

# ENVIRONMENT AGENCY ATTENBOROUGH AND NORTH CONNERIES.

## Report on groundworks in advance of the construction of new flood defences and associated environmental enhancement.

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*Excavating in Area 01 between the rail way and the haul road.*

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**Summary.**

- Trent & Peak Archaeology was contracted by Black and Veatch on behalf of the Environment Agency to conduct an archaeological watching brief on intrusive ground work in advance of enhanced flood defences immediately north west of the Attenborough Nature Reserve between SK50862 33585 and SK 52949 35758.
- The enhanced flood defences were part of a wider scheme of work by the Environment Agency on the left bank of the river Trent from Sawley (Derbyshire) to Colwick (Nottinghamshire).
- In addition to monitoring the groundworks for the enhanced flood defence Trent & Peak Archaeology also monitored ground reduction at the North Coneries in advance of the creation of a new reed bed.
- 750m of trenching were monitored during the course of the watching brief. All of the trenching was shallow, 400mm maximum, comprising the removal of top soil and surface deposits.
- The ground covered had, between the Erewash and Barton Lane, been a quarry haul road and then an access track way to the south western extent of the nature reserve. Other areas were immediately to the north west of the lakes created by quarrying activity and had previously undergone much disturbance and re-working.
- The brick foundations of a small modern building were partially exposed in Area 01. Its full extent was not revealed and its function remains unclear. It is possibly connected to the railway line that runs immediately to the north west of the site.
- A small isolated pit was recorded in Area 03. There were no finds or other dating material associated with the pit and its date remains currently unknown.
- A number of palaeochannels have been identified crossing the area of the watching brief have been identified from aerial photography. No palaeochannel deposits were uncovered as a result of the soil stripping. In two locations, Area 01 and Area 04, auger samples were taken using a Van Walt percussion auger. A third bore hole planned for Area 02 was cancelled due to the proximity of below ground high voltage cables. A further bore hole was attempted in Area 03 but abandoned due to mechanical failure of the percussion auger.
- The paucity of archaeological observations may be accounted for by the shallowness of the groundworks and that the areas through which the trenching passed had previously been subjected to disturbance and re-working.

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## **1. INTRODUCTION**

1.1 Trent & Peak Archaeology was contracted by the Environment Agency to conduct a watching brief on all intrusive ground works associated with the construction of new flood defences at Attenborough, Nottinghamshire. The works covered an area from c.70m north east of the River Erewash to the south west edge of Beeston, Nottinghamshire between NGR SK 50862 33585 and SK 52949 35758.

1.2 The study area lies to the north of the River Trent and passes through an area where archaeological remains have been identified. These include cropmarks and palaeochannels near the River Erewash confluence, cropmarks and palaeochannels along the River Erewash, Attenborough medieval village, fishponds within a Scheduled Ancient Monument, a post medieval gate house and further listed buildings in Attenborough Village.

## **2. PROJECT BACKGROUND**

2.1 The works comprised a part of an overall scheme to enhance the existing flood defences on the left bank of the river Trent extending from Sawley (Derbyshire) in the west to Colwick (Nottinghamshire) in the east.

2.2 The work was commissioned by the Environment Agency, designed by Black and Veatch and carried out by Jackson's Civil Engineering. Archaeological monitoring was conducted by Trent & Peak Archaeology.

2.3 Geology: **Bedrock:** Edwalton and Gunthorpe member mudstone: **Superficial:** Hemington and Holm Pierrepont member sands and gravels. (BGS 2013).

## **3. OBJECTIVES**

2.1 The aim of the work, reported on below, was to mitigate the physical impact of the construction works on any surviving archaeological deposits in the area of the groundworks through preservation by record.

## **4. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND**

4.1 A number of archaeological discoveries from the wider area were made during phases of quarrying. These included a Mesolithic harpoon head (Bishop 2006) which provides the earliest evidence of human activity in the locality. Quarrying and chance finds suggest that activity extended throughout later prehistory. Discoveries include Neolithic stone axes, leaf-shaped arrowheads, Bronze Age metalwork (1966 EMAB no 9, 35) and pottery (1974 EMAB no10, 40). Iron Age and Romano British pottery has been recovered from previous quarrying activity (1974 EMAB no 10, 40 – 43). The Roman period is also represented by pottery. Activity in the Medieval period is demonstrated by both pottery and a silver coin hoard (1974 EMAB no 10, 44). (Webb, 2010)

4.2. The flood plain location of the proposed development raised the possibility of palaeo-environmental deposits being present. Consultation of the Trent Valley Palaeochannel data base indicated the presence of a number of channels in the general vicinity that might be impacted by the proposed works (Baker 2006).

