4245 Park Approach
Thorpe Park
Leeds
LS15 8GB

Thomas Dixon
Miller Homes Limited
Lapwing House
Peel Avenue
Calder Park
Wakefield
WF2 7UA

Our Ref: SDL4480A/NJI/002

Date: 11th September 2025

SDL4480A Potential Shallow Mining Roadway Investigation at land off Hermitage Park, Lepton

Sirius Drilling Limited were commissioned by Miller Homes Limited (Millers) to undertake a programme of targeted probe drilling to investigate the potential presence of a subsurface roadway associated with shallow mine workings at their proposed development site at Hermitage Park, Lepton. It is understood that Millers intend to develop the site with residential properties, private gardens and associated infrastructure.

Sirius have previously undertaken a programme of rotary probe drilling at the site, the findings of which are presented in a Geoenvironmental Appraisal Report (ref. C10281) prepared by Sirius Geotechnical Limited in December 2024. In May 2025 Sirius undertook a further supplementary investigation to assess suspected shallow mineworkings identified by FWS Consultants in 2022, the findings of which are presented in Sirius Drilling Limited letter report ref. SDL4480A/NJI/001.

Following consultation with the Mining Remediation Authority (MRA) it was agreed that all the investigations undertaken to date indicate that the shallowest mine workings below the site, considered to be within the Black Bed Coal, have sufficient competent rock cover such that treatment by drilling and grouting will not be required.

However, the coal mine abandonment plans for the site indicate a potential spine roadway connecting an old air shaft immediately beyond the western site boundary with the area of

recorded workings in the Black Bed Coal in the eastern part of the site. MRA records for the air shaft suggest a depth of only 4.60m although the source of this data is unclear and no recent investigation or treatment data is available.

The intention of these works was to locate the spine roadway and assess any potential influence on surface stability with respect to the proposed development.

1.0 Site Details and Description

The site is located approximately 7km southeast of the Huddersfield town centre in the village of Lepton at National Grid Reference 419220, 414620. The site covers an area of approximately 5.3Ha and comprises undeveloped agricultural fields with tree lined field boundaries, forming several parcels of land. Access to the site is from Hermitage Park to the west. Lepton Great Wood forms the eastern and southern site boundaries.

The site generally slopes from the west up towards the east and northeast, from a low point of 136mAOD to a high point of 149m AOD.

2.0 Geological Setting

A summary of available published geological information and geological conditions present at the site is provided in **Table 2.1**.

Table 2.1: Geological Summary

Sources of Information	• BGS 1:10,000 scale geological map (Sheet SE 11 SE, Kirkburton) • BGS 1:50,000 scale geological map (Sheet 77, Huddersfield) • Coal Authority (CA) Consultants Coal Mining Report Ref. 51003457018001 • Coal Mining Abandonment Plans ref. GCR230 & FGB318
Made Ground	No made ground is recorded on the published BGS map.
Drift Geology	No superficial deposits is recorded on the published BGS map.
Solid Geology	The site is shown to be underlain by Carboniferous Pennine Lower Coal Measures Formation (PLCMF) strata, comprising undifferentiated LCM strata in the east and Kirkburton Sandstone in the west. A thin un-named sandstone band is shown within the northeastern extent of the site.

