PEOPLE OF THE HEATH:

UNDERSTANDING AND CONSERVING PETERSFIELD'S PREHISTORIC BARROWS

GEOPHYSICAL SURVEY APRIL 2015

Mary and Neville Haskins

ADVISORY BODIES

Document Title:	**PEOPLE OF THE HEATH: UNDERSTANDING AND CONSERVING PETERSFIELD'S PREHISTORIC BARROWS** **GEOPHYSICAL SURVEYS – APRIL 2015**
Document Type:	**Archaeological Recording**
Client Names:	**People of the Heath: Understanding and Conserving Petersfield's Prehistoric Barrows** **Petersfield Museum**
Site Code:	**PH15**
National Grid Reference:	**PH15A SU 75502 22808 (Music Hill)** **PH15B SU 757 230 (Cricket Pitch)** **PH15C SU 75539 22950 (Barrow 12)**
Dates of the survey:	**9th-12th April 2015**
Prepared by:	**Dr Neville J. Haskins, Mary I. Haskins**
Position:	**Leaders, Geophysical Survey Team**
Date:	**April 2015**

This report has been prepared for the "People of the Heath: Understanding and Conserving Petersfield's Prehistoric Barrows" project

Copies have been provided for George Anelay, West Sussex Archaeology (Fieldwork Director) and Stuart Needham (Research Director) for dissemination to the Heath Barrow Cemetery Partnership, and for Historic England (as required by the Section 42 Licence)

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Photo front cover – Barrow 13 (Music Hill) from the south

SUMMARY

A geophysical survey using an earth resistance meter has been carried out on a number of barrows which are part of the Petersfield Heath group. In addition an opportunity arose to examine the cricket pitch for any underlying features.

Surveying the cluster of barrows around Music Hill mainly gave results consistent with features visible on the ground. Thus the bank around the top of Barrow 13, the ring of Barrow 14 and the mound of Barrow 15 gave responses visible in the data.

The very high resistance shown by the bank on top of Barrow 13 indicates it is dense dry material. The contrast between this and the subtler variation in contrast for Barrows 14 and 15 meant these were plotted separately to highlight their features. Also a ring of higher resistance material was observed around the base of Barrow 13. In the northwest quadrant a clear filled cut 6m x 3m was observed.

Barrow 14 was shown to be an annular ditch with possible entrances, surrounded by an outer bank. Barrow 15 showed no features except those due to the stand of conifers planted upon it.

Examination of the Cricket Pitch showed no evidence for archaeological features likely to be of interest.

The area of Barrow 12 was dominated by a path of very high resistance which aligned with the run of a known major drain. A circular feature was visible which corresponded with the position of Barrow 12 in Piggott's original survey.

1. INTRODUCTION

1.1 THE CIRCUMSTANCES OF THE SURVEY

Petersfield Heath is situated on the east side of the town of Petersfield in Hampshire. It is home to a nationally important Bronze Age barrow cemetery comprising a total of at least 21 barrows, known as the Petersfield Heath group. Round barrow cemeteries of this type date from approximately 1900-1500 BC although some individual monuments may be earlier. They can contain different types of round barrow and often may contain additional burials between the mounds.

The Petersfield Heath group has been recognised for over 200 years, and early maps such as the first edition Ordnance Survey of 1810 indicate that the cemetery was once far more extensive with additional barrows to the north and east which are now destroyed by modern housing.

Apart from Ordnance Survey maps, the barrows have not been extensively surveyed and remain little understood. In the 1930s Stuart Piggott produced a plan of their locations on the Heath (Fig. 1) (Grinsell 1939). At least one barrow, number 4, was planned in detail by Piggott. There is a possibility that some of the monuments have been degraded or erased over time. The site was also developed as a golf course which led to the introduction of raised tees which look confusingly like barrows! Extensive tree planting took place on the barrow mounds. Dredged material from the Heath Pond may also have been left in dumps on the Heath in the past.

1.2 THE AIMS OF THE PROJECT

This monument complex deserves to be better understood and therefore Petersfield Museum has sponsored the project “People of the Heath: Understanding and Conserving Petersfield's Prehistoric Barrows”. The project is largely funded by the Heritage Lottery Fund and the South Downs National Park Authority. Part of this community project will investigate the Mesolithic and Bronze Age prehistory of the Heath. This archaeological survey is directed by George Anelay and Stuart Needham. The aims of the project are:-

1. To understand the evolution of Petersfield Heath, with special reference to the Bronze Age funerary complex.
2. To place this complex in the broader settlement and land use patterns of the region during the Neolithic and Bronze Ages.

As part of this project, an advisory committee was formed and first met on 30th May 2012. The committee included interested parties such as Hampshire County Council, University of Reading, Petersfield Town Council; Petersfield Tomorrow; East Hampshire District Council, Chichester District Council; English Heritage; Friends of Petersfield Heath; Petersfield Area Historical Society. and the South Downs National Park Authority. The committee supported the proposal from the archaeological directors to undertake geophysical surveying of the Heath barrows and the areas in between.

The nature of Petersfield Heath (peaty soils overlying sandy sub-soils and variable water content) is such that it was not certain that geophysical surveying would give adequate results. A pilot study was proposed to test the available geophysical methods (magnetometry and earth resistance) for identifying features associated with the barrows such as banks, ditches and trackways. This study indicated that twin probe earth resistance measurement was the technique of choice, giving clear results despite the nature of the Heath soils (Haskins and Haskins 2012).

Part of the main project is to introduce local inhabitants to the use of geophysical techniques before undertaking archaeological investigations. To meet these requirements time is made available during the surveys to train and explain the techniques to inexperienced volunteers from the community who wish to be involved. In addition, members of the survey team would explain the activities to members of the public passing by.

1.3 THE LOCATIONS OF THE SURVEY

The areas selected for this survey are shown (Figure 2). The barrows around Music Hill had until recently been covered in bramble and bracken with shrubs and some mature trees. The smaller vegetation was cleared by volunteers from Friends of Petersfield Heath and teams from the young offenders community programme prior to the surveys. It was necessary to work around the mature trees and tree stumps especially on Barrow 15.

