NORTH PENNINES ARCHAEOLOGY LTD

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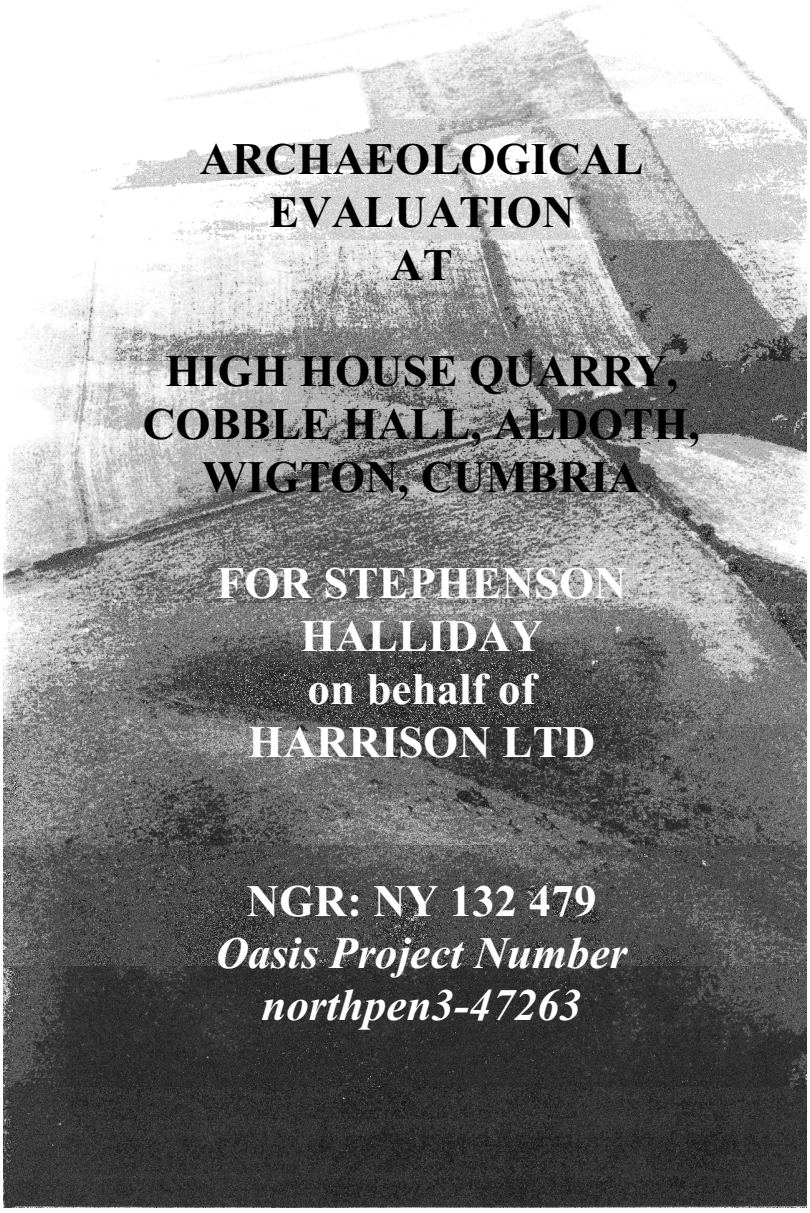

ARCHAEOLOGICAL EVALUATION AT

HIGH HOUSE QUARRY, COBBLE HALL, ALDOTH, WIGTON, CUMBRIA

FOR STEPHENSON HALLIDAY on behalf of HARRISON LTD

NGR: NY 132 479

Oasis Project Number northpen3-47263

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EXECUTIVE SUMMARY

In June 2008, North Pennines Archaeology Ltd undertook an archaeological field evaluation on land at High House Quarry, Aldoth, Cumbria (NGR: NY 132 479). The work was commissioned by Stephenson Halliday, on behalf of their client Harrison Ltd, in order to fulfil an archaeological brief issued by Cumbria County Council's Historic Environment Service (CCCHES). The archaeological evaluation was required as a condition of a planning consent requested by CCCHES, in response to the submitted planning application by the landowner, for the extension of the existing quarry at High House Farm. It was felt by CCCHES that any ground works would have the potential to directly impinge on any remaining features of an archaeological nature.

Previous works at the site undertaken by North Pennines Archaeology Ltd in 2006 comprised a desk-based assessment and accompanying geophysical survey (Davies 2006a). The results of the desk-based assessment found a high potential for the survival of sub-surface archaeological remains, dating to the prehistoric period. Aerial photographs, which identified cropmarks within this area, were first taken in 1975 (Higham and Jones 1975), and were consulted during this stage of the investigation. They appeared to indicate the existence of prehistoric settlements, as well as agricultural and ritual practices, at the site. A Neolithic/Bronze Age worked flint was also recovered from within the site during the North West Wetland Survey (Hodgkinson et al 2000). The excavation at New Cowper Farm, a kilometre to the south-west of High House Quarry, also found extensive evidence of Neolithic and Bronze Age occupation, and suggested that cropmarks within this area could represent only a tiny fraction of extensive remains below ground.

The geophysical survey, which was conducted by Terra Nova Ltd in 2005, on behalf of North Pennines Archaeology Ltd, found a weak geophysical anomaly which correlated approximately with the position of the linear feature identified by the earlier aerial photographs (Terra Nova, 2005).

Subsequently, and as a result of the findings from this assessment, a limited field evaluation was conducted in March 2006 by North Pennines Archaeology Ltd (Davies 2006b), which aimed to investigate the areas identified by aerial photography as being of particular archaeological interest. The investigation, which consisted of a single linear trench measuring 64m in length by 2m in width, successfully located four features, (three being of a modern date) and one undated, possible prehistoric pit. The results of the investigation also implied that plough truncation which had occurred on the site had potentially damaged archaeological remains to the south of the investigated area, but that within the area to the north, archaeological features may remain relatively intact.

In response to these findings, and in accordance with a Project Design, submitted to and approved by CCCHES, an archaeological evaluation comprising a programme of eighteen trial trenches, covering 5% of the area (1090m²), was undertaken between June and August 2008. The trenches were positioned so as to target and test areas which were identified as having cropmarks present in or near them during the 2006 Desk-Based Assessment, as well as a general coverage of 'background' trenches to examine the areas shown as negative or blank.

Seventeen of the trenches (Trenches 1-17) measured 2m in width and 30m in length. Trench 18 measured 2m in width and 35m in length. Four of the trenches (Trenches 2, 4, 6 and 10) did not contain any archaeological or modern remains. Four of the trenches (Trench 1, 7, 13 and 15)

contained plough marks. Trenches 1, 2 and 8 were also observed to have been disturbed by extensive animal burrowing.

Archaeological deposits were observed within ten of the eighteen trenches. Possible prehistoric features were observed within Trenches 3, 5, 8, 16 and 18. This comprised a continuous linear feature which was observed to be aligned approximately NE-SW within Trenches 5, 8, 16 and 17, which correlated to known aerial cropmarks and geophysical anomalies. Within Trench 3, a similar linear feature was aligned at right angles to this, aligned on a roughly W-E alignment. The formation of these features suggests that this represents an enclosure field system, which is putatively dated to the Bronze Age based on nearby discoveries.

Possible post-medieval features were observed within Trenches 8, 9, 11, 12 and 14. These comprised linear features within Trenches 8 and 9 that were aligned in a NE-SW direction and which correlate to a hedgerow, the presence of which is clearly visible in the aerial photographs of the site, and on Tithe maps dating from the 1800's. Similarly, in Trenches 12 and 14, a continuous linear feature is aligned in a NE-SW direction, and appears to correlate to a boundary on the 1800's Tithe maps. In Trench 17 a linear feature may be forming a right angle to the linear feature in Trenches 8 and 9, and suggests that this is part of a boundary ditch, as shown in the 1800's Tithe boundary maps of the area. A linear feature in Trench 11 which is aligned in an E-W direction correlates to a known hedgerow, which was observed in the aerial photography in 1975, suggesting that this feature is relatively modern in date.

