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**LYONS CMC
COAL MINING & GEOTECHNICAL
CONSULTANCY**

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Date: 6th May 2026
Your ref: (S35 7AS)
My Ref: SI 00453

FOR THE ATTENTION OF LESLIE SIMPSON & ROB AGUS

Dear Sirs,

**COAL MINING RISK INTERPRETATION REPORT – FOLLOWING THE SITE
INVESTIGATION FOR PROPOSED RESIDENTIAL DEVELOPMENT AT LAND OFF DANCE
LANE, CRANE MOOR, THURGOLAND, SHEFFIELD S35 7AS**

I am pleased to supply the following report for the above named project and trust that this satisfies your requirements. 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

THIS REPORT 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". Copyright in this report 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.

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1. Introduction

Planning permission has been granted for a new residential dwelling at the above location, subject to the mining legacy risks been fully realised and mitigated from on site, if necessary. Cape Site Services has now undertaken this work via an intrusive site investigation of 2 boreholes and 5 probe holes, the location of which is outlined on plan no. 00453/B – as attached and illustrated in appendix 5.2. The site is centred at OS NGR: 430729E / 401453N.

2. Scope of the Report

The mining legacy risks to the development are as follows:

- Instability from shallow underground coal workings
- Mine entry risks from recorded adjacent ‘adit’ mines

As such, these risks need to be properly determined to ensure sound stability for the development. A borehole investigation consisting of 2 to 3 water flush boreholes was deemed a reasonable level of investigation in the outset regarding potential void migration given the scale and nature of development combined with the available geological and mining information. With regards to mine adits MRA Ref: 430401-019 & 430401-031 (as outlined in the MRA Permit in appendix 5.4), detailed as having a departure (contingency factor for being out of place by) of 10m & 8m respectively), a number of probe holes would be carried out within the zone of influence, to confirm the presence or otherwise of such a feature.

3. Site Investigation

3.1 Methodology

Prior to the intrusive site investigation, a search for utilities was undertaken both via online data providers and physically on site using a Cable Avoidance Tool (CAT). Boreholes were marked out with tape measure from boundary lines as illustrated on plan no. 00453/B outlined in appendix 5.2. As can be seen, the site is quite complex from matters of utilities, which includes a twin poled overhead electricity pylon which transfers overhead to unground supply sited on a concrete pad, as outlined on plan no. 00453/B in appendix 5.2.

For the boreholes an investigation utilising a tracked Beretta Rotary Drill Rig equipped with 2m long 75mm diameter drill rods was deemed appropriate in this instance along with water flush techniques to analyse returns and minimise any risks associated with mine gas emissions and spontaneous combustion. Gas monitoring equipment would be employed during works for risks associated with Methane, Carbon Monoxide, Oxygen, Carbon Dioxide and Hydrogen Sulphide. For the probe holes an investigation using 100mm augers to check the depth to natural ground within the accessible areas of influence was deemed appropriate. Prior

agreement had been secured for these works from the Coal Authority - permit ref: 31243 – as attached for reference in appendix 5.4.

Considering the mining and geological detail boreholes were decided to be taken to a maximum of 12m deep in order to check the nature of the ‘Silkstone’ coal seam, if present, in order to establish any historic unrecorded mining void instability risks to the proposals.

The works were to be supervised by the Drilling Engineers Mr. S. Fish and Mr I. Wiles, and overseen by the Consultant Mining Engineer Mr. M. Lyons.

3.2 Interpretation of Findings

Two boreholes (BH) were undertaken in the positions as shown on attached plan no. 00453/B. As no coal seam was encountered to full depth of 12m in both holes, the third borehole was deemed unnecessary. Given the geological position it was considered that the Silkstone seam has already outcropped at this location. Both boreholes proved between 0.5m to 1.0m of made ground above grey/brown clay to circa 1.9m deep before a brown/grey silty sandstone bedrock. Below the sandstone (of between 0.5m to 0.7m section), mudstones were proved to the full depth of 12m. No signs of any coal seam/underground shallow workings or unstable ground were encountered at either borehole locations and no fugitive gases were detected at any point during the drilling operations. Water flush was maintained throughout drilling.

