NORTH PENNINES ARCHAEOLOGY LTD

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David Jackson BA (Hons)
North Pennines Archaeology Ltd
Nenthead Mines Heritage Centre
Nenthead
Alston
Cumbria CA9 3PD
Tel: (01434) 382045

Tel: (01434) 382045 Fax: (01434) 382043

E-mail: d.jackson@nparchaeology.co.uk

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EXECUTIVE SUMMARY

In September 2009, North Pennines Archaeology Ltd were invited by Wardell Armstrong LLP, to undertake an archaeological field evaluation on land to the northwest of Manthorpe, Grantham, Lincolnshire (NGR SK 915 383). The evaluation followed a geophysical survey of 40% of the 56 hectare site conducted by North Pennines Archaeology Ltd in May 2008 as part of predetermination works to support a planning application for a residential development at the site (Railton 2008).

Two archaeological sites were recorded in the Lincolnshire County Council Historic Environment Record (HER), which fall within the proposed development area. The earthworks of medieval ridge and furrow cultivation had previously been identified on the east side of the site (HER 36396), and a scatter of Romano-British pottery had been recorded on the southwest part of the site (HER 30437). A WWI military railway, known as the Belton War Development Line, was also believed to cross the northwest corner of the proposed development area. However, the wider area around the site has a relatively rich archaeological background, dating from the Early Neolithic period to the post-medieval period.

Based upon the results of the geophysical survey and the previously recorded archaeological sites within the immediate area, the Lincolnshire Heritage Trust requested a programme of limited trial trenching be undertaken. The objective of the evaluation was to determine the presence/absence, nature and extent of any archaeological remains within the proposed development area.

The archaeological field evaluation comprised the excavation of 25 trial trenches over three large arable fields and several smaller pasture fields within the southeast corner of the proposed development area. The trenches were located in order to target both geophysical anomalies and apparently 'sterile' areas. All 25 trenches measured 30m in length and 2m in width, covering 1,500m² of the 56 hectare site.

Trenches 1-19 were located within the three large arable fields which had previously been the subject of the NPA geophysical survey. The deposits were largely consistent within all 19 trenches, being comprised of c.0.35m of ploughsoil and subsoil above the natural substrate. Trenches 4, 6, 9-11, and 17-19 contained several plough furrows consistent with the results of the geophysical survey. Trench 2 revealed a north-south aligned linear feature, probably relating to a former parish boundary.

Trenches 20-25 were located within an area of semi-enclosed pasture fields at the southeast corner of the site. The trenches within the pasture fields were largely devoid of any archaeological finds or features, although Trench 24 was specifically located to target several prominent ridge and furrow earthworks. A palaeochannel and a series of geological deposits were identified in two of the trenches (Trench 20 and Trench 21).

The finds assemblage retrieved during the evaluation included 19th century pottery, a single sherd of 14th century pottery, and several worked lithics, included a Bronze Age scraper. Unfortunately, none of the finds were retrieved from secure contexts, most of them representing residual material within the topsoil or ploughsoil.

Environmental work undertaken has identified that land to the southeast of Running Furrows (Trenches 20-25) possesses a viable source of palaeoenvironmental material which may be suitable for future geological studies of Lincolnshire's environmental development. The majority of the features revealed during the archaeological field evaluation related to the agricultural use of the land in the medieval and post-medieval periods. Evidence for earlier archaeological activity at the site was limited to residual lithic material.

ACKNOWLEDGEMENTS

North Pennines Archaeology Ltd. would like to thank Wardell Armstrong LLP for commissioning the project. Thanks are also due to Jenny Young of the South Kestevan District Council. NPA would also like to thank John of Dysart Plant Ltd, machine operator during the evaluation.

Angus Clark and Don O' Meara carried out the field evaluation, under the supervision of David Jackson. The report was prepared by David Jackson and edited by Martin Railton, Project Manager for NPA Ltd. The project was managed by Martin Railton.

1 INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 In September 2009, North Pennines Archaeology were invited by Wardell Armstrong LLP to undertake an archaeological field evaluation on land to the northwest of Manthorpe, Grantham, Lincolnshire (NGR SK 915 383) (Figure 1). The evaluation followed a geophysical survey of the 56ha site conducted by North Pennines Archaeology Ltd in May 2008 as part of predetermination works to support a planning application for a residential development at the site which highlighted areas of potential archaeological interest (Railton 2008). The 25 evaluation trenches were located in order to target these potentially archaeologically sensitive areas, as well as apparently 'sterile' areas which did not produce any geophysical anomalies. This is in line with government advice as set out in the DoE Planning Policy Guidance on Archaeology and Planning (PPG 16).
- 1.1.2 All trenches were excavated by mechanical excavator and subsequently cleaned by hand under full archaeological supervision. All stages of the archaeological work were undertaken following approved statutory guidelines (IFA 2008).
- 1.1.3 This report comprises the results of the archaeological evaluation and post-fieldwork analysis following the work at Manthorpe, Grantham.

2 METHODOLOGY

2.1 PROJECT DESIGN

2.1.1 A project design was submitted by Wardell Armstrong LLP for an archaeological evaluation of the study area. 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 for Archaeologists (IFA), and generally accepted best practice.

2.2 ARCHAEOLOGICAL EVALUATION

- 2.2.1 The evaluation consisted of the excavation of 25 30 x 2 metre trenches covering 1,500m² of the proposed 56ha development area. The purpose of the field evaluation was to establish the nature and extent of below ground archaeological remains within the vicinity, the evaluation trenches having been located to target both geophysical anomalies and apparently 'sterile' areas. All work was conducted according to the recommendations of the Institute for Archaeologists (2008).
- 2.2.2 In summary, the main objectives of the field evaluation were:
 - to establish the presence/absence, nature, extent and state of preservation of archaeological remains and to record these where they were observed;
 - to establish the character of those features in terms of cuts, soil matrices and interfaces;
 - to recover artefactual material, especially that useful for dating purposes;
 - to recover palaeoenvironmental material where it survives in order to understand site and landscape formation processes.
- 2.2.3 Turf and topsoil was removed by mechanical excavator under close archaeological supervision. The trenches were subsequently cleaned by hand and all archaeological features were investigated and recorded according to the North Pennines Archaeology Ltd standard procedure as set out in the Excavation Manual (Giecco 2003).
- 2.2.4 All finds encountered were retained, including those from excavated topsoil, and were cleaned and packaged according to standard guidelines, and recorded under the supervision of F. Giecco (NPA Ltd Technical Director).
- 2.2.5 All evaluation trenches were backfilled following excavation and recording.
- 2.2.6 The fieldwork programme was followed by an assessment of the data as set out in the *Management of Archaeological Projects* (2nd Edition, 1991).