Modern plough furrows were observed in Trenches 15, 14, 13, 12, 16 and 17. In Trench 16 intensive plough marks were observed, although archaeological deposits within this trench were substantial in depth, suggesting that the deposits remained relatively untouched.

The evaluation at High House Quarry revealed that some well-preserved archaeological deposits exist. However, these appear to be clustered towards the north-west of the evaluation area, as shown by the excellent preservation of linear ditches within Trenches 16 and 18. Archaeological deposits were encountered at a depth of between 0.3m and 0.4m beneath the current ground level. However, the depth of these deposits ranged from 0.2m in the southern areas of the site, to 0.8m in the northern areas, suggesting that the area to the south, which is on a natural ridge, has suffered more in terms of both soil erosion and intensive ploughing.

The lack of secure dating for the features found during this evaluation means that features must be dated using morphological characteristics. Features within Trenches 3, 5 and 8, as well as 16 and 18 appear to correlate to the features identified by aerial photography taken of the site during the 1970's and indicate that these features belong to a probable Bronze Age field system. The post-medieval period is represented by the shallow linear gullies, within Trenches 8, 9, 12 and 14, which appear to correlate to known boundaries seen on 19th century mapping.

The proliferation of other sites within a 10km radius, such as the recent find of a Bronze Age cremation cemetery at Overby Quarry (1.5km from the site), which has similar soil conditions to that at High House, as well as the archaeological finds at New Cowper (2km from the site), mean that this site is part of a wider network across the region and so should not be viewed in isolation.

ACKNOWLEDGEMENTS

North Pennines Archaeology Ltd would like to thank Nick Edwards and Peter Stephenson of Stephenson Halliday and David Harrison of Harrison Ltd for commissioning the project, and for their assistance throughout the fieldwork. David Harrison is also thanked for his machining of the trenches.

North Pennines Archaeology Ltd would also like to extend their thanks to Jeremy Parsons, Historic Environment Officer at Cumbria County Council, and Jo Mackintosh, Historic Environment Records Officer, for their help during this project.

Sean Johnson, Claire Gerson, and Rachel Horn, undertook the evaluation under the supervision of Helen Noakes. The report was written by Helen Noakes. The drawings were produced by Helen Noakes and Matthew Town. The environmental samples were analysed by Patricia Shaw, NPA Environmental Supervisor. The project was managed by Matthew Town, Project Manager for NPA Ltd. The report was edited by Martin Railton, Project Manager for NPA Ltd.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

1.1.1 In June 2008, North Pennines Archaeology Ltd undertook an archaeological field evaluation on land at High House Quarry, Aldoth, Cumbria (NGR: NY 132 479) (Figure 1). The plot of land is currently in use as arable and pastoral land. The work was commissioned by Stephenson Halliday, on behalf of their client Harrison Ltd, in order to fulfil an archaeological brief issued by Cumbria County Council.

1.1.2 The field evaluation comprised the excavation of eighteen linear trial trenches in order to provide a predictive model of surviving archaeological remains detailing zones of relevant importance against known development proposals. The principal objective of this evaluation was to establish the presence/absence, nature, extent and state of preservation of any archaeological remains and to record these where they were observed.

1.1.3 This report sets out the results of the work in the form of a short document outlining the findings, followed by a statement of the archaeological potential of the area, an assessment of the impact of the proposed development, and recommendations for further work.

2. METHODOLOGY

2.1 PROJECT DESIGN

2.1.1 A project design was submitted by North Pennines Archaeology Ltd in response to a request by Stephenson Halliday for an archaeological field evaluation at High House Quarry (Town 2008). This design was in accordance with a brief prepared by Jeremy Parsons, Archaeology Officer for Cumbria County Council.

2.1.2 Following acceptance of the project design, North Pennines Archaeology Ltd was commissioned by the client to undertake the work. The project design was adhered to in full, and the work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists (IFA), and generally accepted best practice.

2.2 ARCHAEOLOGICAL EVALUATION

2.2.1 The field evaluation consisted of the excavation of eighteen trial trenches, seventeen of which measured 30m in length and 2m in width, and one which measured 35m in length and 2m in width, in order to produce a predictive model of surviving archaeological remains detailing zones of relevant importance against known development proposals.

2.2.2 The size of the trial trenches was defined by the requirement that 1090m^2 of the total area planned for development should be evaluated and their locations were determined by the findings produced in a previous desk-based assessment that covered the area (Davies 2006a) and a follow-up targeted archaeological field evaluation of 2006 (Davies 2006b) which highlighted many potential archaeological features within the area of the proposed development. In summary, the main objectives of the evaluation were:

- to establish the presence/absence, nature, extent and state of preservation of archaeological remains and to record these where they are observed;
- to establish the character of those features in terms of cuts, soil matrices and interfaces;
- to recover artefactual material, especially where useful for dating purposes;
- to recover palaeoenvironmental material where it survives in order to understand site and landscape formation processes.

2.3 SITE SPECIFIC AIMS

2.3.1 The main site-specific aim of the evaluation was defined as follows:

- *'To determine the location, extent, date, character, condition, significance and quality of any surviving archaeological remains.'* (Parsons 2008)

2.3.2 The trenches were excavated by a mechanical excavator equipped with a toothless ditching bucket, under archaeological supervision, to the natural substrate. The trench was then manually cleaned and any putative archaeological features investigated and recorded according to the North Pennines Archaeology Ltd standard procedure, as set out in the Excavation manual (Giecco 2003).

2.3.3 Photography was undertaken using Canon EOS 500v Single Lens Reflex (SLR) cameras. A photographic record was made using digital photography, 400 ISO Black and White Print and 200 ISO Colour Slide film.

2.3.4 All work was undertaken in accordance with the Institute of Field Archaeologists Standards and Guidance for Archaeological Field Evaluations (IFA 2002).

2.4 ARCHIVE

2.4.1 A full professional archive has been compiled in accordance with the project design, and in accordance with current English Heritage guidelines (1991), and Brown, DH, 2007, *Archaeological Archives A Guide to Best Practice in Creation, Compilation, Transfer and Curation*. The archive will be deposited within an appropriate repository and a copy of the report given to Cumbria County Council Historic Environment Record, where viewing will be available on request. The archive can be accessed under the unique project identifier NPA 08 HHQ-B.

2.4.2 North Pennines Archaeology supports the **O**nline **A**cces**S** to the **I**ndex of Archaeological **I**nvestigations (OASIS) project. This project aims to provide an online index and access to the extensive and expanding body of grey literature created as a result of developer-funded archaeological fieldwork. As a result, details of the results of this evaluation will be made available by North Pennines Archaeology, as a part of this national project. The site has been given the unique identification number, northpen3-47263 as part of the OASIS Project.

3. BACKGROUND

3.1 LOCATION, TOPOGRAPHY AND HISTORICAL BACKGROUND

3.1.1 High House Quarry is located within the modern civil parish of Holm St Cuthbert, east of Silloth, at NY 132 479 (Figure 1). The site is approximately 9.75ha in area, which is currently split between areas used for both pasture and arable purposes. Within the area to the south of the site, the land is cut away by two steep scarps which create a ravine type formation at the base of the hill.

3.1.2 The quarry falls within the North Cumbrian Plain: a relatively low lying area (below 200m AOD) located to the north and the west of the Lake District Massif, and within the landscape zone known as the Abbeytown Ridge, which forms a significant topographic feature, roughly 40m AOD high, and defines the southern boundary of the Solway Plain (Hodgkinson *et al* 2000).

3.1.3 The Solway Plain is underlain by mudstones and sandstones of Permo-Triassic age to the south. To the west, Jurassic mudstones and limestones overlie these Permo-Triassic rocks, erosion of which created the low lying area of the Solway basin (Countryside Commission 1998).

