

NYCC HER	
SNY	11609
ENY	3891/3892
CNY	4
Parish	8045
Rec'd	7/994

**ARCHAEOLOGICAL ASSESSMENT  
AT KIRK SMEATON  
QUARRY**

A PROGRAMME OF RESEARCH CARRIED OUT  
ON BEHALF OF

CSL SURVEYS Ltd

By

GeoQuest Associates

## **INTRODUCTION**

This report presents the findings of an archaeological assessment of an area within Kirk Smeaton Lime Quarry, near Pontefract, West Yorkshire, centred on SE383500 (Figure 1). The study concerns an area of approximately 1.16ha immediately east of the present workings for which an Interim Development Order has been submitted for further limestone extraction (Figure 2).

The Sites and Monuments Record for North Yorkshire records a cropmark in this vicinity indicating that potential may exist for archaeological remains in the area of proposed extraction. In April-May 1994 the majority of soil was stripped from the site in preparation for quarrying. The aim of this study was therefore as follows:

- 1** Establish, as accurately as possible, the position of the observed cropmark in relation to the area of soil clearance and thus the likely archaeological impact.
- 2** Examine the area of proposed extraction to determine the potential for archaeological remains surviving *in situ*.
- 3** Locate the soil removed from the cropmark area and recover any artifacts and ecofacts.
- 4** Estimate the likelihood that a geophysical survey of the site would provide information of archaeological value.

A field visit was made on 15th August 1994. This research was carried out on behalf of CSL Surveys, acting for D. Holling (Yorkshire Minerals and Reclamation), in accordance with directions provided by J.C. Penny and N. Campling, County Archaeological Officer for North Yorkshire.

## **SITE DESCRIPTION**

Kirk Smeaton Lime Quarry is situated approximately 2km west of Kirk Smeaton village, 5km SE of Pontefract. The Quarry works Permian Lower Magnesian Limestone from an elevation of about 56m. The lithology comprises a buff, strongly jointed, dolomitised limestone with thin clay partings. In this locality, the rock is karstic and well-drained. A number of small cave passages have been intersected by the present quarry workings.

Prior to the soil removal, the study area was utilised for go-kart racing for which a surface of ash had been laid directly onto the ploughsoil.

## **ASSESSMENT METHOD**

The site was investigated as follows:

- 1 An extract from the Sites and Monuments Record for North Yorkshire was obtained showing cropmarks in the vicinity of Kirk Smeaton Quarry. These were digitised and connected (using field boundaries as control points) with a digital map supplied by CSL Surveys to determine the archaeological impact of soil removal (Figure 2).
- 2 Informal interviews were carried out with site staff to establish:
  - i Site history and condition prior to soil removal.
  - ii The method of soil removal.
  - iii Location of relevant soil heaps.
  - iv Recollections of soil quality and thickness variation.
- 3 The crest, sides and base of all relevant soil heaps were examined for archaeological artifacts and ecofacts.
- 4 A pre-stripping soil profile was estimated from interview data and by examining standing sections at the margins of the soil-stripped area.
- 5 A photographic record was made from points **A** and **B** shown in Figure 3 and 4.
- 6 A small test hole was excavated by hand in the centre of the study area (Figure 5).

## **DESCRIPTION OF FINDINGS**

### **Cropmark Location**

Figure 2 shows that the area of soil stripping totally encompasses a cropmark which provided evidence for a pair of connected, linear ditches with an internal feature. This cropmark may have been related to a second feature in the adjoining field to the east.