2.3 ARCHIVE

- 2.3.1 A full professional archive has been compiled in accordance with the project design, and in accordance with current UKIC (1990) and English Heritage guidelines (1991), and according to the recommendations in *Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation* (Brown 2007). The paper and digital archive will be deposited with the City and County Museum, Lincoln under the unique project identifier: **NPA 09 MNG-A**.
- 2.3.2 North Pennines Archaeology Ltd supports the Online Access to the Index of Archaeological Investigations (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. Details of the results of this project will be made available by North Pennines Archaeology as a part of this national project under the unique project identifier: northpen3-65825.

3 BACKGROUND

3.1 LOCATION, TOPOGRAPHY AND GEOLOGY

- 3.1.1 The proposed development area is situated to the northwest of Manthorpe, Grantham and comprises 56 hectares of land bound within arable and pasture fields. A brook called Running Furrows runs through the southeast corner of the site in a northeasterly direction. The proposed development area is largely comprised of three arable fields to the west of Running Furrows brook (Areas A-C), whilst the southeast corner of the area east of the brook is comprised of pasture fields (Area D) (Figure 2). The site is situated within an undulating agricultural landscape at a height of between c.50m 66m OD.
- 3.1.2 The underlying geology of the area is comprised of Liassic and Rhaetic clay and subordinate cementstone with Oolitic shelly limestone, sandstone and clay further east (British Geological Survey 1969). However, the geology within the area is distinctly different both to the east and west of Running Furrows brook. The arable fields to the west of the brook are comprised of lower lias clay and middle lias clay, whilst to the east of the brook, the pasture fields are largely comprised of glacial sands and gravels.

3.2 HISTORICAL BACKGROUND

- 3.2.1 A desk-based assessment of the proposed development area has been undertaken by Wardell Armstrong, a summary of which is included below.
- 3.2.2 No known prehistoric sites are recorded in the immediate vicinity of the proposed development area. However, the wider area was probably exploited during this period. This is attested to by several flint scatters dating from the Early Neolithic to the late Bronze Age, recorded between 230m and 975m from the study area.
- 3.2.3 Roman period activity is represented by a number of scatters of Romano-British pottery, which have been recorded in the area. One of these (HER 30437) is recorded within the southwest part of the site, suggesting that the proposed development area may have been cultivated in this period.
- 3.2.4 Two possible deserted medieval villages were located within 1km of the proposed development area. Towthorpe (HER 30434) was located approximately 150m to the northeast. Easthorpe (HER 30458) may have been situated 800m west of the site boundary. Some of the open fields associated with these villages were almost certainly located within the proposed development area.
- 3.2.5 The study area was probably enclosed in the late 17th century. The earliest available cartographic depiction of the study area is the 1809 Great Gonerby with Manthorpe and Little Gonnerby Enclosure Map, which indicates that the area was owned or leased by Lord Brownlow at this time. His manor house, Belton, was situated to the northeast of the site within a park and gardens. The study area had been further subdivided by the time of the 1st Edition Ordnance Survey map of 1890-91.

- 3.2.6 In the 19th century the Grantham-Newark section of the Great Northern Railway was constructed along the western boundary of the study area (opened 1853). A WWI military railway was constructed in 1915 to serve an army camp, located to the northeast of the study area. This is believed to have crossed the northwest corner of the site.
- 3.2.7 The majority of the proposed development area appears to have remained as agricultural land into the modern period.

3.3 Previous Archaeological Work

- 3.3.1 A geophysical survey of the site was undertaken by North Pennines Archaeology Ltd in May 2008 (Railton 2008). The survey covered approximately 40% of the proposed development area, and was conducted within the arable fields to the west of Running Furrows brook. The surveys detected agricultural features over the majority of the study area. These comprised the well-preserved remains of former ridge and furrow earthworks of probable medieval date, and a possible post-medieval field boundary. It was evident that the plough furrows belonged to at least two open fields, which may have been associated with one of the nearby deserted medieval villages of Towthorpe or Easthorpe. The location of the WWI military railway was detected as a positive magnetic anomaly at the northwest corner of the study area. No early features were detected in the area of the scatter of Romano-British pottery previously recorded on the southwest part of the site. It is possible that the pottery was spread on to the field as midden material in the Romano-British period.
- 3.3.1 No further archaeological investigations are known to have taken place within the proposed development area.

4 EVALUATION RESULTS

4.1 Introduction

- 4.1.1 The archaeological evaluation took place between the 14th September 2009 and the 25th September 2009, and comprised the excavation of 19 trenches within three large arable fields to the west of Running Furrows brook (Areas A-C) and 6 trenches within an area of semi-enclosed pasture fields to the east of the brook (Area D) (Figure 2).
- 4.1.2 All trenches measured 30m in length and 2m in width covering 1,500m² of the proposed 56ha development area. The evaluation trenches were excavated to the level of the natural substrate, with a Case 590SM using a 1.6m wide ditching bucket. The trial trenches were subsequently cleaned by hand and all features and deposits were fully investigated and recorded. The results of the evaluation are outlined below.