A number of 5 probe holes (PH) were carried out in the positions as shown on attached plan no. 00453/3B; with the aim being to determine any areas of significant made ground/fill that would potentially indicate the presence of a mine adit entrance. With the exception of PH4 in the northern corner of the site, all holes proved a small element of made ground of between 0.3m to 1.0m deep. PH5 encountered an ‘obstruction’ at 1m deep; as the client had a small excavator present it was decided to open this hole up to check the nature of this feature. As can be seen in attached Photo’s C & D in appendix 5.4, the obstruction (boulder within made ground) was cleared and natural ground determined at 1.2m deep, determined as brown clay/weathered sandstone. An inaccessible overgrown embankment area to the north, as indicated in purple on the attached plan (Photo A in appendix 5.4), was not investigated as it was clearly evident that this was natural ground - given adjacent PH4 proving natural clay at the surface. Given the site specifics no further probe holes were deemed necessary and it is considered that the mine adit entrances will lie clear of this site.

4. CONCLUSIONS AND RECOMMENDATIONS

- 1) In line with current guidelines (CIRIA C758D Abandoned mine workings manual) no notable coal seam of a workable quality/thickness has been determined within a critical depth beneath the proposed development to within 12m of the surface; and any coal seam below this depth is anticipated to be of a section that will not affect stability be it worked or otherwise. As such it is considered that the site will be stable from the shallow mining aspect and no further associated considerations are necessary. As such usual foundations can be considered, suitably designed for the given structure and nature of near surface strata (made ground/clay).
- 2) No indications of the nearby mine adit entrances were noted and it is considered that those features lie clear of this site. No signs of any other 'unrecorded' mine entries were observed during the investigation; however slight risks are always present within the exposed coalfield for discovering such features. Watching briefs would be prudent during future ground works for any associated signs - grey circular areas of fill material within natural bedrock/clay would be an indication of an old mine shaft for example. The Mining Remediation Authority should be notified where any such feature is encountered or suspected.
- 3) No fugitive gases were encountered during this investigation. However, given the nearby mine entries (on adjacent land) along with made ground on-site, 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. All usual safety precautions should be employed regarding possible fugitive gases in any deep excavation work taking place.

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

This report and future development proposals should be submitted to the regulators for their approval prior to any works taking place.

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 SITE INVESTIGATION INTERPRETATIVE REPORT 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 Working Manual." The opinion may be overruled by Government Authorities based on other information not in my record. Further site investigations may be undertaken which would supersede the factual findings of this investigation. Copyright in this report 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.