### **Soil Quality and Profile**

Site staff reported that about 10-30cm of overburden had been removed by bulldozer machines from a base of heavily weathered Magnesian Limestone. This estimate agreed with the profile seen in the quarry face (Figure 4) and with the height difference with respect to the adjoining arable field. Thus to a good approximation, the original soil profile can be assumed to have been as follows:

SURFACE  
Ash/slag 2-10cm  
Clayey soil 5-30cm  
Weathered limestone 40-150cm

Site staff reported that the weathered rockhead in the study area is slightly undulating giving rise to the soil thickness variation listed above. During soil clearance it was discovered that a zone of increased thickness occurred in the central northern part of the site and this had been left as an area of damp clayey soil until the time of the site visit (Figures 2 and 3). This soil pocket was found to be heavily disturbed by machine tracks. A 30x30cm test hole was excavated by hand in the centre of this zone: the material was found to comprise a structureless, light brown, possibly gleyed, clay with a thickness of 25cm (Figure 5). No artifacts, bone or charcoal were found.

It is interesting to note that the area in question is close to the SW limb of the cropmark feature, suggesting that the deposit may represent the basal remnant of an archaeological ditch which has been eroded by the earthmoving machinery.

### **Soil Heaps**

The soil heaps extending along the eastern boundary of the site were found to contain large quantities of ash and slag (track surface), confirming that they represented the original site overburden.

Although the soil heaps were weathered and unvegetated, providing optimum conditions for fieldwalking, no artifacts of archaeological interest were seen.

### **CONCLUSIONS**

The conclusions of this study are as follows:

- 1 Prior to topsoil removal, the study area was characterised by a cropmark which probably reflected a feature of archaeological interest.
- 2 A zone of damp, clayey soil in the central northern part of the site may correspond to part of this cropmark feature, implying that a basal remnant of a ditch, for example, may yet survive in this area.
- 3 From the available evidence, it seems very unlikely that a geophysical survey would recover any data of archaeological value.

## **RECOMMENDATIONS**

The following recommendation is made:

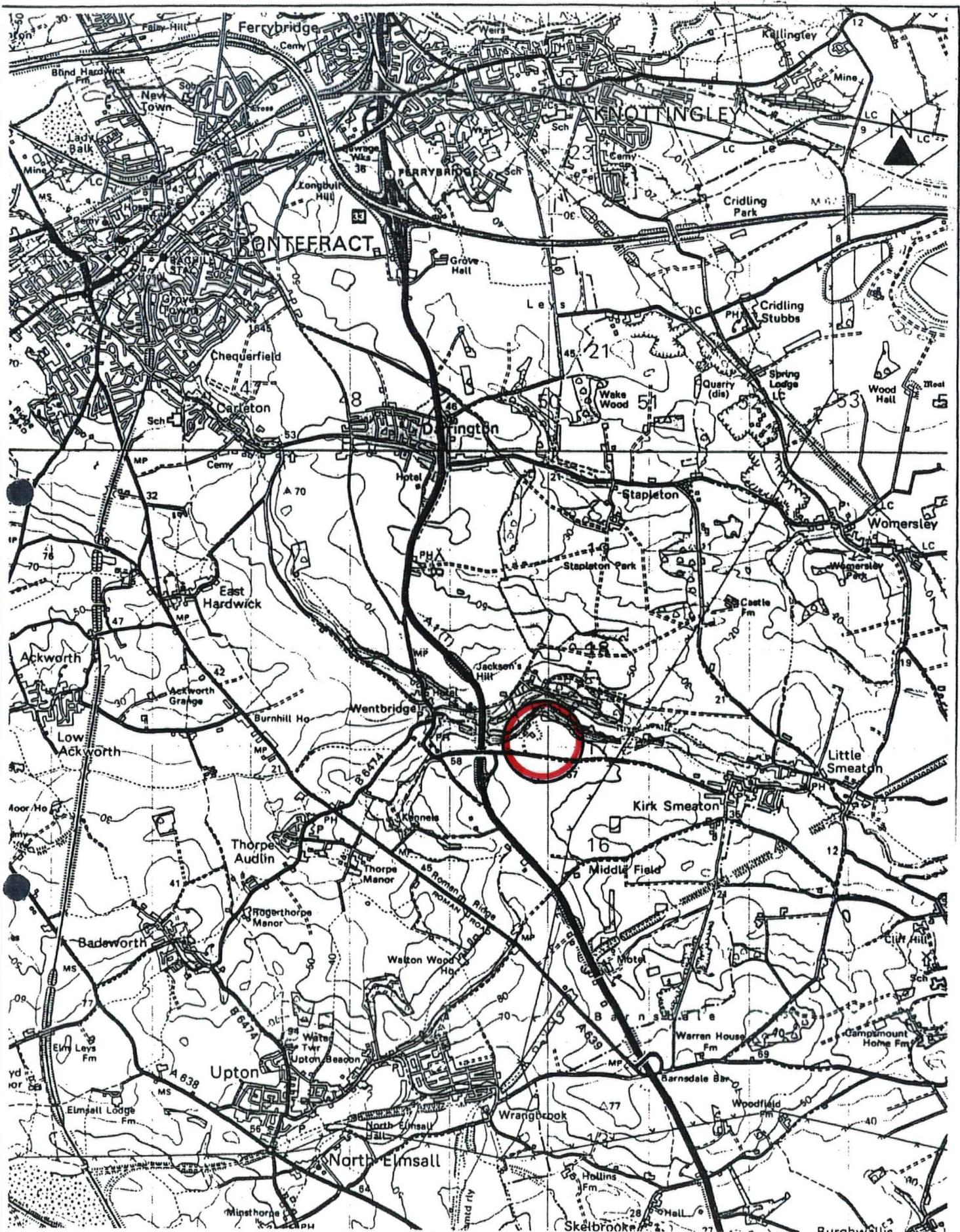
- 1 That an archaeological watching brief be maintained on the process of final soil removal in the area of interest identified above. This stage should preferably be preceded by the excavation of a c. 10m long trial trench in order to test for the presence of surviving archaeological remains and to provide an opportunity to recover samples for palaeoenvironmental analysis.

