Proposed Pumping Station, Rhiwgoch, Harlech

Report on a watching brief

GAT Project No. 2064
Report No. 809
February 2009

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PROPOSED PUMPING STATION, RHIWGOCH, HARLECH
REPORT ON AN ARCHAEOLOGICAL WATCHING BRIEF

GAT Project no. G2064

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Prepared for Egniol Consulting
on behalf of Dŵr Cymru/Welsh Water

By J Kenney

February 2009

Cover: Digging test pits within the area proposed for the pumping station

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WATCHING BRIEF

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PROPOSED PUMPING STATION, RHIWGOCH, HARLECH (G2064.2)

WATCHING BRIEF

Summary
Gwynedd Archaeological Trust conducted an archaeological watching brief during test pitting in advance of a proposed water pumping station near Harlech. The watching brief allowed the depth and nature of the deposits on the site to be inspected, showing that the site had probably never been ploughed and was underlain by boulder clay. The results of the test pits may cause the location of the pumping station to be moved, threatening a feature identified in the assessment report as a possible house platform. Additional recommendations are given for the inclusion of this in a strip, map and sample programme and for its prior topographic recording.

1. INTRODUCTION

Gwynedd Archaeological Trust (GAT) was asked by Egniol Ltd on behalf of their clients Dŵr Cymru Welsh Water to carry out an archaeological watching brief on test pitting in advance of a proposed pumping station near Harlech (centred on NGR SH 58505 31071; figure 1). The pumping station is part of upgrading works being carried out on the Harlech water supply system.

Geological test pits were required to investigate the ground and inform the positioning of the pumping station building. Four geological test pits were to be dug and a fifth pit was dug to locate the water main running through the area.

The site of the pumping station was previously assessed for archaeological potential (Kenney 2009; GAT report 777).

2. SPECIFICATION AND PROJECT DESIGN

A detailed brief has not been prepared for this work, but advice has been received from the Snowdonia National Park Authority (SNPA) Archaeologist. Although a specific project design was not produced the work has been carried out according to the standards set out in the Institute of Field Archaeologists (IFA) *Standard and Guidance for an archaeological watching brief* (2001).

3. METHODS AND TECHNIQUES

Gwynedd Archaeological Trust under took the watching brief on 24th February 2009. The location of the four test pits was determined by the engineer for Dŵr Cymru, although the archaeologist present ensured that no pits were dug within a rough platform identified as feature 05 in the assessment report (Kenney 2009). The test pits were dug by a 3 tonne, tracked mini-excavator with a toothed bucket. The digging of each pit was watched by the archaeologist, although their depth and size was controlled by the engineer.

One of the water mains running through the site was located in test pit 4. The other was tracked by a CAT scanner but required a pit to be dug to confirm its location. This pit (test pit 5) was located to find a bend in the water pipe. The trench for the pipe proved to be broad at the top and the pipe was not easily found, causing the site foreman to dig a fairly large hole before it was located. Most of this hole was within the pipe trench but the north-eastern side dug into undisturbed ground.

The archaeologist photographed each pit and recorded the layers revealed by making notes and measurements.

The location of the pits emphasised the proximity of the pumping station building to a low roughly rectangular platform identified in the assessment as a possible building platform (feature 05). It

appeared that the pumping station building as initially proposed would impact on the edge of this platform, but the results of the test pitting could lead to the engineers recommending that the site of the building being moved to lie directly on feature 05. In the assessment report the location of feature 05 had been determined by National Grid co-ordinates taken in the middle of the feature by hand-held GPS. It was clear that this feature needed to be more extensively located so corners of the platform were triangulated from points on the field wall (figure 1). This can only provide a rough guide to its form and location and further recommendations for its recording are given below.

This report provides a record of the deposits seen in the test pits and gives additional recommendations for mitigation works.

