitability of the remains for submission for radiocarbon dating by standard radiometric technique or accelerator mass spectrometry (AMS). Notes of the presence of such material are included in Tables 4-7.

Nomenclature for plant taxa follows Stace (1997) and insects follow Kloet and Hincks (1964-77).

Microfossil recording

Microfossil content and preservation was investigated using the 'squash' technique of Dainton (1992). This was originally developed specifically to assess the content of eggs of intestinal parasitic nematodes but routinely reveals other microfossils, such as pollen and diatoms. The assessment slides were scanned at 150x magnification with 600x used where necessary.

The same scale employed for the proportion of organic material within the washover was used to record the percentage of organic material within the raw sediment seen under the microscope (at 150x magnification). Similar five-point scales to those used to record the abundance, diversity and preservation of macrofossils were created for the assessment of the microfossils (Table 3).

Nomenclature and comparative size values for intestinal parasite eggs follow Ash and Orihel (1984) for human parasites and Kassai (1998) for those of domestic animals. Occasional identification of fungal spores (where particularly abundant) follows van Geel *et al.* (2003).

Results

A brief summary of the results of the investigations is presented below. Details of the recorded sediments are presented in Table 1 (i-xxix). Details and summary data for the plants remains are given in Tables 4-10 and 13 and Figures 1-3, invertebrate macrofossils (other than unidentified mollusc shell) in Table 11 and microfossil records are shown in Table 12.

Twelve of the boreholes (BH A, H, I, J, K, L, O, W, X, Z, AA and AB) were judged unlikely to provide information useful to the aims of the project (many containing voids within the sediment sequence when extracted so that the depths of the deposits could not be reliably determined). No investigation of these deposits was undertaken beyond the initial sediment descriptions.

Borehole B

Possible 'ancient' waterlogged organic material was noted during the recording of borehole BH B and three subsamples were investigated – subsamples B1 (depth 3.00-4.00 metres; AOD 33.26-32.26), B2 (depth 2.44-2.64 metres; AOD 33.82-33.62) and B3 (depth 2.64-3.00 metres; AOD 33.62-33.26).

The macroscopic organic content of these deposits was predominantly charcoal, rotted wood and rootlet, with an occasional twig (subsample B3) and a little bone. None of the remains could be identified.

The microfossil subsamples showed some organic content but identifiable remains were confined to a few diatoms and fungal spores from subsample B3.

Borehole C

Possible 'ancient' waterlogged organic material was noted during the recording of borehole BH C and three subsamples were investigated – subsamples C1 (depth 3.00-4.00 metres; AOD 31.87-30.87), C2 (depth 2.09-2.19 metres; AOD 32.78-32.68) and C3 (depth 1.90-1.95 metres; AOD 32.97-32.92).

Although the proportion of organic content in these subsamples was high, the remains were predominantly charcoal, rotted wood and rootlet, with an occasional twig (subsample C3) and traces of fly puparia (also in subsample C3). None of the remains could be identified.

The microfossil subsamples also showed some organic content (high in subsample C3), with identifiable remains confined to diatoms (in subsamples C2 and C3 – more numerous and better preserved in C3) and a few rather poorly preserved fungal spores (subsample C2).

Borehole D

Possible 'ancient' waterlogged organic material and probable archaeological remains were noted during the recording of borehole BH D and two subsamples were investigated – subsamples D1 (depth 2.37-3.00 metres; AOD 32.66-32.03) and D2 (depth 2.00-2.09 metres; AOD 33.03-32.94).

The macroscopic organic content of these deposits was predominantly charcoal, rotted wood and rootlet, with a little bone (subsample D2). None of the remains could be identified.

The microfossil subsamples showed D1 to have no organic matrix component at this level. Subsample D2 had a significantly higher general organic content (25-50%) and contained at least five forms of pollen grains/spores and a few plant silica fragments ('phytoliths').

Borehole E

Borehole E did not appear to contain organic material other than probable modern rootlet but appeared to pass

through archaeological layers and two subsamples were investigated – subsamples E1 (depth 2.41-3.00 metres; AOD 32.925-32.335) and E2 (depth 2.12 -2.24 metres; AOD 33.215-33.095).

The organic content of both subsamples was low (from both macrofossil and microfossil records) and consisted largely of either charred (charcoal) or modern (rootlet) material. A few unidentified fungal spores were recorded from subsample E1 and there was a little unidentified bone in subsample E2.

Borehole F

A sequence of organic deposits was encountered in borehole BH F at depths between 0.76 and 2.00 metres (AOD 38.98-37.74 metres) and investigated via seven subsamples (F1-F7), the uppermost of which (F7) yielding few organic remains. Waterlogged plant remains were recovered from the other six subsamples and consisted largely of decayed wood fragments, twig fragments and modern rootlets, with a little charcoal and, in addition, some 'straw'-like material in subsamples F3 and F6. The lowest one metre core tube of the borehole had split and was not subsampled or investigated; other than to check for 'late date' artefacts which were not present.

The identifiable components of the plant assemblages were dominated by fairly large number of moderately well preserved waterlogged seeds and fruits. Overall, plant taxa indicative of waste/open ground were the most frequently represented and included chickweed, common nettle, corn marigold, hemlock, knotgrass, nipplewort, orache/goosefoot, prickly sow-thistle, small nettle and stinking chamomile. There were also plant remains of woody shrubs such as blackberry/raspberry, elder, and hazel which might suggest hedgerow and/or woodland nearby but, equally, the fruit stones (and additionally remains of apple/pear) may have arrived with faeces (see below). Traces of charred cereal crops were noted in three of the subsamples – barley from subsamples F2 and F7, and oat from subsample F6.

The plant assemblage from subsample F3 (depth 1.50-1.86 m; AOD 38.24-37.88 m) also contained a component from wild plant taxa of wet places such as ponds, water-filled ditches and marshy fields (celery-leaved buttercup, lesser spearwort, sedge, spike-rush), and traces of bog-myrtles and marsh pennywort, which probably originated in imported peat.

Invertebrate macrofossils were recorded from five of the subsamples (F2-F6), but preservation was poor. Most of the remains were extremely fragmented and eroded and could not be identified. Better preserved remains were occasionally recorded, however; particularly from subsample F3. Here, cladoceran (water flea, probably

Daphnia) ephippia (resting eggs) were present and a few sclerites of the woodworm beetle, *Anobium punctatum*, were also recorded. The former suggest standing water at the time of deposition (in support of the evidence from the plant remains). Cladocerans form ephippia as a response to environmental stress and often to survive periods of drying out of temporary bodies of water. However, here, it could be that the process was triggered by a decline in water quality caused by pollution from the dumping of waste. *Anobium punctatum* attacks untreated domestic timbers and, together with the quantity of rotted wood fragments present, may indicate the disposal of decaying structural timber. Remains of woodworm were also noted from subsample F5. Small numbers of fragments of fly puparia were recorded from three of the subsamples (F2-F4).

All of the microfossil subsamples showed some organic content, although this was relatively small and preservation was recorded as poor in both of the lowermost (F1 and F2) and the uppermost (F7). Subsamples F5 and F6 showed a very high proportion of organic detritus and F3 and F4 were moderately organic. Records for individual microfossil remains were rather few from subsample F5 and particularly numerous in F6. Single whipworm (trichurid) eggs were recorded from three of the subsamples (F3, F5 and F6) indicating a minor faecal component. Spot measurements of the *Trichuris* eggs showed them to be within the size range for the human whipworm, *T. trichiura* (Linnaeus). However, as this is a wholly contained subset of the size range for the pig whipworm, *T. suis* (Schrank), multiple measurements and a statistical investigation of the data would be required before a more definite statement could (perhaps) be made.

Overall, the biological remains from the subsamples from Borehole BH F suggest several different origins, some clearly indicative of human activity and others reflecting 'natural' habitats. In combination they suggest the disposal of waste (including but not primarily faeces) in an area of damp (and possibly intermittently wet) waste ground.

Borehole G

Borehole G did not appear to contain organic material other than charcoal and a little very rotted shell but did appear to pass through archaeological layers and three subsamples were investigated – subsamples G1 (depth 2.35-2.44 metres; AOD 37.25-37.16), G2 (depth 1.25 - 1.48 metres; AOD 38.35-38.12) and G3 (depth 0.56-1.00 metres; AOD 39.04-38.60).

Waterlogged organic remains were few and consisted largely of modern rootlets in subsample G1. Charcoal

and unidentified bone were recorded from subsamples G2 and G3, and there was a little shell (as noted during the sediment descriptions) from subsample G3. The microfossil subsamples were also largely inorganic but subsample G3 showed a slightly higher proportion and included some diatoms and fungal spores (at least three and two forms were present, respectively).

Borehole M

Possible 'ancient' waterlogged organic material was noted during the recording of borehole BH M and two subsamples were investigated – subsamples M1 (depth 2.00-2.23 metres; AOD 35.81-35.58) and M2 (depth 1.23-1.60 metres; AOD 36.58-36.21).

Subsample M2 was taken from slightly above the observed level of the ground water and yielded no identifiable macrofossils. The microfossil subsample did contain a few diatoms and moderate amounts of organic detritus, however.

Subsample M1 represented a small layer of waterlogged organic material dominated by degraded wood fragments. There was also a small assemblage of quite well preserved and identifiable waterlogged plant remains of species growing in hedges, including elder and hazel, and areas of waste ground (common nettle, hemlock and thistle). There was a smaller component of other plant species indicative of wet places which included celery-leaved buttercup and, perhaps, sedge. The microfossil 'squash' also revealed a moderate organic content to this deposit and some fairly well preserved diatoms (of at least five forms), together with smaller numbers of other organic remains (fungal spores, other spores/pollen grains and fragments of plant silica bodies).

There was no direct evidence for human activity from the organic remains recovered from the subsamples from this borehole.

Borehole N

A sequence of organic deposits was encountered in borehole BH N at depths between 0.63 and 2.85 metres (AOD 38.535-36.315 metres) and investigated via twelve subsamples (N8-N19). A further seven subsamples (N1-N7) from the lower part of the sequence were also processed to ensure no 'late date' artefacts were present (none were found) and as representatives of the underlying stiff clay deposits found in several of the boreholes. The lowest five subsamples yielded no ancient organic remains and were essentially mineral in nature. Subsamples N6 and N7 showed a greater percentage of organic content from both the microfossil and macrofossil subsamples but

identifiable remains were few and preservation was poor.

The subsamples from the organic section were mostly composed of herbaceous and woody detritus, with some charcoal, mosses (Bryophyta) and modern rootlets. A component of 'straw'-like material was recorded in subsamples N8, N10 and N17. A wide range of mostly well preserved waterlogged seeds and fruits was recovered from the subsamples, representing plants growing in wet places (celery-leaved buttercup, gypsywort, lesser spearwort, spike-rush, water-dropwort and water-pepper), as weeds in arable fields and in areas of waste and open ground (black-bindweed, dock, fool's parsley, hemlock, knotgrass, knotweed, orache/goosefoot, stinking chamomile and wild radish). In addition, there were several fruit stones of plum, blackberry/raspberry, sloe and wild cherry and some fragments of hazelnut shell – either representing hedgerow in the vicinity or waste from food resources gathered from such places. There was little evidence of crop plants other than caryopses and a rachis segment of bread wheat in subsample N8 (depth 2.46-2.61 metres; AOD 36.705-36.555 metres) and a wheat caryopsis in subsample N19 (depth 0.63-1.00 metres; AOD 38.535-38.165). In the case of subsample N8, the cereal remains may well derive from faecal material as a *Trichuris* egg (from a whipworm of humans or pigs) was detected in the corresponding microfossil 'squash'.

Invertebrate macrofossil remains were recorded from just two of the subsamples from this sequence, N8 and N9. The remains were, in general, very poorly preserved and present as 'scraps' of heavily fragmented and eroded ('filmy') insect cuticle; although N9 contained an occasional better preserved beetle sclerite. These remains were of no interpretative value.

The microfossil 'squashes' showed a high or very high organic content within subsamples N8-N11 and N17, with lesser percentages noted from N9-N16 and N18-N19. The numbers and ranges of identifiable microfossils present were similarly distributed, with preservation being particularly good within N8 and N17. In addition to the parasite egg from N8 (see above), two further trichurid eggs (human or pig whipworm) were recorded from N11, indicating a minor faecal content in these sections of the deposit sequence.

Borehole P

Borehole BH P contained an organic sequence between 1.31 and 2.67 m (AOD 38.615 to 37.255 m). On initial inspection in the field was thought to represent a 'natural' highly humified peat. However, subsequent processing of subsamples and recording of the macrofossil and microfossil content of the deposits revealed their composition to be similar in nature to

those seen in boreholes BH F and BH N. Twelve subsamples (P1-P12) were investigated and the organic material was, again, mostly wood, twig fragments and bark, with a few 'stems' with 'leaves' from mosses (Bryophyta), modern rootlets and some charcoal. Subsamples P1-P3 were taken from sand deposits below 2.67 metres depth, primarily to confirm that no 'late date' artefactual remains were present (none were recorded); these subsamples were effectively barren of organic content.

The identifiable components of the plant assemblages were dominated by fairly well-preserved waterlogged seeds and fruits of plants from various habitats; mainly present between 1.73 and 2.00 metres (AOD 38.195 to 37.925 metres) in subsamples P6 and P7. Remains of wild species which would have favoured habitats such as waste ground (e.g. chickweed, corn marigold, nipplewort, orache/goosefoot, small nettle) and damp places (e.g. celery-leaved buttercup and possibly sedge) were recorded. Standing water was indicated by the presence of horned pondweed in subsample P4. In addition, there were numerous fragments of hazelnut shell and fruit stones of blackberry/raspberry; perhaps from nearby hedgerow but, in view of the records for parasite eggs (see below), more likely from food waste, with the fruit stones deriving from faeces. Remains of crop plants were rare with only traces of charred oat caryopses recorded from subsamples P7 and P10-P12.

The only invertebrate macrofossils recorded from this sequence were some quite well preserved *Daphnia* ephippia from subsample P4 providing further evidence of standing (though perhaps not permanent) water.

The microfossil subsamples revealed low levels of organic content within P4, P5 and P12 and high to very high percentages within P6-P11. Records for identifiable remains accorded well with the overall levels of organic content, with relatively large numbers of diatoms, fungal spores, other spores/pollen grains and plant silica fragments (sometimes there were very large numbers – fungal spores in subsample P8, for example). The presence of faeces was indicated by records of intestinal parasite eggs from five of the 'squashes'. Eggs of the whipworm of either humans or pigs were noted in subsamples P6, P7, P9, P10 and P12 and there was also a single ascarid egg in P10. In two of the subsamples, P8 and P9, many of the fungal spores present were *Chaetomium* species ascospores – *Chaetomium* species are common, saprophytic cellulose-decomposers occurring on decaying herbaceous material and other decaying organic materials such as cloth and leather (van Geel *et al* 2003, pp. 881).

A few fragments of leather were noted from subsample P9.

Borehole Q

Borehole Q did not appear to contain organic remains but appeared to pass through archaeological layers and three subsamples were investigated – subsamples Q1 (depth 2.88-2.98 metres; AOD 36.335-36.235), Q2 (depth 1.63-1.83 metres; AOD 37.585-37.385) and Q3 (depth 1.00-1.47 metres; AOD 38.215-37.745).

Subsamples Q1 and Q2 gave no uncharred 'ancient' organic remains. Subsample Q3 contained charcoal, unidentified shell and bone fragments, and at least three forms of diatom were seen in the microfossil 'squash'. A moderate organic content was also recorded in the 'squash' but was predominantly rotted charcoal.

Borehole R

Borehole R did not appear to contain organic remains but appeared to pass through archaeological layers and two subsamples from lower deposits were investigated to confirm the absence of remains – subsamples R1 (depth 1.87-2.00 metres; AOD 37.31-37.18) and R2 (depth 1.74-1.87 metres; AOD 37.44-37.31).

The subsamples were barren of biological remains other than traces of charcoal from subsample R2.

Borehole S

Borehole S did not appear to contain organic remains but appeared to pass through archaeological layers and four subsamples were investigated to confirm the absence of waterlogged remains – subsamples S1 (depth 3.28-4.00 metres; AOD 36.49-35.77), S2 (depth 2.62-3.28 metres; AOD 37.15-36.49), S3 (depth 2.55-2.62 metres; 37.22-37.15) and S4 (depth 1.28-2.00 metres; AOD 38.49-37.77).

The subsamples were effectively barren of identifiable organic microfossil and macrofossil remains other than a little hazelnut shell from subsample S2.

Borehole T

Borehole T did not appear to contain organic remains but appeared to pass through archaeological layers and three subsamples were investigated to confirm the absence of waterlogged remains – subsamples T1 (depth 3.70-4.00 metres; AOD 35.795-35.495), T2 (depth 1.80-3.70 metres; AOD 37.695-35.795) and T3 (depth 1.60-1.80 metres; AOD 37.895-37.695)

The organic content of all three subsamples was very low; the microfossil 'squash' from subsample T3

showed an apparent increase in organic detritus but this was most probably decayed modern rootlet. Subsample T3 contained a little unidentified bone and charcoal; the latter was also noted from subsample T2.

Borehole U

Possible 'ancient' waterlogged organic material was noted during the recording of borehole BH U and two subsamples were investigated – subsamples U1 (depth 2.17-3.00 metres; AOD 37.075-36.245) and U2 (depth 1.77-1.96 metres; AOD 37.475-37.285).

Subsample U1 contained waterlogged organic material, including decayed wood fragments and numerous quite well preserved seeds and fruits. There were also some unidentifiable plant fibres, leaf fragments, a little unidentified bone and some invertebrate remains (the last rather less well preserved than the plant remains and unidentifiable). The identifiable component of the plant assemblage was dominated by taxa growing in wet places and included celery-leaved buttercup, crowfoot, rush and water-pepper. In addition, there were remains of two 'useful' plants, namely seeds and capsule fragments of flax (*Linum usitatissimum* L.) and achenes of hemp (*Cannabis sativa* L.). These species may be exploited for the production of fibres and oil. Identifiable microfossil remains were relatively scarce consisting of just a few pollen grains/spores and diatoms.

Remains recovered from subsample U2 were mostly charcoal and rotted wood fragments, with a little unidentified bone. The 'squash' subsample appeared to have a greater organic component than that seen in subsample U1 but this was probably largely rotted charcoal.

Borehole V

Possible 'ancient' waterlogged organic material was noted during the recording of borehole BH V and four subsamples were investigated – subsamples V1 (depth 2.00-2.50 metres; AOD 37.39-36.89), V2 (depth 1.79-2.00 metres; AOD 37.60-37.39), V3 (depth 1.70-1.79; AOD 37.69-37.60) and V4 (depth 1.51-1.70; AOD 37.88-37.69).

The organic component of the washovers was relatively large but consisted largely of rotted wood fragments, with a little charcoal (in subsamples V3 and V4) and an occasional unidentified fragment of bone (subsample V3). No identifiable plant or invertebrate macrofossils were recorded.

The organic content of the microfossil 'squashes' was low and only subsample V3 contained any identifiable

remains (small numbers of diatoms and fungal spores – at least two forms of each) and traces of plant silica fragments.

Borehole Y

Borehole Y did not appear to contain organic remains but appeared to pass through archaeological layers and two subsamples were investigated to confirm the absence of waterlogged remains – subsamples Y1 (depth 3.74-4.00 metres; AOD 36.16-35.90) and Y2 (depth 2.12-2.75 metres; AOD 37.78-37.15).

The subsamples were effectively barren of organic microfossil and macrofossil remains other than a little charcoal from subsample Y2.

Borehole AC

Possible 'ancient' waterlogged organic material including a large wood fragment (at depth 3.30-3.44 metres) was noted during the recording of borehole BH AC and two subsamples from other deposits were investigated for traces of preservation elsewhere in the sequence – subsamples AC1 (depth 2.87-3.00 metres; AOD 33.55-33.42) and AC2 (depth 1.58-2.00 metres; AOD 34.84-34.42).

Subsample AC1 was barren of organic remains. Subsample AC2 contained modern rootlet (as recorded in the description of the sediment) but also some rotted wood fragments, together with charcoal and a little unidentified bone. No identifiable microfossil remains were recorded but the matrix did contain a moderate amount of organic detritus, presumably deriving from both the rotted wood and the modern rootlet.

Small bulk sediment sample from Earthworks Archaeology excavations at Welsh Row

This sample was collected from beneath a medieval track and was primarily sand, with only a trace organic component (seen at a microscopic level in the 'squash') to the matrix. However, it did contain pieces of worked roundwood and twig fragments (to 120 mm in length and 30 mm in diameter), with associated small fragments of rotted (soft and decayed) wood; perhaps from a wattle structure.