3.2 PREVIOUS ARCHAEOLOGICAL WORK

3.2.1 The previous works undertaken on the site include a desk-based assessment carried out by North Pennines Archaeology Ltd in 2006 (Davies 2006a), which indicated that the potential for sub-surface archaeological remains dating to the prehistoric period was extremely high.

3.2.2 This phase of investigation found evidence within the extraction area of a single findspot of Neolithic worked flint, (Hodgkinson *et al* 2000), as well as extensive aerial photography of the area. These images, which were taken by Higham and Jones in 1975, identified a series of cropmarks, which may relate to prehistoric enclosures and settlements. Of direct relevance to the current excavations is a cropmark identified in photograph NY 13477 (Plate 1), which shows a long linear feature running through the site broadly on a NNE-SSW alignment and which would be directly impacted on by the current extraction proposals. Further linear anomalies seem to extend at right angles from this linear, suggesting a potential field system of unknown date.

3.2.3 In 2005 a geophysical survey conducted by Terra Nova Ltd, on behalf of NPA Ltd, concluded that a weak geophysical anomaly existed within the area, and which correlated approximately with the features identified by the aerial photography.

3.2.4 Subsequently, and as a result of the findings of the 2006 desk-based assessment, a targeted field evaluation was undertaken by North Pennines Archaeology Ltd in March 2006 (Davies 2006b). This evaluation located four features, one of which, an undated pit, was the only feature with a suspected antiquity. The evaluation also found evidence to suggest that archaeological features in the southern half of the proposed extraction area will have been severely damaged by plough truncation.

3.2.5 The targeted field evaluation also failed to locate a 'square enclosure' cropmark identified by Higham and Jones in 1975, despite using contingency requested by CCCHES at the time. This occurrence could be explained in three ways; that the cropmark was poorly located, that it has been ploughed away, or that it simply was not an archaeological feature.

3.2.6 Between 2005-2007, phased excavations at New Cowper Quarry (2 km from High House Quarry), uncovered Mesolithic/early Neolithic flint debitage, pits containing early Neolithic pottery, an Early Bronze Age cist burial containing a charcoal rich fill that was radiocarbon dated to 2400-2380 cal BC and 2360-2140, and a number of undated ditched boundary features (Railton 2007).

3.2.7 More recently in 2008, the excavation at Overby Quarry, roughly 1.5km to the south of High House, uncovered approximately thirty cremations, eight of which were within urns (mostly Collared Urns, though one has been tentatively identified as a Food Vessel, dated 2000-1700 cal BC) (Town forthcoming).

Plate 1: Aerial photograph of High House Quarry showing linear cropmarks, relating to potential field systems (Higham and Jones 1975).

4. EVALUATION RESULTS

4.1 INTRODUCTION

4.1.1 The machine stripping of the trenches down to the natural substrate, which were subsequently cleaned by hand, permitted an examination of the archaeological remains within the site. All trench locations are depicted in Figure 3; plans of the Trenches (Figures 4-13), are found within Appendix 2.

4.2 TRENCH 1

4.2.1 Trench 1 was 30m long by 2m wide and was orientated in a north-east, south-west direction. The maximum excavated depth of the trench was 1m to the base with a further 0.10m to the bottom of features encountered. In total one feature of modern origin was investigated. Extensive animal burrowing was also observed within the south-westerly area of the trench.

4.2.2 The natural substrate **(171)** consisted of loosely compacted, friable, reddish-orange sand, 0.4m in depth. Within this deposit natural lenses of gravel and sand were observed.

4.2.3 Cutting into this natural layer was one feature of modern origin. This consisted of a rectangular feature **[150]**, which measured up to 1m in width, 1.5m in length, and up to 0.10m in depth, and was observed at the north-west end of the trench. Within this feature the primary fill was loosely compacted dark greyish-brown silt sand **(151)**, which contained occasional, small stone inclusions and root material. This feature appeared to be the result of visible reinstating of eroded topsoil, instigated prior to the evaluation, and to counter erosion caused by animal grazing as well as natural weathering processes.

4.2.4 All of these features were overlain by topsoil comprised of loosely compacted brownish grey silty sand **(170)**, that contained root systems and small sub-angular to rounded pebbles. At its maximum it measured up to 0.40m in thickness.

4.3 TRENCH 2

4.3.1 Trench 2 measured 30m in length and 2m in width and was orientated in an east-west direction. The maximum excavated depth of the trench was 0.70m. Within Trench 2 no features of either archaeological or modern interest were recorded, although extensive evidence for animal burrowing was observed.

4.3.2 The natural substrate consisted of loosely compacted, friable, reddish-orange sand, **(171)** and was observed at a depth of 0.4m. Within this deposit natural lenses of gravel and sand were observed.

4.3.3 Within Trench 2, the topsoil comprised loosely compacted brownish grey silty sand **(170)**, that contained root systems and small sub angular to rounded pebbles. At its maximum it measured up to 0.40m in thickness.

4.4 TRENCH 3

4.4.1 Trench 3 was orientated in an east-west direction and measured 30m in length and 2m in width. The maximum excavated depth of the trench was 1.20m to the base with a further 0.16m to the bottom of features encountered. In total one feature of possible archaeological interest was investigated (see Figure 4).

4.4.2 The natural substrate consisted of loosely compacted, friable, reddish-orange sand, **(171)**. Within this deposit natural lenses of gravel and sand were observed.

4.4.3 Cutting in to the natural, 10m from the eastern end of the trench, was one feature of archaeological interest. This consisted of a linear feature **[162],** which was aligned west to east, measured 2.70m in width and 3.30m in length, and was filled to a depth of 0.16m by loosely compacted, dark brown silty sand **(163)**.

4.4.4 This linear feature appeared to correlate to the cropmarks identified during the desk based assessment, and is therefore interpreted as being of possible prehistoric date.

4.4.5 Overlying all the above, the topsoil **(170)** consisted loosely compacted, brownish-grey silty sand, measuring 0.4m in depth.

4.4.6 One fragmentary piece of clay pipe was recovered from the spoil heap of this trench, but did not exhibit any datable characteristics, and a 19th century date is ascribed.

4.5 TRENCH 4

4.5.1 Trench 4 was orientated north-west to south-east and measured 30m in length, and 2m in width. The natural substrate **(171)**, was observed at a depth of 0.5m below the ground level, and comprised orange-brown, gravely sand. No archaeological or modern features were observed within this trench.

4.5.2 Overlying the natural substrate, the topsoil **(170)**, comprised loosely compacted, greyish-brown silty sand, and was 0.30m in depth.

4.5.3 One piece of unstratified, 19th century black glazed earthenware was retrieved from the spoil heap.

4.6 TRENCH 5

4.6.1 Trench 5 was orientated east to west, and measured 30m in length and 2m in depth. The natural substrate was observed at a depth of 0.5m below the ground level, and comprised loosely compacted, orange, sand **(171)**. One feature of archaeological significance was observed within this trench (see Figure 5).

4.6.2 Observed approximately in the middle of the trench, a linear feature measuring 0.9m in width was aligned north to south **[160]**. It was filled to a depth of 0.10m by loosely compacted dark brown silty sand with occasional inclusions of pebbles **(161)** (see Plate 2).

Plate 2: South facing section of linear feature **[160]**, in Trench 5.

4.6.3 This linear feature, **[160]** appears to be in alignment with linear feature **[162]**, which was observed in Trench 3. No finds were recovered from within the fill of this feature, **(171)** but this alignment, which correlates to a known cropmark, suggests that this may represent a prehistoric boundary ditch.

4.6.4 Overlying all deposits within this trench, the topsoil **(170)**, was observed to a depth of 0.35m, and comprised loosely compacted greyish-brown silty sand. One piece of unstratified 19th century black glazed earthenware was recovered from this trench.

