

**Mr Nick Lupton & Ms Emily Wright
343 Manchester Road
Millhouse Green
SHEFFIELD
S36 9NQ**

**LYONS CMC
COAL MINING & GEOTECHNICAL
CONSULTANCY**

Web: www.lyonscmc.co.uk
Email: mark@lyonscmc.co.uk
Mob: 07887555580

Date: 24th April 2019
Your ref: (Lee Lane).
My Ref: CMRA 00210

FOR THE ATTENTION OF NICK LUPTON & EMILY WRIGHT

Dear Sir/Madam,

**COAL MINING RISK ASSESSMENT (CMRA) - FOR PROPOSED RESIDENTIAL
DEVELOPMENT OFF LEE LANE, MILLHOUSE GREEN, SHEFFIELD S36 9LN**

Introduction

Planning permission is being sought for the development of a detached dwelling at the above named site, the location of which can be seen on the attached plan No. 00210/A. The site is centred around national grid reference E: 421754 / N: 403095. 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.

British Geological Survey Information

Surface Geology (inc. any superficial deposits)

Records indicate the site to be located on shales and mudstones of the Lower Coal Measure series from the Carboniferous formation. Sand and Gravel river terrace deposits are shown to encroach to the southern boundary of the site, associated with River Don valley.

Coal Seam Outcrops

The 'Upper Band' coal seam is conjectured to outcrop some 25m to the south of the site which will dip beneath the land gently to the north-east below the site under consideration circa 3m to 5m deep (*if conjectured detail is accurate*). Records indicate that this specific coal is of a thin section ranging in thickness from a few centimetres to around 20cm in some parts. No other notable coal seams are predicted to be within an influencing distance of the surface.

Made Ground

No made ground is indicated in the vicinity.

Fault Planes or Fissures

No geological faults are known in the vicinity of the site, the closest being over 200m away to the west. No fissuring of bedrock is known in this area.

Abandoned Mines Records

Opencast Coal Workings.

None known within 250m of site.

Underground Coal Workings - Deep

No deep coal mining has taken place beneath this area in the past and as no coalfields now exist, the site should remain stable from the deep coal mining perspective for the foreseeable future.

Oxpring Boring – Section Detail

A past borehole was sunk as an exploratory hole known as the ‘Oxpring Boring’ located approximately 1km away to the east of this site. The section detail from this borehole indicates a 1.4m thickness of ‘Upper Band Clay’ with a few centimetres of coal at its base. It is likely that this is the same horizon as the Upper Band Coal seam which surfaces just to the south of the site. The section detail also outlines that ‘Dark Mudstone with Ironstone’ lies above this clay/coal strata.

Underground Coal Workings - Shallow

No shallow coal workings are known in this vicinity and given the geological and coal mining information the likelihood of any unchartered historic workings associated with the Upper Band coal seam is considered very low. Some localised workings of any surrounding viable minerals such as clay/fireclay deposits may be possible, although these would be more likely to be via ‘dug out’, quarrying type methods rather than underground mining. Ironstone of a workable grade is not particularly known around this horizon in these parts therefore the risk of associated historic bell pits is considered low.

Mine Entries

No mine entries are known within 20m of the site and considering the geological and mining information the likelihood of discovering unchartered mine entries is considered LOW.

Fugitive Gases

As far as we are aware, no evidence of coal mining related fugitive gas emissions are known within 250m of the site. Given the limited section of shallow coal, the risk of associated gases is considered as low.

Historical Records

According to the historical OS sheets for this area no indications are apparent of any old quarrying or other mining related operations in the vicinity of this land. No colliery spoil related material is anticipated to be experienced on this site.

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)	Very Low
Mine entries (shafts and adits)	Low
Geological faulting	Low
Geological fissures	Low
Fugitive gas emissions	Low
Surface mining (opencast workings)	Moderate to Low
Aggressive ground	Low
Coal exposed / near foundation level	Moderate

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) None Known
Intrusive Site Investigation of Coal Seam / Mines of Coal (given nature of proposals).	(Required / Recommended / Unnecessary)** Unnecessary
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 Publication 32 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	<i>Intrusive Site Investigation required of the shallow coal/s and/or mine entries to determine any necessary stabilisation works for the given development.</i>
Recommended	<i>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.</i>
Unnecessary	<i>Intrusive Site Investigation deemed unnecessary – given geological/mining information.</i>

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

Note: permission is not usually required for 'incidental' coal that is encountered in excavations for foundations for example.

Information sources:

- *British Geological Survey Map Sheet ST 67 SW 1955 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 level of risk from the **Shallow Coal Mining** perspective is VERY LOW, no associated intrusive investigations (such as boreholes to coal seam horizons) would be deemed necessary for the proposed development to mitigate from void migration. Having said this however, it may be deemed prudent for a limited investigation, of either some trial trenching or a few boreholes for example, to check the depth and nature of the coal and surrounding minerals (clay/fireclay) which are known to have been worked, mainly via quarrying/digging out methods, in the wider vicinity. This would ultimately determine a more precise position of the shallow geology, thickness of any superficial material (sand & gravels), provide information for appropriate foundation design (should any made ground or soft clays be present for example) and provide more assurances for safe development (if required) to the developer and any other interested authority or bodies.
- 3) Any coal encountered would need removal and blinding off procedures to help prevent spontaneous combustions risks, with foundations sited on firm strata below the seam horizon.
- 4) Fugitive gas risks associated with coal and/or shallow coal workings are considered low, however suitable precautions should be employed in any deep excavations taking place and if any are suspected then a period gas monitoring should be employed over at least a three months to determine any required mitigation measures within foundation design, such as a methane membrane or positive ventilation.
- 5) Although the risk of discovering old historic mine entries is considered low, a watching brief would be prudent during future ground works and any suspected feature should be reported to the Coal Authority for appropriate checks to be made.

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 the coal seam, if desired, will need the prior consent of the Coal Authority.

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 Special Publication 32 - "Construction Over Abandoned Mine Workings." 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.

Enc.

Land Off Lee Lane, Millhouse Green, Sheffield

Plan No. 00210/A

SCALE 1:1250

SE 2103