Problems with flooding in outlying areas of the cricket pitch mean that it is likely that some remedial action will be taken to alleviate this. The opportunity was taken to survey the pitch to see if there were any underlying potential archaeological features worthy of investigation during this process.

2. METHODOLOGY

2.1 LICENCE

An English Heritage licence was obtained to carry out this geophysics survey. This was necessary as the barrows are Scheduled Ancient Monuments and are protected under the Ancient Monuments and Archaeological Areas Act 1979 (as amended), section 42.

2.2 SCRUB CLEARANCE AND TEMPORARY BARRIERS

Barrow 14 and the southern slope of Music Hill had been covered by trailing brambles and small shrubs. These areas were cleared by working parties of volunteers before the survey. They also removed some of the loose leaf litter but concrete detritus, larger branches and much rubbish (glass bottles, cans, etc.) was not removed. Although both areas were on routes used by the public no barriers were used but volunteers were asked to be aware of the public in the vicinity. Marker flags were used when lines were trailed across public paths whilst surveying Barrow 12.

2.3 LAYING OUT GRIDS

The grid baselines for the barrows were laid out using marker pegs positioned prior to the survey (Fig. 2). Grids (20m x 20m) were extended using tape measures to generate the overall grid. Measurements were taken at ½ m intervals.
The survey of the cricket pitch was carried out using 30m x 30m grids and recording measurements at 1m intervals.

All grids were walked in an approximate north-south direction and walking up and back along the lines in a zig-zag manner.

Marker pegs were laid out to delineate corners of the grids used in the survey during an earlier topographical survey. The positions of these are shown on the plots.

2.4 EARTH RESISTANCE (TWIN PROBE) SURVEY

Earth resistance surveying was carried out using a Geoscan Research RM15 twin probe earth resistance meter. The pilot study (Haskins and Haskins 2012) had shown this to be the most appropriate technique on the soils of the Heath. This technique measures fluctuations in the soil resistivity due to the presence of varying amounts of water. Dry materials such as sand will contain less water than soil and will exhibit higher resistivity, whilst ditches and peat may contain more water leading to lowered resistivity.

Data were collected and stored for later download to a computer. Data were processed using a program (Geoplot, Geoscan Research) to construct an intensity plot of the variation across the grids.

3. FIELDWORK RESULTS

3.1 WEATHER AND OTHER ENVIRONMENTAL CONCERNS

The weather preceding the survey had been wet, but there was no surface water in the immediate vicinity of the surveyed barrows or the cricket pitch. The days of the survey were generally dry and often sunny with the exception of a light shower on the morning of April 10th during setting up. This passed through quickly by 10 a.m.

3.2 TWIN PROBE RESISTIVITY SURVEY OF BARROWS 13 TO 15 (MUSIC HILL)

The twin probe resistivity survey requires the operator to push the probes into the ground at regular intervals to make a reading. There were problems in doing this across the barrows as the cleared areas generally had a thick coat of decomposing leaf litter and pieces of twigs as well as discarded concrete rubble, and stumps from many cleared saplings *(see photograph on front cover).*

Barrow 15 has a number of mature Scots Pine and other trees. These generated a lot of missed readings on the plots, visible as white speckles across all plots

The results for the Music Hill area are shown in Figure 3. The plot shows intense variation in the resistance due to the nature of the soil/sand. Hence the bank around the top of the mound (Barrow 13) registered 1000 –1200 Ω whilst the background values at lower levels were 250 – 350 Ω. This overwhelmed the contrast for Barrows 14 and 15 and these are dealt with below. Music Hill (Barrow 13) also had a further ring of raised resistance around the base shown in Figure 4.

The top of Barrow 13 is much disturbed with a footpath running across it, but this does not show on the geophysical plot. The other feature of note is to the north west of the mound at low level. This area has been cut away and is described locally as a sand quarry. However a clear probable earlier excavation is visible approximately 6m x 3m on the northern slope.

Creating a plot for the area across Barrow 14 alone showed the features more clearly as contrast is enhanced (Figure 5). The main feature (highlighted in Figure 6) is an annular ditch 20m across, also faintly visible on the ground. It is surrounded by a bank shown as intermittent areas of higher resistance. The high resistance also cuts across the inner ditch in the south east quadrant suggesting a break in the ditch at this point. The area between Barrow 14 and the main mound (Barrow 13) was littered with detritus including concrete rubble, many bottles and other rubbish. This shows on the plot as a series of missed measurements (white pixels in the plot).

Barrow 15 is a low regular mound to the east of Music Hill. There is no evidence of any excavation of Barrow 15.The plot across Barrow 15 (Figure 7) shows similar variations to those seen on earlier surveys of barrows (18 and 21 (Haskins and Haskins November 2014)) and are probably due to the large trees on the mound.

3.3 TWIN PROBE RESISTIVITY SURVEY OF THE CRICKET PITCH

The Cricket Pitch survey was exploratory with no foreknowledge of possible features. Therefore the strategy was adjusted to carry out a survey using 30m x 30m grids and taking measurements at 1m intervals. This is adequate to give target areas which can be surveyed using the better resolved 20m x 20m grids with measurements at ½ m intervals.

The results for the survey are shown in Figure 8. The central square is carefully laid and managed turf and on the general sandy substrate of the Heath shows up as a wet area of very low resistance (20-30Ω) in the centre of the plot. The outfield does not show any obvious unnatural features except for an area of high resistance near the current Pavilion. Some concrete was observed breaking the surface here and this may indicate buried rubble. The other visible variation arcing around the north and east of the pitch is due to the underlying geology.

3.4 TWIN PROBE RESISTIVITY SURVEY OF BARROW 12

Barrow 12 was shown on Piggott's plan (Figure 1) but all trace has disappeared on the ground; even so, it remains a scheduled monument. A sand trap for the golf course is extant but this does not accord with the location of Barrow 12 which is still visible on aerial photographs of the 1980s. The results for the survey are shown in Figure 9.

