Project No: EAL.346.25
Dated: 5th February 2026

Ian Hartshorne
Derbyshire Contracts Ltd
Unit 1, Sitwell Business Centre
Heage Road
Ripley
DE5 3GH

To whom it may concern

Re: Land to rear of 42 Main Road, Lower Hartshay – Rotary probe investigation for shallow mine workings.

BACKGROUND

The above site is subject to a development proposal which comprises the construction of a single detached residential dwelling.

The site is located within an area determined as a High Risk Development Area by the Mining remediation Authority. A review of the Mining Remediation Authority Map Viewer website revealed the following salient points:

- No mine entries are recorded on site. Two mine entries are recorded to the west of the site however these are considered to be more than the 8m departure away from the site.
- Surface mining is recorded to the immediate north and south of the site.
- The site is located in an area of probable shallow coal mine workings.
- Coal is not recorded to outcrop within close proximity of the site.

On this basis, further works in terms of historic mining legacy at the site was therefore considered necessary at the site. It was therefore recommended that boreholes are drilled within the footprint of the proposed building to prove or disprove the presence of unrecorded shallow mine workings beneath the site.

Site location, existing and proposed layout plans are included in **Appendix A**.

INVESTIGATION WORKS

Erda Associates Ltd. were asked to attend the subject property in order to undertake a probe drilling investigation for the site. The works were undertaken between the 20th and 22nd January 2026. The probe drilling works were carried out under Coal Authority Permit Ref: 30984.

In summary, the works comprised the advancing of three rotary boreholes (RBH01 to RBH03) to a maximum depth of 30.00mbgl. All boreholes were drilled utilising a water flush medium. Boreholes were reinstated with bentonite backfill upon completion.

A borehole location plan is included in **Appendix A** and borehole logs are included in **Appendix B,** for reference.

GROUND STABILITY ASSESSMENT

Unrecorded Mine Workings

In each borehole, beneath a thin layer of grass over topsoil deposits were present.

Underlying the topsoil, light brown silty very sandy clay with some gravel was recorded across the site to a maximum depth of 3.10mbgl.

The natural clay was immediately underlain by a solid geology of the Pennine Lower Coal Measures predominantly comprising light brown grey sandstone and mudstone with coal bands to a maximum depth of 30.00mbgl.

Two intact bands of black coal were recorded within all three of the boreholes at similar depths as summarised in the table below:

Black Coal Bands Depths		
RBH01	**RBH02**	**RBH03**
19.00m – 20.30m (1.30m thick)	18.30m – 19.55m (1.25m thick)	18.10m – 19.35m (1.25m thick)
25.10m – 25.90m (0.80m thick)	24.35m – 25.20m (0.75m thick)	24.00m – 24.80m (0.80m thick)

The final layer recorded in each borehole was a grey mudstone with thin hard sandstone layers.

There was no indication of historic extraction of coal, no broken ground or voids in any of the boreholes. Water flush return was maintained to depth in each borehole. All coal seams which were encountered were noted as solid and fully intact.

Drilling penetration rates were noted to remain relatively consistent between 5-47mins per 1.50m length run which is indicative of competent strata. Therefore, it is not considered that shallow unrecorded mine workings have been identified beneath the property and the risk of instability from these is reduced to very low.

Mine Gas
Boreholes were monitored for mine gas emissions periodically throughout the drilling works. In summary, no adverse gasses were detected throughout or after the drilling of the boreholes. No potential pathways for mine gas to reach the surface (e.g. mine entries or faults) are known to exist in close proximity to the site.

Based on the above, the risk of mine gas is considered to be low and no further investigation/remediation will be required.

On completion of the boreholes, ground gas monitoring wells were installed within each of the boreholes (RBH01 – RBH03). Gas monitoring at the site is currently ongoing and will be reported separately.

Unrecorded Mine Entries
The risk of unrecorded mine entries being present on site was assessed as being very low. However as a precaution, during the site strip and development, a watching brief should be maintained looking for features indicative of possible mine entries.

CONCLUSION
The probe drilling investigation has not identified suspected shallow unrecorded mine workings beneath the site, and the risk of instability from these is reduced to being very low.

The risk of mine gas is considered to be low as no gas was detected during the drilling investigation works. However, ground gas monitoring at the site is currently ongoing and will be reported separately.

The risk of unrecorded mine entries being present on site is assessed as being very low. However, it is recommended that a watching brief for unrecorded mine entries is undertaken during the proposed redevelopment as precautionary measure. Further assessment will be required should any potential unrecorded mine entries be encountered.