4. GEOLOGICAL AND ARCHAEOLOGICAL BACKGROUND

The site is located on the Cambrian rocks of the Harlech dome (Bowen and Gresham 1967, 1), which the British Geological Survey describes as Cambrian shales, sandstones and quartzites (BGS 1930). These rocks can be seen outcropping on the western edge of the site and were found at shallow depths of about 0.7m in the test pits. The bedrock is covered by boulder clay, also seen in most of the test pits as a stony, pale grey silty clay.

The topsoil is very thin (no more than 0.1m deep) as the site seems never to have been ploughed. The assessment report (Kenney 2009) identified the field containing the development area on the 1841 tithe map, where it is recorded as meadow. Other fields in the area, such as the one immediately opposite across the road, were arable fields in 1841, but these have been cleared of stone. The quantity of surface stone in the field under question shows that it was probably never ploughed. This field is number 666 on the tithe map, and was part of a farm called Cae Ardd Goch, owned by a small landowner, not by the Mostyn Estate, which owned much of the land in the area.

The assessment report identified 7 features of interest, of which only two are close enough to the development area to be directly impacted by the works. The western field boundary of the field was probably constructed in the early 20th century when the adjacent reservoir was built, but the wall along the side of the road might have 18th century origins. Most of the early 19th century field boundaries survive only at foundation level. The most vulnerable of these is a section visible only as a rough line of stones (feature 04f) (see figure 2), but this is far enough from the present limits of the development site to be avoided.

The other feature is a low roughly earthwork platform measuring about 7m by 4m and up to 0.3m in height (feature 05). This is grass covered but occasional stones protrude along the edges. The top of the platform is fairly level. The regularity of this feature suggests that it may be a platform for a rectangular hut, possibly medieval in date. However, there are no clear diagnostic features and it could be a natural feature based on a bedrock outcrop. Triangulation of the corners of this feature shows that it extends into the edge of the present development area (figure 2).

5. RESULTS OF THE WATCHING BRIEF

Introduction

Deposits in each test pit are described below and the results are summarised and conclusions discussed. The layers are defined by measurements from the present ground surface. The trenches are located on figure 1.

Test pit 1 (plate 1)

Size: 1.1m by 0.7m, 0.4m deep max.
0-0.1m: Layer 101. Dark grey loam with occasional stones. Topsoil.
0.1-0.4m: Layer 102. Friable dark brown loam with c.50% angular and sub-rounded stones up to 300mm in length. Main soil horizon developed on the boulder clay. No traces of mixing due to ploughing.
0.4m: Bedrock. Broken up surface of the shale bedrock, breaks into angular slabs.

Test pit 2 (plate 2)
Size: 2.8m by 0.7m, with an extra width of 1.6m at the eastern end, 0.6m deep max.
0-0.1m: Layer 201. Dark grey loam with occasional stones. Topsoil.
0.1-0.2m: Layer 202. Friable dark brown silty loam with c.10% sub-rounded stones up to 150mm in length. This was thickest at the western end and petered out towards the east. Main soil horizon developed on the boulder clay. No traces of mixing due to ploughing.
0.2-0.6m: Layer 203: Mid grey, clayey loam, lighter towards the base of the layer, with numerous stones up to 500mm in length, mainly angular and sub-angular. Altered boulder clay.
0.6m: Bedrock. Broken up surface of the shale bedrock, slopes down fairly steeply from west to east.

Test pit 3 (plate 3)
Size: 2.0m by 0.7m, 0.8m deep max.
0-0.1m: Layer 301. Dark grey loam with occasional stones. Topsoil. It has a thin layer of pea gravel at its base indicating where the gravel was stored during the laying of one of the water pipes running across the site.
0.1-0.4m: Layer 302. Friable dark brown clayey silt with some grit and c.50% sub-angular stones up to 300mm in length. Main soil horizon developed on the boulder clay. No traces of mixing due to ploughing.
0.4-0.8m: Layer 303: Friable light grey, silty clay, with numerous stones up to 500mm in length, mainly sub-angular but some rounded. Boulder clay.
0.8m: Bedrock. Broken up surface of the shale bedrock.