The main feature on the ground is the remains of an old bunker/sand trap from the golf course. This had a fill of loose sand which gave some readings but very variable and often very high (highlighted in Figure 10). A second visible feature is a manhole cover, and a line of very high over-range readings were obtained running from this area to the northeast corner of the surveyed area. This coincided with a footpath as well. However alongside this in the north east quadrant of the survey area is part of an annulus approximately 15m in diameter. This corresponds with similar small ring barrows observed on the Heath and with the description for the scheduled monument. It is cut by the drain and the footpath.

3.5 INVOLVING THE PUBLIC

On this occasion 12 members of the public with no previous experience of carrying out geophysical surveys participated. After receiving an introduction to the principles and application of resistivity surveying they were able to take full part in the survey. 18 more experienced volunteers also took part.

A further important aspect of this project is to inform the public who are passing by. Only a few people showed interested and stopped to talk about the work on this occasion.

4 CONCLUSIONS

4.1 CARRYING OUT THE SURVEY

The survey around the Music Hill area was difficult due to the presence of stumps and detritus, including substantial concrete blocks, on the ground. There is the added problem of landscaping around its base associated with the golfing era. This did not help with contrast to clearly see features.

4.2 THE SURVEY AROUND MUSIC HILL (BARROW 13)

Very high resistant features atop Barrow 13 corresponded with a visible bank along the northern edge. Variable readings from the remainder of the top reflect the considerable erosion and disturbance here. A ring of raised resistance appears to circle the base of Barrow 13. There is evidence for a probable excavation at the base of the north western slope of the mound.

4.3 RESULTS FOR BARROW 14

An annular feature with possible entrance corresponds with a ditch faintly visible on the ground. This is surrounded by a low bank. There is a break in the ditch in the southeast quadrant. As this area was previously covered with scrub and small saplings there is too much disturbance to see much detail.

4.4 RESULTS FOR BARROW 15

The results for Barrow 15 are dominated by the mature pines growing to considerable height across it. No fine detail is apparent.

4.5 RESULTS FOR BARROW 12

The features visible on the ground (manhole cover and sand trap) are clearly visible on the plot. The projected line of the drain dominates the plot and appears to cut the annulus which is probably the remains of Barrow 12.

4.6 RESULTS FOR THE CRICKET PITCH

The results for the Cricket Pitch itself are as expected. There are areas of raised resistance in the south west quadrant corresponding with an area on the ground which contains concrete rubble, possibly from the original pavilion destroyed by fire in the 1960s. Other variation in resistance is due to the underlying geology.

ACKNOWLEDGEMENTS

We acknowledge the help and guidance given by George Anelay and Stuart Needham as directors of the project.

We acknowledge the huge effort by groups of volunteers to clear the tall vegetation and bramble covering the areas before the survey could go ahead.

We thank the Remote Sensing Team (Andy Payne, Neil Linford and Paul Linford), Heritage Protection Department, Historic England, Fort Cumberland, Portsmouth for their advice and the loan of a resistivity meter. We also thank the Chichester City Walls Project Trust for the loan of their resistivity meter, with thanks to Trevor Davies for organising this.

We thank James Stratford-Tuke and the Cricket Club for allowing us to trample over the cricket pitch and stick marker pegs and probes into the ground. Also to John Pike for information about the earlier Victorian pavilion.

Finally but most gratefully we thank our gallant volunteers: - Colin Bullimore, Ray Bulman, Jane Burstall, Sheila Clark, Sue Colbert, Trudi Duthie, Esther Freeborn, Kay Gilmore, Jane Gunning, John Gunning, Peter Harding, Lauren Hazlehurst, Chris Healey, Pauline Healey, Alan Horgan, Hannah Jeffery, John Jeffrey, Andy King, Jane King, Phelim McIntyre, Charles Nash, Sarah O'Brien-Twohig, Hazel Owen, Helen Poulter, Tim Pullan, Judy Stephens, Mat Stephens, Andy Sutton They worked as two successful teams, laying out grids and lines, carried the meter uphill and down dale and were willing to stop and talk to the members of the public who showed an interest. We thank them for their hard work and excellent results.

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4. M.I.Haskins and N.J.Haskins People of the Heath: Understanding and Conserving Petersfield's Prehistoric Barrows. Geophysical Survey November 2014. *Barrows 18 and 21.*