Mining and Quarrying	**Coal Seams:** The **Crow Coal** is conjectured to outcrop through the centre of the site in an approximate northwest-southeast orientation, dipping towards the northeast. The seam is recorded as '3 inches' [7cm] thick to the north of the site. The **Black Bed Coal** is conjectured to outcrop c.20m to the west of the site in an approximate northwest-southeast orientation, dipping towards the east / northeast. The seam is recorded as '1 ft 6 inches' [0.45m] thick. The **Better Bed Coal** is conjectured to outcrop c.350m to the west of the site, again orientated approximately northwest-southeast and dipping to the east / northeast. The coal is shown to outcrop beyond a fault line, in a separate fault block to the site. The seam is recorded as '1 ft 6 inches' [0.45m] thick. **Coal Mining:** The CA mining report records workings within the Black Bed coal seam, at depths of between 37m and 41m and an extraction thickness of 50cm. It was also noted that unrecorded shallow workings may be present beneath the site. **Mine Entries:** The Victoria Colliery Air Shaft (CA ref. 419414-004) is located 5m to the west of the site, connecting to the spine roadway that runs eastwards across the site. This shaft has a recorded depth of 4.60m although the source data for this depth is unconfirmed and no details of investigation or treatment are available. The CA report states that '*a partial search by trial trenching to the east of Hermitage House did not locate the shaft*'. The shaft appears to be labelled as 'Air Pit' and 'Old Pit' on the abandonment plans. **Opencast Coal & Quarries:** There are a number of historic sandstone quarries within the broader area but no evidence of any within or immediately adjacent to the site.

3.0 Previous Investigations

Sirius Geotechnical Limited undertook a Supplementary Geoenvironmental Appraisal in December 2024 on behalf of Miller Homes, which comprised a review of the earlier investigations and a programme of further intrusive investigations. This included a further 35 rotary open hole boreholes drilled to further investigate the shallow coal setting below the site. No evidence of workings was recorded in the Crow Coal and the Black Bed Coal was found to be worked but with sufficient competent rock cover, such that treatment is not required.

4.0 Fieldwork

It was proposed to probe drill a series of transects across the line of the spine roadway to confirm the location, alignment and depth. An MRA permit (ref. 30316) was obtained prior to the works and a copy is attached to this report.

The works were undertaken between 20th and 26th August 2025.

Drilling Works

Probe holes were drilled by rotary open-hole techniques utilising a combination of air and water flush dependent upon the proximity of off-site receptors. In accordance with the MRA permit requirements, a gas monitoring well was installed at the western extent of the works and monitored throughout the works.

The location of the transect lines and probe holes are indicated on Drawing No. SDL4480A/LR/02. Full copies of the drill logs are included in Appendix B.

Gas Monitoring

Continuous gas monitoring was undertaken throughout the drilling works using calibrated Altair 4X Multi-Gas and Senko iGas detectors, attached to the safety gate of the rig. Additionally, gas monitoring was undertaken periodically at the monitoring well installed at Transect 1. No elevated gas readings were observed during the works.

Transect 1

This was considered to be the most critical part of the investigation and comprised of a 12m linear section, perpendicular to the line of the roadway, extending 6m either side of the best-fit position.

Probe holes were initially drilled at 1m spacings and extended to a target depth of 26mbgl. The Black Bed coal was identified at a depth of c.16mbgl with a thickness ranging from 0.50m to 1.00m. Three holes in the transect identified voids at the anticipated seam depth, these were two adjacent holes (T1.9 & T1.10) and T1.13. Further holes were drilled at a reduced spacing of 0.5m between the initial positions, all extended to a depth of 10mbgl to assess for any shallow features not identified in the initial set of probes. These all encountered intact sandstone and mudstone strata.

Transect 2

This was drilled further west into the site and again, spanning the best fit position of the roadway. The Black Bed coal was encountered at a depth of 20mbgl and found to be intact, although the southern extent of the transect was restricted by the existing treeline which is understood to retained as part of the proposed development. The proposed t/ransect 4 and the best-fit line of the roadway fell into the existing/retained treeline heading eastward across part of the central site and as such were inaccessible.

Transects 5 & 6

Further probes were drilled across Transects 5 and 6 which encountered evidence of worked ground at the depth of the Black Bed coal. These could be attributed to the presence of a roadway or unrecorded workings in the seam in this area, as identified during the earlier intrusive investigations.

5.0 Conclusions

Based on the findings of this investigation, it is considered that the spine roadway lies at the depth of the Black Bed coal seam. The void encountered in two adjacent probes in Transect 1 is considered likely to represent the former roadway and had a maximum height of 1.20m. On this basis the roadway has sufficient competent rock cover at what is considered to be the shallowest point with the seam increasing in depth down-dip to the east across the site. It is therefore considered that the roadway does not pose any undue risk to surface stability.

