LYONS CMC
COAL MINING & GEOTECHNICAL CONSULTANCY
Web: www.lyonscmc.co.uk
Email: mark@lyonscmc.co.uk
Mob: 07887555580

Mr John Barry Weaver
2 Cemetery Road
Bolton On Dearne
Rotherham
S75 3JR

Date: 3rd February 2026
Your ref: (S63 8NF).
My Ref: CMRA 00448

FOR THE ATTENTION OF JOHN BARRY WEAVER

Dear John,

COAL MINING RISK ASSESSMENT (CMRA)- FOR PROPOSED RESIDENTIAL DEVELOPMENT AT LAND ADJACENT 2 CEMETARY ROAD, BOLTON UPON DEARNE, ROTHERHAM S63 8NF

Introduction

Planning permission is being considered for a new residential development at the above site, the location of which can be seen on the attached plan No. 00448/A in Appendix 1. The site is centred around national grid reference 445534E / 402419N. 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 MBC.

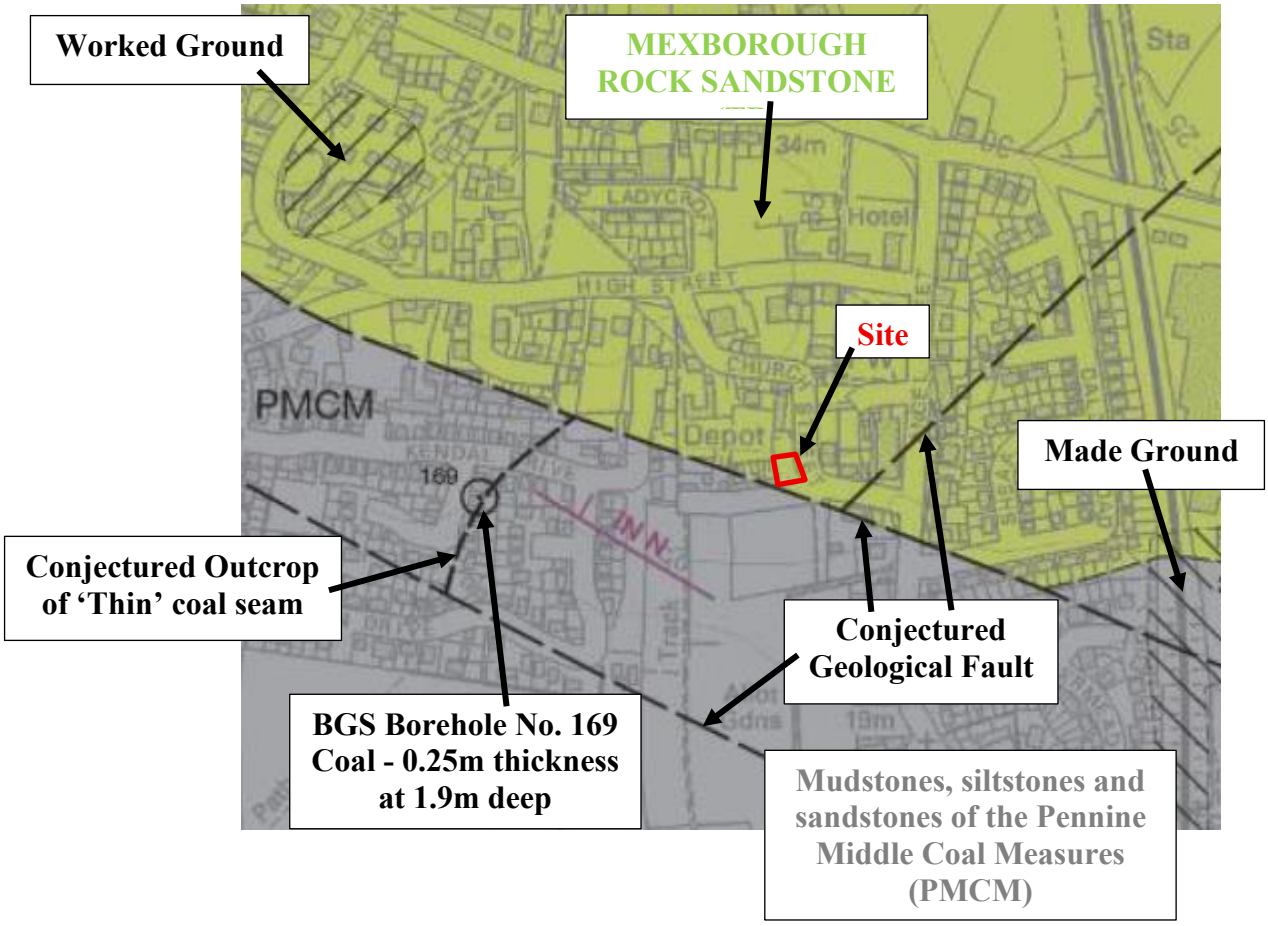
Scope of the Coal Mining Risk Assessment

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.
- The report will not consider other geotechnical or geo-environmental issues.