4.2 RESULTS

- 4.2.1 **Trench 1:** Trench 1 was located toward the northwest corner of Area A and was aligned northwest to southeast across a linear anomaly believed to be the remains of a WWI military railway (Figure 2). The trench was excavated to a maximum depth of 0.44m exposing compact yellow clay (101) below c.0.23m of compact grey/brown silty clay subsoil (102) and c.0.15m of friable grey/brown clay/silt ploughsoil (100) (Plate 1). Two modern land drains were noted within the trench. However, no structural remains relating to the military railway were present. Pieces of slag were noted in the topsoil in this area. This material could have been bedding for the railway, and would explain the geomagnetic anomaly detected in this area during the geophysical survey.
- 4.2.2 **Trench 2:** Trench 2 was located within the centre of Area A and was aligned northwest to southeast (Figure 2). The trench was excavated to a maximum depth of 0.38m exposing compact yellow clay (101) below c.0.21m of compact grey/brown silty clay subsoil (102) and c.0.16m of friable grey/brown clay/silt ploughsoil (100) (Plate 2). Trench 2 contained a modern land drain and a north-south aligned linear feature which measured c.0.45m in width and c.0.2m in depth. The U-shaped linear feature [104] was filled by a deposit of mid-brown silty clay (103) with frequent root fragments (Plate 3, Figure 3). It is probable that the linear feature [104] represents a former parish boundary, the line of which is indicated as a dotted line on Figure 2.
- 4.2.3 **Trench 3:** Trench 3 was located immediately east of Trench 2 and was aligned northwest to southeast across two geophysical anomalies. The trench was excavated to a maximum depth of 0.4m exposing compact yellow clay (101) below c.0.15m of compact grey/brown silty clay subsoil (102) and c.0.18m of friable grey/brown clay/silt ploughsoil (100) (Plate 4). Trench 3 was devoid of any archaeological features.
- 4.2.4 **Trench 4:** Trench 4 was located toward the northwest corner of Area B and was aligned west-northwest to east-southeast. The trench was excavated to a maximum depth of 0.44m exposing compact yellow clay (201) below c.0.2m of compact grey/brown silty clay subsoil (202) and c.0.22m of friable grey/brown clay/silt ploughsoil (200) (Plate 5). Trench 4 contained two north-south aligned plough furrows

which measured c.1m in width. The western most furrow was investigated further and was found to reach a depth of c.0.16m (Plate 6, Figure 3). The plough furrow [203] was filled by a dark yellow/brown clay/silt (204) which contained two sherds of 19^{th} century pottery, a clay pipe stem fragment and a fragment of burnt bone.



Plate 1: Trench 1 looking southeast



Plate 2: Trench 2 looking southeast



Plate 3: North facing section of feature [104] Trench 2



Plate 4: *Trench 3 looking southeast*

4.2.5 **Trench 5:** Trench 5 was located toward the western edge of Area B and was aligned north-northeast to south-southwest. The trench was excavated to a maximum depth of 0.42m exposing compact yellow clay (201) below c.0.16m of compact grey/brown silty clay subsoil (202) and c.0.12m of friable grey/brown clay/silt ploughsoil (200) (Plate 7). Trench 5 was devoid of any archaeological or modern features.

- 4.2.6 **Trench 6:** Trench 6 was located toward the southern end of Area B and was aligned northwest to southeast. The trench was excavated to a maximum depth of 0.65m exposing compact yellow clay (201) below c.0.23m of compact grey/brown silty clay subsoil (202) and c.0.22m of friable grey/brown clay/silt ploughsoil (200) (Plate 8). A modern field drain and two plough furrows were present within Trench 6.
- 4.2.7 **Trench 7:** Trench 7 was located at the southeast corner of Area B and was aligned north-northeast to south-southwest. The trench was excavated to a maximum depth of 0.4m exposing compact yellow clay (201) below c.0.11m of compact grey/brown silty clay subsoil (202) and c.0.21m of friable grey/brown clay/silt ploughsoil (200) (Plate 9). Trench 7 was devoid of any archaeological or modern features.
- 4.2.8 **Trench 8:** Trench 8 was located toward the eastern edge of Area B and was aligned west-northeast to east-southeast. The trench was excavated to a maximum depth of 0.52m exposing compact yellow clay (201) below c.0.18m of compact grey/brown silty clay subsoil (202) and c.0.16m of friable grey/brown clay/silt ploughsoil (200) (Plate 10). Trench 8 was also devoid of any archaeological or modern features.



Plate 5: *Trench 4 looking west-northwest*



Plate 6: South-facing section of plough furrow [203] Trench 4



Plate 7: Trench 5 looking south-southwest



Plate 8: *Trench 6 looking southeast*



Plate 9: Trench 7 looking south-southwest



Plate 10: Trench 8 looking east-southeast

- 4.2.9 **Trench 9:** Trench 9 was located within the northwest corner of Area C and was aligned east to west. The trench was excavated to a maximum depth of 0.47m exposing compact yellow clay (301) below c.0.25m of compact grey/brown silty clay subsoil (302) and c.0.16m of friable grey/brown clay/silt ploughsoil (300) (Plate 11). Two plough furrows were present within Trench 9.
- 4.2.10 *Trench 10:* Trench 10 was located immediately south of Trench 9 and was aligned east to west. The trench was excavated to a maximum depth of 0.6m exposing compact yellow clay (301) below c.0.23m of compact grey/brown silty clay subsoil (302) and c.0.21m of friable grey/brown clay/silt ploughsoil (300) (Plate 12). Trench 10 contained a single plough furrow.