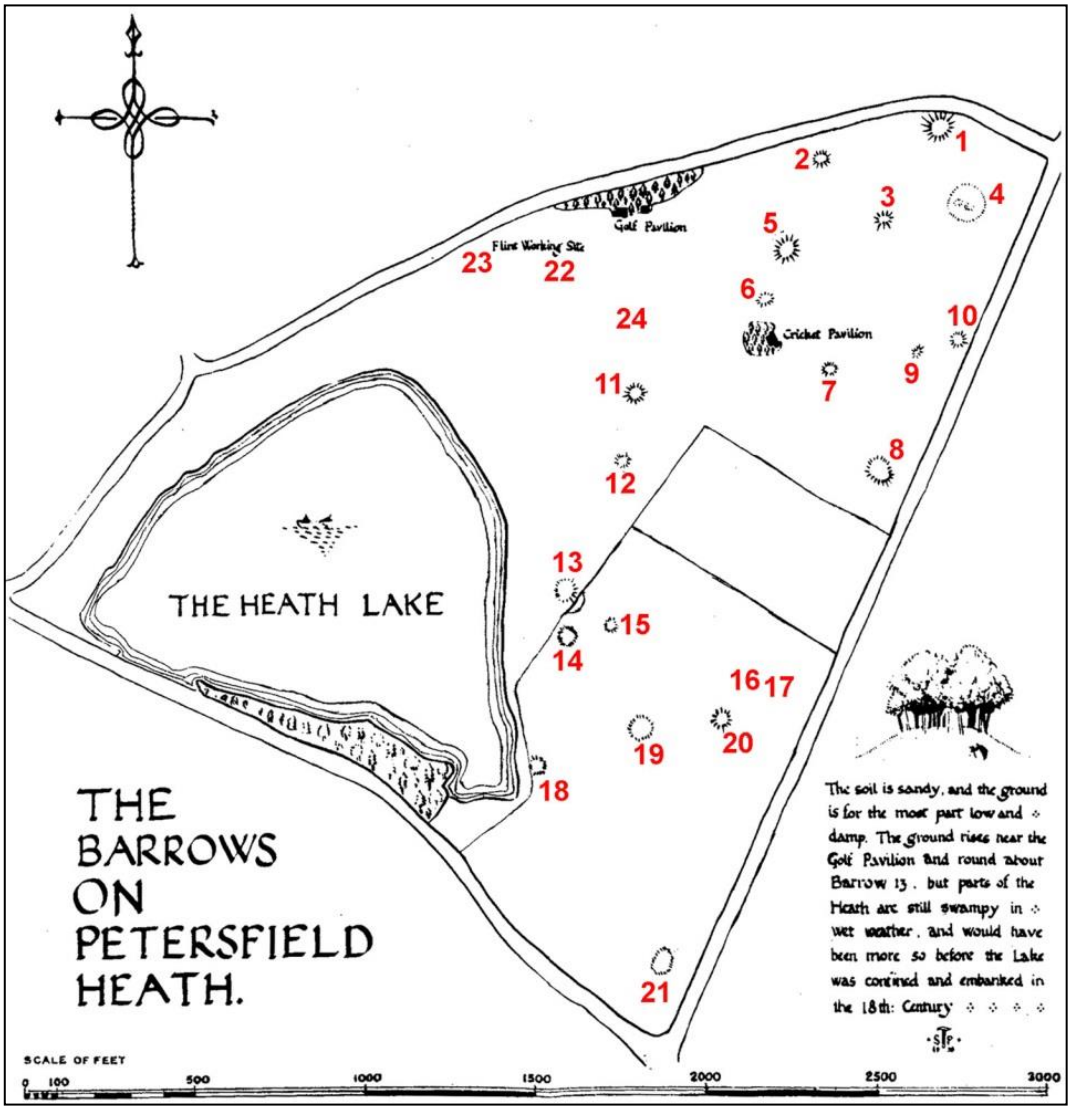

Figure 1: Piggott's plan of the heath and his numbering system.

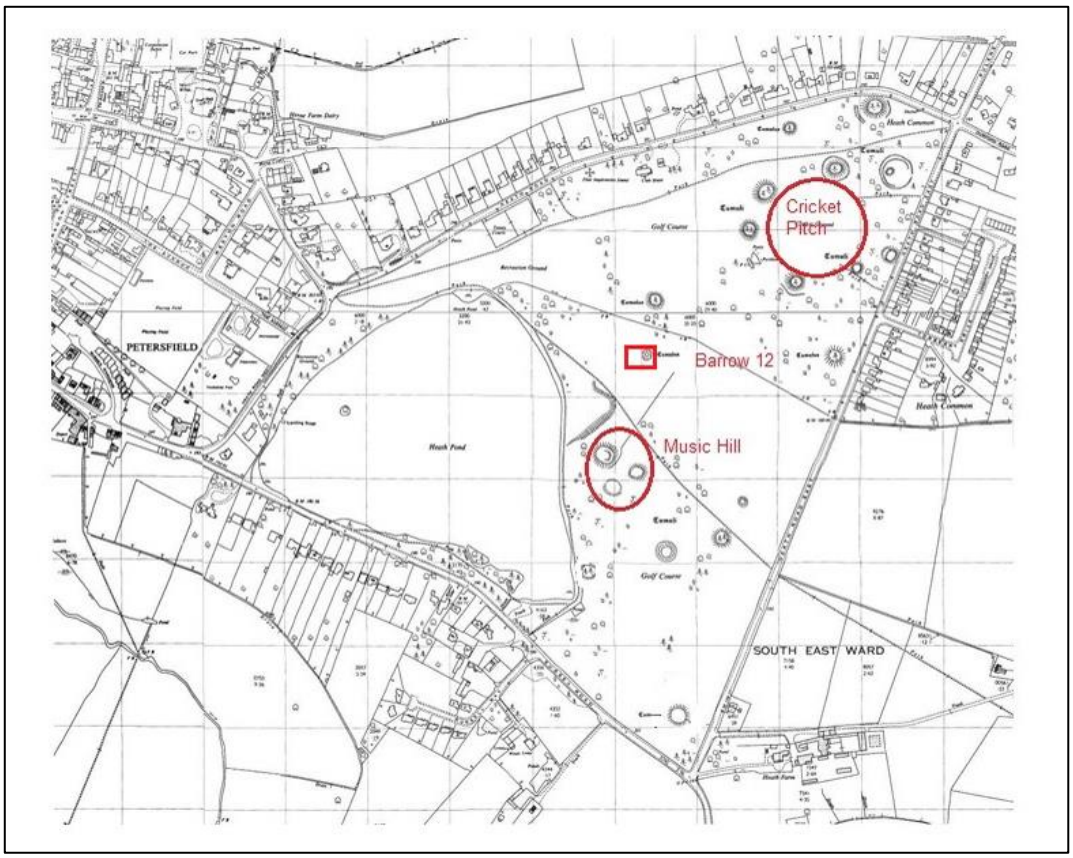

Figure 2: The areas surveyed for this stage of the project.

