



RHONDDA
GEOTECHNICAL
SERVICES

PHASE 1
CONTAMINATED LAND ASSESSMENT
OLD SCHOOL COURT
FORMER BRYN PRIMARY SCHOOL
NEATH ROAD, BRYN
PORT TALBOT
SA13 2RS

10/09/2018

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INTRODUCTION-PURPOSES AND AIMS

As a part of a pre-planning application package, Neath Port Talbot C.B.C. have asked for a report to assess the nature and extent of any contamination on the site of the former primary school at Bryn near Port Talbot and confirmation of whether it originates on the site. The planning application is initially for the construction of two large residential properties, with a second phase of eleven smaller properties. The applicants are Mr Steve Williams and Mr Paul Edwards. Rhondda Geotechnical Services have been engaged to carry out this work.

The report will take the form of a desk top study known as a Phase 1 Contaminated Land Report.

The report will follow the guidelines set out in the document Development of Land Affected by Contamination: A Guide for Developers (Version 3). This was produced by the Welsh Land Contamination Working Group in 2017. In particular the methodology set out in appendix B with the check list for Phase 1 will be followed. The contaminated land exposure assessment (henceforth CLEA) produced by The Environment Agency will be used in the conceptual model, particularly in regard to the source-pathway-receptor concept for pollutant linkages. The entire project will be guided by the 2004 Defra/E.A. document CLR11 (Model Procedures for the Management of Land Contamination).

The current definition of contaminated land is “any land which appears to the local authority in whose area it is situated in to be in such a condition, by reason of substances in or under the ground that

- a. Significant harm is being caused, or there is a significant possibility of such harm being caused OR
- b. Pollution of controlled waters is being, or is likely to be caused”

Section 78A Part 2A Environmental Protection Act

This act also requires that a risk based approach should be used for assessing the contamination status of a site. For a site to be designated as contaminated it must be shown that the site is not fit for its current, or intended use. Statutory guidance states that a two stage approach should be adopted for the assessment of contaminated land.

1. Identification of potential pollution linkages
2. Assessment of the risk to receptors

The first stage (The Phase 1 report) is a qualitative assessment of the plausible pollution linkages that exist or may exist on site. This involves the development of a site conceptual model. This may then be refined in Phase 2 after an intrusive investigation, followed by laboratory testing of samples obtained. A Phase 2 is only carried out if the Phase 1 deems it necessary.

1. AUTHOR CREDENTIALS

The author of this report is Richard Davies. I graduated with a Bachelor of Science honours degree in Geology from Liverpool University in 1979. After starting my career as an engineer in the coal industry, I moved into site investigation in the 1980's and have many years experience working on contaminated land. I am a Fellow of The Geological Society and hold a Master's Degree in Applied Environmental Geology from Cardiff University. I am also a Supporter Member of CL: AIRE (Contaminated Land: Applications in Real Environments)

2. SITE DESCRIPTION

The site is centred on grid reference 281450, 192500 and is at an average elevation of approximately 170m. A.O.D. The site comprises of a former primary school and the surrounding grounds. These are roughly trapezoidal in shape, covering an area of approximately 1.3 hectare. The site is bounded on three sides by fields with Neath Road forming the western boundary. There are no surface watercourses although a small spring emerges just off the eastern boundary. The site location and site boundary can be seen overleaf in Figures 1 and 2 with an aerial photograph of the site in Figure 3.

As can be seen in Figure 3, at the present time the school buildings are still intact and in good condition. For this reason the school buildings will not be considered as a possible source of contamination. They undoubtedly contain asbestos, as it is ubiquitous in buildings of this age. N.P.T. have been asked for the asbestos register for the building but at the current time it has not been located. The buildings will be eventually be demolished. Prior to this licensed contractors will strip any asbestos out for disposal. Similar consideration will be given to the heating system, particularly if oil fired. For this reason it is entirely

justifiable to limit the desk study to the past history of the site only. After the demolition of the school buildings, assuming best practise and proper supervision there is no reason to assume there will be any additional possible hazards.