- 4.2.11 **Trench 11:** Trench 11 was located toward the south-western end of Area C and was aligned east-southeast to west-northwest. The trench was excavated to a maximum depth of 0.54m exposing compact yellow clay (**301**) below c.0.24m of compact grey/brown silty clay subsoil (**302**) and c.0.18m of friable grey/brown clay/silt ploughsoil (**300**) (Plate 13). A 19th century field drain and two plough furrows were present within Trench 11.
- 4.2.12 *Trench 12:* Trench 12 was located within the southwest corner of Area C and was aligned east to west. The trench was excavated to a maximum depth of 1.4m exposing c.1m of compact yellow clay (301) below c.0.2m of compact grey/brown silty clay subsoil (302) and c.0.15m of friable grey/brown clay/silt ploughsoil (300) (Plate 14). Trench 12 was devoid of any archaeological or modern features.
- 4.2.13 **Trench 13:** Trench 13 was located within the southeast corner of Area C and was aligned east-southeast to west-northwest. The trench was excavated to a maximum depth of 0.5m exposing compact yellow clay (301) below c.0.16m of compact grey/brown silty clay subsoil (302) and c.0.24m of friable grey/brown clay/silt ploughsoil (300) (Plate 15). Trench 13 was also devoid of any archaeological or modern features.
- 4.2.14 *Trench 14:* Trench 14 was located within the centre of Area C and was aligned east-southeast to west-northwest across a possible former field boundary, detected in the geophysical survey as a chain of magnetic anomalies. The trench was excavated to a maximum depth of 0.61m exposing compact yellow Liassic clay (301) below c.0.26m of compact grey/brown silty clay subsoil (302) and c.0.24m of friable grey/brown clay/silt ploughsoil (300) (Plate 16). Trench 14 was devoid of any archaeological or modern features. The geophysical anomaly was probably due to ferrous material in the topsoil, which often accumulates along boundary features.



Plate 11: Trench 9 looking west



Plate 12: Trench 10 looking west



Plate 13: Trench 11 looking west-northwest



Plate 14: Trench 12 looking west



Plate 15: Trench 13 looking west-northwest



Plate 16: *Trench 14 looking west-northwest*

- 4.2.15 *Trench 15:* Trench 15 was located toward the northern end of Area C and was aligned north-northeast to south-southwest. The trench was excavated to a maximum depth of 0.46m exposing compact yellow clay (301) below c.0.24m of compact grey/brown silty clay subsoil (302) and c.0.11m of friable grey/brown clay/silt ploughsoil (300) (Plate 17). Trench 15 was devoid of any archaeological or modern features.
- 4.2.16 **Trench 16:** Trench 16 was located immediately northeast of Trench 15 and was aligned northeast to southwest across two possible geophysical anomalies. The trench was excavated to a maximum depth of 0.42m exposing compact yellow clay (301) below c.0.2m of compact grey/brown silty clay subsoil (302) and c.0.15m of friable grey/brown clay/silt ploughsoil (300) (Plate 18). Trench 16 was devoid of any

archaeological or modern features. The geophysical anomalies were probably modern agricultural features.

- 4.2.17 **Trench 17:** Trench 17 was located immediately northeast of Trench 16 and was aligned northeast to southwest across a single linear anomaly. The trench was excavated to a maximum depth of 0.53m exposing compact yellow clay (**301**) below c.0.18m of compact grey/brown silty clay subsoil (**302**) and c.0.12m of friable grey/brown clay/silt ploughsoil (**300**) (Plate 19). Trench 17 did not reveal any evidence for the geophysical anomaly. However, the trench did contain two north-south aligned plough furrows, although the furrows were unrelated to the northwest to southeast aligned anomaly.
- 4.2.18 **Trench 18:** Trench 18 was located within the northeast corner of Area C and was aligned north-northeast to south-southwest. The trench was excavated to a maximum depth of 0.58m exposing compact yellow clay (**301**) below c.0.22m of compact grey/brown silty clay subsoil (**302**) and c.0.21m of friable grey/brown clay/silt ploughsoil (**300**) (Plate 20). Trench 18 contained a modern field drain and a single plough furrow.
- 4.2.19 *Trench 19:* Trench 19 was located toward the eastern edge of Area C and was aligned northeast to southwest. The trench was excavated to a maximum depth of 0.56m exposing compact yellow clay (301) below c.0.25m of compact grey/brown silty clay subsoil (302) and c.0.15m of friable grey/brown clay/silt ploughsoil (300) (Plate 21). Trench 19 contained a modern field drain and two plough furrows.



Plate 17: Trench 15 looking north-northeast



Plate 18: Trench 16 looking southwest



Plate 19: Trench 17 looking southwest



Plate 20: Trench 18 looking north-northeast



Plate 21: Trench 19 looking southwest

- 4.2.20 **Trench 20:** Trench 20 was located within the northeast corner of Area D and was aligned east to west. The trench was excavated to a maximum depth of 0.95m exposing over 0.25m of loose reddish brown medium sand (408) below c.0.48m of loose brown medium/course sandy subsoil (402) and c.0.22m of loose grey/brown medium sandy topsoil (400) (Plate 22). Trench 20 contained a single deposit of charcoal (409) below the subsoil (402) which measured c.0.33m in diameter and c.0.18m in depth.
- 4.2.21 **Trench 21:** Trench 21 was located toward the eastern edge of Area D and was aligned east to west. The trench was excavated to a maximum depth of 1.2m exposing over 0.5m of loose grey/yellow coarse sand (406) below c.0.25m of loose yellow/brown coarse sand and gravel (405), which appeared intermittently within the section.

Deposits (406) and (405) are likely to be glacial in origin, representing glacial loess and glacial moraine respectively. The intermittent glacial moraine deposit (405) was below c.0.2m of loose reddish brown medium sand (408). This was further below c.0.15m of loose brown medium/course sandy subsoil (402) and c.0.32m of loose grey/brown medium sandy topsoil (400) (Plates 23 & 24, Figure 4). Trench 21 also contained a palaeochannel at its eastern end. The palaeochannel [407] measured c.2.8m in width and c.1m in depth, and had cut through the glacial loess (406) and glacial moraine (405), probably forming in a post-glacial environment. The palaeochannel [407] had been filled by a primary orange/brown medium/coarse sand with frequent sub-rounded small stones (404) and a secondary dark orange/brown medium sand with occasional sub-rounded stones (403) (Plate 25, Figure 4).