Discussion

The biological remains and classification of deposits

For the project, a three category system for the classification of the deposits was adopted as follows:

‘Organic-rich deposits’: including significant organic inclusions (e.g. leather, wood, plant macrofossils and microfossils, insects, bone) and/or a matrix composed primarily of humified organic matter.

‘Archaeological deposits’: primarily an inorganic matrix but with visible archaeological remains (largely non-biological but including concentrations of biological remains likely to result from human activity, such as charcoal).

‘Mineral-rich deposits’: an inorganic matrix of natural or anthropogenic origin, with no recorded remains (biological or archaeological).

Twelve of the boreholes were excluded from this second stage of investigation because of the nature of the deposits encountered (with little to suggest archaeological content, organic or otherwise) and/or voids within the cores rendering depth information indeterminate. These were boreholes BH A, H, I, J, K, L, O, W, X, Z, AA and AB and were not assigned to a project classification by direct study, but can be attributed to the category of ‘mineral-rich deposits’.

The subsamples from six of the boreholes (BH E, Q, R, S, T and Y), included in the investigation as they contained possible evidence for archaeological activity, showed little or no waterlogged organic content and provided no interpretatively valuable remains. In the terminology adopted for the project as a whole, these may also be classified as ‘mineral-rich’ deposits.

The deposits with valuable concentrations of waterlogged organic remains were concentrated in sequences from boreholes BH F, N and P (which formed part of the central borehole transect from north-west to south-east). Overall, the plant, invertebrate and microfossil assemblages from the waterlogged deposits in the three boreholes (all found between 36.315 and 38.98 metres AOD) were very similar and represented several origins which included material derived from within buildings, presumably floor sweepings and possibly ‘stable manure’ (*sensu* Kenward and Hall 1997 – a mixture of dung and litter, here including hay, ‘straw’ and bracken, and itself derived from several sources), faeces (probably human though the possibility of pig cannot be excluded) and also a component associated with timbers. This waste matter seems to have been dumped into an area of damp, waste ground, as indicated by many of the wild plant taxa recorded, and there were two instances where standing (though perhaps not permanent) water was indicated (subsample P4 – borehole BH P; depth 2.34-2.67 metres, AOD 37.585-37.255; subsample F3 (Borehole BH F, depth 1.50-1.86 metres, AOD 38.24-37.88). It is clear that these deposits represent waterlogged preservation of organic archaeological deposits rather than wholly ‘natural’ organic accumulations and can be classified as ‘organic-rich deposits’.

The lower of the two subsamples processed from borehole BH U (subsample U1, depth 2.17-3.00 metres, AOD 37.075-36.245) also, and more unexpectedly, yielded numerous remains of the ‘useful’ plant taxa, flax and hemp. These plants may be processed for fibres and oil and the remains perhaps hint that these crops were being processed in the surroundings. British archaeobotanical evidence suggests that flax and hemp retting (a rather noxious process) were largely countryside (rather than urban) activities (Greig 1991), however. The numbers of remains seen here were rather few for the assertion of processing to be more than a tentative suggestion, but for the purposes of

this project it seems prudent to assume that they represent past human activity. Subsample M1 (borehole BH M, depth 2.00-2.23 metres, AOD 35.81-35.58) also yielded a small assemblage of waterlogged plant remains from waste ground and hedgerow taxa; here there was no definite evidence of human activity but this was strongly suggested in some of the other layers within this borehole. Regardless of whether or not human activity has had an input to these deposits both can clearly also be categorised as ‘organic-rich deposits’.

Deposits in the remaining boreholes (BH B, C, D, G, V and AC) may then be allocated to the third project category and described as ‘archaeological deposits’. Most contained at least some material probably derived from past human activity (e.g. charcoal, bone fragments) and, although, identifiable microfossil and macrofossil remains were not always recorded, some waterlogged organic content (perhaps mostly rotted wood). Four of these boreholes also gave spot finds of waterlogged wood (BH C, D, V and AC) as did the single small bulk sample from Welsh Row which contained worked roundwood and twig fragments; this deposit can also be classed as an ‘archaeological deposit’.

Preservation of waterlogged organic remains

The preservation of the biological remains was somewhat variable. Clearly, the preservation of macrofossils in the subsamples from the boreholes listed above as containing ‘archaeological deposits’ must be described as poor as no identifiable remains were observed. However, some of these subsamples did contain identifiable microfossil remains (from boreholes BH B, C, D, G and V) and rotted wood fragments, and there were also inclusions of more substantial wood fragments within boreholes BH C, D, V and AC and the bulk sample from Welsh Row.

Sequences with waterlogged preservation of identifiable plant macrofossils, microfossils

and, less frequently, invertebrate macrofossils were identified within boreholes BH F, N and P and also within single deposits (of those investigated) from boreholes BH M and U. The best preservation of plant remains was observed in borehole BH N (notably subsamples N7, N8, N9, N10, N13 and N17), although the greatest ranges of plant taxa (diversity) were largely recorded from the subsamples from borehole BH F and the subsamples from borehole BH P provided several of the most diverse assemblages of microfossils. Overall, the preservation of organic remains in these deposits may be described as fair to good, but it would appear that this varies considerably between classes of remains and that, in particular, invertebrate macrofossil remains have decayed strongly.

Comparison of observed organic preservation with results from the geochemical assessment and baseline results from monitoring of groundwater levels

Geochemical assessment of subsamples extracted from the boreholes identified two preservation zones of differing potential for the preservation of waterlogged organic remains (Panter pers. comm.).

Zone 1 lies within the floodplain of the River Weaver where the geochemical data suggested reducing conditions and hence deposits conducive to the preservation of waterlogged remains. The boreholes located within this zone were BH A, B, C, D, AB and AC. Boreholes BH A and AB were not investigated for organic remains and the deposits recorded from the others were classified as ‘archaeological deposits’ containing little organic content within their matrix. However, inclusions of waterlogged wood were present in three of the boreholes (BH C, D and AC) – oak from the last being very well preserved, whereas the willow and oak, respectively, from boreholes C and D, were rather strongly decayed. Overall, the limited information from the assessment of the biological macrofossil

and microfossil content of deposits within these boreholes could not provide evidence to substantiate or refute the implications of the geochemical data.

Zone 2 encompasses the rest of the assessment area outside of Zone 1, including archaeological deposits located above the floodplain and specifically the core of the medieval town. Here the preservation of organic remains has been observed (during recent archaeological interventions) to vary considerably from good to poor and this variability was reflected in the assessment of subsamples from the remaining boreholes.

Boreholes BH F, N and P contained sequences of deposits with organic preservation lying between 36.315 and 38.98 metres AOD. Preservation of plant macrofossils and microfossil remains was often good within these deposits, but invertebrate macrofossil remains were mostly very strongly decayed (occasional better preserved remains were recorded from a small number of samples some, but certainly not all, of which may represent post-depositional invaders). For Boreholes BH F and P, the geochemical assessment showed decreasing sulphate levels and increasing sulphide levels with depth (and for BH P significant drops in nitrate levels). This implies better conditions for the survival of waterlogged organic remains will also occur at greater depth in the vicinity of these boreholes. For borehole BH F good preservation (other than of invertebrate macrofossils) was recorded throughout the principal organic deposits (subsamples F3-F6; 38.98-37.78 metres AOD) but in borehole BH P the best preservation was recorded from subsamples P8 and P9 (38.425-38.195 metres AOD) approximately the middle third of the organic sequence. The very high sulphate and nitrate values recorded from the two uppermost (of three) geochemical samples from borehole BH P indicate that the waterlogged organic remains present are in active decay and represent formerly saturated deposits which are now only intermittently wet

(at best); the baseline groundwater level recorded in November 2007 was at well over 3 metres below the current surface at 36.595 metres AOD. The implication of the massively reduced sulphate and nitrate levels recorded from the lowest geochemical subsample in borehole BH P (at 37.925-37.375 metres AOD) is that deeper archaeological deposits in the vicinity may exhibit exceptional waterlogged organic preservation. Deposits with waterlogged remains at the level of those recorded in borehole BH P and above are clearly at risk, however. For borehole BH F, it may be argued that the presence of invertebrate macrofossil remains (albeit mostly heavily decayed) in most of the subsamples examined implies even better organic preservation than that seen from borehole BH P. Unlike borehole BH P, no groundwater level was available for borehole BH F, but recording in the field suggested that this would be at more than 3 metres below the current surface (below 36.74 metres AOD) and hence that a similar potential and risk exists for nearby deposits with waterlogged organic preservation.

Borehole BH N showed the best preservation of waterlogged plant macrofossils seen during the assessment – from subsamples N7-N10 (37.255-36.445 metres AOD), N13 (37.415-37.365 metres AOD) and N17 (37.945-37.875 metres AOD) – within the organic sequence encountered between 38.095 to 36.165 metres AOD. In the field, the deposits were observed to become wet from as little as 0.7 metres depth (38.465 metres AOD) and subsequent baseline recording (in November 2007) reported the groundwater level as 37.795 metres AOD. Here then, it appears that, despite the relatively high sulphate levels recorded, the organic remains are being preserved by reducing conditions within permanently waterlogged sediments – the preservation of the organic remains recorded from the subsamples above the baseline groundwater level (subsamples N18-N19; 38.535-37.945 metres AOD) was markedly poorer, presumably as a result of the oxidising

environment created in intermittently wet deposits. Conditions for the preservation of waterlogged organic remains are therefore very good within these deposits, and any others nearby where the groundwater level remains constantly high, provided that these conditions continue to prevail.

Preservation of waterlogged organic remains was also recorded from the lower subsamples in boreholes BH M and U (M1 at 35.81-35.58 and U1 at 37.075-36.245 metres AOD, respectively). Borehole BH U was located approximately equidistant between Boreholes BH F and BH P near the centre of the historic town and the subsample with preservation was from a somewhat deeper lying deposit. The organic content of the subsample was recorded as very high but the preservation of remains was poor. Groundwater levels are not being monitored for borehole BH U but records from the adjacent boreholes BH T (to the west) and BH V (to the east) reported this as 36.335 metres AOD and 37.44 AOD, respectively. It therefore seems plausible (and consistent with the recorded condition of the biological remains) that the groundwater level at borehole BH U is such that the deposit subsampled as U1 is intermittently wet and that consequently its organic content will be subject to oxidisation and relatively rapid decay (sulphate levels were moderate from the lower of the two geochemical subsamples at 37.195-37.125 metres AOD but significantly lower – only about two-fifths the value – than recorded from higher in the sequence at 37.555-37.455 metres AOD). For subsample M1 groundwater levels are being monitored and the November 2007 baseline record was at 36.23 metres AOD, well above the level of the deposit. However, the preservation in subsample M1 was recorded as similar in nature to that from U1, i.e. very highly organic but with rather poor preservation of individual remains. It may be that this deposit too is subject to repeated wetting and drying and that the resultant oxidising environment is causing fairly rapid decay of its waterlogged organic content.

The subsamples from six of the boreholes (BH E, Q, R, S, T and Y), included in the investigation as they contained possible evidence for archaeological activity, showed little or no waterlogged organic content and provided no interpretatively valuable remains for comparison. Similarly, boreholes G and V provided too few organic remains for useful comparison with the geochemical assessment results.

Recommendations

As the purpose of the investigations to determine the extent and quality of preservation of waterlogged organic remains in the deposits under Nantwich encountered by the borehole survey (and, to a lesser degree, establish the character of the assemblages recovered) has been achieved, no further study of the biological remains reported here is warranted.

It would be useful to obtain additional data from deposits west of the River Weaver and two monitoring transects should be established (within Zone 1). A west-east transect towards the river along Welsh Row and a second aligned roughly north-south, parallel to the river (between boreholes BH C and D). Multi-level sampling for geochemical assessment and monitoring may be required depending upon the nature of the below ground sediments encountered.

Additional or modified monitoring points should be established at several of the current borehole locations some of which will require multi-level sampling tubes – boreholes BH F, M, P, and U.

Archive

All material is currently stored by Palaeoecology Research Services (Unit 8, Dabble Duck Industrial Estate, Shildon,

County Durham), along with paper and electronic records pertaining to the work described here.

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Table 1. Borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire: Description of deposit sequences encountered by borehole. Key: Key: 'PC' = Preservational condition (following the Bergen excavation office state of preservation scale); 'Spot sample' = material removed as an organic spot find (usually wood fragments – species identifications by Steve Allen, YAT); 'C14' = any additional material noted of possible value for radiocarbon dating.

i) Borehole A

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.040	33.290	33.250	E5	Void	Fresh grass at 0.04	none	level	-	-	-
0.040	0.400	33.250	32.890	E2	Moist, mid to dark grey-brown, crumbly (working soft), slightly clay silt	modern rootlet penetration to 0.14	none	level	-	-	-
0.400	1.000	32.890	32.290	E0	Moist, light to mid brown, soft (working more or less plastic), clay silt (more clay in places)	trace of ?iron pan at 0.95-1.00	none	level	Sample 4 = all of core from 0.95-1.00	-	-
1.000	1.060	32.290	32.230	D0	Void	-	-	level	-	-	-
1.060	2.000	32.230	31.290	A0	Moist, light yellow-brown to light grey (colours mixed/inter-mingled), stiff (working plastic), very slightly silty clay. Discontinuity of moist to wet, soft to unconsolidated, light grey, sand at 1.61-1.63	none	none	level	-	-	-
2.000	2.350	31.290	30.940	D0	Void	-	-	level	-	-	-
2.350	2.800	30.940	30.490	A0	Moist, light to mid brown (with some areas of light to mid orange-brown - ?iron pan/oxide staining), stiff and sticky (working plastic), clay (perhaps with a slight silt content in places)	Very granular appearance from 2.35 - 2.65 caused by presence of indurated clay lumps (to 3 mm) within the matrix	none	level	-	-	-
2.800	2.920	30.490	30.370	D0	Void	-	-	level	-	-	-
2.920	3.480	30.370	29.810	A0	Moist, light to mid brown to grey-brown to grey, soft (working slightly sticky and then more or less plastic), slightly silty clay. Slightly wetter and more sticky from 3.20-3.48	none	none	level	-	-	-
3.440	3.900	29.810	29.390	A0	Moist to wet, light grey and light to mid grey, unconsolidated, fine and coarse sand	none	none	-	Sample 5 = all of core from 3.80-3.90	-	-

ii) Borehole B

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.080	36.260	36.180	E5	Moist, mid brown to mid grey-brown, stiff (working plastic), slightly silty clay. Slightly darker - mid to dark grey-brown in lowest 0.02 metres	Fresh grass and associated rootlet penetration at current ground surface. Small stones and occasional cinder (both to 3 mm) and mortar/sand flecks at 0.05. Second very recent ground surface with fresh (still green) grass and clover. Live earthworm	none	level	-	-	-
0.080	0.120	36.180	36.140	E5	Moist, mid brown to mid grey-brown, stiff (working plastic), sandy clay - becomes more sandy in lowest few millimetres (this area working soft)	Fresh grass, clover and associated rootlet penetration from third recent surface at interface with next lowest section. Live earthworm and rounded pebble (to 45 mm) also at lower interface	none	level	-	-	-
0.120	0.220	36.140	36.040	E4	Moist, mid to dark grey-brown, stiff to crumbly (working soft), slightly silty clay sand	Rootlet penetration from third recent land surface and flecked with light grey-brown sand grains throughout. Moist and rather rotted wood fragment declined at approximately 30 degrees at interface with next lowest section (~100 x 15-25 x 20 mm). Rounded pebble (to 12 mm) at 0.21-0.22. Live earthworm	none	declined 30 degrees - interface depth range from 0.19-0.22	-	-	-
0.220	1.000	36.040	35.260	E0	Just moist, mid to dark grey to grey-brown, crumbly (working more or less soft), slightly ?silty, clay sand - some areas slightly more clay but still mostly sand	Occasional inclusions of rounded pebbles (at 0.22), brick/tile (at 0.23-0.25, 0.42, 0.70-0.71, 0.87, 0.89). Also 'hard core' throughout but particularly at 0.35, 0.73, 0.87	none	level	-	-	-
1.000	1.140	35.260	35.120	E0	as layer above	Occasional inclusions of soft, very rotted charcoal	none	level	-	-	-
1.140	1.460	35.120	34.800	E0	Just moist, mid to dark grey to grey-brown, stiff (working more or less plastic), slightly sandy clay - some areas slightly more clay but still mostly sand	Make-up/levelling inclusions, e.g. brick, glass, coal, throughout. ?Asbestos fragment at 1.44	none	level	-	-	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
1.460	1.620	34.800	34.640	E0	Just moist, light to mid brown, stiff (working plastic), clay	Boundary to next lowest section with cinder, ?brick and ?mortar inclusions	none	level	-	-	-
1.620	2.000	34.640	34.260	E0	Just moist, mid brown to grey-brown, stiff and slightly sticky (working more or less plastic), slightly sandy clay (more sandy in places). Becomes slightly wetter in lowest 0.20 m	Occasional 'build up' inclusions - e.g. brick (at 1.71), metal (?tin at 1.92 - 1.94), glass (at 1.93)	none	level	Sample 1 = all of core section from 1.80 - 1.85	-	-
2.000	2.440	34.260	33.820	E1	As layer above	Small organic inclusions at upper interface (looks to be 'ancient' rootlet). Brick (at 2.05 - 2.18), stone (at 2.19), white (modern) tile (at 2.26-2.28), large (to 30 mm) bottle glass fragments (at 2.42)	none	level	-	-	-
2.440	2.640	33.820	33.620	A0	Clay as from 1.46-1.62	cinder at 2.54	none	level	-	-	-
2.640	3.000	33.620	33.260	A0	Moist, mid to dark grey- brown, slightly silty slightly clay sand	cinder (to 12 mm) and ?other burnt material throughout but particulary at 2.68 and 2.85	none	level	-	-	-
3.000	4.000	33.260	32.260	A0	Just moist, mid to dark (slightly blueish) grey, stiff and slightly sticky (working soft), slightly clay slightly sandy silt. Becomes slightly wetter with depth	Small stones from 3.70 downwards becoming more frequent and larger with depth (to 20 mm; common). Rounded edged ?pot fragment (~11 mm square) at 3.92	slight	level	Sample 2 = half of core section from 3.90 - 4.00	-	-
4.000	4.350	32.260	31.910	A0	Moist, mid brown to grey-brown, soft, clay silt (to silty clay). Grades into moist, light to mid yellow-brown, stiff (working plastic), very slightly silty clay from 4.10 - 4.35	Occasional very small stones (to 2 mm)	none	grades	-	-	-
4.350	5.000	31.910	31.260	A0	Moist, light to mid yellow-brown, stiff (working plastic), very slightly silty clay	none	none	level	-	-	-
5.000	5.180	31.260	31.080	D0	Void	-	-	level	-	-	-
5.180	5.350	31.080	30.910	B0	Moist to wet, light to mid brown, firm to soft and sticky (working more or less plastic), slightly silty clay	none	none	level	-	-	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
5.350	5.440	30.910	30.820	B0	As 4.35 - 5.00	none	none	level	-	-	-
5.440	5.690	30.820	30.570	B0	Moist to wet, light to mid brown, soft, sandy clay	none	none	level	-	-	-
5.690	5.790	30.570	30.470	C0	Wet, light to mid brown, unconsolidated, slightly clay sand	none	none	level	-	-	-
5.790	5.950	30.470	30.310	C0	Moist to wet, light to mid grey-brown, soft and sticky, sandy clay silt	none	none	level	-	-	-
5.950	6.000	30.310	30.260	C0	Moist to wet, light to mid grey, soft to unconsolidated, clay sand	none	none	-	Sample 3 = material spilling from base of core tube ~all of 5.95 - 6.00	-	-

