The East Oxford Archaeology and History Project

Magnetometer Survey, Northfield School, Blackbird Leys: SP 547 025

Date Surveyed: 13 July &12 Aug 2011

Background

A geophysical survey (magnetometry) was carried out during on-going investigations as part of the East Oxford Archaeology and History Project. The aim of this Project, which is jointly funded by a grant from the Heritage Lottery Fund and Oxford University's John Fell Fund, is to gain a greater understanding of the history and archaeology of East Oxford, whilst training community volunteers in aspects of archaeological and historical research.

The Site:

The location of the survey is shown as the hatched area in Figure 1.

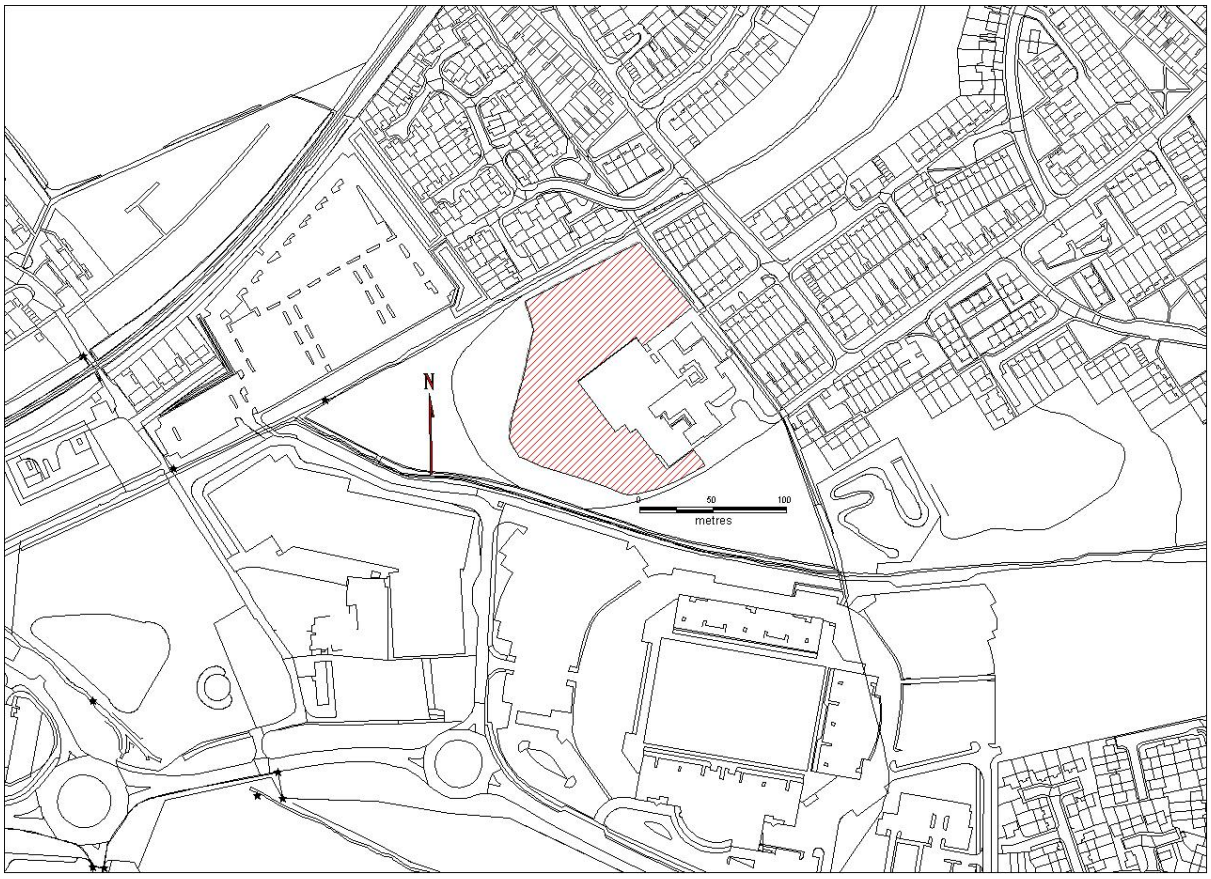

Figure 1: Location of survey

The site lies on level ground at the confluence of the Northfield and Littlemore Brook, with the Northfield Brook delineating its southern border and the now canalised Littlemore Brook its northern. The underlying geology is Beckley Sands. Superficial deposits of alluvium, comprising clay, silts, sands and gravels border the site, but these are considered to lie on the perimeter of the surveyed area.