Test pit 4 (plate 4)
Size: 1.6m by 0.7m, 0.7m deep max.
0-0.1m: Layer 401. Dark grey loam with occasional stones. Topsoil.
0.1-0.7m: Layer 402. Friable dark brown silty loam with numerous stones up to 600mm in length. Quite loose. Fill of pipe trench.
0.7m: Plastic water pipe found, excavation stopped.

Test pit 5 (plate 5)
Size: 2.7m by 2.3m, 1.1m deep max.
0-0.1m: Layer 501. Dark grey loam with occasional stones. Topsoil.
0.1-1.1m: Layer 502. Loose dark brown loam mixed with lenses of mid grey clay and numerous stones up to 500mm in length. Fill of pipe trench. Pipe trench occupies western half of the test pit but is broader at the top and the fill covered most of the test pit near the surface.
0.1-0.4m: Layer 503. Friable dark brown silty loam with numerous sub-angular stones up to 300mm in length. Main soil horizon developed on the boulder clay. No traces of mixing due to ploughing.
0.4-0.8m: Layer 504: Friable light grey, silty clay, with numerous stones up to 500mm in length, mainly sub-angular but some rounded. Boulder clay.
0.8m: Bedrock. Broken up surface of the shale bedrock.
1.1m: Mains water pipe located under concrete cover.

Conclusions
The test pits show a very thin topsoil and no development of a mixed ploughsoil consistent with the field having never been ploughed. The soil horizon that has developed is very stony as stones from the boulder clay have been incorporated. Beneath this is the boulder clay, generally at about 0.7-0.8m below the present ground surface. This is rarely more than 0.4m thick and the broken surface of the bedrock is soon reached.

No archaeological layers were seen and no finds recovered. The stony nature of the main soil horizon will make stripping the site for archaeological evaluation difficult and it may be necessary to intensively clean the whole area by hand to be sure of identifying features.

6. CONCLUSION AND RECOMMENDATIONS FOR FURTHER WORK

The watching brief allowed the depth and nature of the deposits on the site to be inspected. This will be useful in planning the strip, map and sample project recommended to evaluate any archaeology within

the development area. The potential need for intensive cleaning because of the stony deposits should be noted.

The height of the bedrock seen in the test pits and the location of the water mains may cause the engineers to recommend that the location of the pumping station to be moved. The more accurate plotting of limits of feature 05 shows that this feature is likely to be negatively impacted by the development and if the building is moved it is likely to be moved further over this feature. It is not yet know if this platform is a genuine archaeological feature but it should be included in the strip, map and sample programme to evaluate its importance. Before that takes place it is strongly recommended that this feature and the remnant field boundary 04f be recorded by topographical survey. This will record the current form of the earthworks.

The access route to the site should be established and the risk to feature 04f should be assessed. It may be necessary to include a larger area within the strip, map and sample process to ensure that archaeology along the access route is not damaged without prior recording.

7. THE ARCHIVE

The archive consists of notes and 14 digital images taken using a Nikon D40 DSLR. The paper archive will be held by Gwynedd Archaeological Trust (project code G2064), and the digital photographs will be curated by the National Monument Record (NMR), Royal Commission on the Ancient and Historic Monuments of Wales, Aberystwyth. Three copies of the bound report will be sent to the SNPA archaeologist, and a further copy sent to the Historic Environment Record (HER) Archaeologist at the curatorial division of Gwynedd Archaeological Trust, Bangor, for deposition in the Regional HER. A copy of the report will be provided to the NMR.

8. SOURCES

British Geological Survey, 1930. *Geological survey of England and Wales*, Solid Edition, sheets 9 and 10

Bowen, E.G. and Gresham, C., 1967. *History of Merioneth Vol. I*. Merioneth Historical Society, Dolgellau

Kenney, J, 2009. Proposed pumping station, Rhiwgoch, Harlech: archaeological assessment (G2064), (Unpublished GAT Report No. 777)

Tithe map for the parish of Llandanwg in Merionethshire 1841.

Tithe Apportionment Schedule for the parish of Llandanwg in Merionethshire 1840.