iii) Borehole C

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.300	34.870	34.570	D5	Void	grass of current ground surface at 0.30	-	level	-	-	-
0.300	0.350	34.570	34.520	E3	Just moist, mid to dark grey, unconsolidated, slightly silty sand	modern rootlet penetration throughout	none	level	-	-	-
0.350	1.000	34.520	33.870	A1	Matrix continues as for 0.30-0.35 (above) but with mixed colours from light to mid brown to mid to dark grey-brown	Probable fine ash/cinder throughout (concentration, to 9 mm, at 0.81), occasional stones (to 12 mm) throughout. ?Ancient rootlet at 0.70-0.81 and from 0.94 downwards	none	level	-	-	-
1.000	1.900	33.870	32.970	A2	Matrix continues as above with some minor variations and inclusions of mid orange sand at 1.47-1.52 and light grey-brown sand at 1.60-1.62	Rootlet continues to 1.06 and also seen at 1.40, 1.50 and 1.68, ?charcoal flecks (to 3 mm) at around 1.58. Waterlogged and very fragile roundwood fragments at 1.72 and 1.78	none	level	Sample 12 = sediment around round wood at ~1.72-1.74	Spot Sample 2: willow roundwood	second roundwood fragment (~15 mm diameter, 42 mm long) at 1.76-1.79
1.900	1.950	32.970	32.920	A2	Moist, dark grey, slightly sticky (works soft), slightly sandy silt	Rootlet at upper interface (~1.90), waterlogged and soft roundwood at 1.95 (~7 mm diameter)	?slight	level	-	-	possible roundwood fragments (~7 mm diameter) at 1.95
1.950	2.000	32.920	32.870	A1	Moist, light to mid brown to mid to dark grey-brown, slightly sticky (working soft), silty sand	Rootlet at 1.98-1.99			-	-	-
2.000	2.090	32.870	32.780	A0	Moist to wet, light to mid grey-brown, unconsolidated and somewhat thixotropic, slightly clay silt	none	none	level	-	-	-
2.090	2.190	32.780	32.680	A2	Moist, mid grey-brown, soft, sandy silt	thin sliver of very decayed wood (to 40 mm, declined at ~15 degrees to horizontal)	none	level	-	-	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
2.190	3.000	32.680	31.870	B2	Moist, mid grey to grey-brown, firm (working soft), clay silt (slightly more clay in places)	Sulphide staining throughout but markedly at 2.37-2.43, 2.58-2.60, 2.68-2.75, 2.79-2.93. Perhaps all resulting from decayed rootlet	moderate	level	Sample 13 = ~half of core section 2.90-3.00	-	-
3.000	4.000	31.870	30.870	B1	Moist, mid grey-brown, fairly stiff and sticky (working soft and sticky), clay silt	Small 'thread-like' filaments throughout - ?fungal hyphae. Occasional black patches - perhaps sulphide staining but no associated odour - notable at 3.21-3.24 and 3.80-3.84	none	-	-	-	-

iv) Borehole D

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.200	35.030	34.830	D0	Void	-	-	level	-	-	-
0.200	0.430	34.830	34.600	E0	Small amount of matrix (~20%) of moist, mid to dark grey-brown, unconsolidated slightly clay, sandy silt/silty sand	Mostly brick (to 75 mm) and stone (to 30 mm) rubble, with a piece of modern glass (to 45 mm) at 0.23	none	level	-	-	-
0.430	0.470	34.600	34.560	A0	continues as 0.20-0.43 but black in parts - ?ash/cinder content	continues as 0.20-0.43 but black in parts - ?ash/cinder content	none	level	-	-	-
0.470	0.700	34.560	34.330	A0	More or less dry, white, unconsolidated mortar grades into next lowest layer from 0.63-0.70	-	none	grades	-	-	-
0.700	1.000	34.330	34.030	A0	Moist, mid brown to mid to dark grey-brown, firm to crumbly (working soft), slightly clay silt, with occasional patches of light brown sand	black ?cinder/ash and white mortar throughout	none	level	-	-	-
1.000	1.220	34.030	33.810	D0	Void	-	-	level	-	-	-
1.220	1.270	33.810	33.760	A0	Moist, light brown to mid to dark grey-brown (and shades between - colours jumbled), soft to crumbly (working soft), slightly clay sandy silt	a little ?ash/cinder throughout	none	level	-	-	-
1.270	1.510	33.760	33.520	A0	Just moist, dark grey to black, unconsolidated sandy silt, with a high fine cinder/ash content. Occasional mid to dark brown patches where the cinder/ash content is less	Very light grey/grey-brown mortar inter-mixed with matrix	none	level	-	-	-
1.510	1.600	33.520	33.430	A0	Mortar as at 0.47-0.63 above	-	none	level	-	-	-
1.600	1.770	33.430	33.260	A0	A little mid brown sand	Mostly composed of dry brick rubble (to 40 mm), with some black ash/cinder (at 1.66-1.71) and mortar (as above) common (at 1.72-1.77)	none	level	-	-	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
1.770	1.920	33.260	33.110	A0	Moist, mid brown and dark grey, sticky (working soft), slightly clay silt	black ash/cinder common throughout and mortar (as above) present at 1.88-1.92	none	level	-	-	-
1.920	2.000	33.110	33.030	A0	Moist, mid brown, soft (working soft to more or less plastic), silty clay, darker (dark grey/ black) and more silty in lowest 0.02 m	darker lowest 0.02 m could be stained by fine ash/cinder or perhaps sulphides (no odour though)	none	level	Sample 8 = all of core from 1.98-2.00	-	-
2.000	2.090	33.030	32.940	A0	Moist, mid brown to dark grey-brown, crumbly to unconsolidated, slightly silty sand (more silty in parts), with some black patches as noted in lowest part of overlying section	?very rotted charcoal in small patches	?slight	level	Sample 9 = ~half of this core section	-	-
2.090	2.370	32.940	32.660	A0	Moist, varicoloured (from light to mid brown to mid to dark grey-brown in shades of brown and grey-brown), unconsolidated to crumbly, slightly silty sand	none	none	level	-	-	-
2.370	3.000	32.660	32.030	B2	Moist, mid brown, firm to crumbly (working soft), slightly silty clay sand. Becomes slightly wetter with increasing depth	rotted wood at 2.47-2.50	none	level	Sample 10 = sediment from around wood	Spot sample 1: oak	-
3.000	4.000	32.030	31.030	C0	Saturated, light to mid brown, unconsolidated (works sticky and soft), slightly silty clay sand. Appears to be within ground water at least from 3.10 downwards	none	none	-	Sample 11 = all of core from 3.90-4.00	-	-

v) Borehole E

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.110	35.335	35.225	D5	Void	Fresh grass at 0.11	none	level	-	-	-
0.110	0.170	35.225	35.165	E4	Moist, dark brown to grey-brown, slightly humic, crumbly (working soft), slightly clay sandy silt	modern rootlet throughout	none	level	-	-	-
0.170	0.920	35.165	34.415	E3	continues as 0.11 - 0.17	modern rootlet penetration to 0.36. Frequent modern brick (to 60 mm; notably at 0.21-0.32, 0.37-0.44, 0.57-0.58) with associated white flecks of mortar	none	level	-	-	-
0.920	1.000	34.415	34.335	E0	More or less dry, mid to dark grey-brown, unconsolidated silty sand - constitutes perhap 5-10% of core at this point	Mostly modern brick (to 78 mm) and mortar (to 58 mm) rubble, with a fragment of modern clear glass (to 28 mm)	none	level	-	-	-
1.000	1.500	34.335	33.835	E1	Core section mostly collapsed. Matrix continues as layer above 0.17 - 0.92	Brick fragments small and sparse from 1.00-1.25 becoming common and larger (to 42 mm) from 1.25-1.50. Large stones including cobble fragments (to 50 mm) and slate (to 62 mm) at 1.00-1.06 and very large cobble (to 90 mm) at 1.15-1.24. Trace of ?old rootlet at 1.44-1.50	none	-	-	-	-
1.500	1.740	33.835	33.595	A0	Core section mostly collapsed. More or less dry, mid to dark grey-brown, crumbly to unconsolidated, silty sand	none	none	-	-	-	-
1.740	1.860	33.595	33.475	A0	Part (~half) of section continues as layer above (1.50-1.74). Other half of section was a just moist, light to mid brown to grey-brown, stiff (working plastic), clay	none	none	level/divided	-	-	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
1.860	1.940	33.475	33.395	A0	Just moist, light brown to light to mid grey-brown, unconsolidated, ?slightly silty sand	Abundant rounded pebbles (to 36 mm) forming approximately half of this section	none	level	-	-	-
1.940	2.000	33.395	33.335	A0	clay as at 1.74-1.86	none	none	level	-	-	-
2.000	2.120	33.335	33.215	A0	Core section largely collapsed. Mix of unconsolidated coarse sand and lumps (to 70 mm) of stiff (working plastic) clay, both just moist and light to mid brown in colour	none	none	-	-	-	-
2.120	2.240	33.215	33.095	A1	clay as that component in 2.00-2.12 above	rootlets at 2.24	none	level	-	-	-
2.240	2.410	33.095	32.925	A1	Just moist, dark grey-brown, brittle, ?slightly clay silt	rootlet noted throughout, with occasional fragments of brick (to 10 mm at 2.35) and black ?ash lumps (to 6 mm at 2.41)	none	level	Sample 6 = all of core from 2.33-2.38	-	-
2.410	3.000	32.925	32.335	A0	Just moist, mid grey-brown, stiff (working plastic), clay	Large brick inclusion at 2.59-2.70 (fragments to 110 mm - probably shattered by corer)	none	level	-	-	-
3.000	3.180	32.335	32.155	D0	Void	-	-	level	-	-	-
3.180	3.980	32.155	31.355	A0	Moist, mid grey-brown, stiff (working plastic), clay. Becomes wetter in lower 0.20 metres	Occasional black flecks of ?ash/charcoal (to 1 mm) throughout	none	level	-	-	-
3.980	4.000	31.355	31.335	A0	Moist, light grey-brown, unconsolidated, sand (possible slight silt content)	none	none	-	Sample 7 = all of core from 3.90-3.98	-	-

vi) Borehole F

Depth		AOD									
From	To	From	To	PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
0.000	0.600	39.740	39.140	E0	Moist (dry in top 0.10 m), loose gravel (to 70 mm) - no sediment matrix = car park surface	?Terram membrane at base (0.60)	none	level	-	-	-
0.600	0.670	39.140	39.070	A0	Moist, light brown to mid grey (in shades of brown and grey-brown), stiff (working soft and more or less plastic), slightly silty clay	Abundant stones and brick fragments (both to 30 mm) throughout	none	level	-	-	-
0.670	0.760	39.070	38.980	A0	Moist, light to mid grey-brown, stiff (working soft and more or less plastic), slightly silty clay	Occasional brick fragments (to 20 mm) throughout and sliver of bone (to 55 mm) at 0.75	none	level	-	-	-
0.760	0.960	38.980	38.780	A3	Moist, very dark grey-brown to black, crumbly to unconsolidated (working soft), humic, very slightly sandy slightly clay silt	Abundant waterlogged wood fragments (to 60 mm) concentrated in 0.76-0.81	moderate	level	Sample 20 = ~half of core from 0.76-0.82	Spot sample 3: elm	-
0.960	1.000	38.780	38.740	A1	As the lower part of layer above (0.81-0.96) but more or less dry, compacted and brittle to crumbly	none	slight	level	-	-	-
1.000	1.860	38.740	37.880	A3	As 0.76-0.96 but with no further concentrations of wood. Light grey sand intrusions (at ~45 degrees to horizontal) at 1.48-1.52 and 1.56-1.60, and more inter-mixed at 1.64-1.72. Dusted with sand grains from 1.00-1.40. Fibrous organic content at 1.76 and 1.80. Becomes wet from 1.50-1.86	Occasional wood ?chips and twig/root fragments (e.g. at 1.05-1.10) and rounded pebbles (to 15 mm) throughout	slight	level	Sample 21 = ~half of core from 1.80-1.85		-
1.860	1.960	37.880	37.780	A0	Moist, light to mid grey, soft to unconsolidated (working more or less plastic), sandy clay	Large pebble (to 100 mm) present	none	level	-	-	-
1.960	2.000	37.780	37.740	A0	Moist, light to mid brown to grey-brown, unconsolidated, sand, with some black patches	black patches perhaps ?sulphide staining from rotted organics or perhaps very rotted charcoal	slight	level	-	-	-
2.000	3.000	37.740	36.740	A0	Core tube split and sequence largely unrecordable. Terminated in 0.08 m of moist, light to mid brown, very stiff (working plastic), clay	none	none	-	-	-	-

vii) Borehole G

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.270	39.600	39.330	E5	Core section collapsed and occupies only ~one-third of the core tube. More or less dry, mid grey-brown, unconsolidated, humic, silty sand/sandy silt	Fresh grass at 0.00 = current ground surface. Modern rootlet and other herbaceous detritus throughout. Stones, brick, mortar (all to 45 mm) present throughout	none	level	-	-	-
0.270	0.400	39.330	39.200	E5	Just moist, mid grey-brown, unconsolidated, slightly silty sand, with some small areas (to 10 mm) of moist, light brown, stiff (working plastic), clay and patches (to 8 mm) of mid brown, unconsolidated, sand	Rotted brick fragments (to 10 mm) at 0.36-0.40	none	level	-	-	-
0.400	0.480	39.200	39.120	A0	Moist, mid to dark grey, firm (working soft), clay silt	Frequent (~30%) inclusions of black ash/cinder and traces of rotted brick throughout	none	level	-	-	-
0.480	0.530	39.120	39.070	A0	Moist, very pale (off-white), rather slimy, very fine grained ?lime or lime-rich clay	none	none	level	-	-	-
0.530	0.540	39.070	39.060	A0	Collapsed band of moist, unconsolidated, fine sand and gravel	none	none	level	-	-	-
0.540	0.560	39.060	39.040	A0	?Lime as 0.48 - 0.53 (above)	none	none	level	-	-	-
0.560	1.000	39.040	38.600	A0	Moist, dark grey-brown to very dark grey, crumbly to firm (working soft and somewhat plastic), clay silt (some areas perhaps silty clay)	Black ash and/or very rotted charcoal/cinder quite common (~10%) throughout, with some rotted charcoal pieces (to 12 mm) also present. Very rotted shell (soft and disintegrates) at 0.87-0.88, ?tile fragments at 0.62-0.66 (to 55 mm) and 0.91-0.93 (to 20 mm)	none	level	Sample 18 = all of core from 0.65 - 0.70	-	-
1.000	1.250	38.600	38.350	D0	Void	-	-	level	-	-	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
1.250	1.480	38.350	38.120	A1	Just moist, dark grey, crumbly to unconsolidated (working soft and somewhat plastic), sandy clay silt	Black inclusions of very rotted charcoal throughout. Rootlets at 1.27-1.29 and 1.39-1.48	none	level	-	-	-
1.480	1.600	38.120	38.000	A0	Moist, light brown, unconsolidated, sand	none	none	level	-	-	-
1.600	1.990	38.000	37.610	A0	Moist, mid to dark grey, crumbly to unconsolidated (working soft), ?slightly clay, silty sand	Rounded quartz pebble (to 15 mm) at 1.71-1.72 and black flecks of ?rotted charcoal at 1.81-1.82	none	level	Sample 19 = all of core from 1.75-1.80	-	-
1.990	2.000	37.610	37.600	A0	Sand as at 1.48-1.60	none	none	level		-	-
2.000	2.150	37.600	37.450	A0	Moist, light grey to grey-brown, unconsolidated, sand	none	none	level		-	-
2.150	2.350	37.450	37.250	A0	Moist, light to mid grey, firm (working soft then more or less plastic), slightly silty clay	none	none	declined at ~30 degrees to horizontal - interface depth range at 2.31-2.35	-	-	-
2.350	2.440	37.250	37.160	A0	Moist, mid grey, compacted (crumbles when worked), slightly silty sand	none	none	level	-	-	-
2.440	3.000	37.160	36.600	B0	Core section collapsed. Moist to wet, light brown to grey-brown, unconsolidated, coarse sand	Stones (to 30 mm) common (~30%), becoming abundant (>50%) in last 0.05 m	none	-	-	-	-

viii) Borehole H

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.060	39.352	39.292	D5	Void	Fresh grass of current ground surface at 0.06	-	level	-	-	-
0.060	0.200	39.292	39.152	E4	Topsoil of moist, mid to dark brown, crumbly (working soft), sandy clay silt	modern rootlet penetration throughout	none	level	-	-	-
0.200	0.360	39.152	38.992	E3	Similar to 0.06-0.20 (above) but mid brown and slightly more clay content in general, with an inclusion of light to mid brown, stiff clay at 0.21-0.24	occasional modern rootlet fragments throughout	none	level	-	-	-
0.360	0.380	38.992	38.972	A0	Moist, light to mid pinkish-orange ('salmon' pink), unconsolidated, sand	none	none	level	-	-	-
0.380	0.460	38.972	38.892	A0	More or less dry, mid to dark brown, unconsolidated, slightly silty sand	Abundant cinder (to 18 mm) and a little fine ?charcoal throughout	none	level	-	-	-
0.460	0.490	38.892	38.862	A0	More or less dry, very pale yellow-white, cushed mortar layer	none	none	level	-	-	-
0.490	1.000	38.862	38.352	A0	Just moist, mid grey (occasional small areas of mid brown), crumbly (working soft), slightly clay (more so in places) silty sand	Crushed brick (at 0.52-0.54), mortar flecks (at 0.60-0.63), glass (at 0.69-0.71) and occasional small rounded stones (to 10 mm) throughout	none	level	-	-	-
1.000	1.420	38.352	37.932	D0	Void	-	-	level	-	-	-
1.420	1.520	37.932	37.832	A0	Moist, light to mid grey, unconsolidated, slightly silty clay sand	none	none	level	-	-	-
1.520	1.900	37.832	37.452	A0	Just moist, mid brown, very stiff (working plastic), clay	none	none	level	-	-	-
1.900	2.000	37.452	37.352	D0	Void	-	-	level	-	-	-
2.000	3.000	37.352	36.352	A0	as clay at 1.52-1.90 (above)	none	none	level	-	-	-
3.000	4.000	36.352	35.352	A0	as clay at 1.52-1.90 (above) but only 0.35 metres of sediment in core tube, rest void - sediment mobile within tube so any depth record spurious	none	none	-	-	-	-

ix) Borehole I

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.860	38.955	38.095	A1	Moist, mid to dark grey, unconsolidated, slightly silty sand. Slightly clay at 0.77-0.86	Stones (to 65 mm) present throughout - mostly rounded but occasional more angular ones too. Decayed rootlet at 0.30-0.34, 0.37-0.46 and 0.62-0.72. Traces of cinder and coal (both to 7 mm) at 0.74 and 0.77-0.86 and of brick/tile (to 3 mm) at 0.82	very slight	level	Sample 16 = ~half of core at 0.80-0.86	-	-
0.860	0.960	38.095	37.995	A3	Moist, light to mid brown to grey-brown, unconsolidated, sand, with some discrete mid grey clay lumps (to 40 mm)	Large woody root fragments at 0.69-0.72, small stones at 0.86-0.88, ?cinder/ash at 0.88-0.92	none	level	-	-	-
0.960	1.000	37.995	37.955	A0	Moist, light to mid brown, stiff (working plastic), clay	none	none	level	-	-	-
1.000	1.370	37.955	37.585	A0	Moist to wet, mid grey, unconsolidated, slightly silty sand	Occasional rounded quartz pebble (to 6 mm) - e.g. at 1.09 and 1.14. Horizontal band of small rounded stones (to 10 mm) at 1.30-1.31	none	level	Sample 17 = all of core at 1.28-1.32	-	-
1.370	1.580	37.585	37.375	A0	Core section collapsed. Moist, light to mid brown, unconsolidated, fine and coarse sand	none	none	level	-	-	-
1.580	2.000	37.375	36.955	A0	Moist, mid brown to grey-brown, very stiff (working plastic), clay	none	none	level	-	-	-
2.000	3.000	36.955	35.955	A0	Just moist, light to mid brown, very stiff (working plastic), clay	rotted ?sandstone lumps (to 12 mm) at 2.72-2.75	none	level	-	-	-
3.000	3.700	35.955	35.255	A0	clay as at 2.00 - 3.00 (above)	none	none	-	-	-	-

x) Borehole J

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.360	40.040	39.680	E4	Just moist, dark brown, unconsolidated, silty sand	modern woody root and rootlet throughout	none	level	-	-	-
0.360	0.440	39.680	39.600	A0	No real matrix	Lumps of 'furnace slag/hard core' (to 115 mm)	none	level	-	-	-
0.440	0.860	39.600	39.180	A0	Modern sand and gravel dry mix hard core	Two layers of terram membrane at 0.86	none	level	-	-	-
0.860	1.000	39.180	39.040	A2	Moist, dark brown to grey-brown, crumbly (working soft)	Small fragments of 'cinder (to 3 mm) in 0.86-0.89 and a few modern rootlet fragments throughout	none	level	Sample 14 = half of core 0.90-1.00	-	-
1.000	1.260	39.040	38.780	A0	Moist, mid to dark grey-brown, unconsolidated to crumbly, slightly clay slightly silty sand	Occasional rounded pebbles (to 24 mm) throughout	none	level	Sample 15 = all of core 1.20-1.26	-	-
1.260	1.750	38.780	38.290	A2	Moist, light brown, unconsolidated, sand (last 0.02 m slightly wetter and slightly clay)	Occasional rounded pebbles (to 15 mm) at 1.26-1.46	none	slightly diffuse	-	-	-
1.750	2.000	38.290	38.040	A0	Moist, mid to mid to dark brown, stiff, clay (slightly sandy in upper 0.02 m)	none	none	slightly diffuse	-	-	-
2.000	3.000	38.040	37.040	A0	Just moist, mid brown, very stiff and slightly sticky (working plastic), clay	none	none	level	-	-	-
3.000	4.000	37.040	36.040	A0	clay as 2.00-3.00 (above) with slightly silty patches at 3.00-3.20 and 3.34-3.40	none	none	-	-	-	-

