**Mr N. Thresh**
**C/O 1 St. Thomas Road**
**Barnsley**
**S75 1HW**

**CAPE SITE SERVICES**
**COAL MINING & GEOTECHNICAL CONSULTANCY**
Web: www.cape-site.co.uk
Email: cape-site@btconnect.com
Tel: 01226 725050

Date: 10th June 2021
Your ref: (S75 1HW).
My Ref: CMRA 00262

**FOR THE ATTENTION OF MR NEIL THRESH**

Dear Sir,

**COAL MINING RISK ASSESSMENT (CMRA) - FOR PROPOSED RESIDENTIAL DEVELOPMENT AT 1 ST. THOMAS ROAD, BARNSLEY S75 1HW**

## Introduction

Planning permission is being sought for residential development at the above named site, the location of which can be seen on the attached plan No. 00262/A in Appendix 1. The site is centred around national grid reference E: 432127 / N: 407635. A Coal Mining Risk Assessment is required for the proposals, in order to competently address the mining legacy for the site and determine what impact this may have had upon the land. The assessment is intended to be included as a supporting document to a future planning application to Barnsley Local Authority.

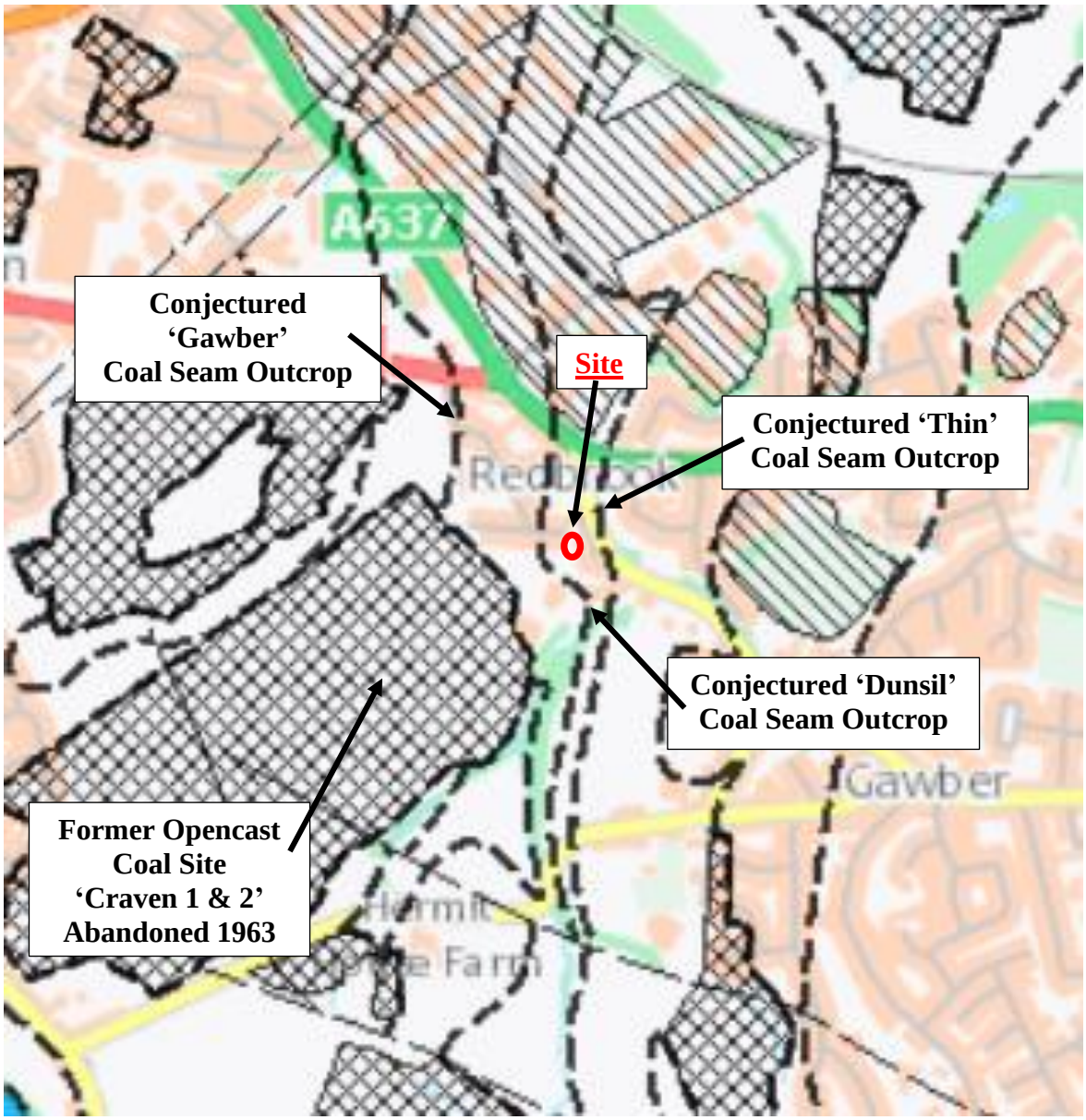
## Scope of the Coal Mining Risk Assessment