3. SITE WALKOVER

A site walkover was conducted on September 2nd 2018. The primary school grounds retain their “as designed” landscaping, although now starting to get overgrown. There are extensive areas of tarmac, comprising the former playground, car park and connecting footpaths. The remainder of the site outside the building footprint is grassed with many mature trees, particularly around the perimeter and in the north eastern part of the site. The survey was not confined to the site but also included looking for traces of past coal mining in the immediate surrounds of the site, particularly in the field adjacent to, and north of the site. Nothing of note was seen.

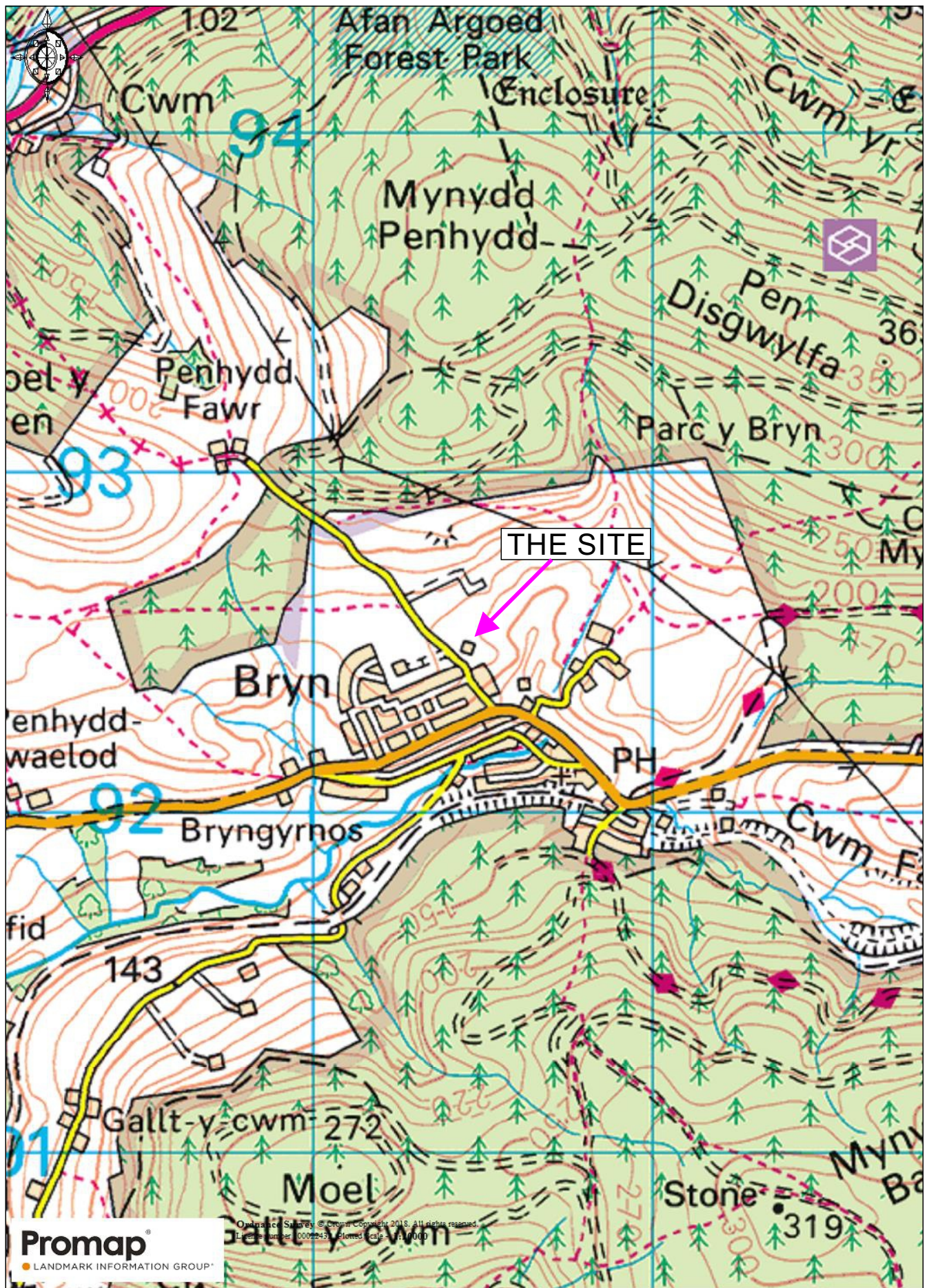


FIGURE 1
SITE LOCATION PLAN

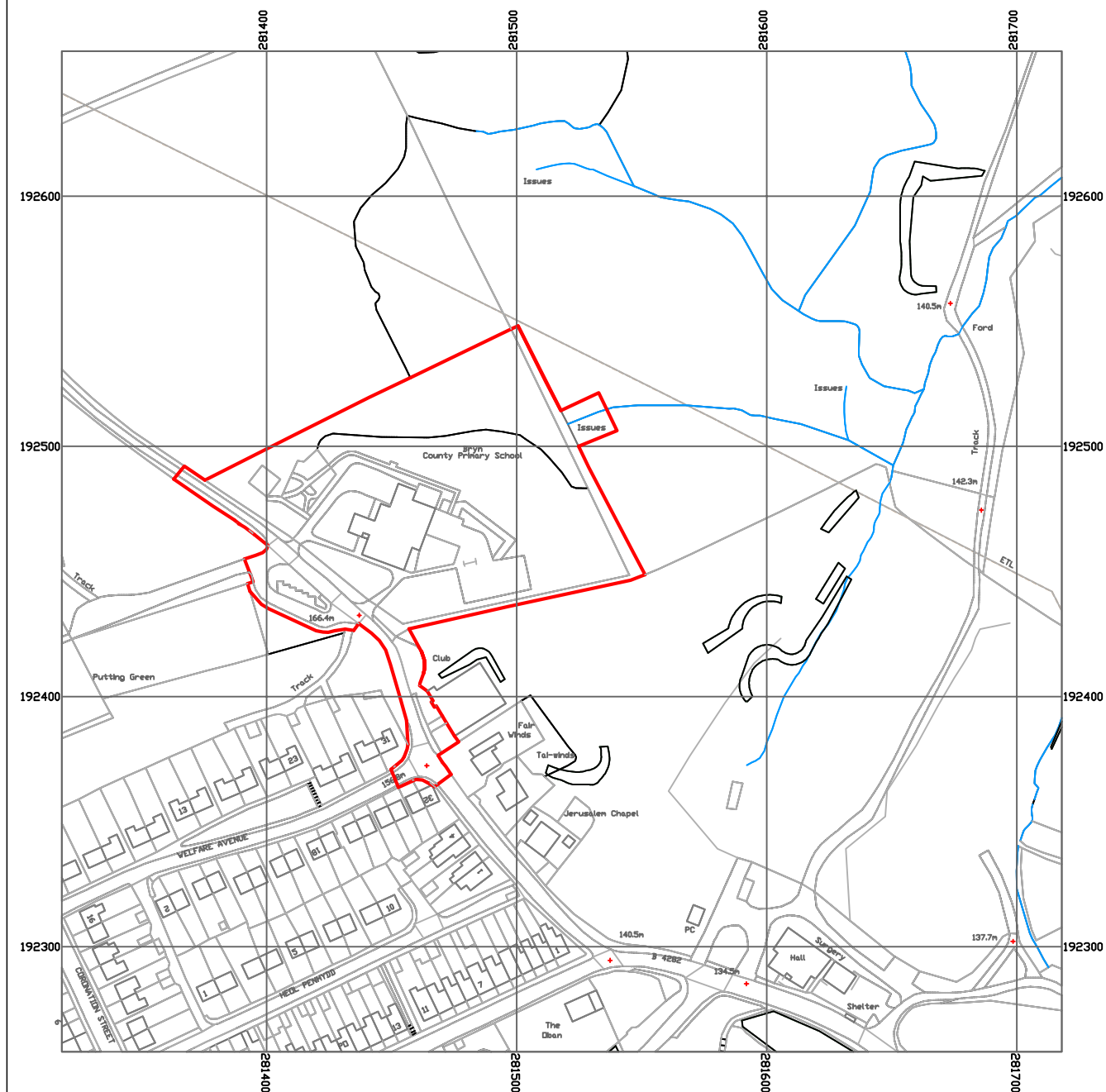


FIGURE 2

SITE BOUNDARY HIGHLIGHTED IN RED



FIGURE 3

2014 AERIAL PHOTOGRAPH OF THE SITE
(GROUNDSURE COPYRIGHT)

4. SITE HISTORY

In order to gain a thorough understanding of the history of the site a comprehensive collection of historical Ordnance Survey maps was purchased from Promap. These were at 1:2500 scale covering the years from 1876 through to 1977. In addition a 1:10,000 map from 1990 was purchased as there was no more recent maps at the larger scale. Beyond that the standard of modern O.S. small scale maps is too poor to be of much use to a desk study.

Figure 4 shows the 1876 map. The site is a completely undeveloped field in a semi-rural area. The village of Bryn consists of a few scattered rows of cottages together with two chapels. An interesting feature of the housing are the very large gardens more typical of the western part of the coalfield. This would be due to the relative inaccessibility of the village, it is noticeable there is no road access to either Neath or Maesteg. There is abundant industrial activity in the area however, with