## **5. METHODOLOGY**

*Environment Agency Attenborough, (EAA), and North Coneries, (NCO), watching brief in advance of flood defence enhancement.*

5.1 All intrusive groundwork was carried out, under archaeological supervision, by a tracked machine using a bladed ditching bucket. Spoil was removed from the site by dumper to be stored for use elsewhere.

5.2 Archaeological recording was carried out by drawing, sections at 1:20 and planes at 1:50, on drawing film, (permatrace). Photographic recording was by digital images and black and white 35mm film.

5.3 Any features were excavated by hand and their location marked on scaled plans of the works.

5.6 A core sample, to recover deposits from a suspected palaeochannel, was obtained by the use of a Van Walt percussion auger.

5.7 The length of the works was divided into areas, i.e. Area 01, Area 02 and Area 03. A watching brief conducted on intrusive ground work at the North Connery, (NCO), is included in this report as its location is immediately adjacent to the south western extent of EAA.

## **6. RESULTS**

6.1 Area 01. 700m from the Erewash to Barton Lane. Figure 1.

6.1.1 Only the upper surface, (0001), of the existing ground was removed to an average depth of 200mm. This exposed a black heavily compacted ashy layer, (0002), (Plate 1), which as the excavation progressed alternated with an orange/brown layer of compacted silty clay with abundant brick rubble inclusions, (0003), (Plate 2 and Plate 4). Only the surface of the underlying layers was exposed and it was not possible to ascertain their respective depths. These layers have been interpreted as the make up of a once existing quarry haul road with material from the railway slumping on to it.

6.1.2 The foundation of a modern brick structure, (0019), was recorded at 23m from the start of the excavation. (Figure 2 and Figure 3, Plate 3). This has been interpreted as being part of a now demolished railway infrastructure. It was only partially exposed and its full dimensions and shape could not be observed. Similarly, its function currently remains unknown.

6.1.3 Following the removal of the upper surface the base of the excavation was 'blinded' with concrete to provide a level base for the construction of a brick flood wall.

6.1.4 A bore hole core was taken at the south west extent of Area 01 where a predicted palaeochannel had been identified from aerial photography. The resultant core did not contain palaeochannel deposits. (Appendix 2).

6.2 Area 02. 500m from Barton Lane to the northern extent of Church Pond. Figure 1.

6.2.1 Only the upper surface, (0004), of the existing ground was removed to an average depth of 200mm, (Plate 5). This exposed a uniform orange/brown silty clay, (0005) which extended the entire length of Area 02. Random blocks of modern concrete were embedded in 0005 indicating a high level of modern disturbance having taken place in the recent past.

6.2.2 There were no archaeological features or remains exposed as a result of the groundworks.

6.2.3 An auger sample to recover possible palaeochannel deposits had been included in the design for Area 02. This was not carried out due to the close proximity of a 24 KV power cable carrying the main electricity supply from Radcliff on Soar power station to Nottingham.

6.3 Area 03. 1300m from Cemex Yard to Beeston Pond. Figure 1.

*Environment Agency Attenborough, (EAA), and North Coneries,(NCO), watching brief in advance of flood defence enhancement.*

6.3.1 Only the upper surface, (0006), of the existing ground was removed to an average depth of 400mm. This exposed a uniform layer of orange/brown silty clay with gravel inclusions, (0007) which extended the entire length of Area 03.

6.3.2 A single pit, (0008), was present 23m north east of Cemex Yard, (Plate 6). This was excavated but there were no finds present and no other dating material, (Figure 4, Plate 7). The pit, (0008), was an isolated feature and currently both its date and function remain unknown.

6.3.3 The methodology employed by the contractors adjacent to Beeston Pond entailed dragging a 'V' shaped blade through the ground which did not leave an exposed surface suitable for archaeological observation. The spoil produced by this methodology did indicate the presence of possible palaeochannel deposits, grey clay mixed with the orange/brown silty clay, (0007), and an auger sample was attempted in order to test this. Due to mechanical failures it was not possible to recover a core sample from this location.

6.3.4 At the south western extent of Area 03 flooding of the excavated trench prevented any accurate observation of either the stripped surface or the presence of archaeological features, (Plate 8).

6.4 Area 04 – North Coneries. Land immediately south east of Area 01. Figure 1.

6.4.1 A watching brief was conducted on land immediately to the south east of Area 01 where a reed bed was to be constructed at the request of the Environment Agency.