xi) Borehole K

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.840	37.135	36.295	E0	Largely void - no real matrix	Largely void, with loose stones (to 55 mm) from 0.00-0.35 (very approximately) followed by a mix of brick (to 30 mm), coal (to 50 mm) and cinder (to 22 mm)	none	level	-	-	-
0.840	1.000	36.295	36.135	E0	Moist, light to mid grey-brown, crumbly (working soft and somewhat plastic), sandy, silty clay/clay silt	Crushed brick/tile, black ash/cinder and stones (to 12 mm) throughout. Smells of diesel oil contamination	none	level	-	-	-
1.000	2.000	36.135	35.135	A0	Just moist, mid brown, very stiff (working plastic), clay - stained dark grey/black by diesel oil contamination from 1.00-1.04	Diesel oil contamination in uppermost 0.04 m	none	level	-	-	-
2.000	2.500	35.135	34.635	A0	Large voids in tube - also contained further clay as seen at 1.00-2.00 (above) but any depth record spurious owing to voids	none	none	level (between clay sections and voids)	-	-	-
2.500	3.000	34.635	34.135	A0	Large voids in tube - also contained further clay as seen at 1.00-2.00 (above) but any depth record spurious owing to voids	none	none	level (between clay sections and voids)	-	-	-

xii) Borehole L

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.500	38.710	38.210	E0	Collapsed and loose in core tube - no matrix	Tarmac and stone (to 60 mm) modern 'hard core'	none	n/a	-	-	-
0.500	0.660	38.210	38.050	E0	A little matrix of more or less dry, light to mid grey, stiff (working plastic), clay	Stone (to 80 mm) 'hard core'	none	n/a	-	-	-
0.660	0.750	38.050	37.960	E0	No matrix	Loose 'hard core' stones (to 80 mm)	none	level	-	-	-
0.750	1.300	37.960	37.410	A0	Moist, dark brown to dark grey-brown, compacted to crumbly, ?ashy, slightly clay silt	?post-medieval/modern pottery fragment (to 35 mm) at 0.97-1.00	none	level	Sample 45 = ~half of core from 0.85-0.92	-	-
1.300	2.000	37.410	36.710	A0	Just moist, light brown, unconsolidated, sand - stained darker from layer above at 1.30-1.38	none	none	level	-	-	-
2.000	2.450	36.710	36.260	A0	Moist sand continues as at 1.30-2.00 (above)	Abundant stones (to 80 mm) at 2.00-2.35 - forming ~90% of tube contents at 2.00-2.20	none	level	-	-	-
2.450	3.980	36.260	34.730	A0	Moist, mid brown, very stiff (working plastic), clay	none	none	level	-	-	-
3.980	4.000	34.730	34.710	D0	Void	-	-	-	-	-	-

xiii) Borehole M

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.350	37.810	37.460	E5	More or less dry, mid grey-brown (flecked with light brown sand), unconsolidated (collapsed and loose in upper 0.18 m of tube), sandy silt	Stones (to 12 mm) and rootlets present throughout; the latter abundant from 0.00-0.09	none	level	-	-	-
0.350	0.450	37.460	37.360	E4	Dry, mid to dark grey-brown, unconsolidated, sandy silt (approx. 50% of core section volume)	Abundant brick/tile rubble (to 38 mm) - approx. 50% of core section volume. Cinder (to 12 mm) and fine (but woody) rootlet common throughout	none	level	-	-	-
0.450	0.490	37.360	37.320	A0	No matrix	All of section was of angular, pale grey/grey-brown, stone (to 24 mm)	none	level	-	-	-
0.490	0.520	37.320	37.290	A0	Dry, mid to dark grey layer of ?ashy silt	Abundant ?burnt stones (to 12 mm)	none	level	-	-	-
0.520	0.550	37.290	37.260	A0	As 0.49-0.52 (above) but colour mixed between mid to dark grey and mid to dark red-brown; latter probably leaching from layer below	none	none	level	-	-	-
0.550	0.580	37.260	37.230	A0	Dry, mid to dark grey-brown, unconsolidated (loose), ?ashy sandy silt matrix; very much a minor component (~10%) of this section	Mostly of dry, angular, brick/tile (to 35 mm), with a little ?mortar (to 37 mm)	none	level	-	-	-
0.580	0.800	37.230	37.010	A0	Just moist, mid brown, stiff (working plastic), clay	Cinder and ?ash lumps (both to 12 mm) present throughout	none	level	-	-	-
0.800	1.000	37.010	36.810	A0	Just moist, mid to dark grey-brown to mid to dark grey, crumbly (working more or less plastic), silty clay (grading to clay silt from top to bottom)	Abundant fine ash throughout. Large brick/tile fragment (to 108 mm) at 0.80-0.88, with a little associated mortar (to 10 mm)	none	level	-	-	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
1.000	1.230	36.810	36.580	A0	Just moist, very dark grey to black, crumbly to unconsolidated, very ashy sandy silt	Large lumps (to 110 mm) of conglomerate ?floor surface at 1.13-1.20 overlying a thin band with abundant angular and rounded stones (to 50 mm) at 1.20-1.23	none	level	-	-	-
1.230	1.440	36.580	36.370	A1	Moist, very dark grey to black, soft to unconsolidated, slightly clay silt	Fine ?ash, ?rootlet, stones (to 12 mm) and possible other waterlogged organic material throughout	slight	grades	-	-	-
1.440	1.600	36.370	36.210	A1	Moist, very dark grey to black, soft to unconsolidated, slightly sandy silt	Fine ?ash, ?rootlet, stones (to 12 mm) and possible other waterlogged organic material throughout. ?Standing ground water from ~1.50 downwards. Very rotted charcoal (to 3 mm) and some ?coal (to 4 mm) at 1.60	slight	grades	-	-	-
1.600	2.000	36.210	35.810	A1	Moist, very dark grey to black, soft to unconsolidated, slightly silt slightly clay sand	Fine ?ash, ?rootlet, stones (to 12 mm) and possible other waterlogged organic material throughout	slight	level	Sample 22 = ~half of core section from 1.60-1.65	-	-
2.000	2.230	35.810	35.580	A1	Continues as 1.60-2.00 above, with small clast of mid brown sand (to 10 mm)	Fine ?ash, ?rootlet, stones (to 12 mm) and possible other waterlogged organic material throughout	very slight	level	Sample 23 = ~half of core section from 2.10-2.20	-	-
2.230	2.840	35.580	34.970	B0	Wet, light to mid brown, unconsolidated, coarse sand	Rounded stones (to 14 mm) present at 2.64-2.84	none	level	-	-	-
2.840	3.000	34.970	34.810	C0	Largely void as core section collapsed. Remaining matrix of loose, saturated, coarse sand	Abundant rounded pebbles (to 45 mm)	-	-	-	-	-

xiv) Borehole N

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.200			E0	Core section collapsed in tube. No matrix.	More or less dry, light and dark grey, mostly cinder (to 30 mm) and ?ash, with some pieces of ?aggregate (to 40 mm)	none	level	-	-	-
0.200	0.500	39.165	38.665	A0	Just moist, mid brown to mid to dark grey-brown, unconsolidated, ashy and slightly silty, sand	Crushed cinder and coal (to 4 mm), brick/tile (to 28 mm) and ?mortar (to 8 mm, very rotted) were all common	none	level	-	-	-
0.500	0.630	38.665	38.535	A0	Just moist, mid brown, stiff (working plastic), clay - surface discoloured to dark grey from 0.55-0.63 (?transfer in sampling tube)	none	none	level	-	-	-
0.630	1.000	38.535	38.165	B0	Moist (becoming wet from 0.70 downwards - ?standing ground water), mid to dark grey-brown to dark grey to black, soft and slightly sticky (works very sticky), sandy clay, with some small clasts (to 20 mm) of light to mid brown clay (at 0.65-0.68, 0.79-0.81, 0.89-0.92, 0.96-1.00)	Abundant very rotted charcoal (to 8 mm) and very rotted ?mortar throughout (with a mortar concentration at 0.95-1.00)	none	level	Sample 29 = ~half of core from 0.75-0.80	-	-
1.000	1.070	38.165	38.095	B0	Core section collapsed in tube. Moist to wet, dark grey, unconsolidated and slightly sticky (working soft), slightly sandy clay silt	none	none	level	-	-	-
1.070	1.220	38.095	37.945	B1	Moist to wet, dark grey, soft (working soft and slightly sticky), slightly sandy clay silt	Very rotted wood (little more than an orange discolouration) at 1.08-1.10 and coal (to 3 mm) fragments (at 1.13-1.14) were present	none	level	-	-	-
1.220	1.290	37.945	37.875	B2	Moist, black, unconsolidated to crumbly (working more or less soft), very humic sediment. Appears to be mostly amorphous organic material with, perhaps, a little silt	Bark fragment (to 50 mm) at 1.25-1.26	none	level	-	-	-
1.290	1.320	37.875	37.845	C2	No matrix.	Consist entirely of a piece of poorly preserved saturated wood	none	level	-	Spot Sample 4: willow	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
1.320	1.580	37.845	37.585	C1	Wet, light to mid grey-brown to dark grey-brown, soft and somewhat thixotropic, silty sandy clay, perhaps with a little amorphous organic content at 1.32-1.35	none	none	level	Sample 30 = ~half of core from 1.35-1.40	-	-
1.580	1.600	37.585	37.565	C0	Wet to waterlogged, light grey-brown, unconsolidated and rather granular, slightly sandy clay - granules moslty seem to be small (to 2 mm) lumps of indurated clay	none	none	level	-	-	-
1.600	1.750	37.565	37.415	C3	As at 1.32-1.58 (above)	Twig fragments (to 3 mm diameter) at 1.67	none	level	-	-	Twig fragment taken as spot sample 5 for AMS dating
1.750	1.800	37.415	37.365	C2	Wet, mid grey to dark grey-brown (and shades between), soft (working sticky), silty clay (to clay silt)	Coal/cinder (to 4 mm) present throughout, bone fragment (to 11 mm) at 1.74 and wood fragment (saturated and rotted) at 1.80	none	level	-	-	-
1.800	1.880	37.365	37.285	C0	Discrete components of wet, pale blueish-grey, sticky, clay and wet, mid to dark brown to grey-brown, sticky (working soft), clay silt	Small coal fragments (to 5 mm) present throughout	none	level	-	-	-
1.880	1.910	37.285	37.255	C0	Band of wet, dark brown, slightly sticky (working soft), ?humic, slightly sandy clay silt	Blue ?vivianite (to 12 mm) at 1.91	slight	level	-	-	-
1.910	2.000	37.255	37.165	C4	Wet, dark brown, soft, very organic silt	Abundant waterlogged herbaceous detritus. Hazelnut fragment at 1.93-1.94	overpowering	level	-	-	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
2.000	2.460	37.165	36.705	C4	Continues as 1.91-2.00 (above), with a pale blueish-grey clay inclusion (as see in 1.80-1.88, above)	Abundant waterlogged herbaceous detritus, large wood fragments and also twigs throughout	overpowering	level	Sample 31 = core section at 2.10-2.15	Spot samples of roundwood (?wattle) taken from 2.00-2.05 (Spot sample 6: willow and hazel), 2.10-2.18 (Spot Sample 7: alder), 2.23-2.33 (Spot Sample 8: alder), 2.35-2.39 (Spot Sample 9: ash)	Spot samples 11 at 2.17 and 12 at 2.40 of twig fragments for AMS dating
2.460	2.610	36.705	36.555	C0	Moist to wet, very dark grey-brown, soft, silty clay sand	none	none	level	-	-	-
2.610	2.720	36.555	36.445	C3	Moist to wet, very dark grey-brown, crumbly (works soft), ?slightly silty, clay sand	Large roundwood (?wattle) inclusions at 2.62-2.64 and 2.67-2.70	very slight	level	Sample 32 = core section at 2.65-2.70	Two roundwood pieces at 2.62-2.64 and 2.67-2.70 taken as Spot Sample 10: willow	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
2.720	2.850	36.445	36.315	C2	Moist, light grey-brown to mid to dark grey (in shades of grey and grey-brown), unconsolidated, sand	Large rounded stones (to 40 mm) at 2.73-2.75	none	level	-	-	Spot sample 13 = twig fragment at 2.74 taken for AMS dating
2.850	3.000	36.315	36.165	C1	continues as 2.72-2.85 (above) but section collapsed in tube	Small sliver of decayed wood at 2.85	none	level	-	-	-
3.000	3.800	36.165	35.365	C0	Just moist, mid brown, very stiff (working plastic), clay	none	none	level	-	-	-
3.800	3.980	35.365	35.185	C0	Just moist, light to mid grey, stiff (working plastic), clay	none	none	grades	-	-	-
3.980	4.000	35.185	35.165	C0	Moist, light to mid grey, sticky (working soft), sandy clay	none	none	-	-	-	-

xv) Borehole O

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.400	39.642	39.242	A5	Section collapsed in tube. Small amount of matrix of just moist, mid to dark grey, slightly clay sandy silt	Some fine ?ash content within the matrix. Fresh grass and moss from current ground surface at 0.00-0.02 and associated rootlet penetration to 0.14 m. Brick/tile (to 30 mm), mortar (to 15 mm), cinder (to 12 mm) and large lumps of slag (to 70 mm) formed the bulk of this section of the core	none	level	-	-	-
0.400	0.540	39.242	39.102	A3	As 0.40-0.54 but with an increasing percentage of brick tile and small patched of mid brown sand (at 0.50-0.52)	As above but with an increasing percentage of brick/tile which becomes the dominant component at 0.50-0.54	none	level	-	-	-
0.540	0.680	39.102	38.962	A0	Moist, dark grey (occasionally mid to dark grey-brown), unconsolidated, ashy, slightly clay silty sand	Rotted mortar at 0.62-0.68	none	level	-	-	-
0.680	0.790	38.962	38.852	A0	Matrix as at 0.54-0.68 but only a minor component of this section	Mostly composed of cinder, slag, mortar and coal (all to 20 mm)	none	level	-	-	-
0.790	0.900	38.852	38.742	A0	Just moist, light grey, stiff (working more or less plastic), slightly silty clay	none	none	level	-	-	-
0.900	1.000	38.742	38.642	A0	No matrix	Almost entirely composed of dry, shattered brick (to 60 mm), with a little associated mortar and traces of ?ash/cinder (the last perhaps contamination from the layer above, however)	none	level	-	-	-
1.000	1.200	38.642	38.442	A0	Section collapsed in tube. Relatively small amount of matrix (~40% of volume) of moist, mid to dark grey-brown, soft (working more or less plastic), silty clay	Mostly of shattered brick (to 70 mm), also one piece of ?Victorian pottery noted	none	level	-	-	-
1.200	1.770	38.442	37.872	A2	Matrix continues as 1.00-1.20 (above)	Infrequent brick/tile and stones (both to 10 mm), large lumps of coal (to 60 mm) at 1.41-1.47 and fine waterlogged plant remains present throughout (most appears to be fine rootlet)	slight	level	Sample 24 = ~half of core from 1.30-1.35	-	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
1.770	2.000	37.872	37.642	B0	Wet (possibly within standing ground water from 1.77 downwards), mid to dark grey-brown, sticky (working plastic), clay, with a little sand content in 1.97-2.00	Brick/tile fragment (to 25 mm) at 1.77	none	level	-	-	-
2.000	2.390	37.642	37.252	D0	Void	-	none	level	-	-	-
2.390	2.890	37.252	36.752	C0	Waterlogged, mid to dark grey-brown, unconsolidated and slightly sticky, slightly clay silty sand (to sandy silt in places)	Occasional rounded stones (to 15 mm) throughout	slight	level	Sample 25 = core section from 2.70-2.75	-	-
2.890	3.000	36.752	36.642	C0	Just moist, mid brown to mid to dark grey-brown, stiff (working plastic), clay	none	none	level	-	-	-
3.000	4.000	36.642	35.642	C0	clay as at 2.89-3.00 (above) continues, with a void at 3.36-3.44	none	none	-	-	-	-

xvi) Borehole P

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.070	39.925	39.855	A0	More or less dry, light to mid slightly pinkish-brown, stiff (working plastic), clay, with a little sand	Small stones (to 6 mm) present throughout	none	n/a	-	-	-
0.070	0.270	39.855	39.655	A0	No real matrix - perhaps a little sand though this may be from the rotted mortar	More or less dry, loose and collapsed in core tube, mix of cinder/coal (to 4 mm - common becoming abundant at 0.19-0.27), brick/tile (to 8 mm) and mortar (to 8 mm)	none	n/a	-	-	-
0.270	0.320	39.655	39.605	A0	More or less dry, mid brown (slightly reddish in places), crumbly (working soft), clay sand	Coal (to 10 mm) present throughout	none	level	-	-	-
0.320	0.360	39.605	39.565	A0	More or less dry, approximately equal mix of buff, unconsolidated, sand and small lumps (to 8 mm) of mid to dark grey-brown clay sand	None	none	level	-	-	-
0.360	0.600	39.565	39.325	A0	More or less dry, light brown to light to mid grey-brown, firm (working more or less soft), clay sand (to sandy clay)	Occasional flecks of coal (to 3 mm) throughout	none	n/a	-	-	-
0.600	1.000	39.325	38.925	A2	Collapsed and loose in core tube - just moist, mid grey to mid grey-brown, unconsolidated (working soft and somewhat plastic), silty clay	Occasional fragments of brick/tile (to 70 mm) present and modern roots noted at 0.65-0.70	none	n/a	-	-	-
1.000	1.130	38.925	38.795	A2	Collapsed and loose in core tube - matrix description as for 1.13-1.31 below	Some charcoal and root fragments present	none	n/a	-	-	-
1.130	1.310	38.795	38.615	A3	Just moist, mid grey, crumbly (working soft), slightly sandy clay silt, with some inclusions of light grey-brown crumbly sand at 1.13-1.24	Roots (at 1.13-1.19) and charcoal (at 1.17-1.21) were common with charcoal becoming abundant from 1.21-1.31. Animal bone fragment (to 20 mm) at 1.30-1.31	none	level	-	-	-
1.310	1.500	38.615	38.425	A2	Just moist, dark brown to dark grey-brown, crumbly (working more or less soft), ?silt or very humified amorphous organic sediment - ?peat, flecked with buff sand/rotted mortar	None	none	level	Sample 33 = ~half of core from 1.45-1.50	-	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
1.500	1.630	38.425	38.295	A2	Just moist, mid to dark, slightly purplish-brown, amorphous organic sediment - ?humified peat	Fragments of moss 'stems and leaves', sedge (<i>Carex</i>) nulets and rootlets	none	level	Sample 34 = ~half of core from 1.50-1.55	-	-
1.630	1.730	38.295	38.195	A2	As 1.31-1.50 - ?peat but without the buff flecks	None	none	level	-	-	-
1.730	1.910	38.195	38.015	A0	Moist, dark brown to dark grey-brown, crumbly (working soft), slightly clay silt	A little fine ?charcoal (to 6 mm) at upper interface (i.e. at 1.73)	none	n/a	-	-	-
1.910	2.000	38.015	37.925	A2	Further ?very humified peat as 1.63-1.73 but collapsed and loose in core tube	None	none	n/a	Sample 35 = ~half of core from 1.91-1.96	-	-
2.000	2.670	37.925	37.255	A0	Moist, dark grey, crumbly (working soft), clay sand, becomes more clay at 2.48-2.67 and works soft and somewhat plastic	None	none	n/a	Sample 36 = ~half of core from 2.00-2.05	-	-
2.670	3.000	37.255	36.925	A0	Moist, light brown, unconsolidated, very 'clean' sand	None	slight	level	-	-	-
3.000	3.500	36.925	36.425	A0	Sand as at 2.67-3.00 continues but perhaps more light grey-brown than light brown	Rounded pebbles (to 30 mm) common to abundant throughout	none	level	-	-	-
3.500	4.000	36.425	35.925	B0	Sand as at 3.00-3.50 continues but mid brown in colour and becoming more wet than moist	Rounded pebbles (to 40 mm) common to abundant throughout	none	-	-	-	-