Surface Geology (inc. any superficial deposits)

Records indicate the site to be located on the Mexborough Rock Sandstone of the Pennine Middle Coal Measure series from the Carboniferous formation. Mudstones and siltstones may also be encountered should part of the site be located on the south-western side of the conjectured fault along that boundary of the site as detailed below. No superficial deposits are indicated in this vicinity. The strata is shown to dip to the east-north-east at a rate of around 1 in 19 (3°) in this vicinity. A summary of the surface geology is illustrated on the image below which is an extract from the BGS Sheet SE40SE 2005 Edition:



Fault Planes or Fissures

Geological faulting is conjectured to pass close to the south-western corner of the site from west-north-west to east-south-east as indicated above ***(it should be noted that as this is based on 'conjecture' the actual position may differ, in some case quite significantly)*** which throws the strata down to the north-east; along with another two conjectured faults some 30m to the south-east and 180m south as shown above. Although no fissuring of sandstone bedrock is known in this vicinity, there will be some potential for such natural features of which there are no records that may have been 'opened out' to some degree by the past deep coal mining in the area.

Coal Seam Outcrops

As outlined on the extract image above, on the southern side of the fault a thin coal seam is conjectured to outcrop some 150m away to the west of the site. BGS borehole no. 169 indicates this coal seam as being of 0.25m thickness and the seam will dip beneath the land eastwards, being beneath the site (only on the southern side of the fault however) at around 8m deep.

Made Ground

BGS records show no made ground beneath the site; the closet is illustrated in the BGS extract image above over 200m away to the east associated with the railway embankment.

Opencast Coal Workings.

No past opencast coal operations are known within 250m of the site.

Underground Coal Workings - Deep

Deep coal mining (over 30m deep) has taken place beneath this site historically in various coal seams, all settlement from which will be long complete. As no coalfields now exist, the site should remain stable from the deep coal mining perspective for the foreseeable future.

Underground Coal Workings - Shallow

No shallow coal workings are recorded or anticipated to affect the site, which is reflected in the fact that it is not located in an area of either past or probable shallow coal workings according to the Mining Remediation Authorities interactive viewer information.