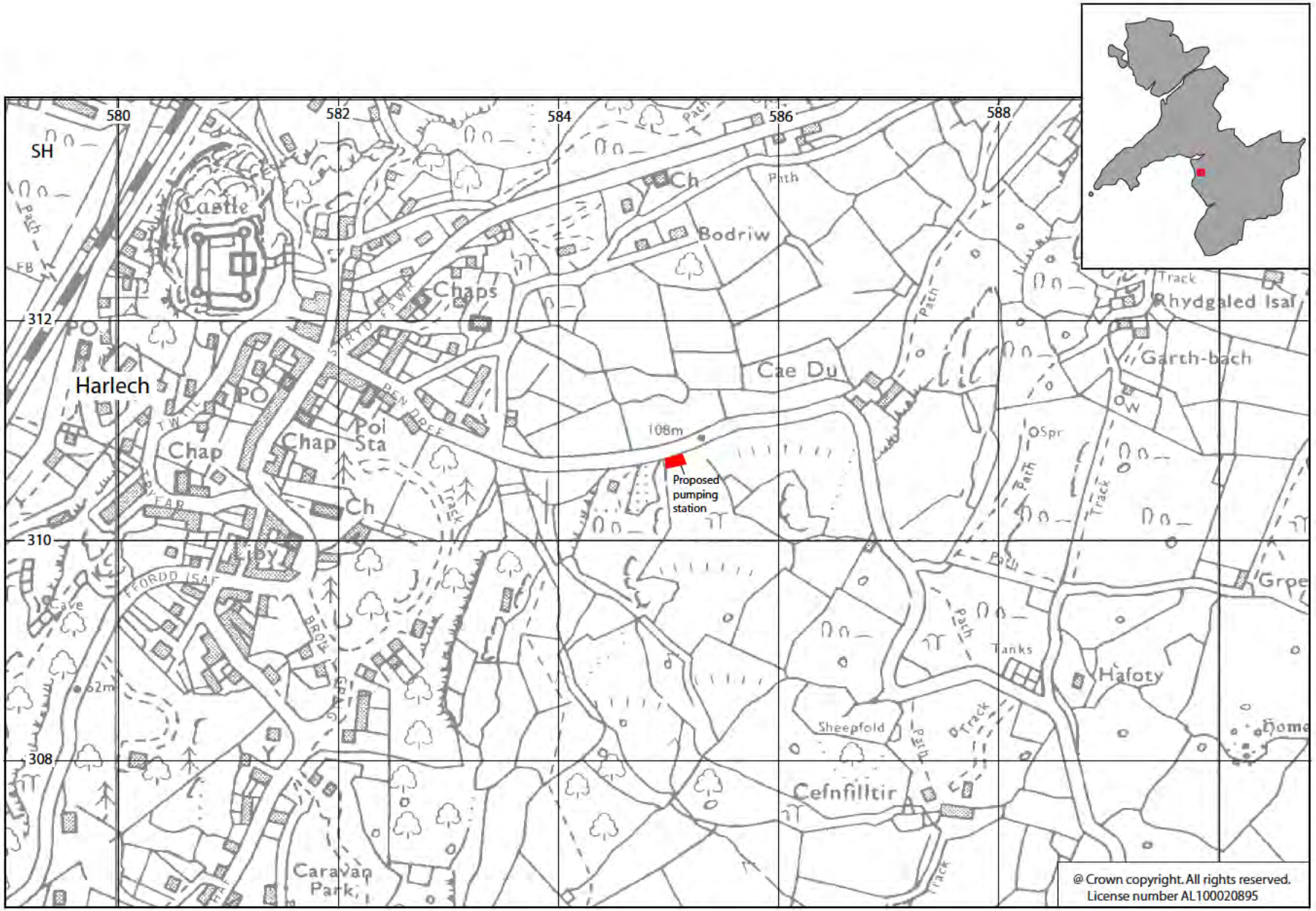

Figure 1. Location of the site (shown in red)