4.7 TRENCH 6

4.7.1 Trench 6 was orientated north-west to south east and measured 30m in length and 2m in width. The natural substrate was observed at a depth of 0.40m below the ground level, and comprised loosely compacted orange-red gravely sand **(171)**. No features of archaeological or modern interest were observed within this trench.

4.7.2 Overlying the natural substrate, topsoil was observed at a depth of 0.28m, and comprised loosely compacted brownish-grey silty sand **(170)**. One piece of 19th century glazed earthenware was recovered from within the topsoil.

4.8 TRENCH 7

4.8.1 Trench 7 was orientated north to south, and measured 30m in length by 2m in width. The natural substrate was observed at a depth of 0.45m below the ground level, and comprised loosely compacted, orangey-red, sand **(171)**. One feature of modern interest was observed within this trench.

4.8.2 At approximately 8m from the southern end of the trench, a circular feature, measuring 0.50m in width and 1.06m in extent **[152]**, was observed cutting into the natural substrate. This was filled to a depth of 0.13m by loosely compacted silvery-white sand **(153)**. No finds were retrieved from within the deposit of this feature, but the irregularity of the form of the feature, suggests that this feature is probably a tree bowl, and therefore possibly relatively modern in date.

4.8.3 Overlying these deposits, topsoil was observed to a depth of 0.3m, and comprised loosely compacted greyish brown silty sand **(170)**.

4.9 TRENCH 8

4.9.1 Trench 8 was orientated north-east to south-west, and measured 30m in length by 2m in width. The natural substrate was observed at a depth of 0.45m below the ground level, and comprised loosely compacted orangey-red gravely sand **(171)**. Three features of archaeological interest were observed within this trench (see Figure 6). Towards the south-westerly end of the trench, intensive animal burrowing was observed, which highly disturbed the deposits within this area.

4.9.2 Cutting in to the natural, at approximately 2m from the north-east end of the trench, a linear feature measuring 1.0m in width, and 0.13m in depth was observed **[159]**. This was filled with a primary deposit of loosely compacted dark greyish-black silty sand which had inclusions of roots and pebbles **(158)** (see Plate 3).

4.9.3 No finds were recovered from within this feature, but it is aligned with the cropmarks identified during the 1975 aerial survey of the area, suggesting that this feature may be part of a prehistoric enclosure ditch. This feature also aligns with the linear features within Trenches 3 and 5.

4.9.4 Observed 2m from the south-west end of the trench were two linear features running parallel to one another. The first linear feature, orientated north-east to south-west, measured 0.6m in width and 2.9m in extent **[165]**. This was filled to a depth of 0.14m by loosely compacted blackish-grey silty sand with inclusions of roots **(164)**. No finds were retrieved from within this deposit.

4.9.5 The second linear feature measured 0.58m in width and 3.30m in length **[167]**. This was filled to a depth of 0.22m by loosely compacted dark blackish-grey silty sand with inclusions of roots **(166)**.

4.9.6 Both these linear features, **[165]** and **[167]**, appear to align with post-medieval boundary ditches, and appear to align with linear features within Trenches 9, 11, 12 and 14.

4.9.7 Observed cutting in to the natural within the middle of the trench, a small circular feature **[169]**, was observed. Measuring 0.42m by 0.36m in width, this feature was filled to a depth of 0.20m by loosely compacted dark blackish-grey silty sand **(168)**. The form of this feature, as well as the close proximity to an area of highly disturbed ground, caused by animal burrowing, suggests that this feature is part of an animal burrow and not archaeological in nature.

4.9.8 Overlying all deposits within this trench, topsoil was observed to a depth of 0.25m, and comprised loosely compacted brownish-grey silty-sand **(170)**. Within this deposit, two sherds of 19th century glazed earthenware were recovered.

Plate 3: South facing section of linear feature **[159]**, in Trench 8.

4.10 TRENCH 9

4.10.1 Trench 9 was orientated north-east to south-west and measured 30m in length and 2m in width. The natural substrate was observed at a depth of 0.5m below the ground level and consisted of loosely compacted orangey-red sand **(171)**. Two features of archaeological interest were observed within this trench (see Figure 7).

4.10.2 At the north-west end of the trench, aligned in a north-east to south-west direction, was a linear feature which measured 0.96m in width and 2m in width **[154]**. This contained a deposit which measured 0.29m in depth, and comprised loosely compacted, dark yellowish brown silty sand **(155)**. No finds were recovered from within this deposit; however, this linear feature appears to correlate to a post-medieval boundary ditch, and aligns with linear features **[165]** and **[167]** in Trench 8.

4.10.3 Observed at a right angle to feature **[154]**, was another linear feature, which was orientated in a north-west to south-east direction, and measured 0.32m in width and 2m in extent **[156]**. This contained loosely compacted yellow-brown silty sand with inclusions of small stones **(157)**. No finds were recovered from this deposit, but this also could be a post-medieval boundary ditch as it is within an alignment with other possible post-medieval ditches.

4.10.4 Overlying all these deposits, topsoil was observed to a depth of 0.35m, and consisted of loosely compacted greyish-brown silty sand **(170)**.

4.11 TRENCH 10

4.11.1 Trench 10 was orientated in an east-west direction, and measured 2m in width and 30m in length. The natural substrate was observed at a depth of 0.5m below the ground level, and comprised loosely compacted orange-red sand **(171)**. No features of archaeological interest were observed within this trench.

4.11.2 Overlying the natural substrate, topsoil was observed at a depth of 0.43m, and consisted of loosely compacted brownish-grey silty sand **(170)**.

4.12 TRENCH 11

4.12.1 Trench 11 was orientated in a north-east to south-west direction, and measured 2m in width by 30m in length. The natural substrate was observed at a depth of 0.35m and consisted of loosely compacted reddish-brown gravely sand **(171)**. One feature of archaeological significance was observed within this trench (see Figure 8).

4.12.2 Orientated in a north-east to south-west direction, a linear feature was observed cutting in to the natural substrate. This linear feature **[143]** measured 0.5m in width and had an extent that continued beyond the 30m length of the trench. It was filled to a depth of 0.2m by loosely compacted mid-greyish-yellow silty sand that contained inclusions of stones **(148)**. This was overlain to a depth of 0.2m, by a dark blackish-brown sandy-silt, which contained inclusions of charcoal flecks **(142)**.

4.12.3 Several sherds of modern, transfer-print porcelain were found within the upper fill **(142)**, and this suggests that this feature is of a modern date. The position, orientation and proximity to the current field boundary, suggests that this feature represents an earlier hedge line that was destroyed sometime recently.

4.12.4 Overlying all deposits within this trench, topsoil was observed at a depth of 0.30m, and comprised loosely compacted brownish-grey silty sand **(170)**.

4.13 TRENCH 12

4.13.1 Trench 12 was orientated in a north-east to south-west direction, and measured 2m in width by 30m in length. The natural substrate was observed at a depth of 0.55m below the ground level and consisted of loosely compacted orange-red, gravely sand, **(171)**. One feature of archaeological significance, and two features relating to modern activity were observed cutting the natural substrate in this trench (see Figure 9).

4.13.2 Located at the northern end of the trench, was a linear feature which measured 1.6m in width, **[115]**. This was filled to a depth of 0.17m by loosely compacted greyish-brown silty sand **(114)**, which had inclusions of small sub-angular stones. This feature was aligned with a similar feature in Trench 14, and appears at a right angle to similar features in Trenches 9 and 8, and suggests that this linear is possibly post-medieval in date (see Plate 4).

4.13.3 Located in the middle of the trench, a small circular feature **[141]**, measured 0.5m diameter, and was filled to a depth of 0.18m by loosely compacted light white sand **(140)**. A sherd of modern brown-glazed earthenware was found within this deposit, dating this feature to roughly 19th-20th century. The date given for this feature, along with the form, suggests that this feature is the remains of a tree bowl.