Plate 22: Trench 20 looking west



Plate 23: Trench 21 looking west



Plate 24: South facing section of Trench 21 Plate 25: South facing section of [407]



- 4.2.22 Trench 22: Trench 22 was located toward the western edge of Area D and was aligned east to west. The trench was excavated to a maximum depth of 0.48m exposing compact yellow clay (401) below c.0.08m of loose brown medium/course sandy subsoil (402) and c.0.17m of loose grey/brown medium sandy topsoil (400). Trench 22 contained a single 19th century field drain (Plate 26).
- 4.2.23 **Trench 23:** Trench 23 was located toward the southwest corner of Area D and was aligned north to south. The trench was excavated to a maximum depth of 0.79m exposing compact yellow clay (401) below c.0.29m of loose reddish brown medium sand (408). This was further below c.0.38m of loose brown medium/course sandy subsoil (402) and c.0.15m of loose grey/brown medium sandy topsoil (400) (Plate 27). Trench 23 was devoid of any archaeological or modern features.
- 4.2.24 *Trench 24:* Trench 24 was located immediately south of Trench 22 and was aligned north-northeast to south-southwest in order to investigate several prominent ridge and furrow earthworks. The trench was excavated to a maximum depth of 0.68m exposing compact yellow clay (401) below c.0.38m of loose brown medium/course sandy subsoil (402) and c.0.19m of loose grey/brown medium sandy topsoil (400) (Plates 28 & 29). A single 19th century field drain was noted within Trench 24. The profile of the ridge and furrow has been provided in Figure 3.
- 4.2.25 **Trench 25:** Trench 25 was located within the southeast corner of Area D and was aligned east to west. The trench was excavated to a maximum depth of 1m exposing compact over 0.4m of loose reddish brown medium sand (408) below c.0.2m of loose brown medium/course sandy subsoil (402) and c.0.35m of loose grey/brown medium sandy topsoil (400) (Plate 30). Trench 25 was devoid of any archaeological or modern features.



Plate 26: Trench 22 looking west



Plate 27: Trench 23 looking north



Plate 28: Trench 24 looking south-southwest



Plate 30: Trench 25 looking west



Plate 29: East facing section of Trench 24

5 FINDS ASSESSMENT

5.1 Introduction

5.1.1 A total of 25 finds from six different contexts were retrieved during the archaeological evaluation. All finds were cleaned and packaged according to standard guidelines, and recorded under the supervision of F. Giecco (NPA Ltd Technical Director).

5.2 ASSESSMENT

- 5.2.1 **Pottery:** A total of six sherds of pottery were recovered during the archaeological evaluation, including two sherds from context (**100**) in Trench 3, two sherds from context (**204**) in Trench 4, a single sherd from context (**200**) in Trench 6, and a single sherd from context (**400**) in Trench 20. Most of the pottery can be dated to the 19th/20th century including porcelain, slipware and tin glazed earthenware. However, the sherd recovered from context (**400**) in Trench 20 is a handle fragment of reduced green glazed ware which can be dated to the 14th century.
- 5.2.2 *Glass:* A total of two shards of green bottle glass were recovered from context (200) in Trench 6. Both shards are base fragments and probably date to the 19th century.
- 5.2.3 *Clay Pipe:* A total of three clay pipe fragments were recovered during the evaluation, including a stem fragment from context (204) in Trench 4 and two bowl fragments from an unstratified context in Trench 7. One of the bowl fragments retains a partial chequered crest. Clay pipes are notoriously difficult to date. However, given their size and form, they can probably be dated to the 19th century.
- 5.2.4 *Lithics:* The lithic assemblage recovered during the archaeological evaluation comprised a total of 13 pieces. All of the pieces were retrieved from unsecured contexts, either being retrieved from the ploughsoil or topsoil, although the trenches within closest proximity to the finds have been given in Table 1 below. Furthermore, the lithic assemblage has been heavily plough damaged making a detailed analysis difficult. However, 11 pieces from the assemblage can be categorised as debitage with the remaining two pieces being categorised as a tool and one possible tool.
- 5.2.5 Most of the debitage appears to be comprised of secondary and tertiary flakes which retain two or more dorsal scars, although the amount of plough damage makes this interpretation tentative. Further technological attributes, which were noted during the analysis, included a predominance of plain butts with a lesser number of marginal butts, the apparent use of both the hard-hammer and soft-hammer techniques, and a general lack of both patina and staining.
- 5.2.6 The most interesting pieces within the assemblage included a tool and a possible tool. The possible tool is a tertiary flake of tan flint which measures 38.67mm in length, 18.64mm in width and 5.61mm in thickness. The piece is triangular in plan, planoconvex in cross-section and displays two dorsal scars. The possible tool appears to display semi-abrupt direct retouch along most of the left lateral margin, although the piece has also sustained extensive edge damage within the same area. However, the

- date and function of the piece remains uncertain, and it is possible that the piece represents an expedient tool.
- 5.2.7 The only definite tool within the assemblage is a button or thumbnail scraper produced on a tertiary flake of black flint. The scraper is sub-oval in plan and sub-rectangular in cross-section, and measures 28.15mm in diameter and 9.23mm in thickness. The piece also displays a plain butt, prominent bulb of percussion and over four dorsal scars. These types of scrapers generally exhibit retouch around all or most of the edge (Butler, 2005: 168), but this particular piece only exhibits a small 12.23mm section of direct abrupt retouch along the right lateral margin. However, the left lateral margin and the distal end of the piece have been heavily plough damaged, probably destroying further evidence of retouch. Furthermore, this type of scraper is typical of the Early Bronze Age (*ibid*: 168), although as the scraper was retrieved from the ploughsoil, it only serves to support previous discoveries within the area.