The purpose of this Coal Mining Risk Assessment Report is to:

- Present a desk-based review of all available information on the coal mining issues which are relevant to the application site;
- Use that information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact of issues;
- Set out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any further works that may be necessary; and
- Demonstrate to the Local Planning Authority that the application site is, or can be made, safe and stable to meet the requirements of national planning policy with regard to development on unstable land.

**Surface Geology (inc. any superficial deposits)**

Records indicate the site to be located on shales and mudstones of the Middle Coal Measure series from the Carboniferous formation. No superficial deposits are indicated in this vicinity. The strata is shown to dip to the north-east at a rate of around 1 in 12 (5°) in this vicinity. Surface geology is outlined on the extract image below from the BGS Onshore Interactive Viewer:



**Coal Seam Outcrops**

As outlined on the extract image above from the BGS Onshore Viewer, a 'Thin' coal seam (negligible thickness) is conjectured to outcrop some 45m away to the east of the site, which will dip to the east and therefore not be present beneath the site. The Dunsil coal seam is conjectured to outcrop some 40m away to the west as indicated, and dipping beneath the site it would be estimated at its shallowest (on the western boundary) circa 3m to 4m *(note –as a degree of uncertainty exists with the information being conjectured, the seam may be shallower or deeper than anticipated).* Local information suggests a seam thickness of the Dunsil seam in the region of 600mm, which includes a dirt band of around 150mm. Below the Dunsil seam lies the Gawber seam (shown to outcrop some 190m away to the west) by a further 15m or so - CIRCA 18m deep beneath the site therefore. Local information suggests a seam thickness of the Gawber seam in the region of 900mm, which includes a dirt band of around 400mm.

**Fault Planes or Fissures**

No geological faulting or fissuring is known within 250m of the site.

**Made Ground**

No made ground is indicated in the vicinity.

**Opencast Coal Workings.**

No opencast coal operations are shown within 50m of the site. The former 'Craven 1 and 2' opencast operation is illustrated on the above image, approximately 110m away to the south-west of the site, which was abandoned in 1963. Records form those workings proved the Gawber seam as: 25cm coal /40cm dirt / 24cm coal – total of 89cm (890mm). The opencast also worked the deeper 'Swallow Wood' coal seam along with the 'Top Haigh Moor' and 'Low Haigh Moor' seams.

**Underground Coal Workings - Deep**

Deep coal mining (over 50m deep) has taken place beneath this area in several coal seams in the past; all associated settlement will be long complete and as no coalfields now exist, the site should remain stable from the deep coal mining perspective for the foreseeable future.

**Underground Coal Workings - Shallow**

Very little knowledge is known of any associated underground workings in the Gawber coal seam, due to its poor quality/dirt band, and it is likely to be at a depth that would not pose a stability issue be it worked or otherwise. The same will apply to the Dunsil coal seam anticipated

at very shallow depth. This is reflected in the Coal Authority's details, where their interactive viewer outlines that the site in not within an area of 'probable shallow coal workings'.

**Mine Entries**

No mine entries are known within 100m of the site itself. It should be noted however that some potential will exist for other mine shafts or adits being encountered which there are no records considering the slightly deeper workable coal (Swallow Wood, Haigh Moor seams etc).

**Fugitive Gases**

As far as we are aware, no evidence of coal mining related fugitive gas emissions are known within 250m of the site.

**Historical Records**

According to the historical records for this site, no nearby indications of any mining or quarrying activities are noted within the site itself.

## Coal Mining Risk Assessment
**(based on the above).**

| **Coal Seam / Coal Mining Issue** | **Risk Assessment** **(VeryHigh/High/Moderate/Low/VeryLow)** |
|---|---|
| Underground coal mining (at shallow depths) | **Low to Very Low** |
| Mine entries (shafts and adits) | **Low to Moderate** |
| Geological faulting | **Low** |
| Geological fissures | **Low** |
| Fugitive gas emissions | **Low** |
| Surface mining (opencast workings) | **Low** |
| Aggressive ground | **Moderate** |
| Coal exposed / near foundation level | **High** |