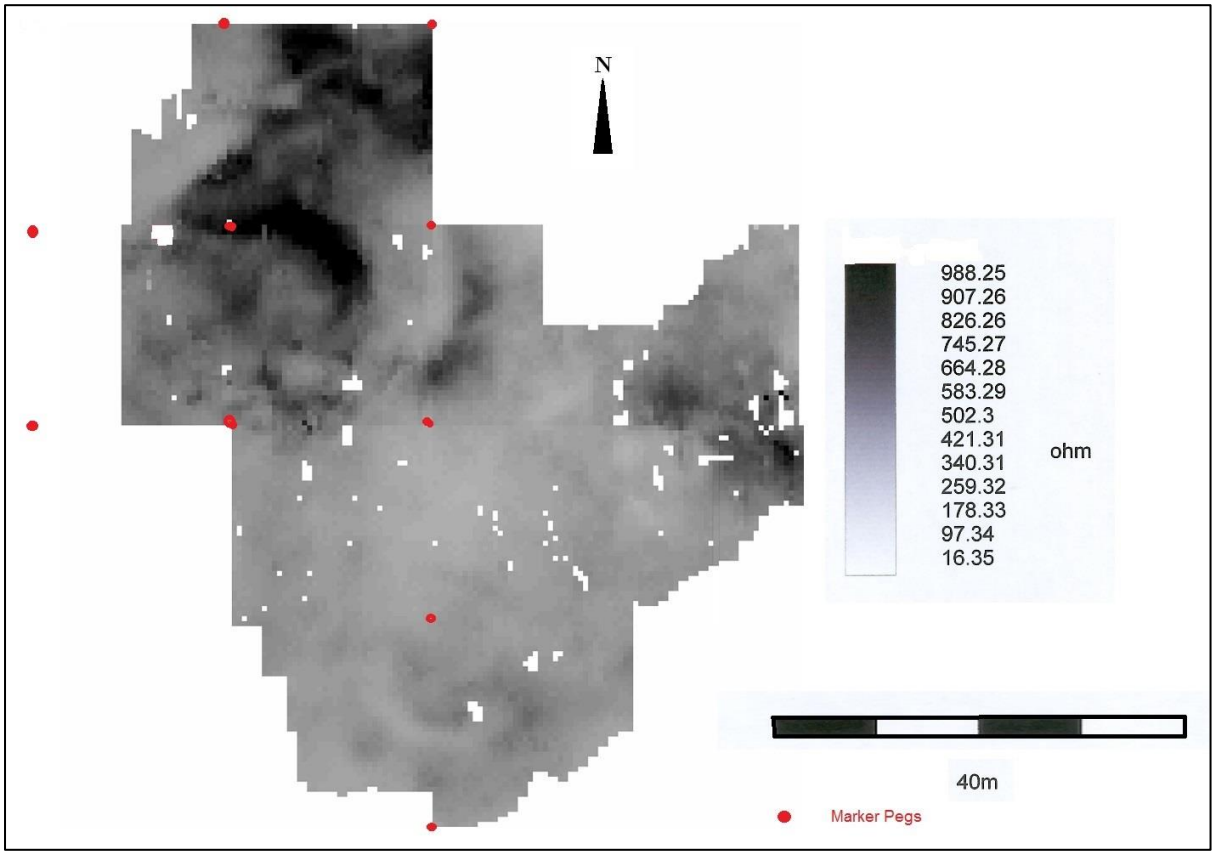

Figure 3: Geophysical survey of the Music Hill area

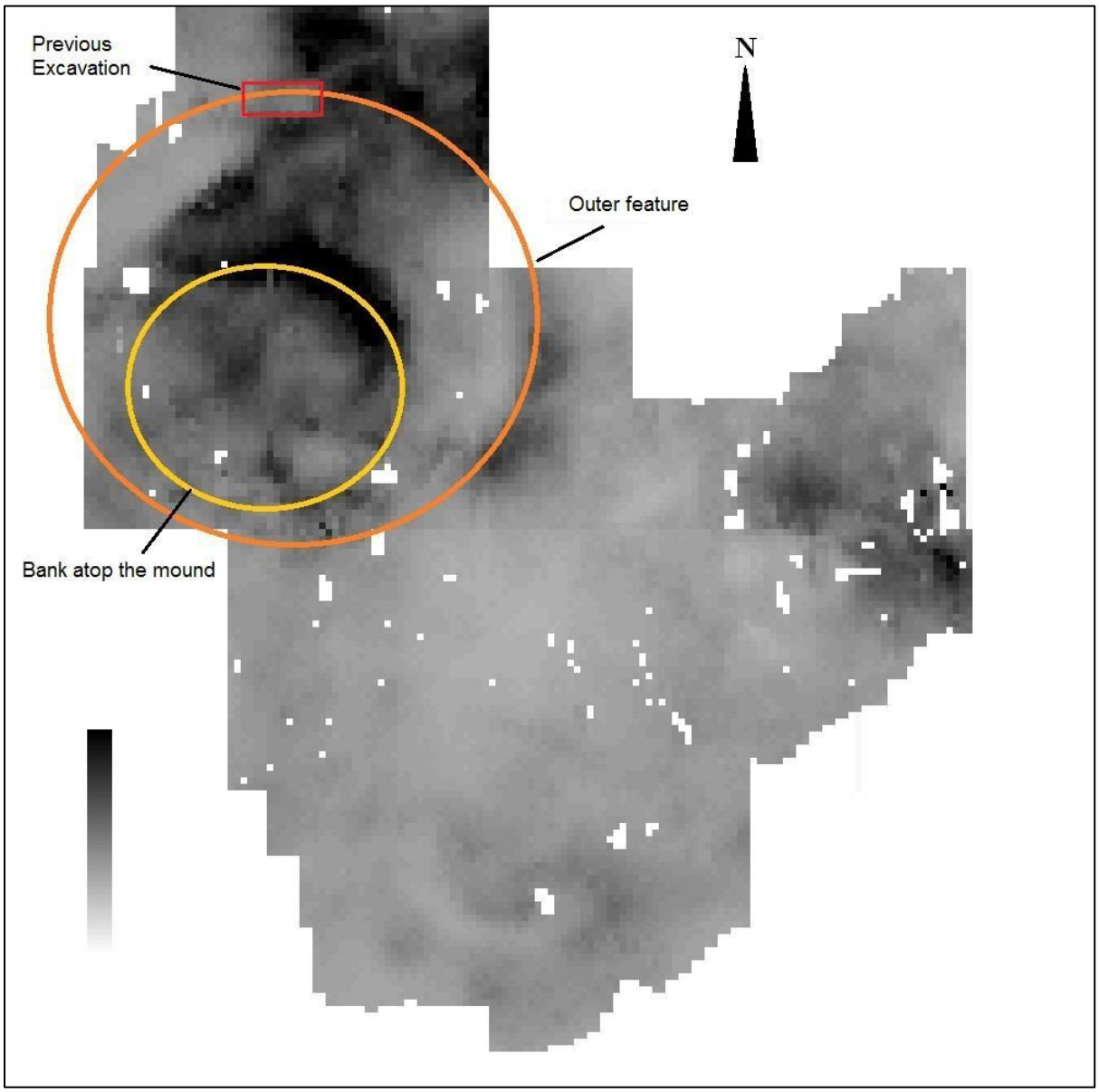

Figure 4: Geophysical survey of Barrow 13 highlighting the features.