4.13.4 Further towards the south of the trench, evidence of a plough furrow was observed. This measured a maximum of 0.15m wide, and 0.05m in depth.

4.13.5 Overlying all the deposits within this trench, topsoil was observed to a depth of 0.38m, and consists of loosely compacted greyish-brown silty sand **(170)**.

Plate 4: East facing section of linear feature **[115]**, in Trench 12.

4.14 TRENCH 13

4.14.1 Trench 13 was orientated in a north to south direction, and measured 2m in width and 30m in length. The natural substrate was observed at a depth of 0.45m below the ground level, and consisted of loosely compacted orangey red gravely sand **(171)**.

4.14.2 Observed cutting in to the substrate, and within the southern area of the trench, seven plough furrows, measuring 0.15m in width and a maximum of 0.10m depth, which were orientated in an east to west direction.

4.14.3 Overlying all deposits within the trench, topsoil was observed at a depth of 0.3m and comprised loosely compacted greyish-brown silty sand **(170)**.

4.15 TRENCH 14

4.15.1 Trench 14 was orientated in north-west to south-east direction, and measured 2m in width and 30m in length. The natural substrate was observed to a depth of 0.5m below the ground level, and consisted of loosely compacted yellowish-brown sand **(171)**. One feature of archaeological significance, and three plough furrows were observed within the trench (see Figure 10).

4.15.2 Orientated north-west to south-east, a linear feature was observed measuring 1.32m in width and 2.60m in length **[101]**. It was filled to a depth of 0.25m with loosely compacted dark-greyish-brown silty sand **(100)**. No finds were recovered from within this feature; however it is aligned with a similar linear feature in Trench 12, and is a possible post-medieval field boundary (see Plate 5).

4.15.3 Orientated in an east to west direction, plough furrows were observed within the southern extent of the trench, and measured a maximum of 0.15m in width, and 0.10m in depth.

4.15.4 Overlying all deposits within this trench, topsoil was observed at a depth of 0.30m, and comprised loosely compacted greyish-brown silty sand **(170)**. A sherd of white porcelain was recovered from within this deposit, and is given a generic date of the 19th century.

4.16 TRENCH 15

4.16.1 Trench 15 was orientated in a north-west to south-east direction, and measured 2m in width and 30m in length. The natural substrate was observed at a depth of 0.4m below the ground level and comprised loosely compacted orange-red gravelly sand **(171)**.

4.16.2 Observed within the western end of the trench, several plough scars were observed cutting the natural substrate. These were orientated in an east-west direction and measured approximately 0.15m in width and 0.1m in depth.

4.16.3 Overlying all deposits within this trench, topsoil was observed at a depth of 0.30m, and consisted of loosely compacted, brown, silty sand, **(170)**, which also contained a sherd of 19th century glazed earthenware.

Plate 5: West facing section of linear feature **[101]**, in Trench 14.

4.17 TRENCH 16

4.17.1 Trench 16 was orientated in a north-east to south-west direction, and measured 2m in width and 30m in length. The natural substrate was observed at a depth of 0.50m below the ground level, and comprised a loosely compacted silty-sand **(171)**. Observed cutting into the natural was a complex of plough furrows, one small boundary ditch and one substantial ditch (see Figure 11).

4.17.2 Located approximately 7.5m from the southern end of the trench, a linear feature **[177]**, measured 2.49m in width and 0.8m in depth, and had a distinctive 'V' shaped profile. It was filled primarily to a depth of 0.5m by loosely compacted reddish-brown silty sand **(176)**, which also contained frequent inclusions of sub-angular stones. This deposit was overlain by a secondary fill, which was 0.2m in depth and comprised loosely compacted dark greyish-brown silty sand with frequent inclusions of stones, **(178)**.

4.17.3 No finds were recovered from feature **[177]**, but this may represent a substantial prehistoric enclosure ditch, the extent of which is greater than 10m, as this linear feature is also present in Trench 18.

4.17.4 Approximately 2m to the north of this linear feature, a small gully **[179]** was orientated roughly east to west, and measured 0.3m in width. It was filled to a depth of 0.12m

with loosely compacted dark blackish-brown silty sand **(180)**. This feature appeared to be within the alignment of similar linear features within Trenches 3, 5 and 8, and is perhaps prehistoric in date. This feature was also slightly truncated on the northern edge by a single plough furrow.

4.17.5 Plough furrows observed within this trench were aligned in an east to west direction, and were approximately 0.15m in width and 0.10m in depth. The numerous plough marks which were slightly wider, at approximately 0.2m in width, were possibly the result of recent potato crop processing, which had occurred at the site some short time before.

4.17.6 Overlying all the deposits within this trench, topsoil was observed to a depth of 0.30m, and comprised of loosely compacted blackish-brown silty sand **(170)**.

4.18 TRENCH 17

4.18.1 Trench 17 was orientated in a north-west to south-east direction, and measured 2m in width and 30m in length. The natural substrate was observed at a depth of 0.40m below the ground level, and consisted of loosely compacted orange-red silty sand **(171)**. One feature of archaeological interest, and one plough scar was observed within this trench (see Figure 12).

4.18.2 Located at the northern end of the trench, a linear feature **[172]**, was observed aligned in an east to west direction, and measured 0.83m in width and 0.9m in extent. This was filled to a depth of 0.27m by a loosely compacted orangey-brown silty sand **(173)**, which contained charcoal flecks and rounded stones. No finds were retrieved from this deposit, but the alignment of this feature correlates to several post-medieval boundary ditches, such as those within Trenches 9 and 11.

4.18.3 Observed within the southern end of the trench, two plough marks were observed; one of these contained a very loose fill, and is probably related to the recent potato crop processing. A further plough furrow ran parallel to this modern plough furrow, and was observed at a maximum depth of 0.10m and was 0.15m in width.

4.18.4 Overlying all the deposits within this trench, topsoil was observed to a depth of 0.30m, and comprised of loosely compacted blackish-brown silty sand **(170)**.

4.19 TRENCH 18

4.19.1 Trench 18 was orientated in a north-east to south-west direction, and measured 2m in width and 35m in length. The natural substrate was observed at a depth of 0.50m below the ground level, and consisted of loosely compacted orange-red sand **(171)**. One feature of archaeological significance was observed (see Figure 13).

4.19.2 Located 7.5m from the northern end of the trench, a linear feature **[175]**, was aligned in a west to east direction, and measured 1.85m in width. It was filled to a depth of 0.74m by loosely compacted dark reddish-brown silty sand **(174)**, which had frequent inclusions of sub-angular stones (see Plate 6). This was a continuation of the linear feature observed within Trench 16 **[177]**.

4.19.3 No finds were recovered from this feature, but it does run parallel with one of the cropmarks identified during the Desk-Based Assessment, and is perhaps prehistoric in date.

4.19.4 Overlying all the deposits in Trench 18, topsoil **(170)** was observed to a depth of 0.38m, and comprised of loosely compacted orange sand.

Plate 6: North-facing section of linear feature **[175]**, in Trench 18.

5. FINDS

5.1 BULK FINDS

5.1.1 The finds were cleaned and packaged according to standard guidelines, and recorded under the supervision of F. Giecco (NPA Ltd Technical Director).

5.1.2 Thirteen finds were retrieved from the whole site (see Table 1).

5.1.3 Two sherds of white transfer porcelain were recovered from within **(142)**, the upper fill of linear **[143]**, in Trench 11. These appeared to be the remains of a modern, circa 20th century, plant pot or cup.

5.1.4 Nine sherds of black-glazed earthenware pottery were recovered from unstratified layers within Trenches 4 and 8, and within the topsoil from Trenches 5, 6 and 15. This type of ceramic pottery dates these contexts to a generic date of the 19th century.