Trench	Context	Area	Material	Quantity	Weight (kg)	Period
3	100	Α	Pottery	2	0.010	Post-Med /Modern
4	204	В	Pottery	2	0.010	Post-Med
4	204	В	Clay Pipe	1	0.003	Post-Med
4	204	В	Burnt Bone	1	1	Unknown
*5	U/S	В	Flint Tool	1	0.011	Bronze Age
*5	U/S	В	Flint Flake	1	0.005	Unknown
6	200	В	Pottery	1	0.008	Post-Med
6	200	В	Bottle Glass	2	0.199	Post-Med
*7	U/S	В	Flint Flake	2	0.016	Unknown
*7	U/S	В	Clay Pipe	2	0.011	Post-Med
1	U/S	В	Flint Flake	1	0.006	Unknown
*13	U/S	C	Flint Flake	2	0.008	Unknown
*14	U/S	С	Flint Flake	2	0.022	Unknown
16	300	С	Flint Tool?	1	0.006	Unknown
*19	U/S	С	Flint Flake	2	0.003	Unknown
1	U/S	С	Flint Flake?	1	0.058	Unknown
20	400	D	Pottery	1	0.009	Medieval

Table 1: Finds Index

- * Denotes trench in closest proximity to find
- 5.2.8 Little further information can be gained from the finds recovered during the evaluation, however the non-modern finds will be maintained within the project archive for future reference.

6 ENVIRONMENTAL ASSESSMENT

6.1 Introduction

- 6.1.1 During the course of an archaeological field evaluation contexts were assessed by an on-site environmental archaeologist to determine whether sampling of particular features would allow further conclusions to be drawn as to the formation and subsequent modification of these features. Samples were taken from two contexts in Trench 20 and 21 associated with possible glacial deposits and a palaeochannel [407]. These were processed to extract material which may be pertinent to understanding the development of these contexts. Though these samples were processed using a standard method the environmental archaeologist was mindful that the material was retrieved from a context interpreted as geological in origin (in this case the early Holocene).
- 6.1.2 The methodology employed required that the whole earth samples be broken down and split into their various different components. Both samples were fully processed by being manually floated and sieved through a 'Siraf' style flotation tank. The residue from each sample was retained, described and scanned using a magnet for ferrous fragments. The flot was dried slowly and scanned at x40 magnification for charred and uncharred botanical remains. Identification of these was undertaken by comparison with modern reference material held in the Environmental Laboratory at North Pennines Archaeology. Plant taxonomic nomenclature follows Stace (1997).
- 6.1.3 The retent, like the residue from wet sieving, will contain any larger items of bone, heavy (eg waterlogged) ecofacts or artefacts. The flot or floating fraction will generally contain organic material such as plant matter, fine bones, cloth, leather and insect remains (though it was not expected that post-Stone Age material would be recovered from what appeared to be a feature of the early Holocene. A rapid scan at this stage was done to 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. The retent samples were also scanned with a hand magnet to retrieve forms of magnetic material.
- 6.1.4 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, thus enabling assessment of anthropogenic activity, seasonality and climate and elements of the economy associated with the features from which the samples are removed. In this case the sandy, well drained, base rich nature of the soil would be suitable for the preservation of charred plant remains and bone (should mineral replacement occur to offset the leeching of calcium from deposited bones material).
- 6.1.5 Sample numbers appear in brackets thus < >, whilst context numbers appear in brackets thus () for all analysis and discussion below. Reference to seeds in the text is made using the richness scale of 1 = present, 2 = frequent and 3 = abundant, as seen in the tabular results (Table 2).

6.2 RESULTS

- 6.2.1 Sample (404) <1> was taken from the palaeochannel in Trench 21 [407]. A 20 litre sample was taken as it was hoped recovered plant remains might lend support to the theory that this was indeed an early Holocene feature, should pioneer species be recovered from the deposit. Alternatively, should remains of developed deciduous woodland be recovered a reassessment of the feature would be necessary.
- 6.2.2 The heavy residue material produced low amounts of magnetic material, all of which appears to be naturally occurring haematite. A number of small bone fragments were also recovered, though they could only be identified as belonging to a large mammal (the largest fragment was c. 5mm x 20mm x 3mm).
- 6.2.3 Plant remains occurred in relatively low amounts but some provisional conclusions can be drawn. The occurrence of *Silene sp.* (likely to be *Silene vulgaris* based on prominent capsule ridges) and Galium sp. suggest an open, dry environment. Infrequent *Gentinia sp.* was also recovered.
- 6.2.4 The low frequency of both plant remains and bone does not allow a statistically secure conclusion to be reached regarding the palaeochannel. However, it has been shown that the palaeochannel does preserve potentially useful environmental material which may be of interest to those studying the floral and faunal development of Lincolnshire in the post-glacial period.
- 6.2.5 Sample (409) <2> was taken from Trench 20. It consisted of a relatively large (c. 33cm x 18cm) concentration of charcoal. It was hoped that the deposit would also contain identifiable plant remains. A 15 litre sample was taken (the extent of the deposit) and flotted.
- 6.2.6 The heavy residue contained a small amount of magnetic material, identified as naturally occurring haematite, as well as a shale like rock and occasional flint.
- 6.2.7 No plant remains such as seeds etc. were recovered which could be identified. However, a large amount of charcoal was recovered which would be suitable for radiometric dating, or species identification.

6.3 CONCLUSIONS

- 6.3.1 The quantity of palaeobotanical material recovered here does not allow specific statements regarding the Holocene environment of Lincolnshire to be confidently made and thus the conclusions above, particularly for the palaeochannel, can only be of the most general nature. However, land to the southeast of the site (Trenches 20-25) possesses a viable source of palaeoenvironmental material which may be suitable for future geological studies of Lincolnshire's environmental development.
- 6.3.2 It is not recommended at this time that the charcoal from sample (409) <2> be sent for radiometric dating or species identification as it does not appear to relate to an archaeological feature. However, should a future, more detailed geological study, be undertaken then it may be useful to use this material to provide relative dates for the overlying and underlying deposits.