The area of the survey comprised a playing field approximately 60m x 90 m in the north, and rougher grass to the south and southwest. Until the 1960's this was a rural area and the land is recorded as meadowland and permanent pasture on the 1931-5 Land Use Map, with the school grounds created within the framework of the former field boundary (Figures 2(a-d))

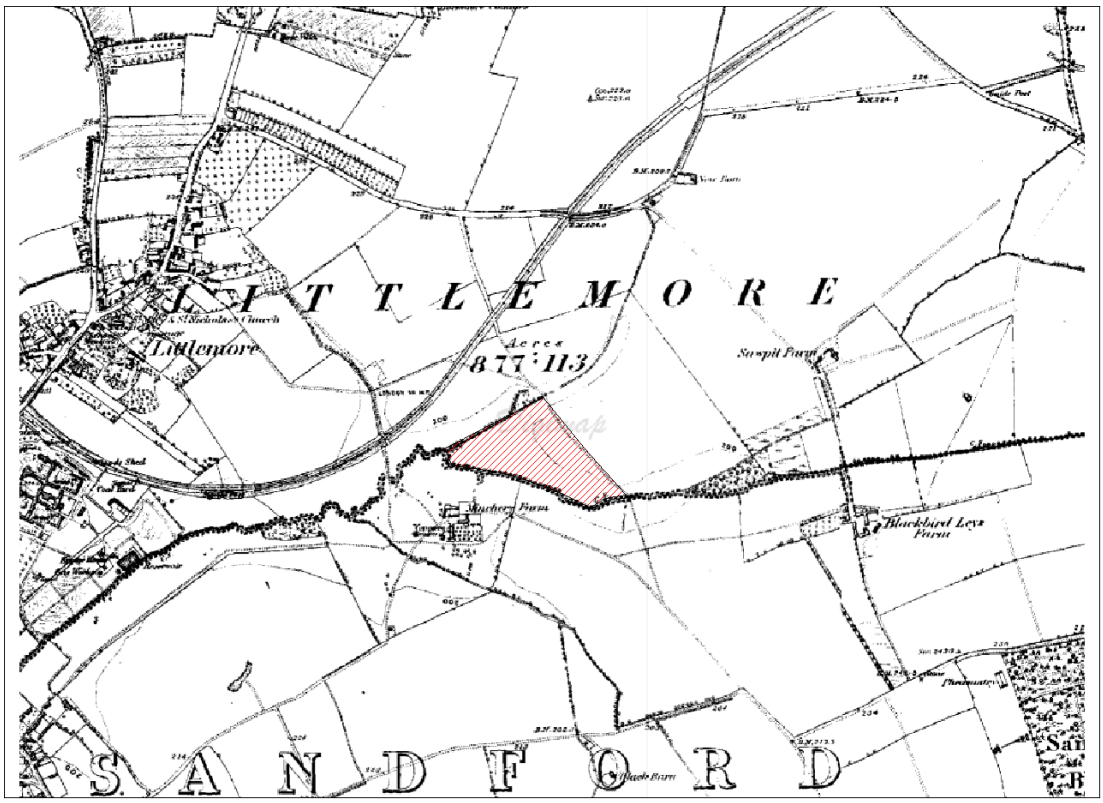

Figure 2(a) 1880 Ordnance Survey

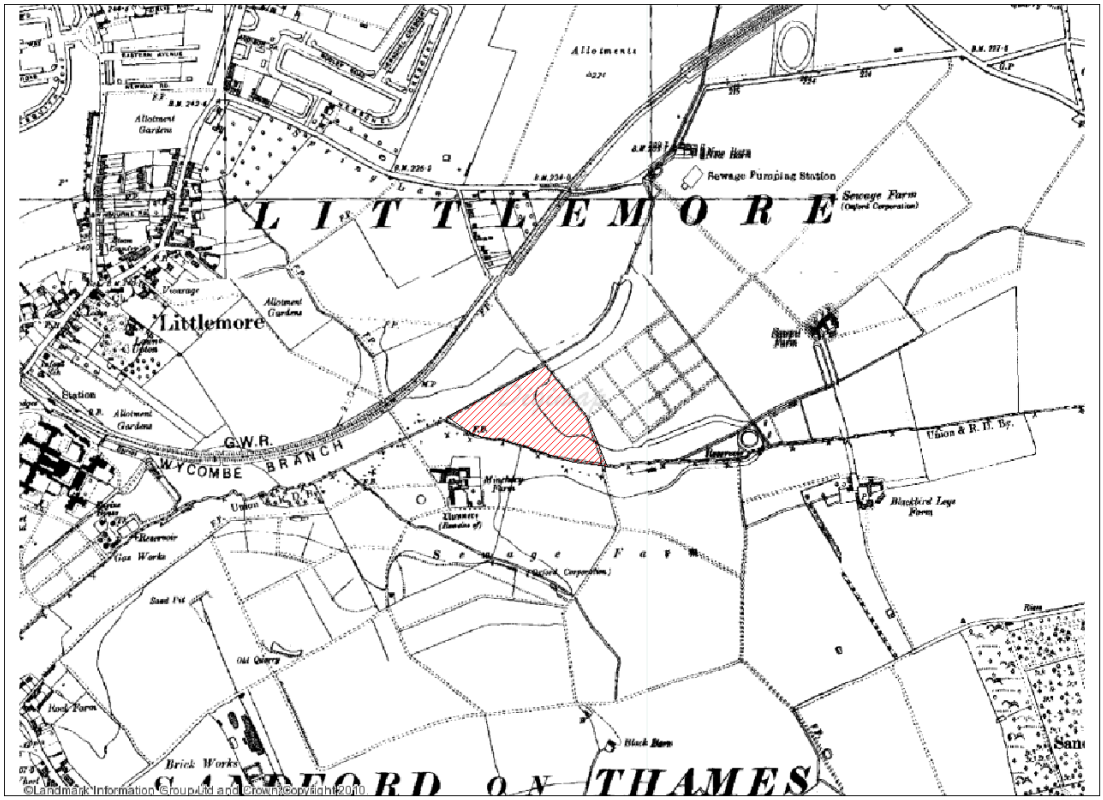

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Figure 2(b) 1920 Ordnance Survey