xvii) Borehole Q

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.480	39.215	38.735	E0	Collapsed and loose in core tube - just moist (to dry in places), light grey-brown to mid brown, unconsolidated, silty sand	Abundant stones (to 30 mm) throughout and modern glass fragment (to 25 mm) at 0.43-0.45	none	level	-	-	-
0.480	0.540	38.735	38.675	E0	Just moist, very dark grey to black, compressed (working more or less soft), very ashy, slightly clay silt, with some light to mid brown sand on outer surface in places	?Cinder/part burnt coal (to 20 mm) present throughout and occasional pieces of ?rotted mortar (to 8 mm)	none	level	-	-	-
0.540	1.000	38.675	38.215	E0	Just moist, dark grey-brown, firm (working soft), slightly clay sandy silt (more sandy in places) grading into stiff (working more or less plastic) slightly sandy slightly silty clay	Small rounded pebbles (to 12 mm) and occasional pieces of ?cinder/coal (to 8 mm) present throughout. Small modern glass fragment (to 7 mm) at 0.70	none	level	-	-	-
1.000	1.470	38.215	37.745	A0	Matrix as 0.54-1.00 (above) but varies between the predominantly silt and predominantly clay components	none	none	level	-	-	-
1.470	1.500	37.745	37.715	A0	Relatively small amount of matrix as at 1.00-1.47 (above) accounts for approximately half of this section	Mortar and crushed brick/tile (both to 15 mm) common to abundant	none	level	-	-	-
1.500	1.630	37.715	37.585	B0	Wet, mid to dark brown to grey-brown, stiff (working soft then more or less plastic), slightly sandy silty clay, becomes more sandy with depth and grades into next lowest section	Stones (to 30 mm) common at 1.53-1.55 and present throughout the rest of this section	none	grades	Sample 44 = ~half of core from 1.50-1.55	-	-
1.630	1.830	37.585	37.385	C0	Wet, mid to dark brown to grey-brown, compacted/firm, slightly clay slightly silty sand	Occasional rounded pebbles (to 20 mm) throughout	none	n/a	-	-	-
1.830	2.000	37.385	37.215	C0	Collapsed and loose in core tube - wet, mid brown, unconsolidated, coarse sand	none	none	n/a	-	-	-
2.000	2.100	37.215	37.115	D0	Void	-	-	level	-	-	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
2.100	2.480	37.115	36.735	C0	Moist to wet, light to mid brown to mid grey-brown, compacted (firm but crumbles), slightly silty sand	Stones (to 15 mm) present throughout	none	level	-	-	-
2.480	2.880	36.735	36.335	C0	Moist to wet, light to mid grey-brown, unconsolidated, coarse sand	Occasional stones (to 25 mm) present throughout but larger (to 70 mm) and more frequent (common) at 2.83-2.88	none	level	-	-	-
2.880	2.980	36.335	36.235	C0	Moist to wet, mid brown, stiff (working soft then plastic), clay	none	none	level	-	-	-
2.980	3.000	36.235	36.215	C0	Sand as at 2.48-2.88 (above)	Stones (to 50 mm) present throughout	none	level	-	-	-
3.000	3.800	36.215	35.415	C0	Core tube broken and only 0.8 metres long - just moist, mid brown, very stiff (working plastic), clay, with a slight 'dusting' of light to mid brown sand at 3.00-3.03 and a small intrusion of moist, mid brown, unconsolidated, sand at 3.21-3.24	A very occasional stone - e.g. small rounded pebble (to 12 mm) at 3.50-3.51	none	-	-	-	-

xviii) Borehole R

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.500	39.180	38.680	E0	Largely collapsed in core tube - no real matrix	Largely collapsed in core tube - slightly moist mix of mortar, brick, stones, cinder and sand, with a particular concentration of brick at 0.44-0.50	none	level	-	-	-
0.500	1.000	38.680	38.180	A0	Just moist, very dark grey, soft (working soft and slightly plastic), ?ashy, slightly sandy clay silt, flecked with occasional light coloured sand grains	Traces of brick/tile (to 8 mm) and occasional stones (to 9 mm) throughout, ?mortar (to 30 mm) at 0.84, Flecks of granular black ?cinder/part burnt coal (to 5 mm) at 0.95-1.00	none	level	-	-	-
1.000	1.090	38.180	38.090	D0	Void	-	-	level	-	-	-
1.090	1.360	38.090	37.820	A0	As 0.50-1.00 above, with occasional clasts (to 10 mm) of light to mid brown sticky clay	as 0.50-1.00 above but with coal (to 14 mm) throughout	none	level	-	-	-
1.360	1.560	37.820	37.620	A0	Moist to wet, light brown to light to mid grey-brown, soft, coarse sand	rounded pebbles (to 25 mm) at 1.53-1.56	none	level	Sample 27 = ~half of core from 1.40-1.45	-	-
1.560	1.600	37.620	37.580	A0	Grades from sediment above (1.36 to 1.56) info sediment below	none	none	level	-	-	-
1.600	1.740	37.580	37.440	A0	Moist, light to mid grey, firm (working soft and somewhat plastic)	none	none	level	-	-	-
1.740	1.870	37.440	37.310	A0	Moist, light to mid brown to grey-brown, soft (working more or less plastic clay, with indurated 'granules' of mid brown clay (to 2 mm)	none	none	level	-	-	-
1.870	2.000	37.310	37.180	B0	Moist to wet, light brown to light to mid grey-brown, soft, coarse sand	abundant rounded pebbles (to 35 mm)	none	level	-	-	-
2.000	2.500	37.180	36.680	D0	Void	-	-	-	-	-	-
2.500	3.000	36.680	36.180	C0	Moist (to wet from 2.35 downwards, mid brown to mid grey-brown, stiff (working plastic), clay	none	none	declined at approximately 45 degrees -	-	-	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
								interface depth range 2.85-3.00			
3.000	3.080	36.180	36.100	D0	Void	-	-	-	-	-	-
3.080	4.000	36.100	35.180	C0	clay as 2.50-3.00	none	none	-	-	-	-

xix) Borehole S

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.160	39.770	39.610	A0	Just moist, light brown, unconsolidated to soft, very 'clean' sand	None	none	level	-	-	-
0.160	0.810	39.610	38.960	A0	No matrix	More or less dry, unconsolidated (collapsed and loose in tube), angular stone (to 80 mm)	none	level	-	-	-
0.810	1.000	38.960	38.770	A0	Just moist, dark grey-brown, crumbly, slightly silty sand	possibly slightly ashy	none	level	-	-	-
1.000	1.280	38.770	38.490	D0	Void , with a little collapsed sand (as layer below)	None	none	level	-	-	-
1.280	2.000	38.490	37.770	A0	Moist, mostly mid to dark grey-brown, unconsolidated, slightly silty sand, with occasional light brown patches of sand at 1.40, 1.60, 1.70 and dark grey sand at 1.53 and 1.74 - section from 1.90-2.00 collapsed and loose in tube	Small stones (to 8 mm) present throughout. Traces of brick/tile (to 7 mm) from 1.90-2.00	none	level	Sample 27 = ~half of core from 1.50-1.55	-	-
2.000	2.360	37.770	37.410	A0	sand as at 1.28-2.00 continues	Small stones (to 8 mm) present throughout	none	level	Sample 28 = ~half of core from 2.30-2.35	-	-
2.360	2.440	37.410	37.330	A0	No matrix	Brick surface - large fragments to 130 mm	none	level	-	-	-
2.440	2.550	37.330	37.220	A0	No matrix	Angular stone and conglomerate (to 50 mm) - looks to be hardcore for overlying brick surface (2.36-2.44)	none	level	-	-	-
2.550	2.620	37.220	37.150	A0	Moist, mid to dark to dark grey, unconsolidated, sand	Flecks of rotted charcoal (to 6 mm) and small stones (to 8 mm) present throughout	none	level	-	-	-
2.620	3.280	37.150	36.490	A0	Moist, light brown to light grey-brown, unconsolidated, fairly coarse 'clean' sand	None - ?deliberately laid 'bedding'	none	level	-	-	-
3.280	4.000	36.490	35.770	A0	Moist, light brown to light grey-brown, unconsolidated, fairly coarse 'clean' sand	Abundant rounded pebbles (to 20 mm) throughout	none	-	-	-	-

xx) Borehole T

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	1.600	39.495	37.895	A2	Collapsed and loose in core tube - moist, light to mid brown to mid grey-brown, unconsolidated, slightly clay slightly silty sand. Occasional lumps of just moist, pale yellow, slightly stiff (working more or less plastic) clay at 0.10-0.22	Rootlets at 0.00-0.24 and 1.24-1.27, stones (to 25 mm) present throughout 0.00-1.00 and becoming larger (to 60 mm) and common from 1.00-1.60, ?human skull fragment at 0.70 and a ?charred bone fragment (to 20 mm) at 1.59 - depths nominal as core collapsed	none	n/a	-	-	-
1.600	1.800	37.895	37.695	A0	Moist, dark brown to very dark grey-brown to black, crumbly to unconsolidated (working soft), slightly sandy clay silt - dark colour perhaps caused by fine ash	Large ?sandstone inclusion (to 80 mm) at 1.66-1.73 and brick/tile (to 50 mm) at 1.68-1.73	very slight	n/a	Sample 40 = ~half of core from 1.65-1.70	-	-
1.800	3.700	37.695	35.795	A2	Collapsed and loose in core tube - moist, light brown to light to mid grey-brown, unconsolidated, fine and coarse sand (becoming more coarse with increasing depth)	Large rounded pebbles (to 80 mm) abundant at 3.44-3.54	none	level	-	-	-
3.700	4.000	35.795	35.495	A2	Moist mid brown, very stiff (working plastic), clay	none	none	-	-	-	-

xxi) Borehole U

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	1.000	39.245	38.245	A0	Collapsed and loose in core tube - moist, mid brown to mid grey-brown to mid to dark grey, unconsolidated, slightly silty clay sand	Stones (to 60 mm) and fragments of brick/tile (to 90 mm) present throughout. Depths rather meaningless given core collapse but animal bone fragment (to 55 mm) at 0.35 and several fragments of ?human skull (to 40 mm) at 0.60-0.65	none	n/a	-	-	-
1.000	1.500	38.245	37.745	A0	Moist (becomes wet at around 1.50), mid to dark grey-brown, slightly sticky (working soft then crumbly), slightly clay sandy silt/silty sand	Occasional stones (to 35 mm) and pieces of coal (to 8 mm) throughout. Large ?human skull fragment (to 80 mm) at 1.00-1.08	none	level	-	-	-
1.500	1.570	37.745	37.675	A0	A very little matrix as above (1.00-1.50) but wet and unconsolidated	Single large rounded pebble/?cobble (to 70 mm)	none	level	-	-	-
1.570	1.770	37.675	37.475	B0	Moist to wet, mid to dark grey-brown, slightly sticky (working soft then crumbly), slightly clay silty sand, with a small patch of light brown coarse sand at 1.77	Stones (to 15 mm) present throughout	none	level	Sample 38 = ~half of core from 1.65-1.70	-	-
1.770	1.960	37.475	37.285	B1	Moist to wet, dark grey-brown, brittle (working soft and slightly plastic), clay silt	Trace of ?waterlogged organic detritus and an occasional rounded pebble (to 18 mm) present	slight		-	-	-
1.960	2.000	37.285	37.245	D0	Void - sediment collapsed from tube	-	-	-	-	-	-
2.000	2.170	37.245	37.075	B2	As 1.77-1.96 above	Root at 2.03	slight	n/a	Sample 37 = ~half of core from 1.65-1.70	-	-
2.170	3.000	37.075	36.245	C2	Collapsed and loose in core tube - moist to wet, mid brown, unconsolidated (occasionally slightly sticky), slightly clay coarse sand	Rotted wood fragment (to 60 mm) at 2.17-2.23, rounded pebbles (to 60 mm) abundant throughout	none	-	-	Rotted wood inclusion (to 60 mm) Spot Sample 14: oak	-

xxii) Borehole V

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	1.000	39.390	38.390	A3	Collapsed and loose in core tube - more or less dry, mid to dark brown, unconsolidated, sand	Rounded stones (to 20 mm) present throughout and root penetration to 0.40 (with traces at 0.90 too); depths rather meaningless owing to collapse of core, however	none	n/a	-	-	-
1.000	1.440	38.390	37.950	A0	Collapsed and loose in core tube - matrix as above (0.00-1.00) but becoming moist from around 1.40 downwards	Rounded stones (to 20 mm) present throughout	none	n/a	-	-	-
1.440	1.510	37.950	37.880	A3	No matrix	Large wood fragment at 45 degrees to horizontal	none	n/a	-	Spot Sample 15: elm	-
1.510	1.700	37.880	37.690	A3	Matrix as at 1.00-1.44 but only partially collapsed and moist, with a slight clay content in places	Rounded stones (to 20 mm) present throughout and two areas with waterlogged wood fragments - several small pieces (to 15 mm) at 1.51-1.54 and slightly larger fragments (to 35 mm) at 1.56-1.63 (rather decayed and orange-coloured); also root fragment through a larger wood fragment	none	level	Sample 39 = ~half of core from 1.51-1.56	Several wood fragments from 1.56-1.63 Spot Sample 17: ash	-
1.700	1.790	37.690	37.600	A3	Moist, mid grey, crumbly to unconsolidated (working soft), clay sand, with some patches of mid orange unconsolidated sand	Large stone (to 60 mm) at 1.71-1.77 and large (to 60 mm) horizontal wood fragment at 1.75-1.79	none	level	-	Large wood fragment Spot Sample 16: oak	-
1.790	2.000	37.600	37.390	A0	Moist, mid grey-brown, stiff (working soft and somewhat plastic), sandy clay	Occasional rounded pebbles (to 15 mm) present	none	n/a	-	-	-
2.000	2.500	37.390	36.890	A2	Whole tube marked as 2.00-2.50 but half void - moist, mid brown, mid grey and mid grey-brown, unconsolidated, sand, with a little grey clay (more clay at 2.00-2.15, i.e. clay sand which works soft and slightly plastic)	Rounded pebbles (to 70 mm) common and an occasional rotted wood fragment (to 60 mm), e.g. at 2.15-2.20	none	level	-	-	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
2.500	3.500	36.890	35.890	A0	Whole tube marked as 2.50-3.50 but core discontinuous in 2 parts and total deposit length present 0.86 m - both sections of core the same just moist, mid brown, very stiff (working plastic), clay	upper surface (?2.50-2.60) sandy, very compacted and with inclusions of stones (to 30 mm)	none	level	-	-	-
3.500	4.500	35.890	34.890	A0	Clay as at 2.50-3.50 continues	pieces of contaminant fresh grass on outer surface of core	none	-	-	-	-

xxiii) Borehole W

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	1.000	40.030	39.030	E4	Collapsed and loose in core tube - moist, mid to dark brown to grey-brown, unconsolidated, sand	Depth records effectively meaningless owing to core collapse but roots and ?ornamental bark at 0.00-0.15, modern pot fragment (to 30 mm) at 0.50, stones (to 15 mm) present throughout becoming common from 0.80-1.00	none	n/a	-	-	-
1.000	1.360	39.030	38.670	A3	Just moist, dark grey-brown, crumbly to unconsolidated (working more or less soft), sandy clay silt	Occasional stones and brick/tile fragments (both to 15 mm) present throughout, root at 1.05-1.10 and 1.35 (continuing down to 1.48), single pot sherd (to 30 mm) at ~1.20	none	level	-	-	-
1.360	1.770	38.670	38.260	A3	Moist, mid brown, grey and grey-brown, crumbly to unconsolidated, sand	Root as noted above continues to 1.48 and stones (to 15 mm) were present at around 1.55	none	level	-	-	-
1.770	2.000	38.260	38.030	A0	Moist, light to light to mid brown/orange-brown, crumbly to unconsolidated, sand - orange colouration from ?iron pan/oxide	Stone (to 55 mm) present at 1.97-2.00	none	n/a	-	-	-
2.000	2.480	38.030	37.550	A0	As 1.77-2.00 but collapsed and loose in core tube	None	none	n/a	-	-	-
2.480	2.640	37.550	37.390	A0	Small amount of matrix of moist, light to mid slightly blue grey, sticky (working more or less plastic), slightly sandy clay - more sandy at 2.58-2.64 and this area more mid grey-brown in colour	Most of core section composed of abundant large stones (to 65 mm)	none	declined at 30 degrees	-	-	-
2.640	3.000	37.390	37.030	A0	Just moist, mid brown, very stiff (working plastic), clay	None	none	-	-	-	-

xxiv) Borehole X

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.340	37.615	37.275	E0	Collapsed and loose in core tube - a little matrix of dry, light to mid grey, unconsolidated, clay	Mostly loose angular 'hard core' stones (to 45 mm)	none	level	-	-	-
0.340	0.600	37.275	37.015	E3	Just moist, mid to dark brown to dark brown, unconsolidated, silty sand (topsoil)	Brick/tile (to 20 mm), mortar (to 15 mm), modern rootlets and stones (to 35 mm) present throughout	none	level	-	-	-
0.600	1.120	37.015	36.495	A2	Moist, mid brown, very stiff (working plastic), clay, with sandy intrusion at 0.83-0.90	Stones at 0.83-0.90, and rootlets at 0.80-0.85 and 0.94	none	level	-	-	-
1.120	1.420	36.495	36.195	A0	Just moist, light brown to mid grey-brown to mid to dark grey, unconsolidated, sand	Stones (to 15 mm) present throughout	none	level	-	-	-
1.420	2.000	36.195	35.615	A0	Moist, mid brown, very stiff (working plastic), clay	Occasional stones (to 10 mm) present - particularly at 1.75-1.85, also a large angular rock (to 80 mm) inclined at ~45 degrees to horizontal at 1.53-1.59	none	level	-	-	-
2.000	2.210	35.615	35.405	D0	Void	-	-	-	-	-	-
2.210	2.840	35.405	34.775	A0	Clay as at 1.42-2.00 (above)	Occasional fairly large stones present, e.g. rounded pebble (to 65 mm) at 2.48-2.55	none	n/a	-	-	-
2.840	2.880	34.775	34.735	D0	Void	Single large angular stone (to 85 mm) penetrates into underlying clay to 2.92 - vertically aligned relative to greatest dimension	-	n/a	-	-	-
2.880	3.000	34.735	34.615	A0	Clay as at 2.21-2.84 (above)	none	none	-	-	-	-

xxv) Borehole Y

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.500	39.900	39.400	E0	Collapsed and loose in core tube - conglomerate 'hard core' in lumps to 80 mm; 'cemented' stones and loose light brown dry sand	none	none	n/a	-	-	-
0.500	0.830	39.400	39.070	E0	Collapsed and loose in core tube - as 0.00-0.50 above but also with large stones (to 80 mm), sand component moist and mid brown in colour	Collapsed and loose in core tube - as 0.00-0.50 above but also with large stones (to 80 mm), sand component moist and mid brown	none	n/a	-	-	-
0.830	1.000	39.070	38.900	A0	Collapsed and loose in core tube - a little matrix of moist, mid to dark brown, unconsolidated sand	Brick and stone rubble (both to 60 mm), with ?black ash/fine cinder common at 0.83-0.92	none	n/a	-	-	-
1.000	1.800	38.900	38.100	D0	Void	-	-	n/a	-	-	-
1.800	2.000	38.100	37.900	A0	No matrix	Dry shattered brick (to 90 mm)	none	n/a	-	-	-
2.000	2.060	37.900	37.840	A0	No matrix	'Plug' of dry brick (to 100 mm)	none	level	-	-	-
2.060	2.120	37.840	37.780	A0	'Plug' of moist mid to dark grey-brown to dark grey, compressed (working crumbly), silty sand	Crushed brick (to 50 mm) and black ash/cinder abundant at upper surface (2.06)	none	level	-	-	-
2.120	2.750	37.780	37.150	A0	Moist, light brown to light to mid grey-brown (rather orange from 2.12-2.30 probably from surface contamination from brick above), unconsolidated, sand	none	none	n/a	-	-	-
2.750	3.000	37.150	36.900	A0	Collapsed and loose in core tube - a little matrix of sand as at 2.12-2.75 continues	Abundant rounded pebbles (to 50 mm) form approximately 90% of the volume of this section	none	n/a	-	-	-
3.000	3.740	36.900	36.160	A0	Sand as at 2.12-2.75, with a slightly reddish area (?iron pan/oxide) at 3.38-3.44	Occasional rounded pebbles (to 40 mm) present throughout, small 'lens' of pebbles (to 25 mm) at 3.44-3.50, rounded pebbles (to 25 mm) common at interface with layer below (3.71-3.74)	none	n/a	-	-	-
3.740	4.000	36.160	35.900	A0	Just moist, mid brown, very stiff (working plastic), clay	none	none	-	-	-	-