Sample	1	2			
Context	404	409			
Volume processed (litres)	15	20			
Volume of retent(ml)	1000	200			
Volume of flot (ml)	30	250			
Samples suitable for radiocarbon dating	-	٧			
Residue contents (relative abundance)					
Bone/teeth, burnt bone	1	-			
Charcoal	-	1			
Flint/chert	1	2			
Magnetic Residue	1	1			
Stones/gravel	3	2			
Flot matrix (relative abundance)					
Charcoal	2	3			
Modern roots	2	1			
Other plant remains (relative abundance)					
(x) Galium sp.	2	-			
(x) Silene sp.	2	-			
(x) Gentinia sp.	1	-			
(x) Unidentified sp.	-	-			

(c: cereal types, x: wide niche) Relative abundance is based on a scale from 1 (lowest) to 3 (highest) where 0 is not present.

Table 2: Environmental samples

7 CONCLUSIONS

7.1 CONCLUSIONS

- 7.1.1 During the archaeological field evaluation at Manthorpe, Grantham, 25 trenches were excavated over four separate areas, covering 1,500m² of the proposed 56ha development area. The purpose of the evaluation was to establish the nature and extent of below ground archaeological remains within the vicinity, the evaluation trenches being located to target both geophysical anomalies and apparently 'sterile' areas. All trenches were excavated down to the top of the natural substrate.
- 7.1.2 Trenches 1-19 were located within the three large arable fields which had previously been the subject of the NPA geophysical survey. The deposits were largely consistent within all 19 trenches, being comprised of c.0.35m of ploughsoil and subsoil above the natural substrate. Trenches 4, 6, 9-11, and 17-19 contained several plough furrows consistent with the results of the geophysical survey. Trench 2 also revealed a north-south aligned linear feature, probably relating to a former parish boundary.
- 7.1.3 Trenches 20-25 were located within an area of semi-enclosed pasture fields at the southeast corner of the site. The trenches within the pasture fields were largely devoid of any archaeological finds or features, although Trench 24 was specifically located to target several prominent ridge and furrow. A palaeochannel and a series of geological deposits were identified in two of the trenches (Trench 20 and Trench 21).
- 7.1.4 The finds assemblage retrieved during the evaluation included 19th century pottery, a single sherd of 14th century pottery and several worked lithics, included a Bronze Age scraper. Unfortunately, none of the finds were retrieved from a secure context, most of them representing residual material within topsoil or ploughsoil.
- 7.1.5 The environmental work undertaken has identified that land to the southeast of Running Furrows (Trenches 20-25) possesses a viable source of palaeoenvironmental material which may be suitable for future geological studies of Lincolnshire's environmental development.
- 7.1.5 The majority of the archaeological features revealed during the field evaluation related to the agricultural use of the land in the medieval and post-medieval periods. Evidence for earlier archaeological activity at the site was limited to residual lithic material.

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APPENDIX I: CONTEXT INDEX

Context Number	Category	Area	Above	Below	Interpretation
100	Deposit	Α	102	/	Ploughsoil
101	Geological	Α	/	102	Natural Substrate
102	Deposit	Α	101	100	Subsoil
103	Fill	Α	104	102	Fill of [104]
104	Cut	Α	101	103	Redundant Field Boundary
200	Deposit	В	202	1	Ploughsoil
201	Geological	В	/	202	Natural Substrate
202	Deposit	В	201	200	Subsoil
203	Cut	В	201	204	Plough Furrow
204	Fill	В	203	202	Fill of [203]
300	Deposit	С	302	1	Ploughsoil
301	Geological	С	/	302	Natural Substrate
302	Deposit	С	301	300	Subsoil
400	Deposit	D	402	/	Topsoil
401	Geological	D	/	402/408	Natural Substrate
402	Deposit	D	401/403/408/409	400	Subsoil
403	Fill	D	404	402	Secondary Stream Fill
404	Fill	D	407	403	Primary Stream Fill
405	Deposit	D	406	407/408	Glacial Gravel Moraine
406	Deposit	D	1	405/408	Glacial Loess
407	Cut	D	405	404	Post-Glacial Fluvial Channel
408	Deposit	D	401/405/406	402/409	Post-Glacial Sand Deposit
409	Deposit	D	408	402	Charcoal Spread