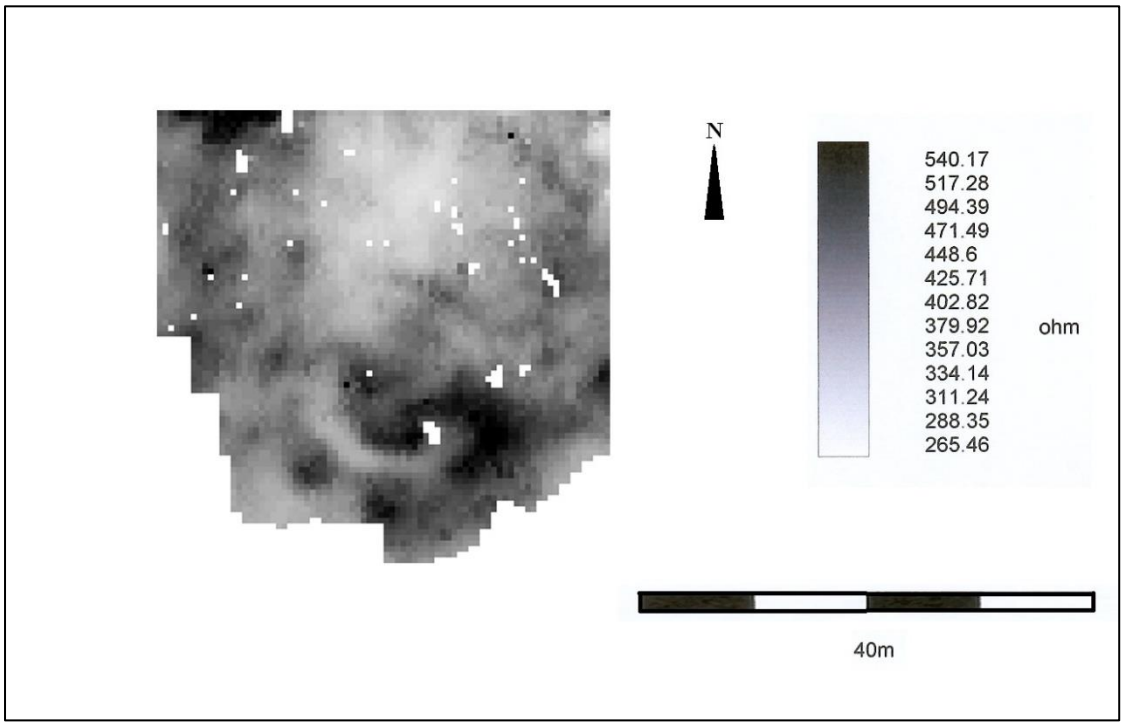

Figure 5: Geophysical survey of Barrow 14

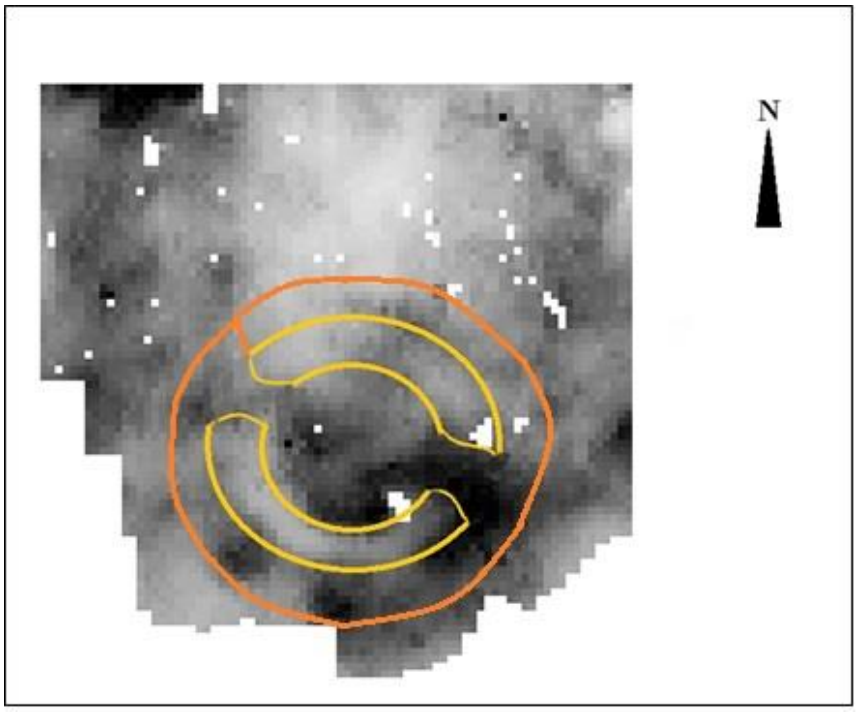

Figure 6: Survey of Barrow 14 highlighting the features.