We trust the information contained within this letter report is satisfactory, however, if you have any queries or require further information, please do not hesitate to contact the undersigned.

Yours faithfully

Nick Ireland | Technical Manager | Drilling

M 07885 803452

T 0113 264 9960

E nick.ireland@thesiriusgroup.com

W www.thesiriusgroup.com

Enclosures.

Drawing No. SDL4480A/LR/02 – Spine Roadway Probe Drilling Investigation

SDL4480A/LR/03 – Abandonment Plan GCR230 Victoria Colliery – Black Bed Coal

Drilling Logs

MRA Permit Ref. 30316

ENCLOSURES

DRAWINGS

NOTES

SITE BOUNDARY

REVISION		BY	DATE
0	>>	>>	>>
A	>>	>>	>>
B	>>	>>	>>
C	>>	>>	>>
D	>>	>>	>>

SIRIUS
DRILLING LTD
4245 Park Approach,
Thorpe Park,
Leeds
LS15 8GB
www.thesiriusgroup.com
TEL: 0113 264 9960
FAX: 0113 264 9962

CLIENT

MILLER HOMES LIMITED

SITE

HERMITAGE PARK LEPTON

DRAWING TITLE

ABANDONMENT PLAN GCR230 VICTORIA COLLIERY - BLACK BED COAL

DRAWING NO.	REVISION NO.
SDL4480A/LR/03	0

DRAWN BY	APPROVED BY
NJI	JCC

DATE	SCALE	PAPER SIZE
SEPTEMBER 2025	1:1,000	A3

NOTES

LINE OF SPINE ROADWAY FROM ABANDONMENT PLAN GCR 230

DRILLING RECORD

- BROKEN GROUND
- SOFT PUSH
- VOID
- SOLID COAL
- NO COAL OR WORKINGS
- GAS MONITORING WELL

REVISION		BY	DATE
0	FOR INFORMATION	>>	>>
A	>>	>>	>>
B	>>	>>	>>
C	>>	>>	>>
D	>>	>>	>>

SIRIUS DRILLING LTD
4245 Park Approach,
Thorpe Park,
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LS15 8GB
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CLIENT

MILLER HOMES LIMITED

SITE

HERMITAGE PARK LEPTON

DRAWING TITLE

SPINE ROADWAY PROBE DRILLING INVESTIGATION

DRAWING NO.	REVISION NO.
SDL4480A/LR/02	0
DRAWN BY	APPROVED BY
NJI	JCC

DATE	SCALE	PAPER SIZE
SEPTEMBER 2025	1:1000	A3

DRILLING LOGS

OPENHOLE DRILL LOG

Sirius Group

Job No. 4480 a
Contract Name: Lepton
Working Day: Wednesday

Date: 20-08-25
Client: Miller Homes
Sheet: 1 of 1

Hole No.	From	To	Flush (W/A/M)	Casing T/S (m)	Strata Description
T1.1	0.00	2.50			weathered Sandstone
	2.50	10.50			Sandstone
	10.50	11.00			fractured Sandstone
	11.0	14.00			firm Sandstone / Mudstone
	14.00	16.00			Mudstone
	16.00	17.00			coal intact
	17.00	26.00			Sandstone-Mudstone

Rig Type: Mc 15

Crew Details: M. Thomas
R Haddington

Remarks: On site @ 12.00 unload Rig and equipment Return to Yard for water fittings

Gas Monitoring

%	O_2	CO_2	CH_4	CO
Start	20.8	-	-	-
Mid	20.8	-	-	-
End	20.8	-	-	-

Weather Conditions: Overcast

Boreholes Total	
Today	1
Previous	
To Date	

Drilled Total	
Today	26
Previous	
To Date	

Casing Total	
Today	—
Previous	
To Date	

Signed by Sirius Drilling Ltd:

Signed by Client:

T - Temporary, S - Sacrificial

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OPENHOLE DRILL LOG

Sirius Group

Job No. 4480a
Contract Name: Lepton
Working Day: Thursday

Date: 21-08-25
Client: Miller Homes
Sheet: 1 of 2

Hole No.	From	To	Flush (W/A/M)	Casing T/S (m)	Strata Description
T1·2	0·00	2·50			Weathered Sandstone
	2·50	14·50			Sandstone
	14·50	15·80			Mudstone
	15·80	16·80			coal
	16·80	26·00			Sandstone-Mudstone
T1·3	0·00	2·50			Weathered Sandstone
	2·50	15·80			Sandstone/Mudstone
	15·80	16·40			coal intact
	16·40	26·00			Sandstone-Mudstone
T1·4	0·00	2·50			Weathered Sandstone
	2·50	15·80			Sandstone-Mudstone
	15·80	16·30			coal intact
	16·30	26·00			Sandstone-Mudstone
T1·5	0·00	2·50			Weathered Sandstone
	2·50	15·60			Sandstone-Mudstone
	15·60	16·20			coal intact
	16·20	26·00			Sandstone-Mudstone
T1·6	0·00	2·50			Weathered Sandstone
	2·50	13·50			Sandstone-Mudstone
	13·50	14·50			fractured Sandstone
	14·50	15·50			Sandstone-Mudstone
	15·50	16·00			coal intact
	16·00	26·00			Sandstone-Mudstone
T1·7	0·00	2·50			Weathered Sandstone
	2·50	16·00			Sandstone-Mudstone
	16·00	16·60			coal
	16·60	26·00			Sandstone-Mudstone
T1·8	0·00	2·50			Weathered Sandstone
	2·50	16·00			Sandstone-Mudstone
	16·00	16·60			coal intact
	16·60	26·00			Sandstone-Mudstone
T1·9	0·00	2·50			Weathered Sandstone
	2·50	15·80			Sandstone-Mudstone
	15·80	16·80			Void
	16·80	17·80			Solid Strata
T1·10	0·00	2·50			Weathered Sandstone
	2·50	16·00			Sandstone-Mudstone
	16·00	17·20			Void
	17·20	18·20			Solid Strata

Rig Type: MCIS

Crew Details: M Thomas, R Haddington

Remarks: Install in T1·6 15·00mtr Slotted 10·00mtr Plain End cap gas Bung Cover

Gas Monitoring

%	O_2	CO_2	CH_4	CO
Start	20.8	–	–	–
Mid	20.8	–	–	–
End	20.8	–	–	–

Weather Conditions: fine

Boreholes Total	
Today	
Previous	
To Date	

Drilled Total	
Today	
Previous	
To Date	

Casing Total	
Today	
Previous	
To Date	

Signed by Sirius Drilling Ltd:

Signed by Client:

T - Temporary, S - Sacrificial

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OPENHOLE DRILL LOG

Sirius Group

Job No. 4480 a
Contract Name: Leptan
Working Day: friday

Date: 22-08-25
Client: Miller Homes
Sheet: 1 of 2

Hole No.	From	To	Flush (W/A/M)	Casing T/S (m)	Strata Description
T1.11	0.00	2.50			Weathered Sandstone
	2.50	16.00			Sandstone-Mudstone
	16.00	16.80			Coal
	16.80	17.80			Sandstone-Mudstone
T1.12	0.00	2.50			Weathered Sandstone
	2.50	16.00			Sandstone-Mudstone
	16.00	17.00			Coal
	17.00	18.00			Sandstone-Mudstone
T1.13	0.00	2.50			Weathered Sandstone
	2.50	15.50			Sandstone-Mudstone
	15.50	16.50			Void
	16.50	17.00			Broken ground
	17.00	18.00			Solid Strata
12A	0.00	10.00			Sandstone-Mudstone
11A	0.00	10.00			Sandstone-Mudstone
10A	0.00	10.00			Sandstone-Mudstone
9A	0.00	10.00			Sandstone-Mudstone
8A	0.00	10.00			Sandstone-Mudstone
7A	0.00	10.00			Sandstone-Mudstone
6A	0.00	10.00			Sandstone-Mudstone
5A	0.00	10.00			Sandstone-Mudstone
4A	0.00	10.00			Sandstone-Mudstone
3A	0.00	10.00			Sandstone-Mudstone
2A	0.00	10.00			Sandstone-Mudstone
1A	0.00	10.00			Sandstone-Mudstone
T2.6	0.00	1.50			Sandy clay
	1.50	30.00			Sandstone-Mudstone
T2.1	0.00	1.50			Sandy clay
	1.50	20.00			Sandstone-Mudstone
	20.00	21.00			Coal
	21.00	25.00			Sandstone-Mudstone