Table 2: Context Index

APPENDIX II: FIGURES

Figure 1 : Location map

Figure 2: Trench Location Plan

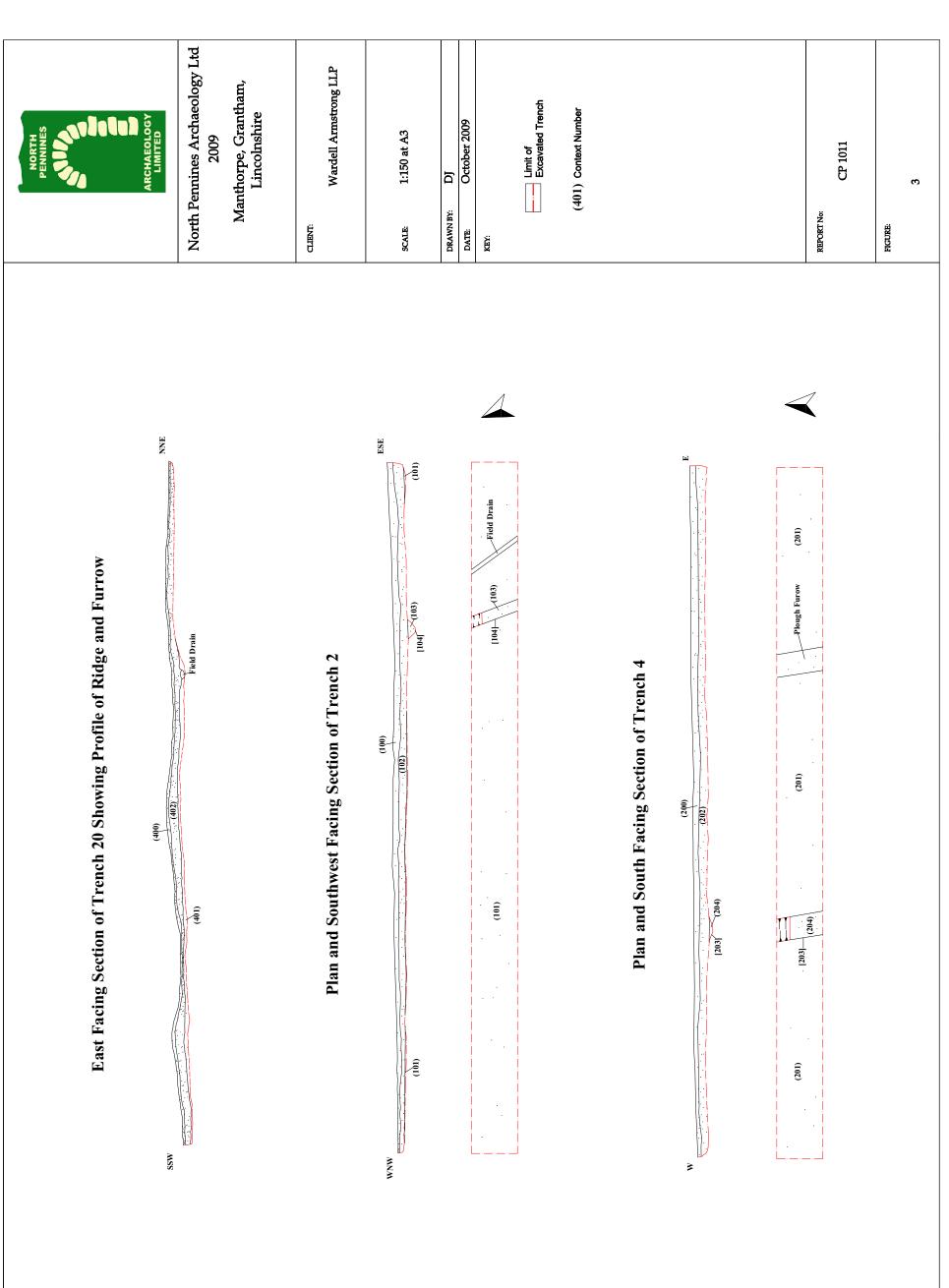


Figure 3: East facing section of Trench 20, plan and southwest facing section of Trench 2, plan and south facing section of Trench 4

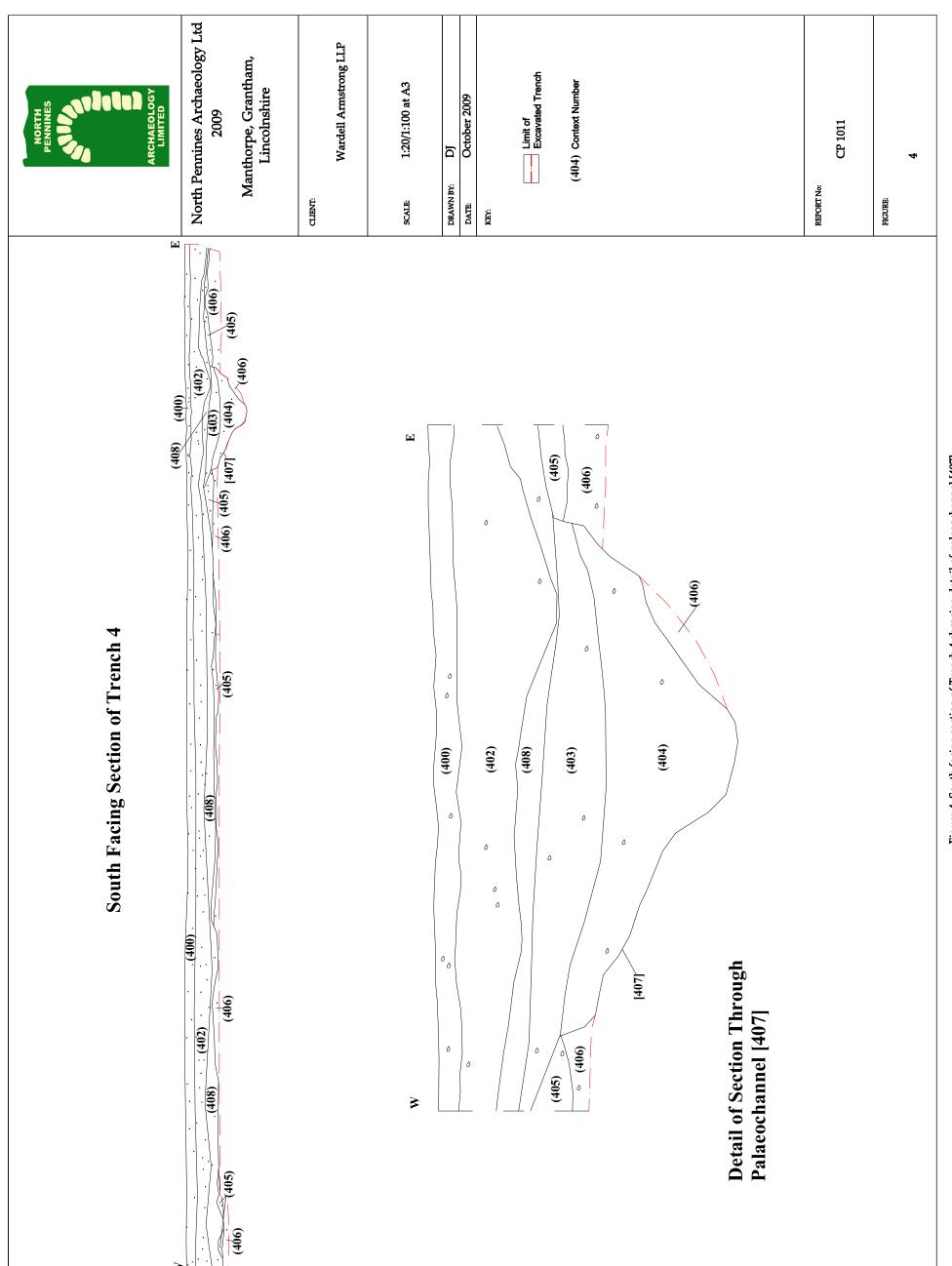


Figure 4: South facing section of Trench 4 showing detail of palaeochannel [407]