many coal levels marked (both on and off the extract in Figure 4). Even at this early date there are many levels and shafts marked as “old” i.e. disused. A railway runs into a large sidings complex from the south west which is connected to many of the coal levels by tramways. The size would indicate a considerable volume of coal production. The distinctive depressions and spoil heaps left by ironstone trenching can be seen 150m north of the site. They are not annotated as such, and appear to have already been abandoned.

By 1899 (Figure 5) coal production appears to have declined. Two levels appear to be still in production, and connected by tramway to the new railway running south of the village. The old railway running in from the south west has been taken up and the railway sidings are gone. The size of the village remains unchanged. The most significant development in relation to the site is the trial level and “old shaft” just north of the site. These are also marked on both the Geological Survey map and the Coal Authority maps. As neither the level nor the shaft appears on the earlier map it is likely it is an air shaft for the ventilation of the trial level.

In Figure 6 the 1919 revision shows the spoil heap at the trial level slightly larger than before but it is significant that no tramline links it to anywhere. It could possibly be linked underground to the Penrhydd Slant 200m to the north west. However, its position to the north of the site, with the seam dipping north means it would have had no effect on ground stability beneath the site whatever the extent of the workings. The new residential properties show quite a degree of planning. The long terrace of Bryngyrrnos Street has been completed, with the