5 Appendix

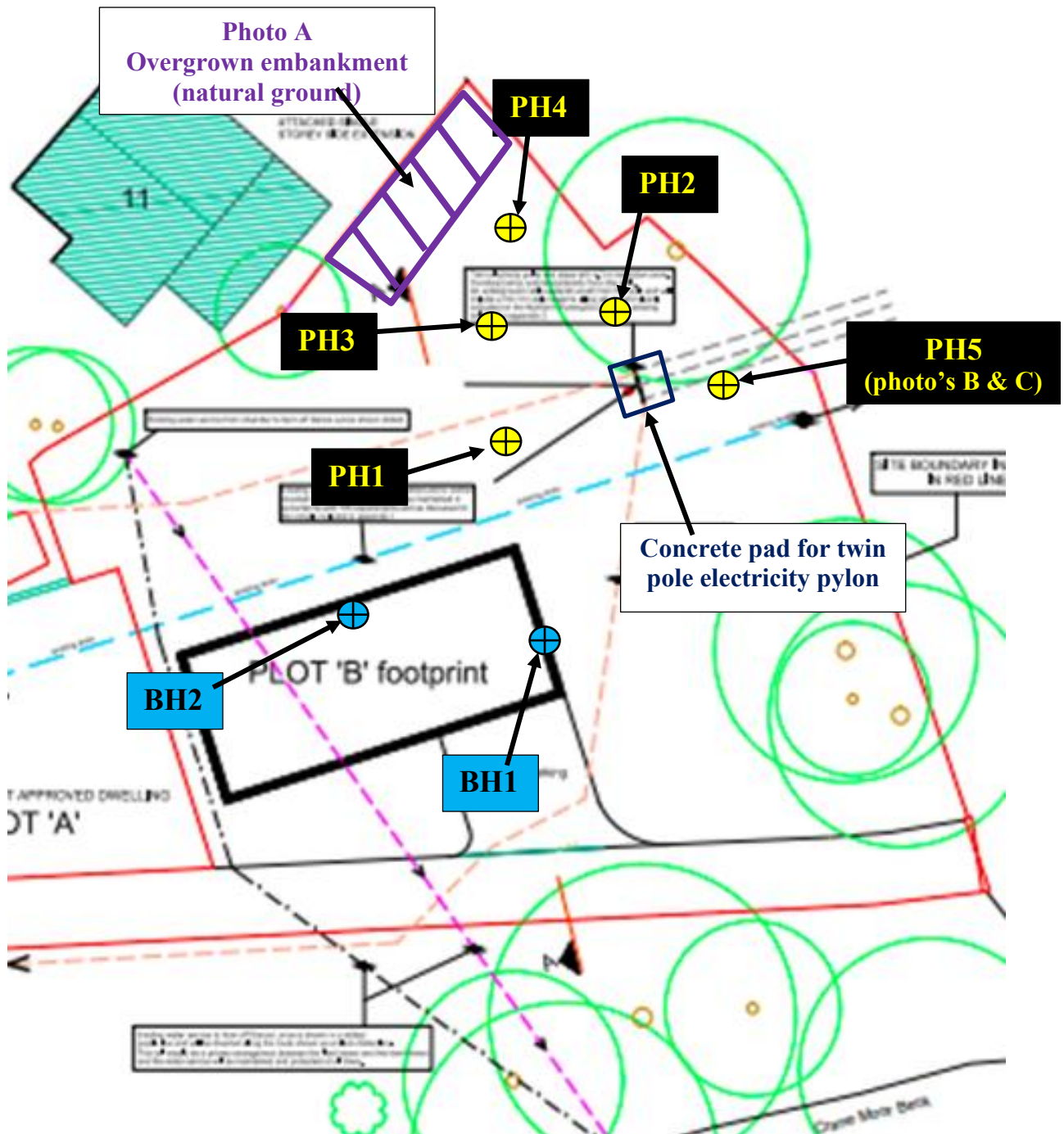
5.1 References

- 5.1.1 CIRIA C758D 'Abandoned mine workings manual'.
- 5.1.2 British Standards Institution: BS 5930:2015 'Code of practice for ground investigations' BSI 2015.
- 5.1.3 British Standards Institution: BS EN ISO 14688-1: 2002 + A1 2013 'Geotechnical Investigation and Testing - Identification and Classification of Soil - Part 1 - Identification and Description. BSI 2013.
- 5.1.4 British Standards Institution: BS EN ISO 14689-1: 2003 'Geotechnical Investigation and Testing – Identification and Classification of Rock – Part 1 – Identification and Description. BSI 2003. Incorporating Corrigendum No. 1 February 2007.
- 5.1.5 British Standards Institution: BS 10175 'The Investigation of Potentially Contaminated Sites. Codes of Practice'. BSI 2011+A1 2013.
- 5.1.6 British Standards Institution: BS EN ISO 22476-3: 2005 + A1 2011 'Geological Investigating and Testing. Field Testing. Standard Penetration Test'.
- 5.1.7 British Standard 1377:1990 Parts 1-9 'Methods of Test for Soils for Civil Engineering Purposes'.