6.4.2 Mapping indicated that a palaeochannel existed running through the area of intrusive groundworks and the aim of the watching brief was to recover evidence of this which potentially could date the channel.

6.4.3 The upper surface of Area 04, (0009), was removed by a tracked machine using a bladed ditching bucket, (Plate 9 and Plate 10), and the exposed surface, (0010), monitored for any archaeological remains or deposits. There were none present.

6.4.4 The remaining layers of alluvial silts and clays were then removed down to the existing water level to provide the correct environment for seeding the reed bed. The upper layers revealed in the section, (0010, 0011, 0012, 0013, 0014), are made ground associated with successive layers built up against the interface of the dry ground and the water's edge. Below these, (0015, 0016, 0017, 0018) appear to be undisturbed alluvial layers laid down as a result of flooding. There were no artefacts in any of these lower layers that would enable a date to be established for the probable inundations. A section of this was recorded to preserve a record of the stratigraphy, (Figure 5, Plate 11).

The stratigraphic sequence revealed in section was as follows:

<b><i>Context</i></b>	<b><i>Depth</i></b>	<b><i>Description</i></b>
0009	200mm	Made ground comprising silty loam mixed with yellow clay and brick rubble throughout.
0010	420mm	Yellowish brown silty clay
0011	300mm,ave.	Dump of lime and concrete.
0012	420mm	Similar to 0011
0013	390mm	Greyish yellow silty clay
0014	670mm	Greyish yellow silty clay, same as 0013
0015	850mm	Yellow clay
0016	850mm	Greyish yellow clay
0017	180mm	Grey clay
0018	300mm	Mid yellow clay

*Environment Agency Attenborough, (EAA), and North Coneries,(NCO), watching brief in advance of flood defence enhancement.*

6.4.5 An auger sample was taken from the lowest level of the excavation and the core analyses for the presence of palaeochannel deposits and organic material that may be suitable for a Carbon 14 determination, ( Appendix 3).

## **7. DISCUSSION**

7.1 A combination of shallow excavations and in Area 03 the methodology employed by the contractors limited the opportunity for archaeological remains or deposits to be exposed and recorded as a result of the groundworks.

7.2 In Area 01 the excavation only penetrated the surface layer of what had been originally a quarry haul road and more latterly a track way on the north western edge of the flooded quarry workings that now constitute the Attenborough Nature Reserve. The exposed surface comprised heavily compacted silty clay with abundant brick rubble which has been interpreted as being modern in origin. Material, type one stone in a black ashy matrix was also present below the stripped surface. This has probably come from material used to make up the rail way track which runs immediately to the northwest of Area 01.

7.3 A single feature, a modern brick foundation was recorded in Area 01. This has been interpreted as modern and probably connected with the rail way. It was only partially exposed and its full extent remains unknown.

7.4 A small isolated pit was recorded Area 03. There were no artefacts or other dating material in the fill of the pit and it is currently undated.

7.5 Possible palaeochannel deposits were observed in Area 03 but the methodology employed by the contractors prevented any detailed recording of this or samples being taken. An auger sample which had been planed was not recovered due to mechanical failure.

7.6 A watching brief on intrusive ground work for the construction of a new reed bed at the North Conneries was carried out.

7.7 No archaeological features were exposed. Palaeochannel deposits were recovered from both deep sections and from an auger sample and these may give information regarding the date of the channel and the surrounding environment.

7.8 No finds of any description were present throughout the length of the trenching with the exception of brick rubble in Area 01 and Area 04. Those bricks that could be identified were all modern and have probably been used to level or stabilise ground surfaces at the edge of the lakes resulting from gravel extraction.

## **8. CONCLUSIONS**

8.1 There were only limited opportunities for the observation and recording of archaeological remains and deposits arising from the methodology employed by the contractors.

8.1 The brick foundations of a small industrial building were recorded in Area 01. This has been interpreted as being related to the rail way infrastructure. The foundation was only partially exposed and its full shape and dimensions remain currently unknown. One small pit was recorded in Area 03 but its dating and function remain unclear.

8.2 Possible palaeochannel deposits were recorded from two locations and samples recovered from one. These appear to coincide with the location of palaeochannels predicted by mapping from areal photography.

8.3 With the exception of brick rubble, all of which was modern, no finds were present in the areas monitored during the watching brief.