5.1.5 A small sherd of white porcelain was found within the topsoil of Trench 14, and is possibly the remains of a plant pot. The date for this find is the 19th century.

5.1.6 A fragment of clay tobacco pipe stem was recovered from an unstratified context from Trench 3. This had no makers stamp, or characteristics that could be used for an accurate dating of the find, and so a generic date is applied of the 19th century.

Context	Trench	Material	Quantity	Weight (Kg)	Period
u/s	3	Fragment of Clay Pipe Stem	1	0.002	19th century AD.
u/s	4	Glazed Earthenware	2	0.009	19th century AD.
u/s	8	Glazed Earthenware	2	<0.001	19th century AD.
(140)	12	Glazed Earthenware	1	<0.001	19th century AD.
(142)	11	Transfer Porcelain	2	0.018	20th century AD
(170)	5	Glazed Earthenware	1	0.024	19th century AD.
(170)	6	Glazed Earthenware	1	0.006	19th century AD.
(170)	14	White Porcelain	1	<0.001	20th century AD
(170)	15	Glazed Earthenware	2	0.013	19th century AD.

Table 1: List of artefacts recovered during the evaluation.

5.1.7 None of the finds were considered to have archaeological significance and were discarded.

6. ENVIRONMENTAL ANALYSIS

6.1 INTRODUCTION – THE ENVIRONMENTAL REMAINS

6.1.1 A series of eighteen evaluation trenches were excavated at High House Quarry, Aldoth, Cumbria. The objective of the environmental analysis was to establish the presence/absence, nature, extent and state of preservation of any ecofactual remains and to determine their origins.

6.1.2 The site provided conditions of dry to waterlogged loosely compacted soil. Preservation of the organic remains and bone was then expected to be reasonable, depending on the acidity of the soil.

6.1.3 Of the 18 trenches excavated 8 contexts were considered worth sampling, **(153)**, **(106)** in Trench 7, **(155)** in Trench 9, **(142)** in Trench 11, **(176)**, **(178)** and **(180)** in Trench 16, **(173)** in Trench 17 and **(174)** in Trench 18.

6.1.4 Samples **<1> (142)**, **<2> (153)**, **<3> (155)**, **<5> (112)**, **<6> (176)**, **<7> (178)** and **<8> (180)** were all fills of pits or ditches. Sample **<4> (173)** was a deposit.

6.2 METHODOLOGY

6.2.1 All the whole earth samples were selected for processing in order to assess the environmental potential of the material recovered. This will help provide further information as to the depositional processes involved in the formation of the material. The methodology employed required that the whole earth sample be broken down and split into the various different components. This was achieved by a combination of water washing and flotation. The recovered remains were then assessed for content.

6.2.2 Flotation separates the organic, floating fraction of the sample from the heavier mineral and finds content of sands, silts, clays, stones, artefacts and waterlogged material. Heavy soil and sediment content measuring less than the mesh size falls through the retentive mesh to settle on the bottom of the tank. Flotation produces a 'flot' and a 'residue' for examination, whilst the heavier sediment retained in the tank is discarded. The method relies purely on the variation in density of the recovered material to separate it from the soil matrix, allowing for the recovery of ecofacts and artefacts from the whole earth sample.

6.2.3 The retent, like the residue from wet sieving, will contain any larger items of bone, or artefacts. The flot or floating fraction will generally contain organic material such as plant matter, fine bones, cloth, leather and insect remains. A rapid scan at this stage will allow further recommendations to be made as to the potential for further study by entomologists or palaeobotanists, with a view to retrieving vital economic information from the samples. Favourable preservation conditions can lead to the retrieval of organic remains that may produce a valuable suite of information in respect of the depositional environment of the material, which may include anthropogenic activity, seasonality and climate and elements of the economy. Nomenclature follows Stace (1997). The contents of the samples are listed below in Table 2.

6.2.4 The following report discusses the samples by trench, starting with the lowest number and continuing numerically.

6.3 TRENCH 7: SAMPLE 2 (153)

6.3.1 This context was the fill of a possible tree bowl and was loose silvery-white silty sand with occasional inclusions of charcoal. It was fairly compacted and some root action was noted. No finds were recovered from it; the only inclusions noted being small stones and a small amount of charcoal. The retent was made up of amounts of stones and gravel with a small amount of magnetic material and a small amount of charcoal. There were a number of seeds of the *Vicia* species also recovered from the retent. The flot contained mainly root material and charcoal with small amounts of woody plant parts and sclerotia. Seeds of *Brassica* species, *Rubus* sp. and goosefoot were present in minimal amounts.

6.4 TRENCH 9: SAMPLE 3 (155)

6.4.1 This context was the fill of a ditch, and was friable compact dark yellowish brown sandy silt. Some root inclusions and small stones were noted. The matrix from the retent was mainly gravel with some stones as well as small amounts of magnetic material, woody plant parts and charcoal. There were a number of seeds of the *Vicia* species also recovered from the retent. The flot consisted mainly of roots with small amounts of bark, wood, woody plant parts and charcoal. Fat-hen, *Chenopodium* sp. were the only seeds present.

6.5 TRENCH 11: SAMPLE 1 (142)

6.5.1 This context is the fill of a linear feature. It was loose, friable dark blueish grey sandy silt with frequent inclusions of stones and gravel. The matrix from the retent was mainly gravel with some stones as well. Small amounts of charcoal, magnetic residue and metal work as rusted iron fragments were also present.

6.5.2 A number of seeds of the *Vicia* species were also present in the retent as well as elder, pale persicaria and *Rubus* species also recovered from the retent. Roots were the main component of the flot with a small amount of charcoal, leaf mould, bark, wood and woody plant parts.

6.6 TRENCH 16: SAMPLE 6 (176)

6.6.1 This loose dark reddish brown silty sand with frequent stone inclusions was the fill of a ditch. The matrix from the retent was mainly gravel and stones with a small amount of both charcoal and magnetic residue also present. The flot consisted of mainly roots and a small amount of charcoal. There were a varied number of seeds also present. Mostly they were goosefoot with small amounts of hemp nettle, chickweed, elder and dock species.

6.7 TRENCH 16: SAMPLE 7 (178)

6.7.1 This secondary fill of a possible prehistoric linear feature seems to represent burning *in situ*. It is loosely compacted dark blackish brown silty sand with frequent inclusions of stones. The main constituent of the retent was stones and gravel. A small amount of charcoal was also present with some magnetic residue and a few seeds of fat-hen. The flot consisted mainly of modern root material with a small amount of charcoal. A number of seeds recovered from the flot were identified as hemp nettle and fat-hen. There were a considerable number of the fat-hen seeds.

6.8 TRENCH 16: SAMPLE 8 (180)

6.8.1 This soft dark blackish brown matrix of silty sand was the single fill of a post post-medieval plough furrow. The main constituent of the retent was again stones and gravel. Small amounts of charcoal and magnetic residue were also recovered from it with some small, uncharred twigs. Seeds present from the retent were pale persicaria, hemp nettle and fat-hen.

6.8.2 Again the seeds recovered from the flot contained quite a large number of fat-hen. Common chickweed and hemp nettle were ruderal seeds recovered from the flot. Pale persicaria, a species liking damper ground, were also found as well as *Rubus* sp. (blackberry, raspberry etc.) and docks.

6.9 TRENCH 17: SAMPLE 4 (173)

6.9.1 This compact mid orangey brown silty sand had inclusions of charcoal flecks and stones. It was the single fill of a possible boundary ditch. The retent comprised mainly of stones and gravel with small amounts of magnetic residue and charcoal as well. A few seeds of fat-hen and pale persicaria were also present. The flot matrix was mainly modern root material with only small numbers of both fat-hen and *Rubus* sp. seeds.