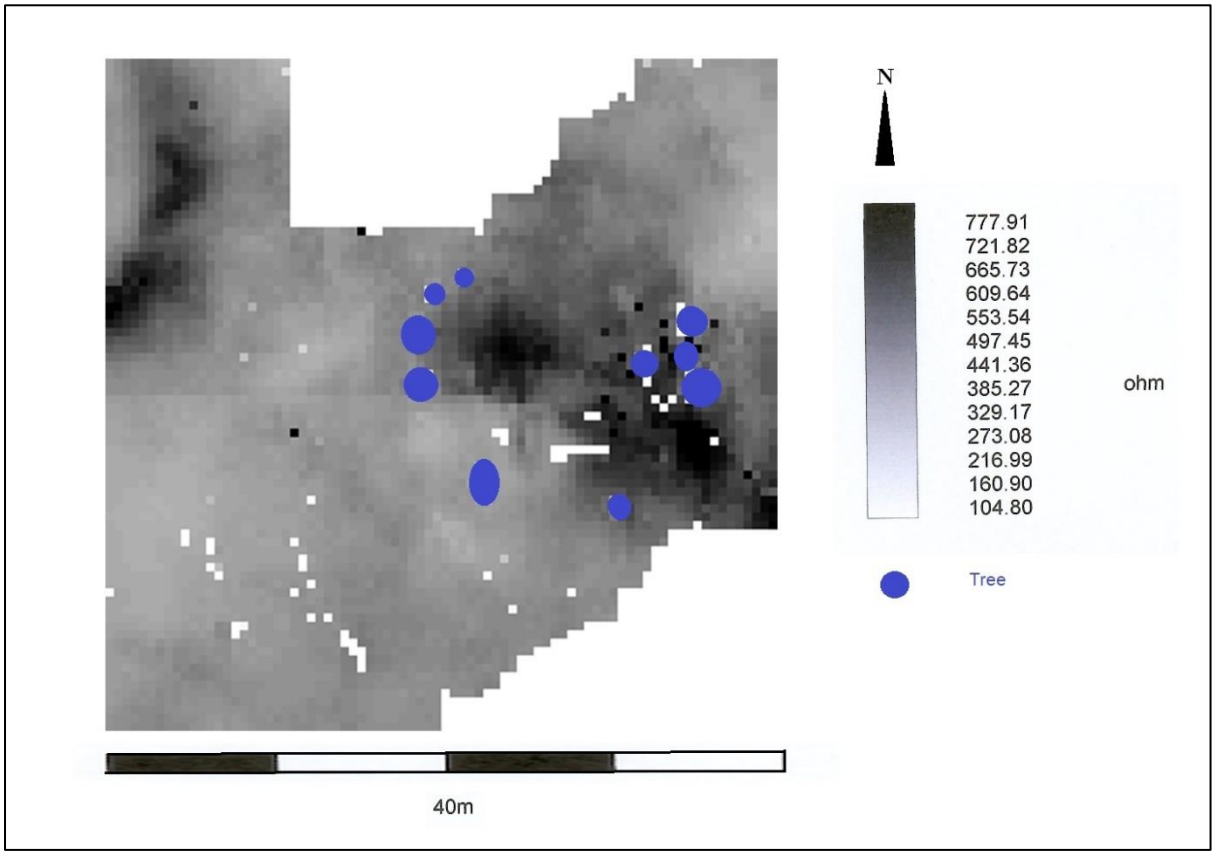

Figure 7: Survey of Barrow 15

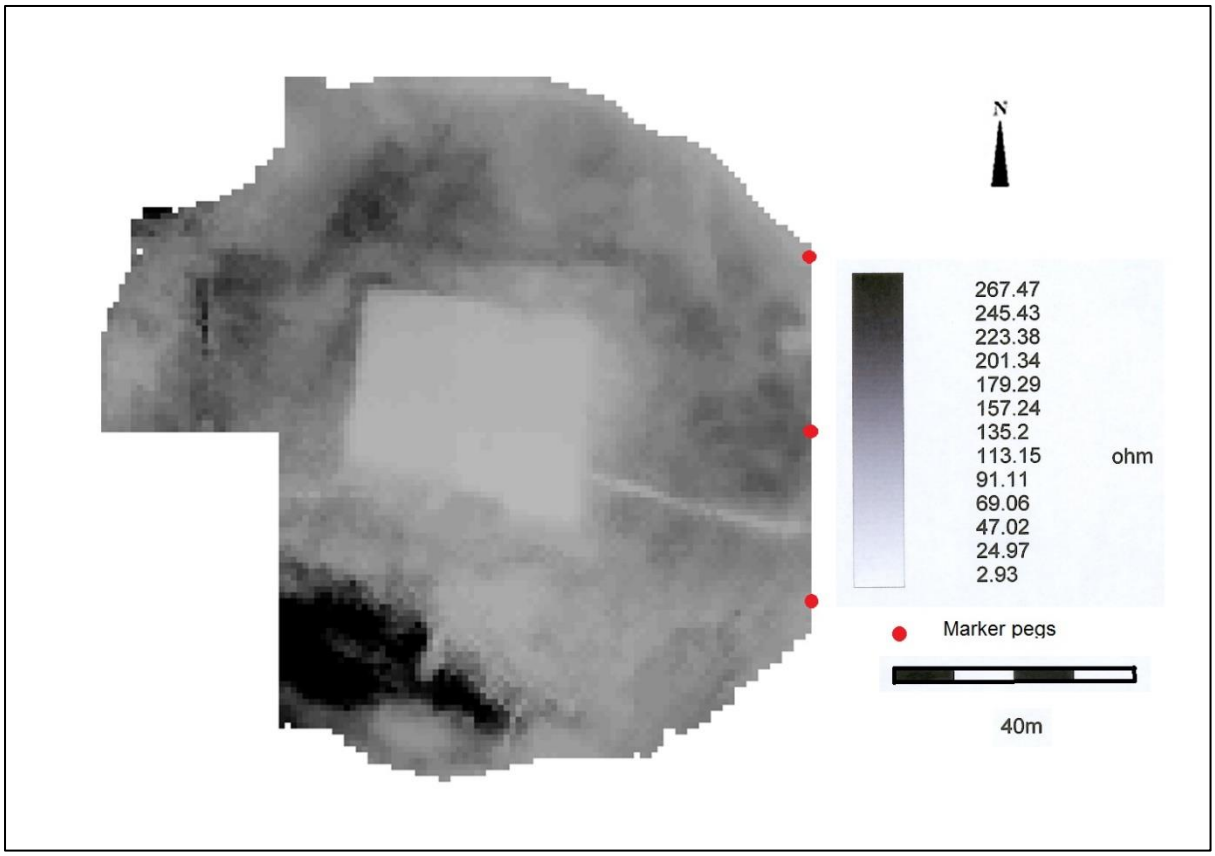

Figure 8: Survey of the Cricket Pitch