streets behind laid out ready for construction. A new quarry just off the northeast corner of the figure is linked by tramway to a brickworks served by a clay pit. Just off the south east corner Bryn Navigation Colliery can be seen with extensive colliery buildings. All the old levels appear to be disused.

The 1937 map (Figure 7) shows the housing in the village much as it is today. Bryn Navigation is still in full production, but all the shallow mining has ceased. The legacy of past mining is still very much in evidence with multitudes of spoil heaps and depressions. The quarry, clay pit and brickworks have shut after the brief building boom. This had been fuelled by the large colliery development with the increased housing demand. The site remains untouched.

Figure 8, the 1962 revision shows renewed shallow coal mining in much of the area north of the site although most of it is outside the extract in the figure. This revival started during WW2 and had largely come to an end by the late 50's/early 60's. It should be borne in mind that there is a considerable time lag between a re-survey and the map publication, usually 2-5 years. These were very small scale, for example Parc-y-Bryn Colliery was recorded as having a workforce of four in the 1956 mines register. Bryn Navigation was the only large operation, employing over 600 men until its closure in 1964.

By 1977 all mining in the region had ceased. The signs of past activity remain everywhere. In Figure 9 it can be seen that the school has been constructed. The layout is identical to that seen in the aerial photograph in Figure 3. The old level on the northern boundary of all previous maps has gone. There was no trace of it on the walkover survey. It is very likely it was stopped up and levelled during the construction and landscaping of the school and grounds. The Coal Authority have no records of this, as is normal for work that they have not carried out themselves since their inception in 1994.