*Environment Agency Attenborough, (EAA), and North Coneries,(NCO), watching brief in advance of flood defence enhancement.*

References:-

Baker S, 2006, *Cultural Heritage Management and the palaeo-environmental resource: Surveying the surface-visible palaeochannel record in the Trent Valley, UK*  
ADS: [archaeologicaldataservice.ac.uk/archives/view/palaeo\\_eh\\_2006/](http://archaeologicaldataservice.ac.uk/archives/view/palaeo_eh_2006/)

BGS 2013, *Geology of Britain Viewer*, British Geological Survey:  
[www.bgs.ac.uk/discoveringGeology](http://www.bgs.ac.uk/discoveringGeology).

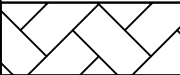
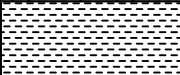
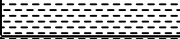
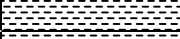
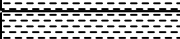
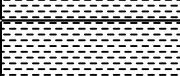
Webb P, 2010, *A Report on a Watching Brief during a Bore Hole Survey at Wheatear Field, Attenborough, Nottinghamshire*. Trent & Peak Archaeology.

## Appendix 1. Summary Context List

0001	Area 01	Ground surface yellow/brown silty loam with elements of 0002 and 0003.
0002	Area 01	Black ashy layer with type one crushed stone, material from rail way.
0003	Area 01	Orange/brown compacted silty clay with brick rubble.
0004	Area 02	Mid brown silty loam, topsoil
0005	Area 02	Orange/brown silty clay
0006	Area 03	Mid/dark brown silty loam
0007	Area03	Orange/brown silty clay.
0008	Area 03	Small pit.
0009	Area 04	Made ground, mid brown silty loam mixed with yellow clay and brick rubble.
0010	Area 04	Yellowish brown silty clay
0011	Area 04	Lime and concrete dump
0012	Area 04	Lime and concrete dump, same as 0011.
0013	Area 04	Greyish yellow silty clay
0014	Area 04	Same as 0013
0015	Area 04	Yellow clay
0016	Area 04	Greyish yellow clay
0017	Area 04	Grey clay
0018	Area 04	Mid yellow clay.
0019	Area 01	Partially exposed brick foundation.

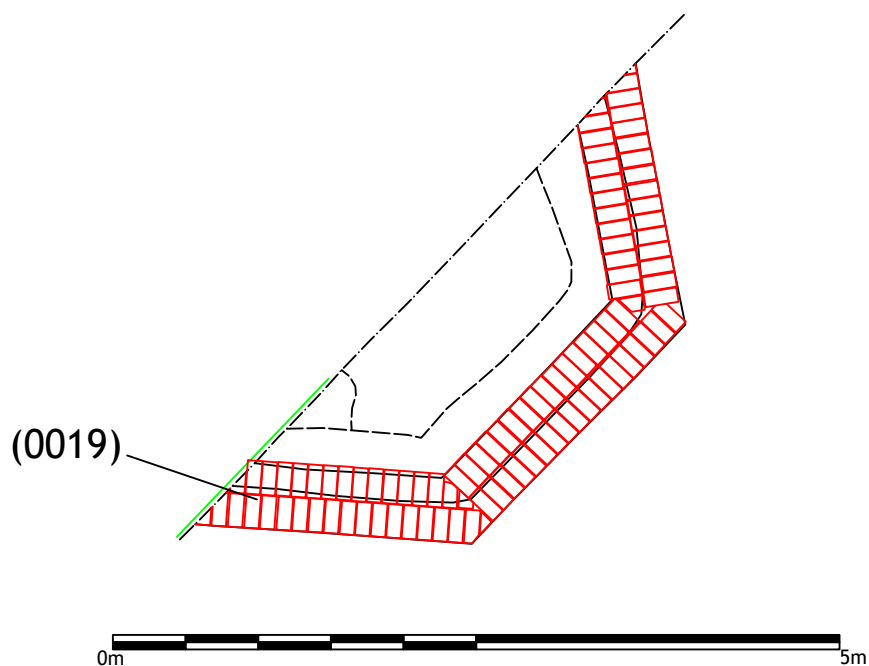
## Borehole Log

Borehole number: BH 08	Date: 21.10.11
Location: NCO North Coneries, Attenborough	Co-ordinates: 450931, 333616
Drilling method: Van Walt percussion auger	Ground level (OD): 26.86m ( bore hole sunk from 25.264mOD).
Logged by: LP	Vertical scale: 1:20