6.10 TRENCH 18: SAMPLE 5 (174)

6.10.1 This deposit was within a linear feature that suggests a prehistoric date although there were no finds recovered. The matrix was soft loosely compacted dark reddish brown silty sand with frequent inclusions of pebbles. Again the retent consisted mainly of stones and gravel with a small amount of charcoal present. Other inclusions were small amounts of magnetic residue, small uncharred twigs and woody plant parts. The flot was mainly made up of modern root material with small amounts of charcoal and woody plant parts. Seeds present were a substantial amount of fat-hen, hemp nettle also being present.

Sample	1	2	3	4	5	6	7	8
Context	142	153	155	173	174	176	178	180
Volume processed (litres)	30	10	30	30	40	40	10	10
Volume of retent(ml)	2000	300	400	300	200	300	300	300
Volume of flot (ml)	700	200	500	20	50	30	7	20
Samples suitable for radiocarbon dating	-	-	-	-	-	-	-	-
Residue contents (relative abundance)								
Bone/teeth	-	-	-	-	-	-	-	-
Burnt bone	-	-	-	-	-	-	-	-
Burnt clay	-	-	-	-	-	-	-	-
Chaff charred	-	-	-	-	-	-	-	-
Charcoal	1	1	1	1	1	1	1	1
Charred plant	-	-	-	-	-	-	-	-
Flint/chert	-	-	-	-	-	-	-	-
Grain, charred	-	-	-	-	-	-	-	-
Magnetic residue	1	1	1	1	1	1	1	1
Metal work	1	-	-	-	-	-	-	-
Seeds (various species))	1	-	1	1	-	1	1	1
Slag/metalworking debris	-	-	-	-	-	-	-	-
Small twigs uncharred	-	1	-	-	1	1	-	1
Stones / gravel	3	3	3	3	3	3	3	3
Tree buds	-	-	-	-	-	-	-	-
Wood	-	-	-	-	-	-	-	-
Woody plant parts	-	-	1	-	1	1	-	-
Flot matrix (relative abundance)								
Bark and wood (waterlogged)	1	-	1	-	-	-	-	-
Bone (calcined)	-	-	-	-	-	-	-	-
Charcoal	1	2	1	-	1	1	1	1
Leaf mould	1	-	-	-	-	-	-	-
Modern roots	2	2	3	3	3	3	3	3
Woody plant parts	1	1	1	1	1	-	-	-
Sclerotia	-	1	-	-	-	-	-	-
Small snail shells	-	-	-	-	-	-	-	-

Uncharred small twigs	-	-	-	-	-	-	-	-
Charred plant remains (total counts)								
(c) *Avena* sp. grain (Oats)	-	-	-	-	-	-	-	-
(c) Barley	-	-	-	-	-	-	-	-
(c) Wheat	-	-	-	-	-	-	-	-
(c) Cerealia indeterminate	-	-	-	-	-	-	-	-
Other plant remains (relative abundance)								
(r) *Galeopsis* sp.	-	-	-	-	1	1	-	1
(r) *Stellaria media*	-	-	-	-	-	1	1	1
(t) *Sambucus* sp.	1	-	-	-	-	1	-	-
(w) *Persicaria lapathifolia* (Pale persicaria)	-	-	-	-	-	-	-	1
(x) *Brassica* sp.	-	1	-	-	-	-	-	-
(x) *Chenopodium* sp (Goosefoot)	-	1	1	1	2	2	2	2
(x) *Lactuca* sp L. (Lettuce)	-	-	-	-	-	-	-	-
(x) Poaceae (Grasses) modern intruders	-	-	-	-	-	-	-	-
(x) *Rubus sp.*	1	1	-	-	-	-	-	1
(x) *Rumex* sp (Dock)	-	-	-	1	-	1	-	1
(x) *Urtica dioica* (Common nettle)	-	-	-	-	-	-	-	-
(r: ruderal; t: trees/shrubs; w: wetland; x: wide niche) Relative abundance is based on a scale from 1 (lowest) to 3 (highest) where 0 is not present.								

Table 2: Details of samples and contexts

6.11 DISCUSSION

6.11.1 Very few plant macrofossils were found in this investigation that could meaningfully help interpret the deposition processes within the features from which they came. Those recovered appeared to be of modern origin as they showed no signs of fossilisation and were not charred. However, some of the flot material did contain fairly large amounts of fat-hen.

6.11.2 The uncharred seeds recovered in Samples 1 to 8 come from species that can inhabit a wide range of habitats and do not add any information to the depositional process or formation of the fills or deposits. They also all seem to be modern material, especially the *Vicia* species as these are still green in some cases, they have not even dried out. This could indicate that the features were open fairly recently to accumulate the material or that the plant matter has been ploughed in. this often happens with *Vicia* species as they add nitrogen to the soil as they are leguminous.

6.11.3 The root material recovered in most of the samples was probably from the upper layers of topsoil, turf and subsoil, the organic material within the matrices of the features

providing a rich source of nutrients for the plants. Again this may have been ploughed in as this field may have been pasture previously.

6.11.4 The fungus from which the sclerotia in Sample **<2> (153)** come would have lived in the upper layers of the soil and may indicate the presence of woodland as it is an ectomycorrhizal species which has mutualistic associations with some tree roots, particularly members of the Fagaceae, Pinaceae and Betulaceae (Hudson, 1986). The plant remains do not provide any information about the age of these contexts. There were very few of them present though.

6.11.5 Very small flots were recovered from Samples **<4>** to **<8>** and as these were mainly root material they produce little diagnostic evidence to determine the origins of the organic material recovered. Even Samples **<1>**, **<2>** and **<3>** produced nothing suitable to determine depositional processes of the matrices, they were mainly modern root material. Charred grain was not recovered from any of the samples.

6.11.6 In samples **<5>**, **<6>**, **<7>** and **<8>** there were considerable amounts of fat-hen, *Chenopodium* species. This taxa is often found in areas of open and disturbed ground. It is from a range of arable weed seeds that are often associated with farming. In view of the well-drained nature of the features, and the presence of modern roots, the uncharred seeds of fat-hen and the other occasional species present are likely to be modern.

6.12 CONCLUSION AND RECOMMENDATIONS

6.12.1 Charred grain was not recovered from any of the samples. Charred material usually preserves very well. This suggests that there was no activity in close proximity to the site that included the charring of grain, probably then indicating no grain drying or cooking in the areas from which the samples were removed. None of the material would be suitable for carbon dating.

6.12.2 Minimal seeds and other plant macrofossils were recovered from each sample, giving very little information as to the taphonomic processes involved in the deposition of the material from which they came. The potential for further information being gained from the examination of this material is very limited, and so it is recommended that no further work be done on the samples.

6.13 VERTEBRATE REMAINS

6.13.1 No bone was recovered from the site. The lack of vertebrate remains may be due to the lack of deposition or to the soil conditions being too acidic and so eroding the material after its deposition. As there were very few finds or macrofossils associated with any of the contexts it was probably the lack of initial deposition.

6.14 RADIOCARBON DATING AND OTHER SCIENTIFIC DATING METHODS

6.14.1 The finds and ecofacts recovered from the site were minimal but contexts were secure and there did not seem to be any mixing. There is no suitable material for carbon dating as the charred organic material recovered from the samples is charcoal from wood of unknown date, so the result could potentially add approximately 400 years to the actual date as some of the wood could be as old as 400 or 500 years.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 ARCHAEOLOGICAL POTENTIAL

7.1.1 High House Quarry is situated in an area associated strongly with ritual and domestic practices of Neolithic and Bronze Age communities, such as shown by the excavations at the New Cowper and Overby Quarries. During 2006, a desk-based assessment interpreted aerial photographs which showed significant cropmarks, amongst which were the outline of a putative Bronze Age enclosure, within the boundary of the proposed extraction area. The evaluation at High House has allowed a further analysis of these cropmarks to be undertaken.