xxvi) Borehole Z

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.250	38.460	38.210	E3	Collapsed and loose in core tube - a little sand may constitute matrix?	Fill consists largely of rounded pebbles (to 40 mm), with occasional fragments of brick/tile (to 15 mm) and a little sand - ?ornamental pebble surface? More or less dry grass at 0.25	none	level	-	-	-
0.250	0.700	38.210	37.760	A0	Just moist, light brown to mid grey (in shades of brown, grey and grey-brown), unconsolidated, sand	Brick/tile fragments (to 8 mm) at 0.43-0.45	none	level	-	-	-
0.700	1.000	37.760	37.460	A0	Just moist, light grey-brown, unconsolidated, sand	Abundant rounded pebbles (to 45 mm) throughout	none	n/a	-	-	-
1.000	1.680	37.460	36.780	D0	Void	-	-	level	-	-	-
1.680	2.040	36.780	36.420	A0	Sand as at 0.70-1.00, with some mid orange areas of ?iron pan/oxide	Abundant rounded pebbles (to 45 mm) throughout	none	level	-	-	-
2.040	2.980	36.420	35.480	A0	Moist, mid brown, very stiff (working plastic), clay	None	none	level	-	-	-
2.980	3.000	35.480	35.460	A0	Sand as at 0.70-1.00, but compacted	Rounded pebbles (to 20 mm) common	none	-	-	-	-

xxvii) Borehole AA

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.350	39.970	39.620	E0	Collapsed and loose in core tube - just moist, mid brown to mid to dark grey-brown, unconsolidated, silty sand	Abundant brick/tile (to 55 mm) throughout	none	level	-	-	-
0.350	0.640	39.620	39.330	A0	Moist, mid to dark grey to grey-brown, firm/stiff (working soft), slightly sandy clay silt	Crushed brick/tile fragments (to 20 mm) present at 0.35-0.54	none	level	-	-	-
0.640	1.000	39.330	38.970	A0	Moist, light brown (discoloured to mid to dark grey-brown from layer above at 0.64-0.74), unconsolidated, sand	none	none	level	-	-	-
1.000	2.600	38.970	37.370	A0	Moist, light to mid grey, unconsolidated, fine sand	none	none	level	-	-	-
2.600	3.000	37.370	36.970	A0	Just moist, mid brown to grey-brown, very stiff (working plastic), clay	none	none	-	-	-	-

xxviii) Borehole AB

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.430	39.730	39.300	E0	Collapsed and loose in core tube - a little matrix of dry, light grey, unconsolidated, sand	Mostly modern 'hard core' of brick/tile fragments (to 70 mm) and stones (to 18 mm), with an upper surface 'plug' of tarmac at 0.00-0.05; brick becoming abundant at 0.33-0.43	none	level	-	-	-
0.430	0.480	39.300	39.250	A0	'Plug' of just moist, very dark grey, compacted, very ashy silt	Abundant ash content	none	level	-	-	-
0.480	0.610	39.250	39.120	A0	Collapsed and loose in core tube - matrix of dry, ashy silt as at 0.43-0.48 form approximately half of the volume of this section	Approximately half of the volume of this section composed of lumps of conglomerate 'hard core' (to 100 mm). Significant ash content	none	n/a	-	-	-
0.610	1.000	39.120	38.730	A0	Collapsed and loose in tube - more or less dry ashy silt as at 0.43-0.48 but not compacted	Traces of brick/tile (to 4 mm), coal (to 20 mm) and ?charcoal (to 6 mm) present throughout. Significant ash content	none	n/a	-	-	-
1.000	1.100	38.730	38.630	D0	Void	-	-	-	-	-	-
1.100	1.730	38.630	38.000	B0	Moist (becoming wet from 1.40 down), dark grey-brown, firm/stiff and compacted (collapses when removed from core tube), silty fine sand (to fine sandy silt)	Occasional black flecks/patches (to 10 mm) of ?black ash/cinder	none	level	-	-	-
1.730	2.000	38.000	37.730	B1	Moist, mid to dark grey to grey-brown, somewhat stiff to crumbly (working soft), ?humic, slightly sandy slightly clay silt	None	slight	level	Sample 43 = ~half of core from 1.80-1.85	-	-
2.000	2.060	37.730	37.670	D0	Void	-	-	level	-	-	-
2.060	2.370	37.670	37.360	B0	Moist, fine sandy silt/silty fine sand as at 1.10-1.73; compacted from 2.06 to 2.30 (but collapses when removed from tube) and collapsed in core tube at 2.30-2.37	Occasional rounded pebbles (to 50 mm) present throughout	none	level	-	-	-
2.370	2.790	37.360	36.940	C0	Moist to wet, light to mid yellow-brown, unconsolidated, coarse sand	Rounded pebbles (to 20 mm) common at 2.70-2.79	none	level	-	-	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
2.790	3.000	36.940	36.730	C0	Moist, mid brown, compacted to firm/stiff (working soft), clay sand - collapses when removed from tube	Rounded pebbles (to 60 mm) common throughout	none	-	-	-	-

xxix) Borehole AC

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
0.000	0.460	36.420	35.960	E0	Collapsed and loose in core tube - a little matrix of more or less dry, light grey-brown, sand (becomes very dark grey at 0.28-0.36 from abundant fine ash/cinder)	Most of core volume composed of angular 'hard core' stone (to 65 mm), with occasional fragments of brick/tile (to 45 mm). Abundant fine ash/cinder	none	level	-	-	-
0.460	0.590	35.960	35.830	E0	More or less dry, mid brown to dark grey-brown, compacted and firm (working soft), clay sand - some areas with much more clay content and working more or less plastic	Occasional stones (to 15 mm) and brick/tile (to 50 mm) fragments present	none	level	-	-	-
0.590	0.730	35.830	35.690	E0	No matrix	Large brick rubble inclusion (to 120 mm)	none	level	-	-	-
0.730	0.770	35.690	35.650	E0	Collapsed and loose in core tube - clay sand as at 0.46-0.59 (above)	none	none	level	-	-	-
0.770	1.000	35.650	35.420	E0	Collapsed and loose in core tube - clay sand as at 0.46-0.59 (above)	Brick/tile fragments (to 40 mm) at 0.77-0.80 and modern glass fragment (to 40 mm) at 0.99-1.00	none	level	-	-	-
1.000	1.510	35.420	34.910	E0	Collapsed and loose in core tube - moist, very dark grey, firm to unconsolidated, very ?ashy, slightly sandy silt	Occasional modern pot sherds (to 18 mm) and patches of ?rotted mortar	none	level	-	-	-
1.510	1.580	34.910	34.840	A0	No matrix	Large brick/tile inclusion (to 100 mm)	none	level	-	-	-
1.580	2.000	34.840	34.420	A1	Matrix as at 1.00-1.51	Occasional fragments of brick/tile (to 10 mm) and traces of ?fine root throughout	very slight	level	Sample 41 = ~half of core from 1.80-1.85	-	-
2.000	2.270	34.420	34.150	A0	Matrix continues as at 1.58-2.00 becoming slightly clay and working soft from 2.15 to 2.27	none	none	level	-	-	-
2.270	2.520	34.150	33.900	B0	Moist to wet, dark grey to grey-brown, firm (working soft and somewhat plastic), clay silt	?Rotted mortar (to 12 mm) at 2.38-2.44	none	level	-	-	-
2.520	2.620	33.900	33.800	B0	Moist to wet, mid grey, crumbly (working soft and sticky), clay silt	Stones (to 20 mm) present throughout	none	level	-	-	-
2.620	2.730	33.800	33.690	B0	Moist, light to mid grey to mid grey, firm and slightly sticky (working soft and somewhat	none	none	level	-	-	-

Depth		AOD		PC	Sediment description	Inclusions	Sulphide odour	Interface	Chemical sample	Spot sample	C14
From	To	From	To								
					plastic), silty clay, with a slight surface 'dusting' of sand						
2.730	2.870	33.690	33.550	B0	Moist to wet, light grey to mid grey-brown, unconsolidated, coarse sand, with occasional patches somewhat clayey	none	none	level	-	-	-
2.870	3.000	33.550	33.420	B1	Moist, light to mid grey to mid grey-brown, stiff and slightly sticky (working plastic), very slightly sandy clay, with some black patches from ?sulphide staining left by rotted organics	none	slight	level	-	-	-
3.000	3.230	33.420	33.190	B0	Moist, mid to dark brown, crumbly to unconsolidated, very slightly clay sand	none	none	level	-	-	-
3.230	3.300	33.190	33.120	B0	Moist, light to mid grey, soft (working more or less plastic), slightly silty clay	none	none	level	-	-	-
3.300	3.440	33.120	32.980	B2	Sand as at 3.00-3.23	Large wood fragment (to 60 mm) inclined at approximately 45 degrees to horizontal	none	level	Sample 42 = ~half of core from 3.30-3.40	Wood taken as Spot Sample 18: oak	-
3.440	3.860	32.980	32.560	B2	Moist, mid to dark brown to grey-brown, compacted and firm (working soft), clay sand	Inclusions of large stones (to 60 mm) at 3.55-3.59 and 3.63-3.68, and occasional fragments of organic detritus (?rotted root) throughout	none	level	-	-	?Twig fragment at 3.54 for possible AMS dating
3.860	4.000	32.560	32.420	D0	Void	-	-	-	-	-	-

Table 2. Borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire: Scales employed for the recording of the general composition of the washover fractions from the processed subsamples and the plant and invertebrate (other than unidentified mollusc shell) macrofossil remains recovered.

1) Description of composition of the washover fractions: proportion of organic component

- 1 – 0%
- 2 – <25%
- 3 – <50%
- 4 – <75%
- 5 – >75%

2) Abundance: number of recorded items (identifiable waterlogged plant or invertebrate remains – seeds or fruits/minimum number of individuals represented)

- 1 – sample contained no identifiable items
- 2 – sample contained 1-20 items
- 3 – sample contained 21-100 items
- 4 – sample contained 101-500 items
- 5 – sample contained more than 500 items

3) Diversity: range of recorded items (minimum numbers of identifiable waterlogged plant or invertebrate taxa present)

- 1 – sample contained no non-carbonised, determinable botanical macro-remains, or only largely sub-recent intrusive/contaminant remains, carbonised macro-remains may be present
- 2 – sample contained non-carbonised remains of 1-5 taxa, typically largely corrosion-resistant species (e.g. goosefoot, chickweed, stinking nettle, knotweed)
- 3 – sample contained non-carbonised macro-remains of 6-10 taxa
- 4 – sample contained non-carbonised macro-remains of 11-40 taxa
- 5 – sample contained non-carbonised macro-remains of more than 40 taxa

4) Preservation: condition of recorded items (waterlogged plant or invertebrate remains)

- 1 – no taxon/species determination was possible to the level that should theoretically be possible for the taxon concerned, the material was too severely fragmented and/or corroded
- 2 – some species determination was possible, though the remains were highly fragmented and/or the seed coat was highly corroded
- 3 – most remains could be determined to the maximum taxonomic level feasible, though there was some damage or corrosion to the seed coat (other than splitting, which can be caused by germination prior to deposition)
- 4 – remains complete and undamaged, though no fine elements such as hairs or fragile husk remains were present
- 5 – remains complete and undamaged, and fine, fragile elements such as hairs and some husk remains were present. NB: A large number of species do not include these elements, and the husk of most types of grain is in fact more resistant than the seed coat, so this cannot be used for classification in category 5

The categories for Diversity and Preservation follow Smit *et al.* (2006) with minor modifications.

Table 3. Borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire: Scales employed for the recording of the general composition of the 'squash' subsamples and the microfossils present.

1) Description of composition of the 'squash': proportion of organic component

- 1 – 0%
- 2 – <25%
- 3 – <50%
- 4 – <75%
- 5 – >75%

2) Abundance: number of recorded items (identifiable microfossil remains)

- 1 – sample contained no identifiable items
- 2 – sample contained 1-20 items
- 3 – sample contained 21-100 items
- 4 – sample contained 101-500 items
- 5 – sample contained more than 500 items

3) Diversity: range of recorded items (minimum numbers of microfossil taxa present)

- 1 – sample contained no non-carbonised, determinable microfossil remains, or only largely sub-recent intrusive/contaminant remains, carbonised remains may be present
- 2 – sample contained non-carbonised remains of 1-5 taxa
- 3 – sample contained non-carbonised macro-remains of 6-10 taxa
- 4 – sample contained non-carbonised macro-remains of 11-40 taxa
- 5 – sample contained non-carbonised macro-remains of more than 40 taxa

4) Preservation: condition of recorded items (microfossils)

- 1 – no taxon/species determination was possible to the level that should theoretically be possible for the taxon concerned, the material was too severely fragmented and/or corroded
- 2 – some species determination was possible, though the remains were highly fragmented and/or corroded
- 3 – most remains could be determined to the maximum taxonomic level feasible, though there was some damage or corrosion
- 4 – remains more or less complete and undamaged, there may be some very slight chemical erosion (e.g. parasite eggs may be intact but rather pale)
- 5 – remains complete and undamaged

Table 4. Borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire: Records for plant remains from the washovers from subsamples from Boreholes B-E, G, M, O, Q-T, Y and AC, and also for the small bulk sample from excavations by Earthworks Archaeology (designated EA1). Key: 'S' = subsample; 'Dep (cm)' = depth in borehole in centimetres; 'wt (kg)' = weight of processed subsample in kilos; 'w/o' = volume or weight of washover in ml or g; 'res' = weight of residue in kilos; 'C14' = possible material for radiocarbon dating; 'Desc' = description; 'Ab' = abundance; 'Div' = diversity; 'Pres' = preservation; 'char' = charcoal; 'eec' = earthworm egg capsules; 'fly' = fly puparia; 'sh' = shell; 'bo' = bone; '?fi' = possible fish bone; 'co' = coal; 'b/t' = brick/tile; 'm/p' = mortar/plaster; 'g' = glass; 's/s' = sand and stones; 's/c' = slag/cinder; 'pot/fc' = pottery/fired clay; 'me' = metal; 'lth' = leather; 'x' = present.

S	Dep (cm)	wt (kg)	w/o (ml/g)	res (kg)	C14	Desc	Botanical macro-remains			Other botanical remains					Animal remains					Artefactual and inorganic								
							Ab	Div	Pres	char	mod. root	moss	wood	twig	eec	fly	sh	bo	?fi	co	b/t	m/p	g	s/s	s/c	pot/fc	me	lth
B1	300 to 400	7.200	150	none	none	2	1	1	1	x	x	-	-	-	-	-	-	x	-	-	-	-	-	x	-	x	-	-
B2	244 to 264	1.000	75	0.240	seeds & fruits	3	2	2	2	x	x	-	x	-	x	-	-	x	-	x	x	-	-	x	x	-	x	x
B3	264 to 300	2.100	350	0.430	seeds & fruits	3	2	2	2	x	x	-	x	x	-	-	-	x	-	x	-	-	-	x	x	-	-	-
C1	300 to 400	6.200	30	0.074	none	5	1	1	1	x	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C2	209 to 219	0.400	40	none	seeds & fruits	4	2	2	2	x	x	x	x	-	x	-	-	-	-	-	-	-	-	x	-	-	-	-
C3	190 to 195	0.380	40	none	seeds & fruits	5	4	2	2	x	x	-	x	x	x	x	-	-	-	-	-	-	-	-	-	-	-	-
D1	237 to 300	1.400	10	0.015	seeds & fruits	3	2	2	3	x	x	-	x	-	x	-	-	-	-	-	-	-	-	x	-	-	-	-
D2	200 to 209	0.775	100	0.087	none	2	1	1	1	x	-	-	x	-	x	-	-	x	x	-	-	-	-	x	-	-	-	-
E1	241 to 300	5.000	66	0.286	cereal grain	2	2	2	3	x	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-	x	-	-
E2	212 to 224	0.750	12	0.061	none	2	1	1	1	-	x	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-
G1	235 to 244	0.750	6	0.181	none	2	1	1	1	-	x	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-
G2	125	1.500	69	0.174	seeds	2	3	2	3	x	-	-	-	-	-	-	-	x	-	-	x	-	-	x	-	x	-	-

S	Dep (cm)	wt (kg)	w/o (ml/g)	res (kg)	C14	Desc	Botanical macro-remains			Other botanical remains					Animal remains					Artefactual and inorganic									
							Ab	Div	Pres	char	mod. root	moss	wood	twig	eec	fly	sh	bo	?fi	co	b/t	m/p	g	s/s	s/c	pot/ fc	me	lth	
T3	160 to 180	1.300	39	0.488	none	1	1	1	1	x	x	-	-	-	x	-	-	x	-	-	-	-	-	x	-	x	-	-	
U1	217 to 300	1.360	75	0.838	seeds & fruits	5	3	4	2	-	-	-	x	-	-	-	-	x	-	-	-	-	-	x	-	-	-	-	
U2	177 to 196	1.300	100	0.110	seeds & fruits	5	3	2	2	x	-	-	x	-	x	-	-	x	-	-	-	-	-	x	-	-	-	-	
V1	200 to 250	3.000	10	1.7	none	3	1	1	2	-	-	-	x	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	
V2	179 to 200	1.900	10	0.519	none	5	2	2	2	-	-	-	x	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	
V3	170 to 179	0.480	50	0.104	seeds & fruits	5	2	2	2	x	-	-	x	-	-	-	-	x	-	-	-	-	-	x	-	-	-	-	
V4	151 to 170	1.100	250	0.396	none	5	1	1	2	x	x	-	x	-	x	-	-	-	-	-	-	-	-	x	-	-	-	-	
Y1	374 to 400	5.500	3	0.161	none	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	
Y2	212 to 275	1.800	11	2.230	none	1	1	1	1	x	-	-	-	-	-	-	-	-	-	x	-	-	-	x	-	-	-	-	
AC1	287 to 300	0.800	10	0.071	none	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
AC2	158 to 200	3.000	350	0.440	none	4	1	1	1	x	x	-	x	-	x	-	-	x	-	x	x	-	x	-	x	x	x	x	-
EA1		3.000	750	0.816	seeds & fruits	5	2	2	2	x	x	-	x	x	-	-	-	x	-	-	-	-	-	x	-	-	-	-	

Table 5. Borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire: Records for plant macrofossil remains from the washovers from subsamples from Borehole F. Key: 'S' = subsample; 'Dep (cm)' = depth in borehole in centimetres; 'wt (kg)' = weight of processed subsample in kilos; 'w/o' = volume or weight of washover in ml or g; 'res' = weight of residue in kilos; 'C14' = possible material for radiocarbon dating; 'Desc' = description; 'Ab' = abundance; 'Div' = diversity; 'Pres' = preservation; 'char' = charcoal; 'straw' = straw-like material; 'arth' = 'arthropod'; 'eec' = earthworm egg capsules; 'fly' = fly puparia; 'bo' = bone; '?fi' = possible fish bone; 'co' = coal; 's/s' = sand and stones; 's/c' = slag/cinder; 'pot/fc' = pottery/fired clay; 'x' = present.

S	Dep (cm)	wt (kg)	w/o (ml/g)	res (kg)	C14	Desc	Botanical macro-remains			Other botanical remains							Animal remains					Artefactual and inorganic			
							Ab	Div	Pres	char	mod. root	moss	wood	twig	bark	straw	arth	eec	fly	bo	?fi	co	s/s	s/c	pot/fc
F1	196 to 200	0.150	10	0.037	seeds & fruits	4	3	4	2	x	-	-	x	x	-	-	-	x	-	-	-	-	x	-	-
F2	186 to 196	0.600	20	0.373	seeds & fruits	4	3	4	2	x	x	x	x	x	x	-	x	x	x	-	-	-	-	-	-
F3	150 to 186	2.280	125	0.749	hazel nut shell	5	4	4	3	x	x	-	x	x	-	x	x	x	x	-	-	-	-	-	-
F4	125 to 150	1.700	125	0.373	hazel nut shell	5	3	4	2	x	x	-	x	x	x	-	-	x	x	-	-	-	x	-	-
F5	100 to 125	1.180	250	0.059	hazel nut shell	5	3	4	3	x	x	x	x	x	x	-	x	x	-	-	-	-	x	-	-
F6	76 to 100	1.350	500	0.059	seeds & fruits	5	4	4	3	x	-	-	x	x	-	x	-	x	-	x	-	-	x	-	-
F7	67 to 76	0.450	15	0.083	cereal grain	2	1	1	1	x	-	-	-	-	-	-	-	x	-	x	x	x	-	x	x

Table 6. Borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire: Records for plant macrofossil remains from the washovers from subsamples from Borehole N. Key: 'S' = subsample; 'Dep (cm)' = depth in borehole in centimetres; 'wt (kg)' = weight of processed subsample in kilos; 'w/o' = volume or weight of washover in ml or g; 'res' = weight of residue in kilos; 'C14' = possible material for radiocarbon dating; 'Desc' = description; 'Ab' = abundance; 'Div' = diversity; 'Pres' = preservation; 'char' = charcoal; 'straw' = straw-like material; 'eec' = earthworm egg capsules; 'fly' = fly puparia; 'bo' = bone; '?fi' = possible fish bone; 's/s' = sand and stone; 'wo/res' = fractions not separated; 'x' = present.