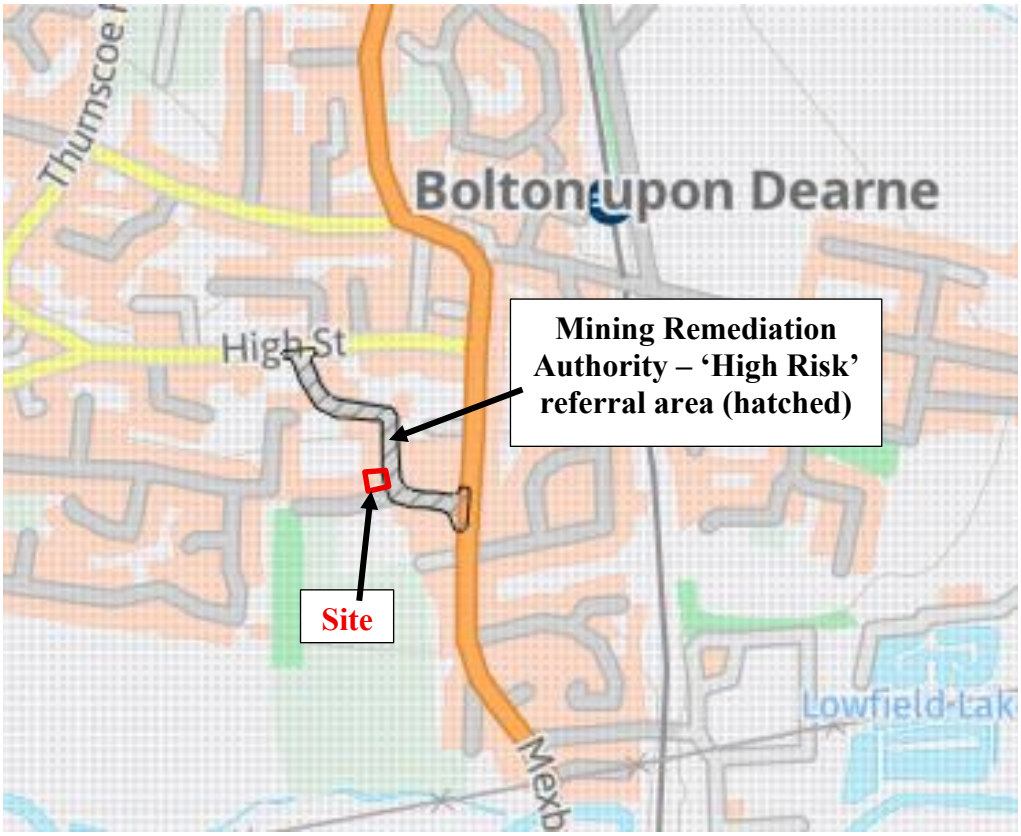
Mine Entries

No known mine entries are indicated within 250m of the site and given the geological and mining position the likelihood of discovering any unrecorded mine entries would be considered low.

Fugitive Gases

As can be seen on the image below, which forms an extract from the Mining Remediation Authorities interactive viewer information, the site is located partially on a 'high risk' area. As far as we are aware, this is due to fugitive ground gasses having being encountered in the past that may have been linked to mine gas emissions. In this case it would appear that the occurrence would have been during the time of highway construction/resurfacing of Church Street. Given the geological position (porous sandstone and geological faulting) there will be some tangible

'pathways' for such mine gasses to migrate from deep coal workings, particularly as flooding of underground workings (which progressively takes place over many years after cessation of mining) displaces any associated pockets of gas, generally upwards, through pathways such as: other mining voids, faulted/fissured/fractured strata, old mine shafts/adits, made ground/backfill/superficial material etc.



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

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) **N/A**
Intrusive Site Investigation of Coal Seam / Mines of Coal (given nature of proposals).	(Required / Recommended / Unnecessary)** **N/A**
Advised critical depth beneath foundation/rock-head 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.*

Mining Remediation Authority

Prior written permission from The Mining Remediation 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 Mining Remediation Authority's permissions process can be found at: www.coal.gov.uk/services/permissions/index.cfm

Information sources:

- *British Geological Survey Map Sheet SE40SE 2005 Edition*
- *British Geological Survey – Geology Of Britain Viewer*
- *Mining Remediation 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) The site can also be regarded as stable from the **Shallow Coal Mining** position, with no workable coal seam anticipated to affect this area. As such, no further associated intrusive investigations of shallow coal seams will be required ***(with regard to informative(s) nos. 1 & 2 in appendix 2).***

3) A watching brief should be employed during future ground/foundation works for any signs of the geological fault (broken/fractured/ 'stepped' bedrock) and/or any opened-out fissures within sandstone bedrock. If encountered then foundations may need to be strengthened/redesigned as necessary (to the advice of a suitably qualified structural engineer) and prior ground remediation/treatment may be required in severe instances.

4) In terms of the fugitive mine/ground gas risks, and considering the overlaying sandstone deposits (which may be faulted/fissured) it would be prudent, in the absence of any further gas monitoring ***(note informative no. 3 in appendix 2),*** to include gas protection measures (such as a methane membrane for example) within future foundation designs; which could also protect from radon issues if required. Of course, should a future gas monitoring programme be undertaken (by an appropriately qualified geotechnical engineer) then it may be concluded that no such precautions are necessary.

Note: should there be any uncertainty of actual conditions during future ground works Lyons CMC or indeed the Mining Remediation Authority themselves can be further consulted for on site assessment if necessary.

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 Mining Remediation 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.