7.1.2 A series of eighteen linear trial trenches were excavated in order to assess the first phase of the proposed extraction, an area which was highlighted by the 2006 Targeted Field Evaluation carried out by North Pennines Archaeology Ltd as having potential for archaeological remains. In addition, trenches were excavated to check 'background' areas, that were interpreted as 'blank', and that could hold as yet unidentified archaeological interest.

7.1.3 Archaeological deposits were encountered at a depth of between 0.3m and 0.5m below the current ground level. Evidence of ploughing was viewed across the site, but with a higher concentration occurring within the southern areas, as was also observed during the 2006 field evaluation.

7.1.4 The earliest archaeological feature encountered during the evaluation of the site was the linear ditch feature which was observed within Trenches 3, 5, and 8 (features **[162]**, **[160]**, and **[159]** respectively), and which correlates directly with the positioning of the cropmarks as shown by the aerial photographs from 1975. These features therefore are suggested as being of a prehistoric date, possibly Bronze Age, in view of dating recovered from features at Overby Quarry (Davies 2006, and Town forthcoming), and the difference in alignment with the enclosure fields on the ridge.

7.1.5 Running parallel to these, the linear ditch that was observed within Trenches 16 and 18 (features **[177]** and **[175]** respectively), may also correlate to the cropmarks identified during the assessment of the aerial photography. It is possible that this linear feature continues in a south-easterly direction, and the positioning of Trenches 6 and 2 just narrowly missed the edge of this feature.

7.1.6 Post-medieval deposits were observed within Trenches 17, 14, 12, 9 and 8, and the linear features within these, (**[179]**, **[101]**, **[115]**, **[154],** and **[156]**, and **[165]** and **[167]**, respectively), are suggested as being post-medieval field boundaries. This is due to their correlation to positions from known tithe maps dated to the 18th century. Plough marks were also observed within the base of several trenches, and these could date to anywhere between the post-medieval and modern period. The intensity of these plough marks was observed mainly in the southern parts of the evaluation area.

7.1.7 The modernity of the deposits within the linear **[143]**, within Trench 11 is suggested by the presence of modern pottery types, as well as the freshness of the charcoal within

the upper deposit. This feature is likely to have been the former hedge boundary between the two existing fields.

7.1.8 Environmental sampling provided no further information regarding the formation of deposits at High House. However, the findings support the evidence that intensive ploughing, as the result of intensive farming on the site, has occurred.

7.1.9 The evaluation at High House Quarry successfully investigated aerial cropmark anomalies, and found a correlation to several linear features which may have been the remains of a putative Bronze Age enclosure ditch. No archaeological finds were found to indicate that this site was being used for any other purposes than agricultural. A high concentration of plough marks and animal burrowing was observed during the evaluation, but this was mostly limited to the areas towards the south. The survival of a substantial ditch within Trenches 16 and 18, suggests that the areas to the north and west are more likely to be of significant archaeological potential.

7.1.10 The discoveries at both New Cowper Quarry and Overby Quarry, which are within a short distance of High House Quarry, and have the same soil conditions, where human inhumations and cremations have been found, suggest that archaeological works at High House should be viewed in conjunction with these sites. These discoveries also highlight that the potential for substantial archaeological remains at High House Quarry are still high, especially to the north west of the current site where plough activity appears reduced. Therefore, archaeological mitigation should be sought prior to any heavy groundwork at the site.

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APPENDIX 1: CONTEXT LIST

Context Number	Trench	Category	Interpretation
(100)	14	Deposit	Fill of post-medieval boundary ditch
[101]	14	Cut	Cut of boundary ditch, filled by (100)
[102]	15	Cut	Plough mark
(103)	15	Deposit	Plough fill
[104]	15	Cut	Plough mark
(105)	15	Deposit	Plough fill
[106]	15	Cut	Plough mark
(107)	15	Deposit	Plough fill
[108]	15	Cut	Plough mark
(109)	15	Deposit	Plough fill
[110]	15	Cut	Plough mark
(111)	15	Deposit	Plough fill
(112)	14	Deposit	Non Archaeological Feature
[113]	14	Cut	Non Archaeological Feature
(114)	12	Deposit	Fill of post-medieval boundary ditch
[115]	12	Cut	Cut of boundary ditch, filled by (114)
[116]	13	Cut	Plough mark
(117)	13	Deposit	Plough fill
[118]	13	Cut	Plough mark
(119)	13	Deposit	Plough fill
[120]	13	Cut	Plough mark
(121)	13	Deposit	Plough fill
[122]	13	Cut	Plough mark
(123)	13	Deposit	Plough fill
[124]	13	Cut	Plough mark
(125)	13	Deposit	Plough fill
[126]	13	Cut	Plough mark
(127)	13	Deposit	Plough fill
[128]	13	Cut	Non Archaeological Feature
(129)	13	Deposit	Non Archaeological Feature
[130]	13	Cut	Non Archaeological Feature
(131)	13	Deposit	Non Archaeological Feature
[132]	13	Cut	Non Archaeological Feature
(133)	13	Deposit	Non Archaeological Feature
(134)	14	Deposit	Plough fill
[135]	14	Cut	Plough mark
(136)	14	Deposit	Plough fill

Context Number	Trench	Category	Interpretation
[137]	14	Cut	Plough mark
(138)	14	Deposit	Plough fill
[139]	14	Cut	Plough mark
(140)	12	Deposit	Fill of [141]- non archaeological feature
[141]	11	Cut	Cut of plant bowl, filled by (140)
(142)	11	Deposit	Fill of linear feature [143]
[143]	11	Cut	Cut of post-medieval field boundary ditch
[144]	12	Cut	Plough mark
(145)	12	Deposit	Plough fill
[146]	12	Cut	Plough mark
(147)	12	Deposit	Plough fill
(148)	11	Deposit	Upper fill of post-medieval boundary ditch, [143]
149	VOID	VOID	VOID
[150]	1	Cut	Non Archaeological Feature
(151)	1	Deposit	Fill of re-instated spoil, Non Archaeological
[152]	7	Cut	Non Archaeological Feature
(153)	7	Deposit	Non Archaeological Feature
[154]	9	Cut	Cut of medieval boundary ditch
(155)	9	Deposit	Fill of linear feature [154]
[156]	9	Cut	Cut of post-medieval boundary ditch, filled by (157)
(157)	9	Deposit	Fill of post-medieval boundary ditch [156]
(158)	8	Deposit	Fill of linear feature [159]
[159]	8	Cut	Cut of possible Bronze Age ditch
[160]	5	Cut	Cut of possible Bronze Age ditch
(161)	5	Deposit	Fill of linear feature [160]
[162]	3	Cut	Cut of possible Bronze Age ditch
(163)	3	Deposit	Fill of linear feature [162]
(164)	8	Deposit	Fill of post-medieval boundary ditch, [165]
[165]	8	Cut	Cut of post-medieval boundary ditch containing 164
(166)	8	Deposit	Fill of post-medieval boundary ditch, [167]
[167]	8	Cut	Cut of ditch, parallel to [165]
(168)	8	Deposit	Fill within [169]
[169]	8	Cut	Probable animal burrow
(170)	ALL	Deposit	Topsoil
(171)	ALL	Deposit	Natural
[172]	17	Cut	Cut of post-medieval boundary ditch containing (173)
(173)	17	Deposit	Fill of boundary ditch [172]

Context Number	Trench	Category	Interpretation
(174)	18	Deposit	Fill of linear feature [175]
[175]	18	Cut	Cut of possible Bronze Age linear feature, containing (174)
(176)	16	Deposit	Primary fill of linear feature [177]
[177]	16	Cut	Cut of linear ditch, containing (178) and (176)
(178)	16	Deposit	Upper fill within possible Bronze Age ditch [177]
[179]	16	Cut	Cut of post-medieval boundary ditch, filled by (180)
(180)	16	Deposit	Fill of linear feature [179]

APPENDIX 2: FIGURES