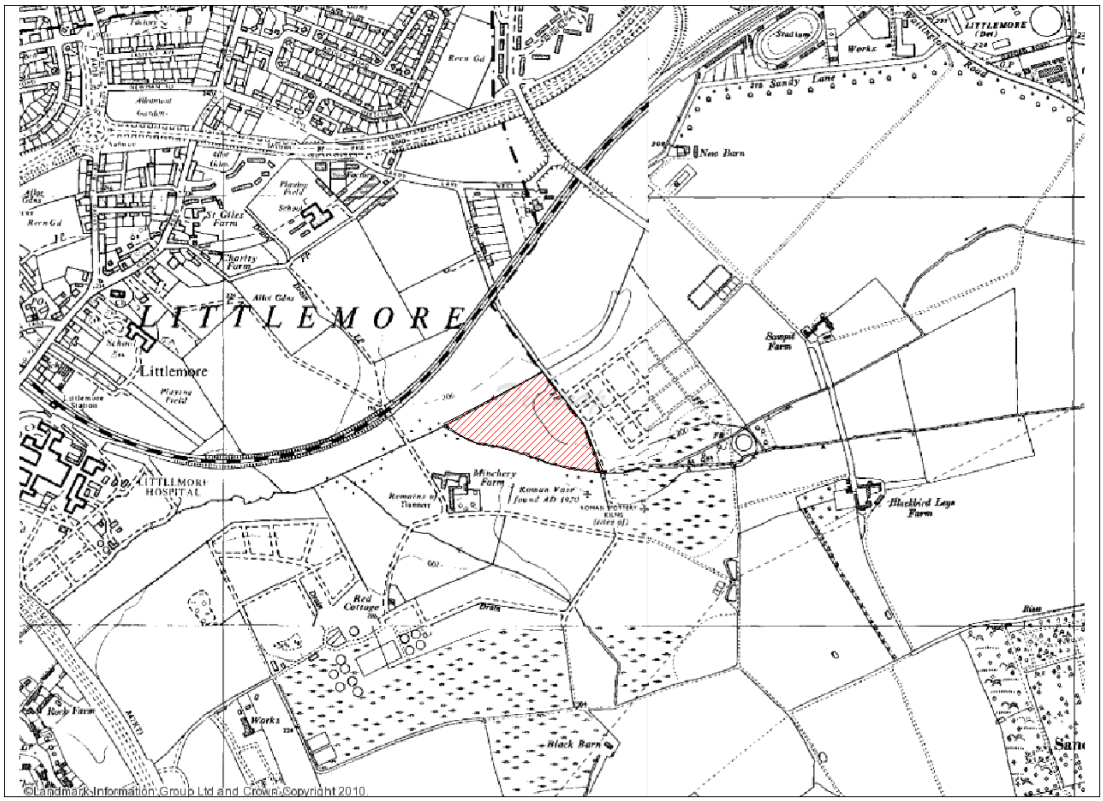

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Figure 2(c) 1960 Ordnance Survey

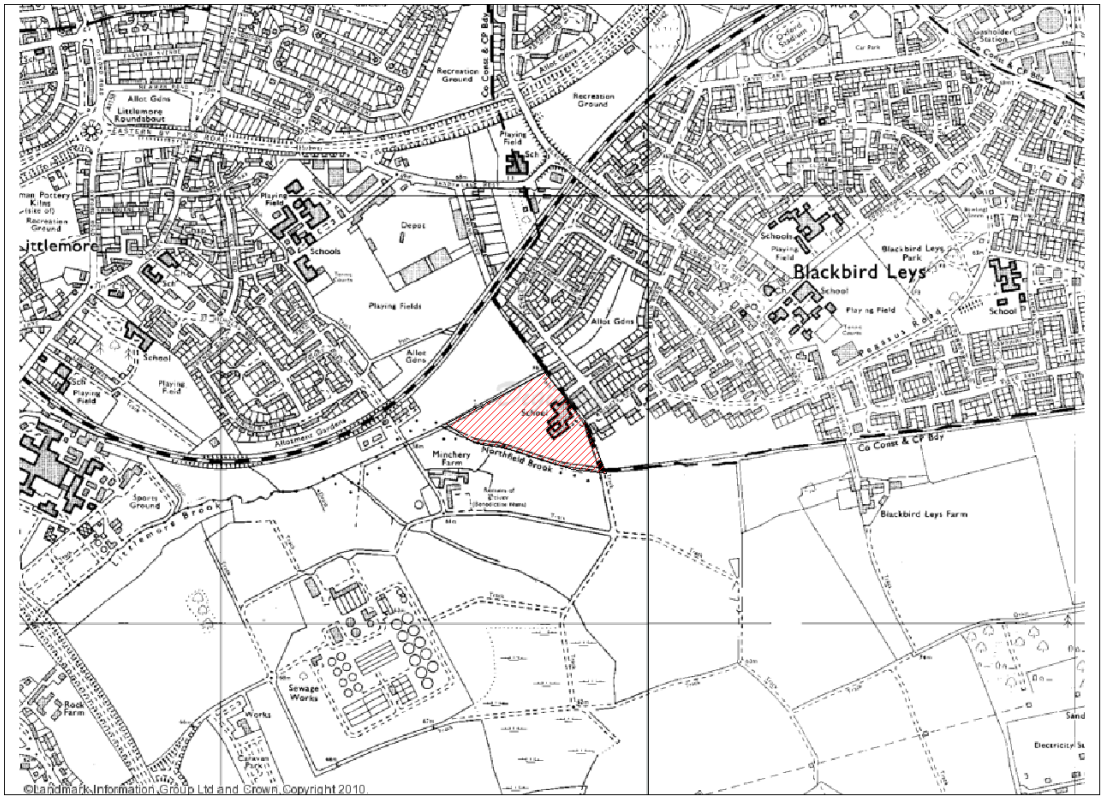


Figure 2(d) 1970 Ordnance Survey

Archaeological Background

The area is rich in evidence for past human activity. During the Roman period it lay at the heart of the Oxfordshire pottery industry, with a number of kilns discovered within a 1km radius of Northfield School (Booth & Edgeley-Long 2003 and Historic Environment Records). Sites dating from the prehistoric period onwards have been discovered during development in the region, notably an early Anglo-Saxon settlement and a possible medieval settlement during the development of the Oxford Science Park 400 m to the southwest (Moore 2001).