## Defined Risk Assessment

**(Where 'Underground Coal Mining' above = Very High to Moderate)**

| | |
|---|---|
| Extent of known underground mining in this/these shallow coal seam/s in the wider vicinity | (Extensive / Much / Occasional / None Known)<br>**N/A** |
| Intrusive Site Investigation of Coal Seam / Mines of Coal (given nature of proposals). | (Required / Recommended / Unnecessary)**<br>**N/A** |
| Advised critical depth beneath foundation level to investigate considering geology and nature of the shallow coal/s* | **N/A** |

**Key:**

** The critical depth is calculated according to Ciria C758D guidance which details that for the land to be regarded as stable from any voided mineworkings, then a suitable section of competent rock cover above the workings should be proved that is equal or greater than ten times the 'in-tact' coal seam thickness. The advised critical depth to investigate to in this report takes into account the available geological information, any nearby mining records and may include a contingency for the seam to be of a slightly greater thickness than anticipated. Due care and diligence should be employed on-site to ensure that sound information is gathered of the in-tact seam thickness, particularly if concluding that old workings are outside the critical depth of affecting stability for the proposed development.*

*** Where :*

| | |
|---|---|
| ***Required*** | *Intrusive Site Investigation **required** of the shallow coal/s and/or mine entries to determine any necessary stabilisation works for the given development.* |
| ***Recommended*** | *Intrusive Site investigation **recommended** – given a lower level of risk in relation to the nature of proposed development some proposals may reduce the risk to an acceptable level via suitable design considerations.* |
| ***Unnecessary*** | *Intrusive Site Investigation deemed **unnecessary** – given geological/mining information.* |

**Coal Authority**

Prior written permission from The Coal Authority is required for intrusive activities which will disturb or enter any coal seams, coal mine workings or coal mine entries (shafts and adits). Further information on The Coal Authority's permissions process can be found at: www.coal.gov.uk/services/permissions/index.cfm

**Information sources:**

- *British Geological Survey Map Sheet SE 30 NE 1980 Edition*
- *British Geological Survey – Geology Of Britain Viewer*
- *Coal Authority Interactive Viewer and Mine Abandonment Plans*
- *Historical Mapping – old-maps.co.uk*

**CONCLUSIONS**

1) The site can be regarded as stable from the **Deep Coal Mining** perspective, and as no coal fields now remain this position should continue for the foreseeable future.

2) Given the **Shallow Coal Mining** position no further works would be deemed necessary, such as intrusive investigations to check for mining voids etc. Although unlikely, care should be taken for any signs of fill material / made ground that may be associated with small scale historic 'digging out' of the shallow seam, albeit of poor quality. Suitable designed foundations may be required.

3) Any coal exposed in future foundation works should be removed and blinded off to help prevent spontaneous combustion risks. Foundations should then be designed accordingly in terms of aggressive ground considerations.

4) A watching brief should be employed during future grounds works for any signs of unrecorded mine entries. A site scrape to natural ground is the most effective procedure to check for such features, circular areas of grey fill within bedrock would be an indication. If suspected the Coal Authority (as owners) should be notified immediately for appropriate deliberations.

5) Considering the relatively shallow coal, usual safety precautions should be employed regarding possible fugitive gases in any deep excavation work taking place.

A suitably qualified and competent professional should be employed to use this report to determine the conditions on site, and ultimately advise on what action, if any, is necessary to safeguard the development. It should be noted that any future works to investigate any coal seam, mines of coal or associated mine entries will need the prior consent of the Coal Authority via their permitting procedure.

I trust that this satisfies your requirements, however please do not hesitate to contact myself at any time for further clarification or advice.

Yours Sincerely,

*M Lyons*

M. Lyons
Consultant Mining Engineer
BSc CSci MIMMM

Enc.

*THIS COAL MINING RISK ASSESSMENT IS BASED ON AND LIMITED TO THE INFORMATION IN MY RECORD AT THE TIME THE ENQUIRY IS ANSWERED. It is based on my professional opinion in line with the guidelines set out in CIRIA C758D "Abandoned mine workings manual." The opinion may be overruled by Government Authorities decisions based on other information not in my record. If a site investigation is recommended then this risk assessment will be superseded by the factual findings of that investigation. All site investigation work should be carried out by a competent professional from which independent conclusions and recommendations for safe development should be provided. It should be noted that: no operation should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. The investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases; these risks both under and adjacent the site should be fully considered in any proposals both for personnel and public safety. Copyright in this CMRA belongs to M.A.Lyons. All rights are reserved and unauthorised use is prohibited. Copyright is not transferred to external parties by possession of this report, however, those for whom the report is compiled have the right to use it. If any unauthorised third party comes into possession of this report, they rely upon it entirely at their own risk and the author does not owe them any Duty of Care or Skill.*

**Appendix 1 – Location Plan No. 00262/A**
**(Not To Scale)**
**Site centred at O.S. 432127 / 407635**