Description	Legend	Depth (thickness) m	Comments / Samples
Mixed topsoil and silts		0.20m (0.20m)	Backfill from excavation
Yellowish grey silty clay 2.5YR 5/2		0.50m (0.30m)	Alluvium Organics in layer
Grey clay 2.5YR 4/1		0.59m (0.09m)	Alluvium
Black silty clay		0.64m (0.05m)	Alluvium
Grey clay 2/5N		0.77m (0.13m)	Alluvium
Sandy clay with large stone inclusions 10YR 3/1		1.02m (0.25m)	Alluvium
End of borehole			



tp EAA/NCO Figure 1. Site Plan, showing watching Brief Areas and possible palaeochannels.  
 Trent & Peak ARCHAEOLOGY Scale 1:10000 at A3

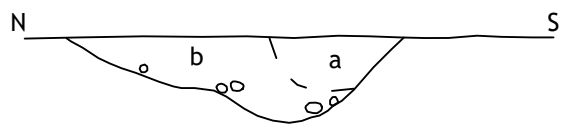


EAA/NCO  
Figure 2. Plan of 0019  
Scale at A4 1:50

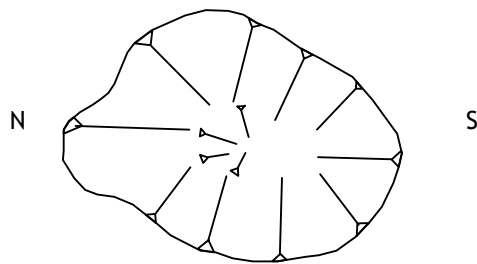


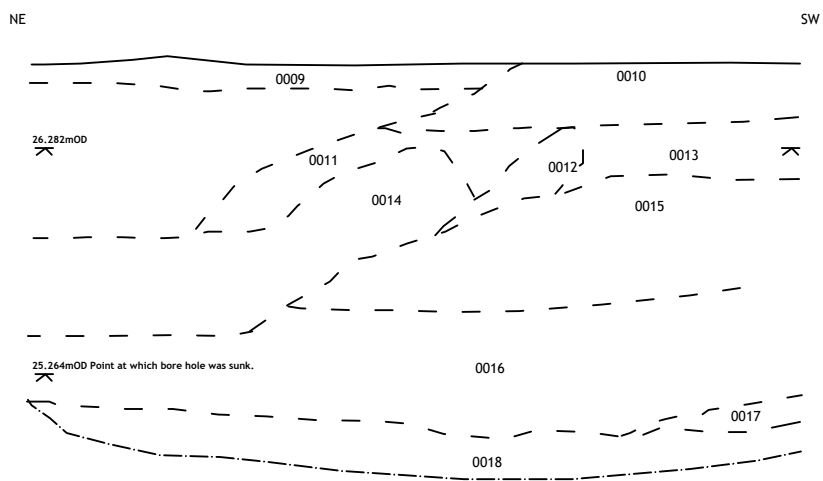
- 0001 Angular stone 10-40mm with 10% coal fragments and 20% dark brown silt loam
- 0002 Dark brown gritty loam with 40% angular stone 10-20mm
- 0003 Dark brown gritty loam
- 0004 Rounded stone 10-30mm within 20% light brown silt
- 0006 Dark brown gritty loam with 20% angular stone 10-20mm
- 0019 Brick feature - mix of red and yellow bricks measuring 80mm x 230mm bonded by yellowish white lime mortar





a burned material in orange/brown clay  
b mid brown loamy sand





- 0009 ground surface, modern deposits, brown silty loam mixed with yellow clays
- 0010 Yellowish/brown silty clay
- 0011 dump of lime and broken concrete fragments
- 0012 dump of lime and broken concrete fragments, similar to 0011
- 0013 greyish yellow silty clay
- 0014 greyish yellow silty clay, same as 0013
- 0015 yellow clay
- 0016 greyish yellow clay
- 0017 grey clay
- 0018 mid yellow clay



Plate 1. Stripping at the start of Area 01. Looking north east.



Plate 2. Stripping in the centre of Area 01. Looking north east.





Plate 3. Brick foundation, 0019, Area 01. Looking north west.



Plate 4. Area 01 showing slumped material from railway abutting the compacted silty clay of the former quarry haul road. Looking north east.



Plate 5. Soil stripping in Area 02. Looking north east.



Plate 6. Small pit, 0008, in Area 03 pre excavation. Looking west.



Plate 7. Pit, 0008, west facing section. Looking east.



Plate 8. Area 03 flooding after topsoil strip. Looking north east.



Plate 9. Start of soil stripping in Area 04. Looking west.



Plate 10. The surface after the upper layer has been removed. Looking west.



Plate 11. Stratigraphic sequence in Area 04. Looking south east.