Rig Type: MC 15

Crew Details: M. Thomas, R Haddington

Remarks: No Gas Detected through out Drilling

Gas Monitoring

%	O_2	CO_2	CH_4	CO
Start	20.8	-	-	-
Mid	20.8	-	-	-
End	20.8	-	-	-

Weather Conditions: fine

Boreholes Total	
Today	
Previous	
To Date	

Drilled Total	
Today	
Previous	
To Date	

Casing Total	
Today	
Previous	
To Date	

Signed by Sirius Drilling Ltd:

Signed by Client:

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OPENHOLE DRILL LOG

Sirius Group

Job No. 4480a
Contract Name: Leptan
Working Day: friday

Date: 22-08-25
Client: Miller Homes
Sheet: 2 of 2

Hole No.	From	To	Flush (W/A/M)	Casing T/S (m)	Strata Description
T2.2	0.00	1.50			Sandy clay
	1.50	20.00			Sandstone-Mudstone
	20.00	21.00			coal
	21.00	25.00			Sandstone
T2.3	0.00	1.50			Sandy clay
	1.50	16.00			Sandstone-Mudstone
	16.00	16.50			fractured Sandstone
	16.50	20.00			Sandstone-Mudstone
	20.00	21.00			coal
	21.00	25.00			Sandstone

Rig Type: Mc15

Crew Details: M. Thomas, R Haddington

Remarks:

Gas Monitoring

%	O_2	CO_2	CH_4	CO
Start	20.8	-	-	-
Mid	20.8	-	-	-
End	20.8	-	-	-

Weather Conditions: fine

Boreholes Total	
Today	19
Previous	
To Date	

Drilled Total	
Today	278.8
Previous	
To Date	

Casing Total	
Today	
Previous	
To Date	

Signed by Sirius Drilling Ltd:

Signed by Client:

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OPENHOLE DRILL LOG

Job No. 4480A
Contract Name: Lepton
Working Day: ~~Monday~~ Tuesday

Date: 26-08-25
Client: Miller Homes
Sheet: 1 of 2

Hole No.	From	To	Flush (W/A/M)	Casing T/S (m)	Strata Description
T2.5	0.00	1.50			Sandy clay
	1.50	20.00			Sandstone - Mudstone
	20.00	20.40			coal
	20.40	25.00			Sandstone - Mudstone
T2.7	0.00	1.50			Sandy clay
	1.50	20.00			Sandstone - Mudstone
	20.00	20.50			coal
	20.50	25.00			Sandstone - Mudstone
T2.8	0.00	1.50			Sandy clay
	1.50	20.00			Sandstone - Mudstone
	20.00	20.50			coal
	20.50	25.00			Sandstone - Mudstone
T2.9	0.00	1.50			Sandy clay
	1.50	20.50			Sandstone - Mudstone
	20.50	21.00			coal
	21.00	25.00			Sandstone - Mudstone
T5.5	0.00	2.00			Weathered Sandstone
	2.00	6.50			Sandstone
	6.50	7.50			fractured Sandstone
	7.50	15.50			Sandstone - Mudstone
	15.50	16.50			fractured Sandstone
	16.50	18.50			Sandstone
	18.50	18.80			Void
	18.80	20.50			Broken ground
	20.50	27.00			Solid Strata
T5.6	0.00	2.50			Weathered Sandstone
	2.50	7.00			Sandstone
	7.00	7.50			fractured Sandstone
	7.50	16.00			Sandstone - Mudstone
	16.00	16.50			fractured Sandstone
	16.50	18.50			Sandstone
	18.50	20.50			Broken ground / Soft
	20.50	21.00			Solid
	21.00	21.50			Broken ground
	21.50	25.00			Solid Strata
T5.4	0.00	2.00			Weathered Sandstone
	2.00	7.00			Sandstone - Mudstone
	7.00	7.50			fractured Sandstone
	7.50	21.00			Sandstone - Mudstone
	21.00	22.00			Soft Possible Pack Waste
	22.00	25.00			Sandstone - Mudstone