The last map, from 1990 is at a much smaller scale (1:10,000) and shows little of any relevance to the desk study. For completeness an extract has been reproduced as Figure 10.

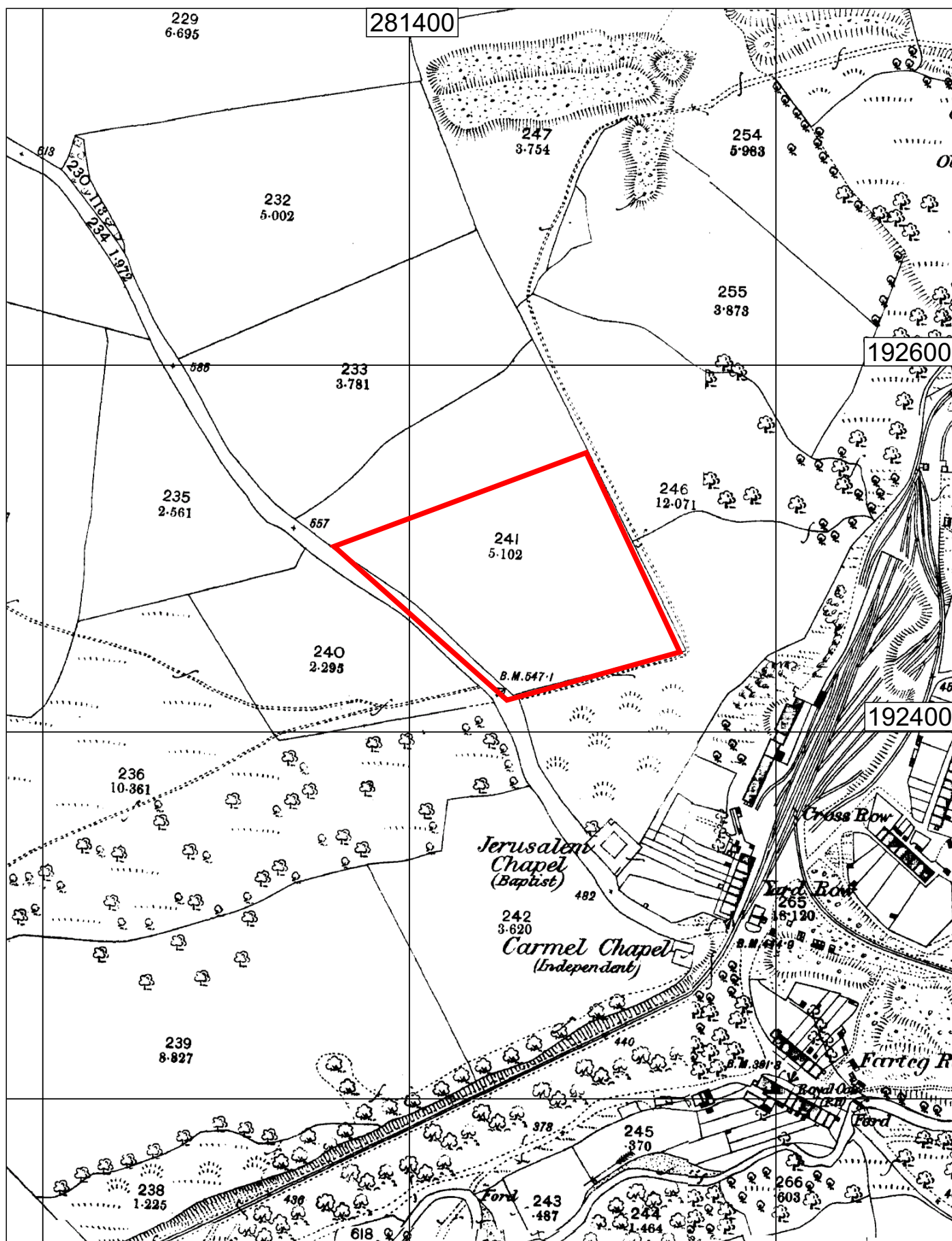


FIGURE 4
THE SITE IN 1876