**Note** Whilst every effort has been taken in the preparation and submission of this report in order to provide as complete an assessment as possible within the terms of the brief, GeoQuest Associates cannot accept any responsibility for consequences arising as a result of unknown and undiscovered sites or artifacts.

**Survey and Report:** M.J. Noel, 18/8/94

**FIGURE 1**

Location of Kirk Smeaton Lime Quarry, about 5km SE of Pontefract  
and 2km west of the village of Kirk Smeaton.



**CSL SURVEYS**

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**PROJECT**

KIRK SMEATON LIME QUARRY.

**DRG N°**

C5111/20

**REV**

**TITLE**

LOCATION PLAN

**SCALE**

1 : 50000

**CLIENT**

YORKSHIRE MINERALS & RECLAMATION

**DATE**

APRIL 94

**D'WN**

JCP

## **FIGURE 2**

Map showing the location of the area of recent soil removal at Kirk Smeaton Quarry (yellow). Positions of cropmarks recorded in the SMR for N. Yorkshire are shown in brown. Points **A** and **B** are viewpoints for Figures 3 and 4 respectively.

KIRK SMEATON QUARRY ARCHAEOLOGICAL & OTHER FEATURES

0 50m 1:1000

SURVEY BY ON BEHALF OF

**GeoQuest**  
ASSOCIATES



400

900



INDUSTRIAL AREA

Soil

Cropmark

Damp area

UNWORKED AREA

Soil

(B)

(A)

ID0 #237 BOUNDARY

Cropmark

SW

Damp Area

W



FIGURE 3

Panorama of the area from which soil has recently been removed,  
photographed from Point A in Figure 2.



**FIGURE 4** The working quarry face NNW from point B in Figure 2.  
Note the thin soil developed over weathered Magnesian Limestone.



**FIGURE 5**  
Trial hole in centre  
of damp soil area  
marked in Figure 2.  
The surviving soil  
thickness was found  
to be >25cm.