S	Dep (cm)	wt (kg)	w/o (ml/g)	res (kg)	C14	Desc	Botanical macro-remains			Other botanical remains							Animal remains				Inorganic	
							Ab	Div	Pres	char	mod. root	moss	wood	twig	bark	straw	eec	fly	bo	?fi	s/s	
N1	398 to 400	0.153	10	wo/res	none	4	1	1	1	-	x	-	-	-	-	-	-	-	-	-	-	x
N2	380 to 398	1.450	20	0.065	none	4	1	1	1	-	x	-	-	-	-	-	-	-	-	-	-	x
N3	350 to 380	1.700	<10	0.061	none	3	1	1	1	-	x	-	-	-	-	-	-	-	-	-	-	x
N4	325 to 350	1.950	none	0.057	none	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
N5	300 to 325	1.800	none	0.067	none	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
N6	272 to 285	1.500	50	0.525	hazel nut shell	4	2	3	3	x	x	x	x	-	x	-	-	-	-	-	-	x
N7	261 to 272	0.500	150	0.045	fruits & twigs	3	2	2	4	-	x	x	x	x	x	-	-	-	-	-	-	x
N8	246 to 261	1.000	350	0.050	hazel nut shell & seeds fruits	5	3	4	4	x	x	x	x	x	x	x	-	-	-	-	-	x
N9	200 to 241	1.300	500	wo/res	hazel nut shell	4	3	4	4	x	x	x	x	x	x	-	x	x	-	-	-	x
N10	191 to	0.400	350	wo/res	hazel nut shell &	5	2	4	4	x	x	x	x	x	x	x	-	x	-	-	-	-

S	Dep (cm)	wt (kg)	w/o (ml/g)	res (kg)	C14	Desc	Botanical macro-remains			Other botanical remains							Animal remains				Inorganic	
							Ab	Div	Pres	char	mod. root	moss	wood	twig	bark	straw	eec	fly	bo	?fi	s/s	
	200				fruits																	
N11	188 to 191	0.200	60	wo/res	fruits & seeds	4	2	3	3	x	x	x	x	x	x	-	-	-	-	-	x	
N12	180 to 188	0.025	60	0.016	fruits & seeds	4	2	3	3	x	x	x	x	x	x	-	-	-	-	-	x	
N13	175 to 180	0.475	250	wo/res	hazel nut shell & fruits	3	2	2	4	x	-	-	x	x	x	-	-	-	-	-	x	
N14	160 to 175	0.400	50	0.063	fruit stones	4	3	4	3	x	x	x	x	x	x	-	x	-	-	-	x	
N15	158 to 160	0.132	60	0.011	seeds & fruits	3	2	2	3	x	x	x	x	x	x	-	-	-	-	-	-	
N16	132 to 158	0.640	150	0.054	hazel nut shell & fruits	3	2	3	3	x	x	-	x	-	-	-	x	-	-	-	x	
N17	122 to 129	0.285	275	wo/res	seeds & fruits	5	3	4	4	x	x	-	x	-	-	x	x	x	-	-	-	
N18	107 to 122	0.730	250	wo/res	seeds & fruits	3	2	3	3	x	-	-	x	-	-	-	x	-	x	-	x	
N19	63 to 100	1.330	150	0.160	fruit stones & charred grain	4	2	2	3	x	-	-	x	-	x	-	x	-	-	x	x	

Table 7. Borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire: Records for plant macrofossil remains from the washovers from subsamples from Borehole P. 'S' = subsample; 'Dep (cm)' = depth in borehole in centimetres; 'wt (kg)' = weight of processed subsample in kilos; 'w/o' = volume or weight of washover in ml or g; 'res' = weight of residue in kilos; 'C14' = possible material for radiocarbon dating; 'Desc' = description; 'Ab' = abundance; 'Div' = diversity; 'Pres' = preservation; 'char' = charcoal; 'straw' = straw-like material; 'arth' = 'arthropod'; 'eec' = earthworm egg capsules; 'fly' = fly puparia; 'Dap' = Daphnia ephippia; 'bo' = bone; '?fi' = possible fish bone; 'co' = coal; 'lth' = leather; 's/s' = sand and stones; 'wo/res' = fractions not separated; 'x' = present.

S	Dep (cm)	wt (kg)	w/o (ml/g)	res (kg)	C14	Desc	Botanical macro-remains			Other botanical remains							Animal remains					Artefactual and inorganic				
							Ab	Div	Pres	char	mod. root	moss	wood	twig	bark	straw	eec	fly	Dap	bo	?fi	co	lth	s/s		
P1	350 to 400	2.200	32	1.425	none	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x
P2	300 to 350	3.100	2	1.225	none	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-	x
P3	267 to 300	2.000	2	0.675	none	1	1	1	1	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x
P4	234 to 267	2.000	150	0.650	seeds & fruits	3	3	3	3	x	-	-	x	-	-	-	-	x	-	x	x	-	-	-	-	-
P5	200 to 234	1.470	2	0.425	seeds & fruits	2	2	2	3	x	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-	
P6	191 to 200	1.300	75	none	hazel nut shell	3	3	4	3	x	-	x	x	-	-	-	-	x	x	-	x	x	-	-	-	-
P7	173 to 191	0.840	250	wo/res	hazel nut shell	3	3	4	3	x	-	x	x	x	-	x	x	x	x	-	x	-	-	-	-	-
P8	163 to 173	0.420	250	wo/res	hazel nut shell	5	2	2	3	x	-	-	x	x	x	x	-	x	-	-	-	-	-	-	-	x
P9	150 to 163	0.355	250	wo/res	hazel nut shell	5	2	2	4	x	x	-	x	x	x	-	x	x	-	x	-	-	-	x	-	-

S	Dep (cm)	wt (kg)	w/o (ml/g)	res (kg)	C14	Desc	Botanical macro-remains			Other botanical remains							Animal remains					Artefactual and inorganic		
							Ab	Div	Pres	char	mod. root	moss	wood	twig	bark	straw	eec	fly	Dap	bo	?fi	co	lth	s/s
P10	131 to 150	0.750	250	0.052	charred grain	2	2	2	4	x	x	-	x	-	-	-	x	-	-	x	x	-	-	x
P11	113 to 131	0.680	110	wo/res	charred grain	2	2	2	4	x	-	-	-	-	-	-	-	-	-	x	x	-	-	x
P12	100 to 113	0.240	42	wo/res	charred grain	1	1	1	1	x	-	-	-	-	-	-	-	-	-	x	x	x	-	-

Table 8. Borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire: List of identified plant remains from subsamples from Borehole F, with notes on the presence of other components. Key: 'c' = charred; 'w' = waterlogged.

Sample				F1	F2	F3	F4	F5	F6	F7
Crop plants										
<i>Avena</i>	oat	caryopsis	c						X	
<i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.	barley	caryopsis	c		X					X
Wild plant taxa										
<i>Agrostemma githago</i> L.	corncockle	seed	w	X	X	X		X	X	
<i>Anagallis arvensis</i> L.	pimpernel	seed	w		X					
<i>Anthemis cotula</i> L.	stinking chamomile	achene	w		X	X			X	
<i>Apium</i>	marshwort	mericarp	w				X	X		
<i>Atriplex/Chenopodium</i>	orache/goosefoot	seed	w	X	X	X	X	X	X	
<i>Brassica/Sinapis</i>	cabbage/mustard	seed	w			X			X	
<i>Carduus/Cirsium</i>	thistle	achene	w			X		X		
<i>Carex</i>	sedge	caryopsis	w			X	X	X	X	
<i>Centaurea cyanus</i> L.	cornflower	achene	w					X	X	
<i>Chrysanthemum segetum</i> L.	corn marigold	achene	w	X	X	X		X	X	
<i>Conium maculatum</i> L.	hemlock	mericarp	w	X	X	X	X	X		
<i>Corylus avellana</i> L.	hazel	nut shell	w			X	X	X	X	
<i>Corylus avellana</i> L.	hazel	nut shell	c						X	
<i>Eleocharis</i>	spike-rush	nut	w		X	X	X		X	
<i>Galeopsis speciosa</i> Mill./ <i>G. tetrahit</i> L.	large-flowered/common hemp-nettle	nutlet	w		X	X		X	X	
<i>Hydrocotyle vulgaris</i> L.	marsh pennywort	mericarp	w			X				
<i>Lamium album</i> L./ <i>L. purpureum</i> L.	white/red dead-nettle	nutlet	w			X	X			
<i>Lapsana communis</i> L.	nipplewort	achene	w			X			X	
<i>Lycopus europaeus</i> L.	gypsywort	nutlet	w			X				
<i>Malus/Pyrus</i>	apple/pear	seed	w				X			
<i>Mentha</i>	mint	nutlet	w	X		X				
<i>Myrica</i>	bog-myrtles	nut	w			X				
<i>Persicaria</i>	knotweed	achene	w	X		X		X	X	
Poaceae	grass family	caryopsis	c		X					
<i>Poa pratensis</i> L./ <i>P. trivialis</i> L.	smooth/rough meadow-grass	caryopsis	w				X			
<i>Polygonum aviculare</i> L.	knotgrass	achene	w	X		X	X	X	X	
<i>Polygonum hydropiper</i> (L.) Spach	water-pepper	achene with perianth	w	X		X	X	X		

Sample				F1	F2	F3	F4	F5	F6	F7
<i>Potentilla</i>	cinquefoil	achene	w						x	
<i>Potentilla erecta</i> (L.) Raeusch.	tormentil	achene	w			x				
<i>Prunella vulgaris</i> L.	selfheal	nutlet	w			x			x	
<i>Prunus avium</i> (L.) L./ <i>P. cerasus</i> L./ <i>P. spinosa</i> L.	wild/dwarf cherry/sloe	fruit stone	w			x	x			
<i>Ranunculus</i> subg. <i>Batrachium</i>	crowfoot	achene	w		x					
<i>Ranunculus acris</i> L./ <i>R. repens</i> L.	meadow/creeping buttercup	achene	w	x	x			x	x	
<i>Ranunculus arvensis</i> L./ <i>R. sarduos</i> Crantz	corn/hairy buttercup	achene	w			x	x		x	
<i>Ranunculus flammula</i> L.	lesser spearwort	achene	w	x		x	x	x	x	
<i>Ranunculus sceleratus</i> L.	celery-leaved buttercup	achene	w	x		x		x	x	
<i>Raphanus raphanistrum</i> L.	wild radish	mericarp	w			x	x			
<i>Rubus fruticosus</i> L. agg./ <i>R. idaeus</i> L.	blackberry/ raspberry	fruit stone	w	x		x	x		x	
<i>Rumex acetosella</i> L.	sheep's sorrel	achene	w	x	x	x		x	x	
<i>Rumex obtusifolius</i> L.	broad-leaved dock	achene with perianth	w	x		x		x		
<i>Rumex</i>	dock	achene	w	x	x	x	x	x	x	
<i>Sambucus nigra</i> L.	elder	seed	w	x		x	x	x		
Scrophulariaceae	figwort family	seed	w			x				
<i>Solanum nigrum</i> L.	black nightshade	seed	w						x	
<i>Sonchus asper</i> (L.) Hill	prickly sow-thistle	achene	w	x		x	x			
<i>Stellaria media</i> (L.) Vill.	chickweed	seeds	w	x	x	x		x		
<i>Urtica dioica</i> L.	common nettle	achene	w	x	x	x	x	x		
<i>Urtica urens</i> L.	small nettle	achene	w	x	x	x		x	x	
<i>Vicia hirsuta</i> (L.) Gray/ <i>V. tetrasperma</i> (L.) Schreb.	tare	seed	c				x			
<i>Viola</i>	violet	seed	w	x		x			x	
Other botanical remains										
bark fragments					x					
charcoal				x	x	x	x	x	x	
culm fragments						x		x		
modern rootlets					x	x	x	x		
mosses (Bryophyta)					x			x		
'straw'						x		x		
twig fragments				x	x	x	x	x	x	
wood fragments				x	x	x	x	x	x	

Sample				F1	F2	F3	F4	F5	F6	F7
Animal remains										
arthropod remains (elytra, capsules)					X	X		X		
bone fragments									X	X
earthworm egg capsules				X	X	X	X	X	X	X
fish bones										X
fly puparia						X	X	X		
Artefactual and inorganic material										
coal										X
pottery/fired clay										X
sand/stones				X			X	X	X	
cinder/slag										X

Table 9. Borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire: List of identified plant remains from subsamples from Borehole N, with notes on the presence of other components. Key: 'c' = charred; 'w' = waterlogged.

Sample				N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	N15	N16	N17	N18	N19
Crop plants																						
Cerealia	cereals	caryopsis	w								x											
<i>Triticum</i>	wheat	caryopsis	c																			x
<i>Triticum aestivum</i> L.	bread wheat	rachis segment	w								x											
Wild plant taxa																						
<i>Aethusa cynapium</i> L.	fool's parsley	mericarp	w										x		x							
<i>Agrostemma githago</i> L.	corncockle	seed	w								x	x										
<i>Anthemis cotula</i> L.	stinking chamomile	achene	w							x				x	x		x					
Apiaceae	carrot family	mericarp	w																			x
<i>Atriplex/Chenopodium</i>	orache/goosefoot	seed	w						x		x	x		x	x		x		x	x	x	
<i>Carex</i>	sedge	caryopsis	w						x			x			x	x	x	x	x	x	x	x
<i>Carex</i>	sedge	caryopsis with utriculus	w								x										x	
<i>Conium maculatum</i> L.	hemlock	mericarp	w													x						
<i>Corylus avellana</i> L.	hazel	nut shell	w						x			x	x			x	x		x			
<i>Corylus avellana</i> L.	hazel	nut shell	c								x									x		x
<i>Danthonia decumbens</i> (L.) DC.	heath-grass	caryopsis	w								x		x									
<i>Eleocharis</i>	spike-rush	nut	w									x					x		x	x		x
<i>Fallopia convolvulus</i> (L.) Á. Löve	black-bindweed	achene	w								x		x								x	x
<i>Filipendula ulmaria</i> (L.) Maxim.	meadowsweet	achene	w								x											
<i>Galeopsis speciosa</i> Mill./ <i>G. tetrahit</i> L.	large-flowered/common hemp-nettle	nutlet	w						x		x	x	x		x					x	x	x
<i>Lamium album</i> L./ <i>L. purpureum</i> L.	white/red dead-nettle	nutlet	w															x				
<i>Lapsana communis</i> L.	nipplewort	achene	w								x										x	
<i>Lycopus europaeus</i> L.	gypsywort	nutlet	w									x	x									

Sample				N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	N15	N16	N17	N18	N19
<i>Mentha</i>	mint	nutlet	w								x									x		
<i>Oenanthe</i>	water-dropwort	mericarp	w									x										
<i>Persicaria</i>	knotweed	achene	w							x	x	x	x	x								
<i>Polygonum aviculare</i> L.	knotgrass	achene	w						x											x	x	
<i>Polygonum hydropiper</i> (L.) Spach	water-pepper	achene with perianth	w								x											
<i>Potentilla</i>	cinquefoil	achene	w									x					x				x	
<i>Prunella vulgaris</i> L.	selfheal	nutlet	w														x					
<i>Prunus spinosa</i> L.	sloe	fruit stone	w														x					
<i>Pteridium aquilinum</i> (L.) Kuhn	bracken	leaf fragment	w							x												
<i>Ranunculus</i> subg. <i>Ranunculus</i>	buttercup	achene	w										x							x	x	x
<i>Ranunculus acris</i> L./ <i>R. repens</i> L.	meadow/creeping buttercup	achene	w									x			x		x	x				
<i>Ranunculus flammula</i> L.	lesser spearwort	achene	w								x	x	x		x					x		
<i>Ranunculus sceleratus</i> L.	celery-leaved buttercup	achene	w								x			x			x	x	x	x	x	x
<i>Raphanus raphanistrum</i> L.	wild radish	mericarp	w										x		x	x	x					
<i>Rubus fruticosus</i> L. agg./ <i>R. idaeus</i> L.	blackberry/raspberry	fruit stone	w						x		x			x					x			x
<i>Rumex acetosella</i> L.	sheep's sorrel	achene	w						x						x		x					
<i>Rumex</i>	dock	achene	w						x	x	x	x						x				
<i>Sambucus nigra</i> L.	elder	seed	w																		x	
<i>Sonchus asper</i> (L.) Hill	prickly sow-thistle	achene	w									x			x						x	
<i>Thlaspi arvense</i> L.	field penny-cress	seed	w										x	x								
<i>Urtica dioica</i> L.	common nettle	achene	w																		x	
Other botanical remains																						
bark fragments													x			x						
charcoal									x		x	x	x	x	x	x	x	x	x	x	x	x
culm fragments											x	x	x									
modern rootlets				x	x	x			x	x	x	x	x	x	x		x	x	x	x		
mosses (Bryophyta)									x	x	x	x	x	x			x	x				
'straw'											x		x								x	
twig fragments										x	x	x	x	x	x	x	x	x	x			x

Sample				N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	N15	N16	N17	N18	N19	
unidentifiable plant fibres																					X		
wood fragments									X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Animal remains																							
bone fragments																						X	
earthworm egg capsules												X				X			X	X	X	X	X
fly puparia												X	X								X		
fish bones																							X
Inorganic material																							
sand				X	X	X			X	X	X	X		X	X	X	X		X		X	X	

Table 10. Borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire: List of identified plant remains from subsamples from Borehole P, with notes on the presence of other components. Key: 'c' = charred; 'w' = waterlogged.

Sample				P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
Crop plants															
<i>Avena</i>	oat	caryopsis	c							x			x	x	x
Wild plant taxa															
<i>Agrostemma githago</i> L.	corncockle	seed	w							x					
<i>Atriplex/Chenopodium</i>	orache/goosefoot	seed	w				x		x	x				x	
<i>Brassica/Sinapis</i>	cabbage/mustard	seed	w							x					
<i>Carduus/Cirsium</i>	thistle	achene	w							x					
<i>Carex</i>	sedge	caryopsis	w				x	x	x	x	x	x			
<i>Chrysanthemum segetum</i> L.	corn marigold	achene	w						x						
<i>Corylus avellana</i> L.	hazel	nut shell	w						x	x	x	x			
<i>Corylus avellana</i> L.	hazel	nut shell	c											x	
<i>Euphorbia helioscopia</i> L.	sun spurge	seed	w											x	
<i>Fallopia convolvulus</i> (L.) Á. Löve	black-bindweed	achene	w							x					
<i>Galeopsis speciosa</i> Mill./ <i>G. tetrahit</i> L.	large-flowered/common hemp-nettle	nutlet	w						x						
<i>Lamium album</i> L./ <i>L. purpureum</i> L.	white/red dead-nettle	nutlet	w						x						
<i>Lapsana communis</i> L.	nipplewort	achene	w						x						
<i>Malus/Pyrus</i>	apple/pear	seed	w							x					
<i>Menyanthes trifoliata</i> L.	bogbean	seed	w							x					
<i>Persicaria</i>	knotweed	achene	w							x	x				
Poaceae	grass family	caryopsis	w						x						
<i>Polygonum aviculare</i> L.	knotgrass	achene	w							x					
<i>Prunus avium</i> (L.) L./ <i>P. cerasus</i> L./ <i>P. spinosa</i> L.	wild/dwarf cherry/sloe	fruit stone	w							x					
<i>Ranunculus acris</i> L./ <i>R. repens</i> L.	meadow/creeping buttercup	achene	w				x			x					
<i>Ranunculus sceleratus</i> L.	celery-leaved buttercup	achene	w				x	x		x					
<i>Rubus fruticosus</i> L. agg./ <i>R. idaeus</i> L.	blackberry/ raspberry	fruit stone	w				x	x	x	x			x		
<i>Rumex acetosella</i> L.	sheep's sorrel	achene	w				x		x						
<i>Rumex</i>	dock	achene	w				x		x	x					
<i>Sambucus nigra</i> L.	elder	seed	w						x	x			x	x	
<i>Sonchus asper</i> (L.) Hill	prickly sow-thistle	achene	w						x	x					

Sample				P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
<i>Stellaria media</i> (L.) Vill.	chickweed	seeds	w						x	x					
<i>Urtica dioica</i> L.	common nettle	achene	w							x					
<i>Urtica urens</i> L.	small nettle	achene	w						x	x	x				
<i>Vicia hirsuta</i> (L.) Gray/ <i>V. tetrasperma</i> (L.) Schreb.	tare	seed	c											x	
<i>Viola</i>	violet	seed	w						x						
<i>Zannichellia palustris</i> L.	horned pondweed	achene	w				x								
Other botanical remains															
bark fragments											x	x			
charcoal						x	x	x	x	x	x	x	x	x	x
culm fragments											x				
modern rootlets											x	x	x		
mosses (Bryophyta)									x	x					
'straw'										x	x				
twig fragments										x	x	x			
wood fragments							x		x	x	x	x	x		
unidentifiable plant fibres									x						
Animal remains															
bone fragments							x		x	x		x	x	x	x
<i>Daphnia</i>							x								
earthworm egg capsules							x		x	x		x	x		
fish bones									x				x	x	x
fly puparia									x	x	x	x			
Artefactual and inorganic material															
coal					x										x
leather fragments												x			
sand				x	x	x	x	x	x	x			x		x
stones				x											

Table 11. Borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire: Invertebrate (other than unidentified mollusc shell) macrofossil remains from the washovers (no remains were recorded from subsamples not included in this table). Key: 'wt (kg)' = weight of processed subsample in kilos; 'w/o (ml/g)' = volume or weight of washover in ml or g; 'res (kg)' = weight of residue in kilos; 'Desc' = description; 'Ab' = abundance; 'Div' = diversity; 'Pres' = preservation.