'The Priory' public house lies approximately 250 metres to the southwest of the school. The building housed the Benedictine priory of St Nicholas in the 12th century, and by the 13th century was possibly under the patronage of the Templars (Williams 2006). It later became Minchery Farmhouse. During the 2006 investigations at Minchery Farm Paddock, Roman pottery was recovered across the headland overlooking the confluence of the Littlemore and Northfield brooks, and Roman occupation was postulated.

The potential to identify areas of archaeological interest within the survey area was therefore good.

Method:

The survey was undertaken using a single sensor Bartington Grad 601-1 magnetic gradiometer, using a 1m line separation and a resolution of 4 readings per metre. The instrument was set to a sensitivity of 0.1nT. The results were processed using geophysical software *ArcheoSurveyor*.

The survey was carried out over 2 days and the key grids locations were recorded using a Leica GNSS system (GPS). The original three grids were successfully relocated during the second day and the remainder of the survey completed (See Figure 3)

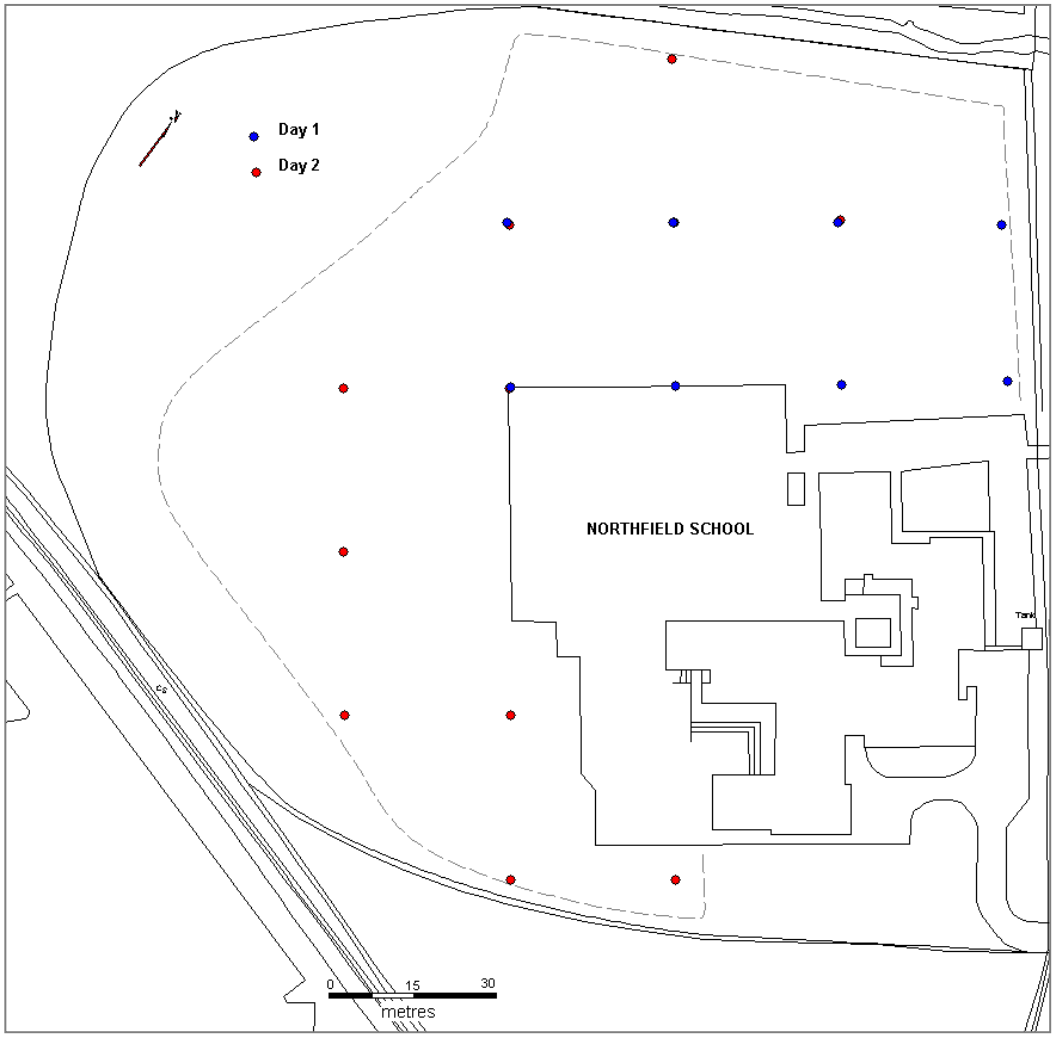


Figure 3: Key grid locations

Results and interpretation:

Some difficulties were experienced on day 1, with anomalously high values of 97-98 nT recorded across the entire site which prevented correct calibration of the equipment. The source of the interference was unknown and it was decided to limit the survey to 3x30 m grids. Two large anomalies were recorded (arrowed in Figure 4(a)) and these were most probably created by the metal goal posts. The smaller anomalies are possibly modern contamination.

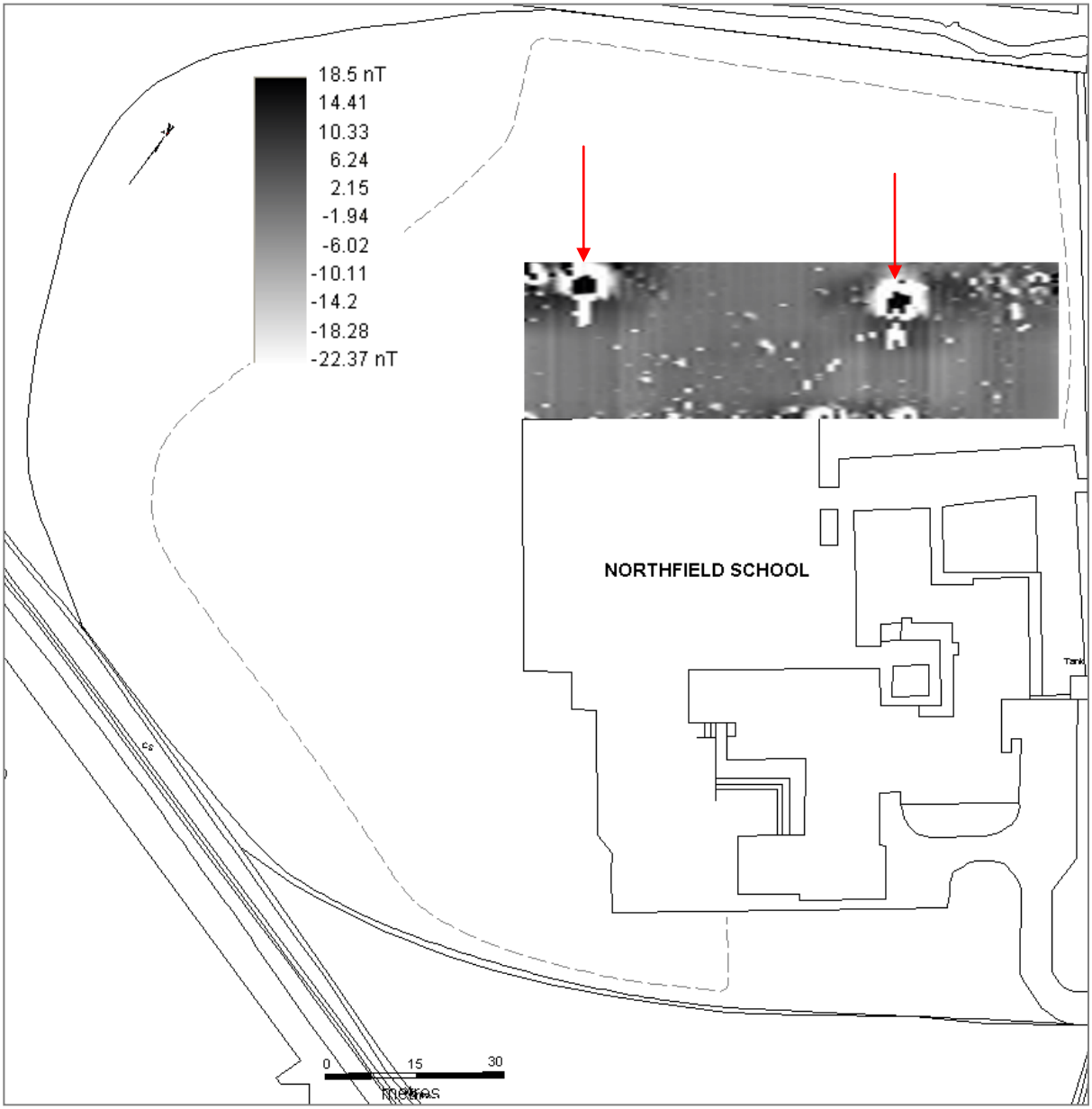


Figure 4(a) Geophysical survey - day 1, processed linear greyscale

Figure 4(b) Geophysical survey - day 2, processed linear greyscale

The problems encountered on day 1 were not experienced during the second day of surveying although a substantial metal perimeter fence caused some interference where the magnetometer approached the fence, and this can be identified as striping. An area of potential interest is circled in Figure 4(b). This appears to show curving lengths of ditch and possible pits identified as higher value (darker) readings. This area corresponds to a circular feature visible on Google Earth.

In common with features identified on aerial photographs, geophysics is unable to give dates for the anomalies detected, and inferences are drawn from their resemblance to similar anomalies of known date. Features of similar form are commonly seen on later prehistoric and Roman sites, and it would require further investigation to verify this.

Acknowledgements:

We would like to thank Mr Mark Blencowe and the staff of Northfield School, for allowing access for this survey to be carried out.