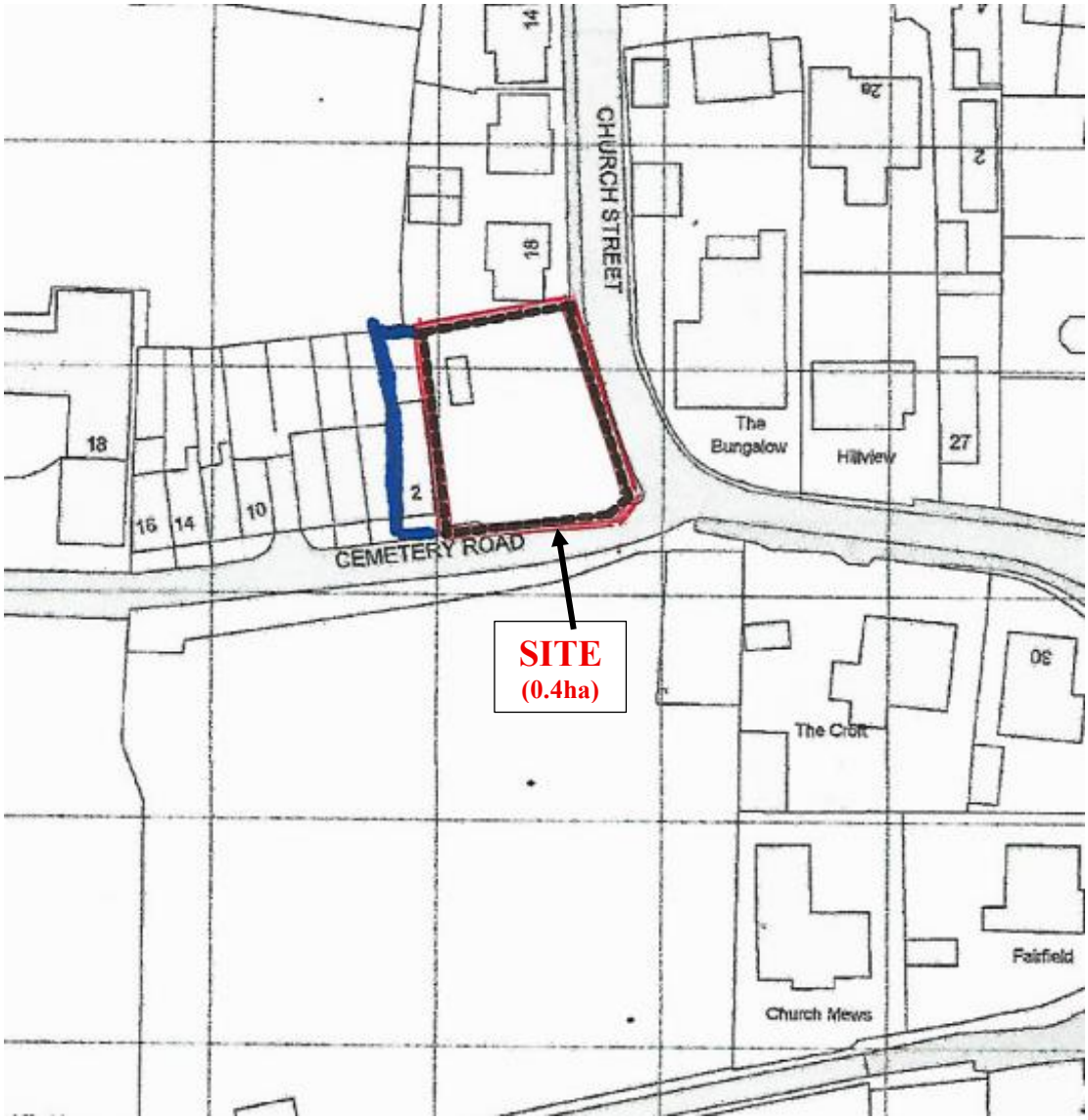
Yours Sincerely,

M Lyons

M. Lyons
Consultant Mining Engineer
BSc CSci MIMMM

Enc.

Appendix 1 – Location Plan No. 00448/A
(Not To Scale)
Site centred at NGR: 445534E / 402419N



Appendix 2 – Informative(s)

1) The relatively recently revised CIRIA document titled 'Abandoned Mine Workings Manual', which replaced Special Publication 32 (1984), indicates that the use of empirical or 'rule of thumb' guides, as the design basis for treatment depth, has been successfully observed for many years for a wide range of abandoned mine workings and overlying rock/soil strata scenarios. As such, the guidance indicates that further design/ground stabilisation consideretions will be required if there is less than 10 times the aggregate measured height of mine workings as competent rock cover above the workings.

2) For information, should the grouting of any mine workings be required, a 10:1 PFA/cement mix or similar would need to be injected into the workings and any other disturbed strata above it under pressure on an OS coordinated treatment grid approved by the Coal Authority (and Building Control/third-party Warranty provider as required). Specific proposals to treat any mine workings would need to be submitted in the form of a standalone 'Specification', with a separate permit to treat being obtained from the Coal Authority. The method of consolidation is dependent on the nature of the bedrock strata and the underground mining conditions encountered, although fissile strata, such as shales and mudstone deposits, do permit mining voids to migrate upwards to quite high levels. All grouting works would need to be supervised by a competent engineer, with a final validation report being produced to confirm what works were undertaken and whether they were successful or not.

3) Ground gas monitoring can be undertaken to confirm or discount the presence of an elevated gassing regime within the underlying soils. Elevated concentrations of mine gases (e.g. CO2, CH4) may be present within the coal seams, voids in or above any shallow mine workings, areas of made ground/opencast backfill, and in any permeable bedrock strata (and any organic rich surficial soils). Mine entries and/or and geological fault lines/fissured bedrock will also provide pathways for gas to migrate. The period of monitoring to be undertaken should be broadly completed in accordance with current guidance [BS8485]. Piezometers would need to be installed (during drilling works for example) to facilitate this.