Rig Type: Mc 15

Crew Details: M. Thomas, R Haddington

Remarks: All BHS Backfilled - gravel Bentonite Seal

Gas Monitoring

%	O_2	CO_2	CH_4	CO
Start	20.8	–	–	–
Mid	20.8	–	–	–
End	20.8	–	–	–

Weather Conditions: fine

Boreholes Total	
Today	10
Previous	
To Date	

Drilled Total	
Today	258.4
Previous	
To Date	

Casing Total	
Today	
Previous	
To Date	

Signed by Sirius Drilling Ltd:

Signed by Client:

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OPENHOLE DRILL LOG

Sirius Group

Job No. 4480 A
Contract Name: Lepton
Working Day: Tuesday

Date: 26-08-25
Client: Miller Homes
Sheet: 2 of 2

Hole No.	From	To	Flush (W/A/M)	Casing T/S (m)	Strata Description
T6.5	0.00	2.50			Weathered Sandstone
	2.50	25.50			Sandstone - Mudstone
	25.50	26.20			Coal
	26.20	27.20			Mudstone
T6.3	0.00	2.50			Weathered Sandstone
	2.50	22.50			Sandstone - Mudstone
	22.50	23.10			Broken ground
	23.1	26.00			Soft
	26.00	27.00			Solid strata
T6.1	0.00	2.50			Weathered Sandstone
	2.50	25.40			Sandstone - Mudstone
	25.40	26.20			Coal
	26.20	27.20			Mudstone

Rig Type: Mc 15

Crew Details: M. Thomas, R Hadlington

Remarks: All BHS Backfilled / gravel Bentonite Seal

Gas Monitoring

%	O_2	CO_2	CH_4	CO
Start				
Mid				
End				

Weather Conditions: fine

Boreholes Total	
Today	
Previous	
To Date	

Drilled Total	
Today	
Previous	
To Date	

Casing Total	
Today	
Previous	
To Date	

Signed by Sirius Drilling Ltd:

Signed by Client:

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MRA PERMIT

Mining Remediation Authority

Permit to Enter or Disturb Mining Remediation Authority Interests

Permit 30316

Name and Address of Permit Holder:

Miller Homes Limited
Lapwing House, Peel Avenue
Calder Park
Wakefield
West Yorkshire
WF2 7UA

Site Location:

Hermitage Park
Rowley Lane
Lepton

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

Ground investigation by 60 boreholes to 25m, treatment of shallow mine workings by drilling and grouting to 25m on 12m grid

within the Authority's interests at the identified site location above as shown on the Grant 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 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 CO, CH_4, CO_2, O_2, H_2S at borehole/rig & boundary monitoring between works and receptor to 25m as agreed*
- *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: Helen Day Granted Date: ***19 August 2025***

For and on behalf of the Mining Remediation Authority

Nominated Representative: Helen Day, Permitting Manager
Mining Remediation Authority, Permitting Office, 200 Lichfield Lane, Mansfield, Notts, NG18 4RG
Tel: 01623 637450; E-Mail: permissions@coal.gov.uk

Mining Remediation Authority

Granted Permit Boundary

Permit Ref: 30316

Permit Boundary:

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The Mining Remediation Authority is the trading name of the Coal Authority ('TCA') established pursuant to Section 1 of the Coal Industry Act 1994, of 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, NG18 4RG. The Coal Authority remains the legal name of the Authority