Subsample	Depth (cm)	wt (kg)	w/o (ml/g)	res (kg)	Desc	Ab	Div	Pres	Notes
F2	186 - 196	0.600	20	0.373	4	2	2	2	A few scraps of insect cuticle (probably beetle), one staphylinid elytron, one ant (Formicidae) head (very pale), a few pieces of fly puparia (one species, all fragments very pale)
F3	150 - 186	2.280	125	0.749	5	3	3	2	Numerous pieces of beetle cuticle but almost all small unidentified and eroded fragments, with an occasional better preserved sclerite. At least three beetle species were present – a staphylinid, at least one ground beetle (Carabidae) and two or more individuals of woodworm beetle (<i>Anobium punctatum</i> (Degeer)). Also some fly puparia fragments (two species) showing relatively little erosion and very pale and fragmented mites (Acarina). There were a few cladoceran ehippia (probably <i>Daphnia</i>)
F4	125 - 150	1.700	125	0.373	5	4	2	2	Numerous unidentified and very eroded fragments of insect cuticle, with an occasional slightly better preserved beetle sclerite (one species) and a few fragments of poorly preserved fly puparia (one species)
F5	100 - 125	1.180	250	0.059	5	4	2	2	Numerous unidentified and very eroded fragments of insect cuticle, with an occasional slightly better preserved beetle sclerite (two species – a ground beetle and <i>Anobium punctatum</i>)
F6	76 - 100	1.350	500	0.059	5	3	1	1	Numerous fragments of extremely eroded and fragmented insect cuticle none of which could be identified
N8	246 - 261	1.000	350	0.050	5	3	1	1	Numerous fragments of extremely eroded and fragmented ('filmy') insect cuticle none of which could be identified
N9	200 - 246	1.300	500	wo/res	4	3	2	2	Numerous unidentified and very eroded fragments of ('filmy') insect cuticle, with an occasional slightly better preserved beetle sclerite including elytra representing at least two species and some undiagnostic body parts (e.g. leg sclerites)
P4	234 - 267	2.000	150	0.650	3	3	2	4	Some quite well preserved <i>Daphnia</i> ehippia but no other ancient invertebrate remains recorded
U1	217 - 300	1.360	75	0.838	5	3	1	1	Numerous fragments of extremely eroded and fragmented ('filmy') insect cuticle none of which could be identified

Table 12. Borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire: Microfossil remains from the investigated deposits. Key: 'Desc' = description; 'Ab' = abundance; 'Div' = diversity; 'Pres' = preservation; 'N' = semi-quantitative numbers; 'f. hy.' = fungal hyphae; 'f' = few (1-5); 's' = some (6-20); 'm' = many (20-100); 'vm' = very many (100s); 'vvm' = very very many (1000s).

Sample	Depth (cm)	Desc	Ab	Div	Pres	Diatoms		Fungal spores		Pollen		'Phytoliths'		Trichuris	Ascaris	f. hy.	plant tissue frags
						N	types	N	types	N	types	N	types				
B1	~350	3	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
B2	244 - 264	2	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
B3	264 - 300	3	2	2	2	f	2	f	1	-	-	-	-	-	-	s	-
C1	~350	2	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
C2	209 - 219	2	2	2	2	s	3	f	1	-	-	-	-	-	-	f	-
C3	190 - 195	4	2	3	3	m	8	-	-	-	-	-	-	-	-	-	s
D1	237 - 300	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
D2	200 - 209	3	3	3	2	-	-	-	-	s	5	f	1	-	-	-	-
E1	~265	2	2	2	1	-	-	f	1	-	-	-	-	-	-	-	-
E2	~218	2	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
F1	196 - 200	2	2	2	1	-	-	s	1	-	-	s	1	-	-	f	-
F2	186 - 196	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
F3	~168	3	3	3	2	f	1	m	3	s	3	s	1	1	-	f	s
F4	125 - 150	3	3	3	3	s	3	m	3	s	3	f	1	-	-	f	s
F5	100 - 125	5	2	2	2	-	-	-	-	f	1	-	-	1	-	f	vm
F6	76 - 100	5	4	3	3	-	-	m	3	m	5	f	1	1	-	-	vm
F7	~72	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
G1	235 - 244	2	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
G2	125 - 148	2	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
G3	56 - 100	3	2	2	3	s	3	s	2	-	-	-	-	-	-	f	-
M1	~211	3	3	3	3	s	5	f	1	f	1	f	1	-	-	-	-
M2	~142	3	2	2	2	f	2	-	-	-	-	-	-	-	-	-	-
N1	398 - 400	2	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
N2	~390	2	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
N3	~365	2	1	2	2	-	-	-	-	f	1	-	-	-	-	-	-
N4	~338	2	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
N5	~313	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-

Sample	Depth (cm)	Desc	Ab	Div	Pres	Diatoms		Fungal spores		Pollen		'Phytoliths'		Trichuris	Ascaris	f. hy.	plant tissue frags
						N	types	N	types	N	types	N	types				
N6	272 - 285	3	3	3	2	-	-	-	-	m	3	-	-	-	-	f	-
N7	261 - 272	4	3	2	2	-	-	-	-	m	3	-	-	-	-	-	s
N8	246 - 261	5	4	4	4	vm	4	s	1	vm	8	-	-	1	-	s	vm
N9	200 - 241	4	3	3	2	f	1	f	1	s	3	f	1	-	-	f	m
N10	191 - 200	5	3	3	2	f	1	m	2	m	3	-	-	-	-	s	vm
N11	188 - 191	5	3	3	2	f	1	m	2	s	2	-	-	2	-	-	m
N12	~184	3	2	2	2	-	-	m	2	s	2	-	-	-	-	m	s
N13	175 - 180	2	2	2	1	-	-	s	2	f	1	-	-	-	-	-	s
N14	~168	2	2	1	1	-	-	f	1	-	-	-	-	-	-	f	-
N15	158 - 160	2	2	2	2	-	-	f	1	s	4	-	-	-	-	-	s
N16	~145	2	2	2	2	-	-	s	1	-	-	-	-	-	-	s	s
N17	122 - 129	5	4	4	3	m	6	vvm	3	m	3	s	1	-	-	-	vm
N18	~115	3	3	2	2	-	-	s	2	f	1	-	-	-	-	s	s
N19	~82	2	2	1	1	-	-	f	-	-	-	-	-	-	-	-	-
P1	350 - 400	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
P2	300 - 350	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
P3	267 - 300	1	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
P4	~250	2	3	4	3	s	3	f	1	s	6	s	1	-	-	s	-
P5	~217	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
P6	191 - 200	4	4	4	3	vm	7	m	3	m	5	m	2	1	-	f	s
P7	173 - 191	5	5	4	3	vm	4	m	3	vm	7	f	1	2	-	f	f
P8	163 - 173	5	5	4	4	m	4	vvm	3	vm	4	-	-	-	-	s	m
P9	150 - 163	5	4	4	3	vm	9	vm	5	s	2	f	1	6	-	s	vm
P10	131 - 150	4	3	4	3	s	3	vm	5	-	-	m	2	5	1	f	s
P11	113 - 131	5	2	2	2	f	2	-	-	-	-	vm	2	-	-	f	-
P12	100 - 113	2	2	2	2	f	1	s	2	f	1	-	-	1	-	f	-
Q1	~293	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Q2	163 - 183	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Q3	100 - 147	3	2	2	2	s	3	-	-	-	-	-	-	-	-	f	s
R1	187 - 200	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
R2	174 - 187	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
S1	328 - 400	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-

Sample	Depth (cm)	Desc	Ab	Div	Pres	Diatoms		Fungal spores		Pollen		'Phytoliths'		Trichuris	Ascaris	f. hy.	plant tissue frags
						N	types	N	types	N	types	N	types				
S2	262 – 328	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
S3	255 – 262	2	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
S4	128 - 200	2	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
T1	~385	2	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
T2	180 - 370	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
T3	160 - 180	3	2	2	1	-	-	-	-	-	-	f	1	-	-	s	-
U1	217 - 300	2	2	2	2	f	2	-	-	f	1	-	-	-	-	f	m
U2	177 - 196	3	1	1	1	-	-	-	-	-	-	-	-	-	-	s	-
V1	200 - 250	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
V2	~190	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
V3	170 - 179	2	2	2	2	s	2	s	2	-	-	f	1	-	-	f	-
V4	151 - 170	2	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
Y1	~387	1	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
Y2	212 - 275	1	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
AC1	~293	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
AC2	158 – 200	3	1	1	1	-	-	-	-	-	-	-	-	-	-	f	-
EA1	bulk	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	s

Table 13. Borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire: Summary abundance and diversity data for the plant assemblages from Boreholes BH F, N and P.

Subsample	Depth (cm)	weight (kg)	washover	residue	Identifiable charred plant remains		Identifiable waterlogged plant remains		
					number of plant taxa	abundance (items/sample)	number of plant taxa	abundance (items/sample)	density (items/kg)
F1	196 - 200	0.150	10 ml	0.037 kg	-	-	21	56	373
F2	186 - 196	0.600	20 ml	0.373 kg	2	2	15	30	50
F3	150 - 186	2.280	125 ml	0.749 kg	-	-	38	200	88
F4	125 - 150	1.700	125 ml	0.373 kg	1	1	20	96	56
F5	100 - 125	1.180	250 ml	0.059 kg	-	-	23	69	58
F6	76 - 100	1.350	500 ml	0.059 kg	2	4	25	240	178
F7	67 - 76	0.450	15 g	0.083 kg	1	1	-	-	-
N1	398 - 400	0.153	10ml	wo/res	-	-	-	-	-
N2	380 - 398	1.450	20 ml	0.065 kg	-	-	-	-	-
N3	350 - 380	1.700	<10 ml	0.061 kg	-	-	-	-	-
N4	325 - 350	1.950	residue only	0.057 kg	-	-	-	-	-
N5	300 - 325	1.800	residue only	0.067 kg	-	-	-	-	-
N6	272 - 285	1.500	50 ml	0.525 kg	-	-	8	11	7
N7	261 - 272	0.500	150 g	0.045 kg	-	-	4	6	12
N8	246 - 261	1.000	350 g	0.050 kg	1	1	17	45	45
N9	200 - 241	1.300	500 ml	wo/res	-	-	14	24	18
N10	191 - 200	0.400	350 ml	wo/res	-	-	11	16	40
N11	188 - 191	0.200	60 ml	wo/res	-	-	6	13	65
N12	180 - 188	0.025	60 ml	0.016 kg	-	-	10	12	480
N13	175 - 180	0.475	250 ml	wo/res	-	-	4	4	8
N14	160 - 175	0.400	50 ml	0.063 kg	-	-	12	21	53
N15	158 - 160	0.132	60 ml	0.011 kg	-	-	5	7	53
N16	132 - 158	0.640	150 g	0.054 kg	-	-	10	19	30
N17	122 - 129	0.285	275 ml	wo/res	1	1	14	35	123
N18	107 - 122	0.730	250 ml	wo/res	-	-	8	16	22
N19	63 - 100	1.330	150 ml	0.160 kg	2	2	3	18	14
P1	350 - 400	2.200	32 g	1.425 kg	-	-	-	-	-
P2	300 - 350	3.100	29 g	1.225 kg	-	-	-	-	-
P3	267 - 300	2.000	21 g	0.675 kg	-	-	-	-	-
P4	234 - 267	2.000	150 ml	0.650 kg	-	-	8	74	37
P5	200 - 234	1.470	26 g	0.425 kg	-	-	3	10	7
P6	191 - 200	1.300	75 ml	none	-	-	16	96	74

Subsample	Depth (cm)	weight (kg)	washover	residue	Identifiable charred plant remains		Identifiable waterlogged plant remains		
					number of plant taxa	abundance (items/sample)	number of plant taxa	abundance (items/sample)	density (items/kg)
P7	173 - 191	0.840	250 ml	wo/res	1	1	21	87	104
P8	163 - 173	0.420	250 ml	wo/res	-	-	4	9	21
P9	150 - 163	0.355	250 ml	wo/res	-	-	2	3	8
P10	131 - 150	0.750	250 ml	0.052 kg	1	2	2	4	5
P11	113 - 131	0.680	110 g	wo/res	3	4	3	4	6
P12	100 - 113	0.240	42 g	wo/res	1	2	-	-	-

Figure 1. Borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire: Plant biodiversity in subsamples from Borehole BH F, N and P.

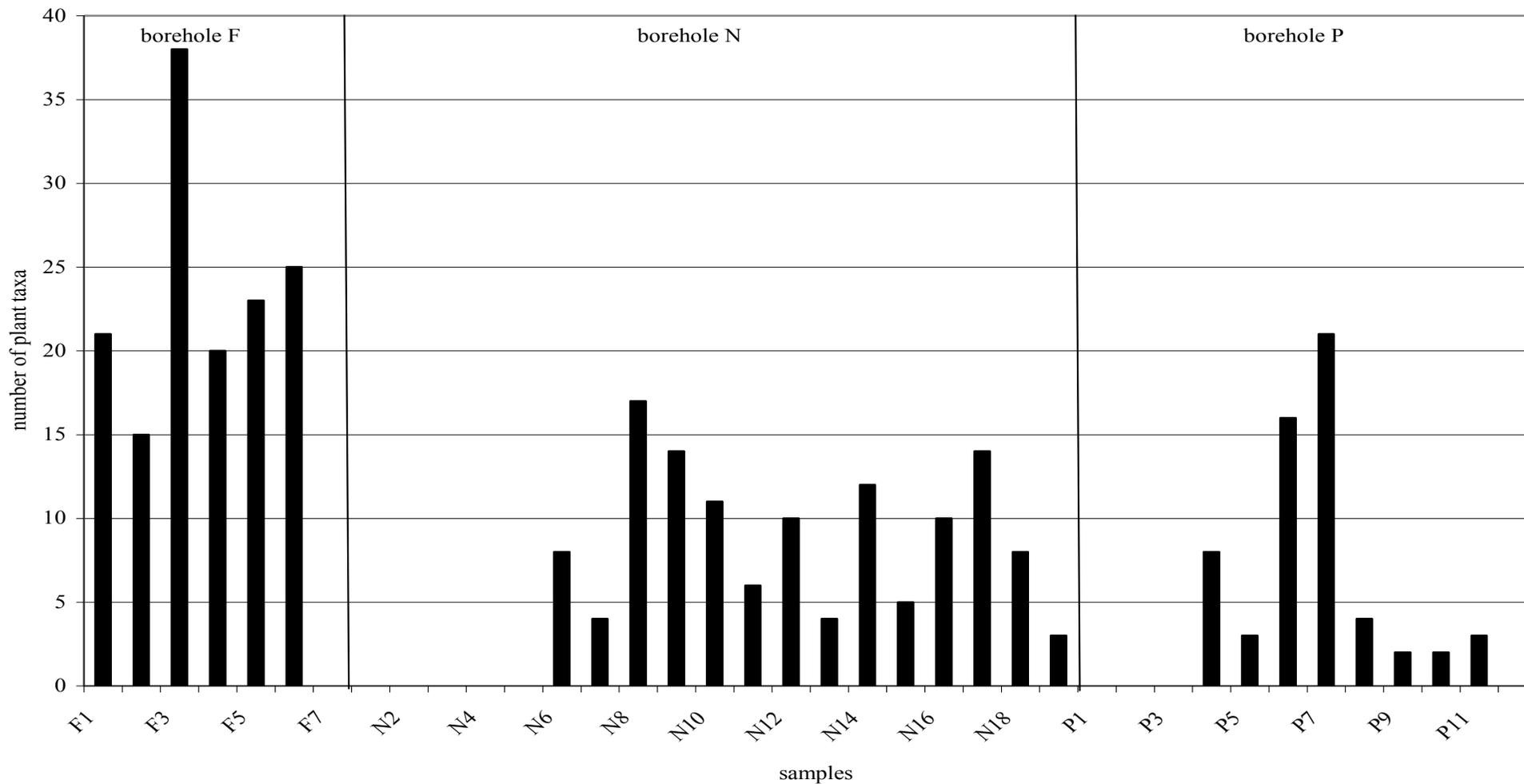


Figure 2. Borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire: Plant biodiversity and abundance in subsamples from Borehole BH F, N and P.

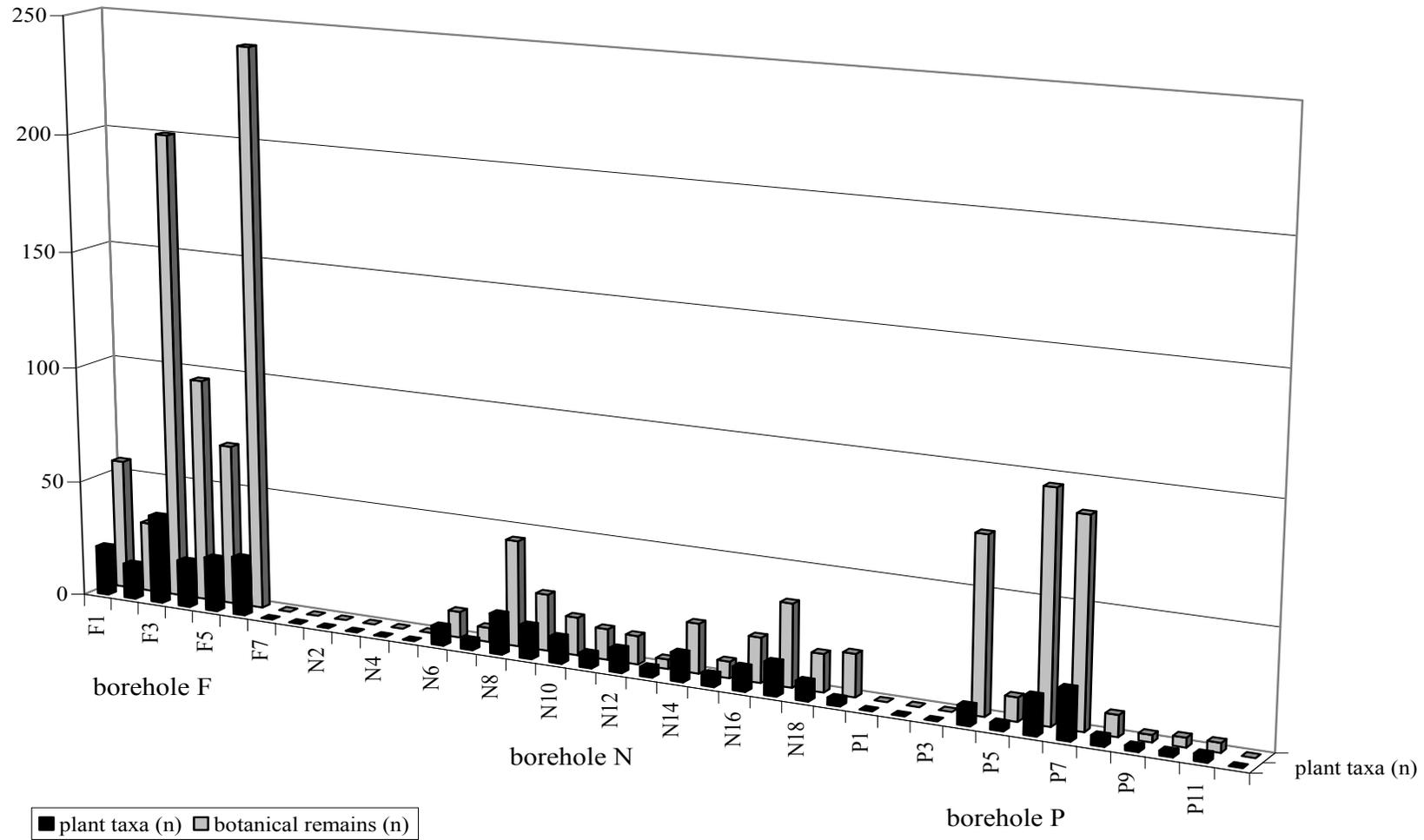


Figure 3. Borehole investigations of the nature and extent of sub-surface deposits, Nantwich, Cheshire: Plant biodiversity and density (items per kilo) in subsamples from Borehole BH F, N and P.