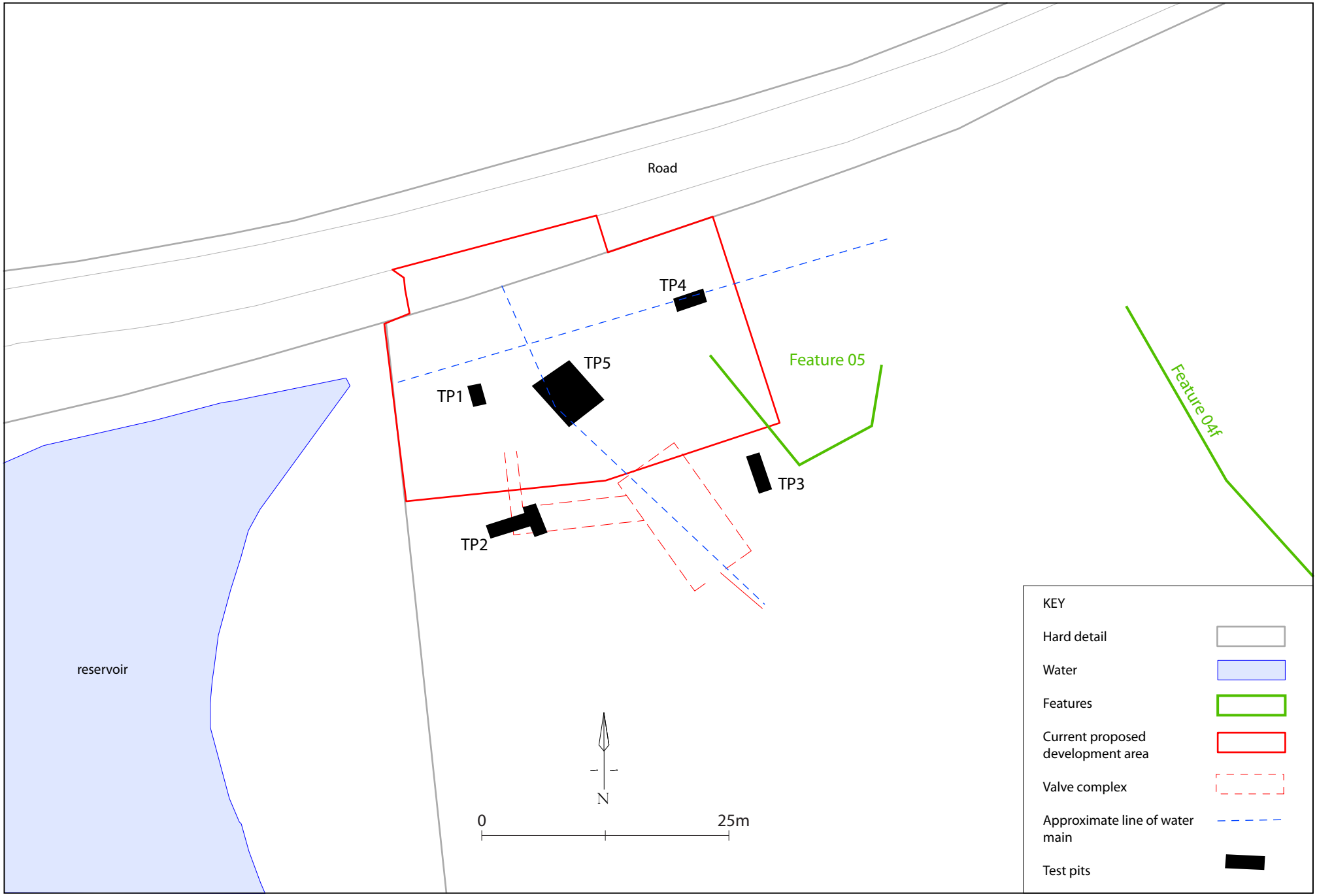

Figure 2. Location of test pits and improved representation of feature 05

Plate 1. Test pit 1 from E

Plate 2. Test pit 2 from NW

Plate 3. Test pit 3 from E

Plate 4. Test pit 4 from S

Plate 5. Test pit 5 from SW

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