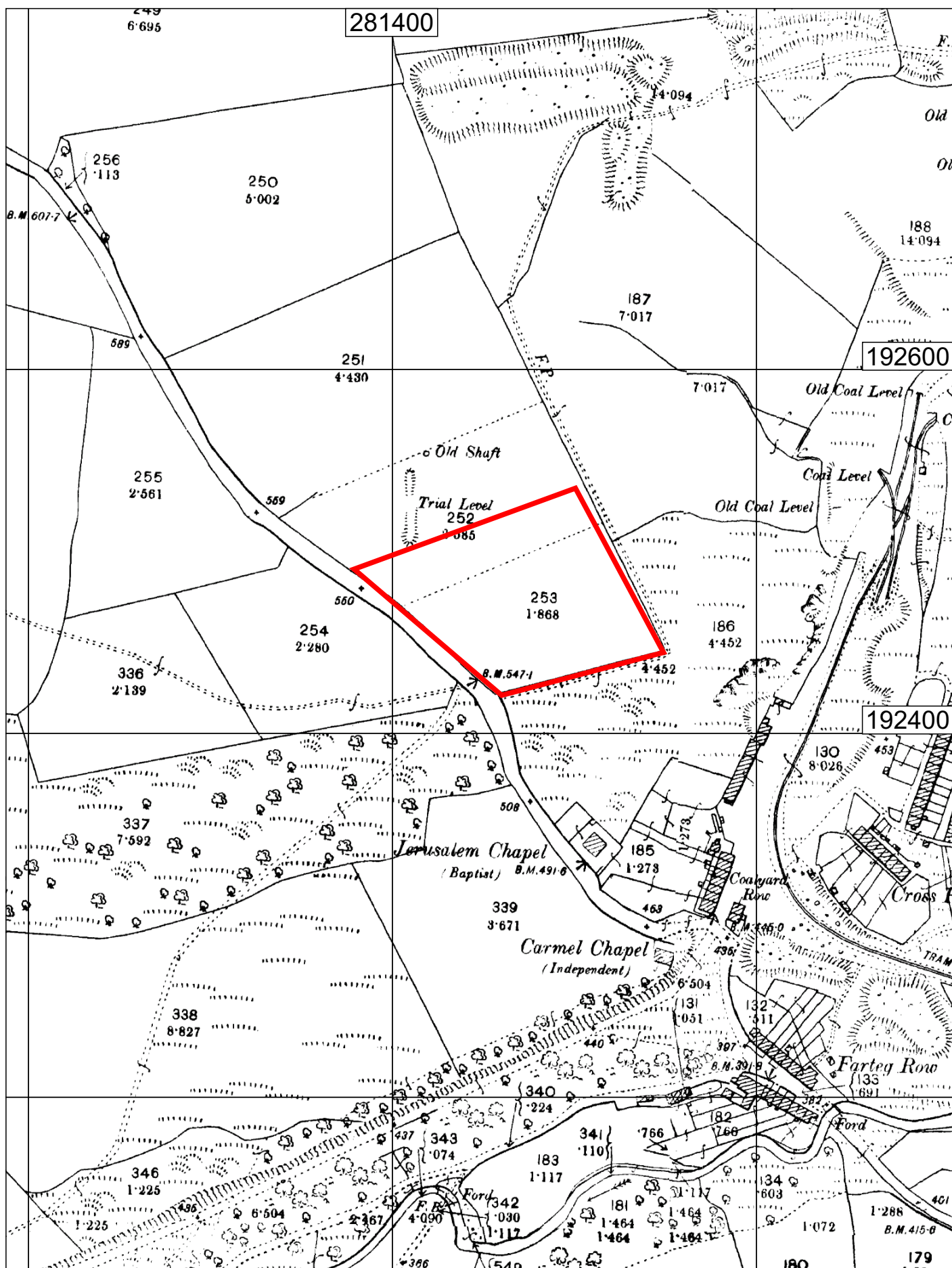


FIGURE 5
THE SITE IN 1899

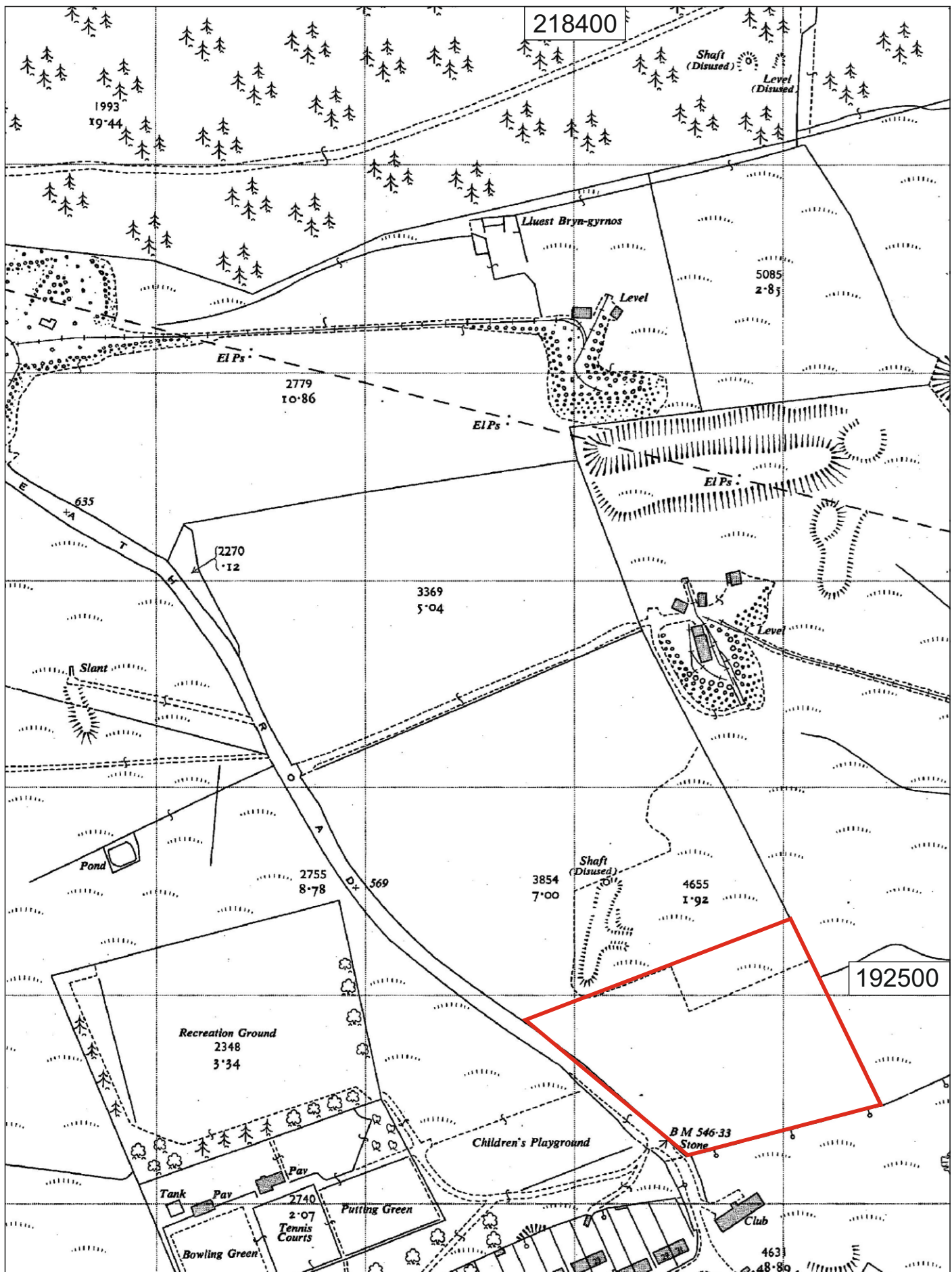


FIGURE 8
THE SITE IN 1962