The survey was carried out by Project Officer Paula Levick and community volunteers Steve Nicholson and Charles Wrench.

Report prepared by Paula Levick, 23 Aug 2011.

References:

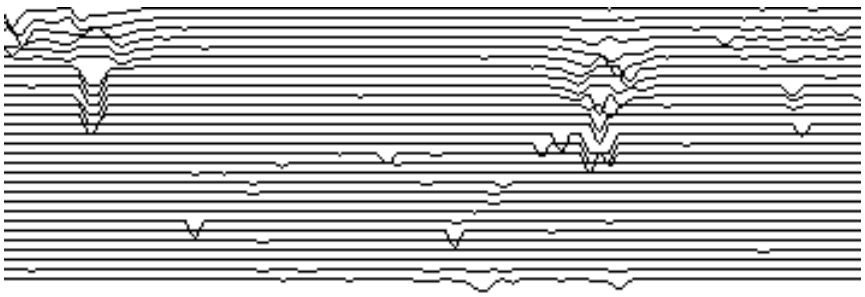
Booth, P. and Edgeley-Long, G. 2003. Prehistoric Settlement and Roman Pottery Production at Blackbird Leys, Oxford. *Oxoniensia* 2003.

Moore, J. 2001. Excavations at Oxford Science Park, Littlemore, Oxford. *Oxoniensia* **66,** 163-21

Williams, G. 2006. *An Archaeological Evaluation at Minchery Farm Paddock, Littlemore, Oxford*. John Moore Heritage Services. Unpublished report.

Appendices

Base data displayed as stack trace plots depicting areas of altered magnetic response.



Day 1

Day 2

Metadata

Day 1
Instrument Type: Bartington (Gradiometer)
Units: nT
Direction of 1st Traverse: 0 deg
Collection Method: ZigZag
Surveyed Area: 0.27 ha

Processes: 6
1 Base Layer
2 Clip at 2.00 SD
3 High pass Uniform filter: Window: 21 x 21
4 DeStripe Mean Grid: Grids: All Threshold: 2 SDs
5 DeStripe Mean Traverse: Grids: All Threshold: 2 SDs
6 Clip at 2.00 SD

Day 2:
Instrument Type: Bartington (Gradiometer)
Units: nT
Direction of 1st Traverse: 0 deg
Collection Method: ZigZag
Surveyed Area: 0.62753 ha

Processes: 7
1 Base Layer
2 Clip at 1.00 SD
3 De Stagger: Grids: All Mode: Both By: 1 intervals
4 DeStripe Mean Traverse: Grids: All Threshold: 2 SDs
5 DeStripe Mean Grid: Grids: All Threshold: 2 SDs
6 Clip at 2.00 SD
7 Interpolate: Match X & Y Doubled.

East Oxford, One History or Many?
Is made possible by a grant from the Heritage Lottery Fund and the John Fell Fund

heritage lottery fund
LOTTERY FUNDED

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