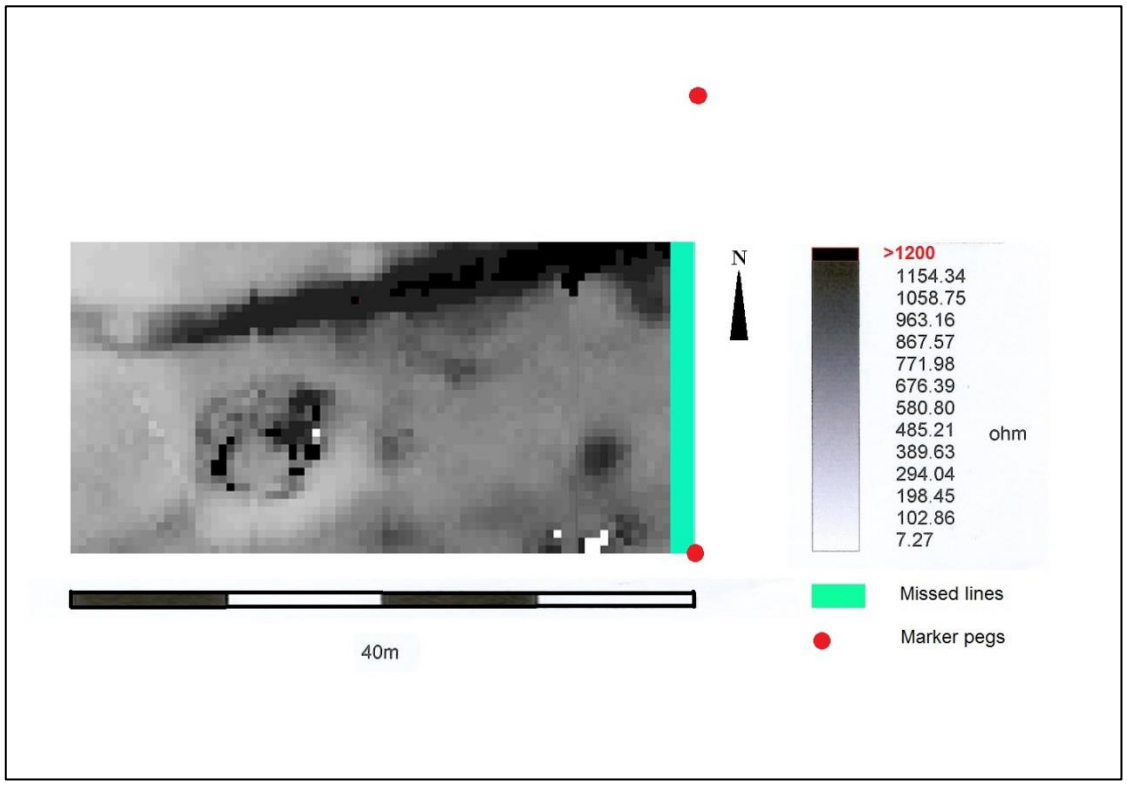

Figure 9: Survey of Barrow 12

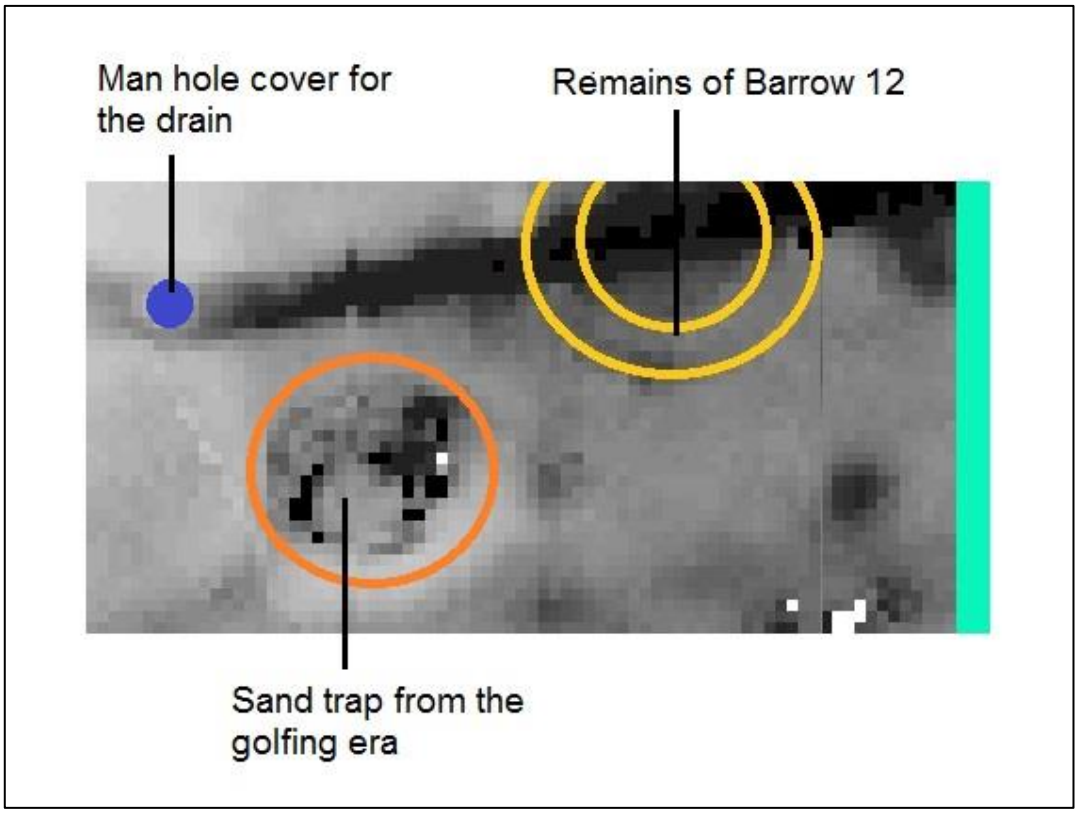

Figure 10: Features observed with Barrow 12