5.2 Borehole Location Plan No. 00453/B

**LAND OFF DANCE LANE, CRANE MOOR,
THURGOLAND, SHEFFIELD S35 7AS**

**Site Investigation
Borehole Location Plan
(NTS)**



5.3 Drilling log sheets

Client: Lyons CMC	Site: Land at Dance Lane, Crane Moor Thurgoland, Sheffield. S35 7AS		Cape Site Services unit 2, rear of Castle Buildings Carlton Road, Barnsley, S71 3HX 
Date: 20-21/04/2026	Method: water flush	Permit No: 31243	
Driller: Ian Wiles		Driller Assistant: Richard Hawkins, Simon Fish	
		Page No: 1	

Measurements In Meters

No:	FROM	TO	THICKNESS	DESCRIPTION
BH1	0	1	1	Made ground
	1	1.8	0.8	Clay brown
	1.8	2.5	0.7	Sandstone brown grey silty
	2.5	3.5	1	Mudstone grey
	3.5	4	0.5	Mudstone dark grey
	4	12	8	Mudstone grey silty odd sandstone band
BH2	0	0.5	0.5	Made ground
	0.5	1.9	1.4	Clay grey brown
	1.9	2.4	0.5	Sandstone grey brown silty
	2.4	3	0.6	Mudstone grey
	3	3.4	0.4	Mudstone dark grey
	3.4	12	8.6	Mudstone grey silty
PH1	0	0.3	0.3	Made ground
	0.3	1.7	1.4	Clay grey brown
	1.7	2.5	0.8	Mudstone grey
PH2	0	1	1	Very wet made ground
	1	2	1	Clay grey brown very stiff
PH3	0	0.5	0.5	Soft made ground clay
	0.5	2	1.5	Clay grey brown stiff
PH4	0	1.8	1.8	Clay grey brown stiff
	1.8	2	0.2	Mudstone grey
PH5	0	1	1	Made ground
Hand dug	1	1	0	Obstruction

5.4 Photographs

Photo A (overgrown embankment / natural ground)





**Photo B
(PH5.1)**



**Photo C
(PH5.2)**

5.5 Coal Authority Permit



Site Location:

Land at Dance Lane, Crane Moor, Thurgoland, Sheffield, S35 7AS

Name and Address of Permit Holder:

Leslie Simpson, 3 Byrne Close, Barugh Green, Barnsley, S75 1NS

This certificate hereby grants the above named Permit Holder a Permit to carry out:

Ground investigation by three boreholes to 12m to determine presence of shallow mine workings, investigation of mine entry 430401-019 & potentially mine entry 430401-031 by probe drilling

within the Mining Remediation Authority's interests at the identified site location above as shown on the Granted Permit Boundary (overleaf) for the period of **12 months** from the granted date shown below. *The granting of this Permit does not constitute advice given by the Mining Remediation Authority in relation to the proposed operations. It is the Permit Holder's responsibility to obtain appropriate health, safety, environmental, technical and legal advice.*

Conditions:

- Manned entry (i.e., into mine entries/workings) is **strictly prohibited**.
- Water flush
- Gas Monitoring (i.e., CO, CH₄, CO₂, O₂, H₂S) at borehole and rig
- Operators undertaking the work must be in possession of this certificate and the Permit boundary plan at the time of works
- Appropriate borehole sealing without delay and to withstand site level changes

Signed: Amy McKenna Permit Granted Date: 24th March 2026

Permit Expiry Date: 23rd March 2027

For and on behalf of the Mining Remediation Authority

Nominated Representative: Amy McKenna, Permitting Manager.

Mining Remediation Authority, Permitting Office, 200 Lichfield Lane, Mansfield, Notts, NG18 4RG. Tel: 01623 637450;

E-Mail: LicensingAndPermissions@MiningRemediation.gov.uk





Mining
Remediation
Authority

Granted Permit Boundary

Permit number: 31243

Permit boundary:



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COAL MINING & GEOTECHNICAL CONSULTANCY

Appendix 5.6 Informative(s):

- 1) The relatively recently revised CIRIA document C758D 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 considerations 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 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.