Providing the above recommendations are adhered to, it is considered that the site can be made suitable for the proposed development.

Copies of this letter report should be forwarded to the Local Authority / Coal Authority for review and approval.

A copy of the Mining Remediation Authority Permit Closure Summary Form is included within **Appendix C**.

Yours Sincerely

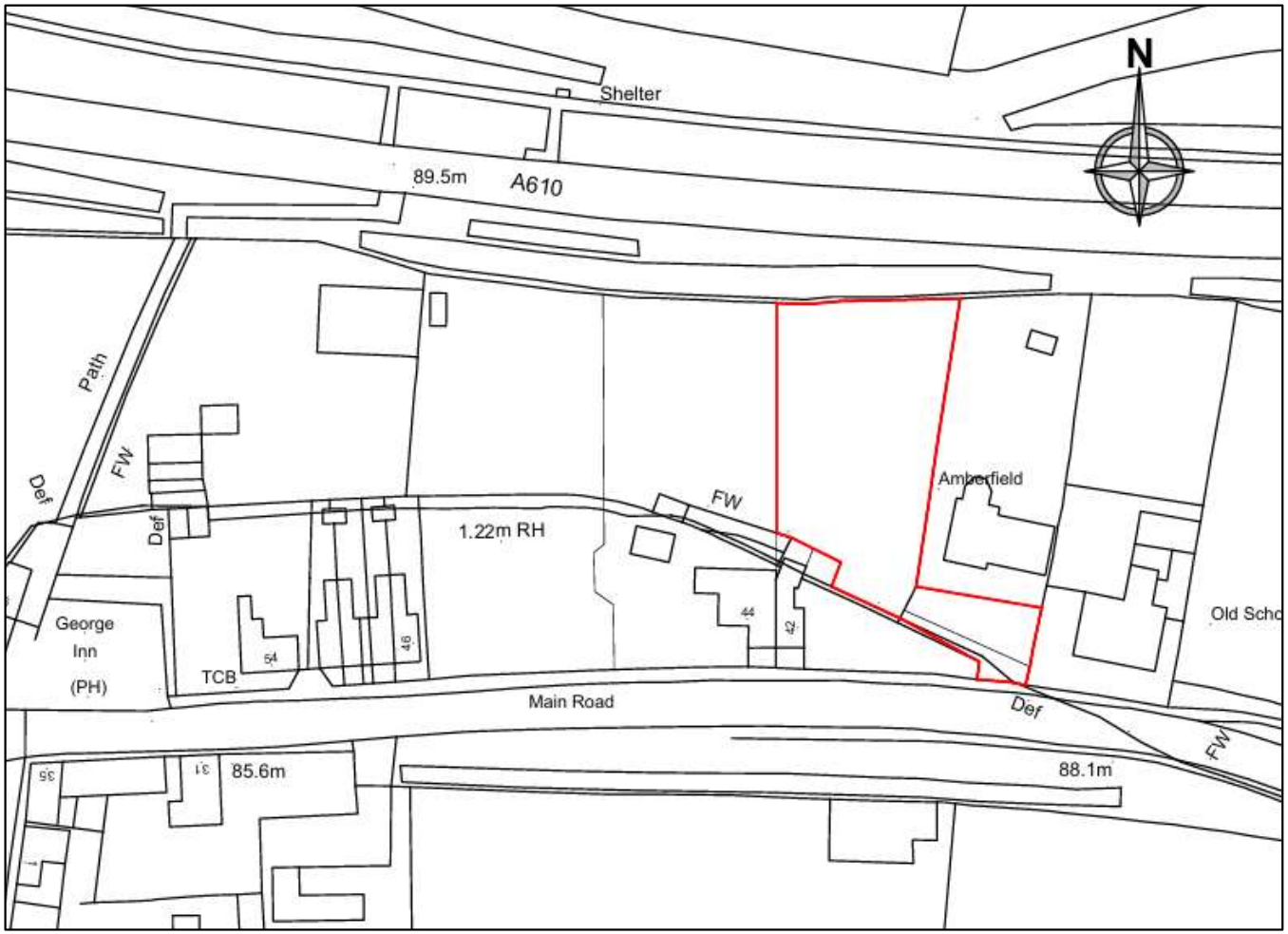
V Evans

Vicky Evans BSc
Senior Geo-Environmental Engineer

Encl.
Appendix A – Site Figures
Appendix B – Exploratory Hole Logs
Appendix C – Permit Closure Summary Form

Appendix A





KEY:

Site Boundary

DO NOT SCALE

Erda Associates ltd

TITLE:

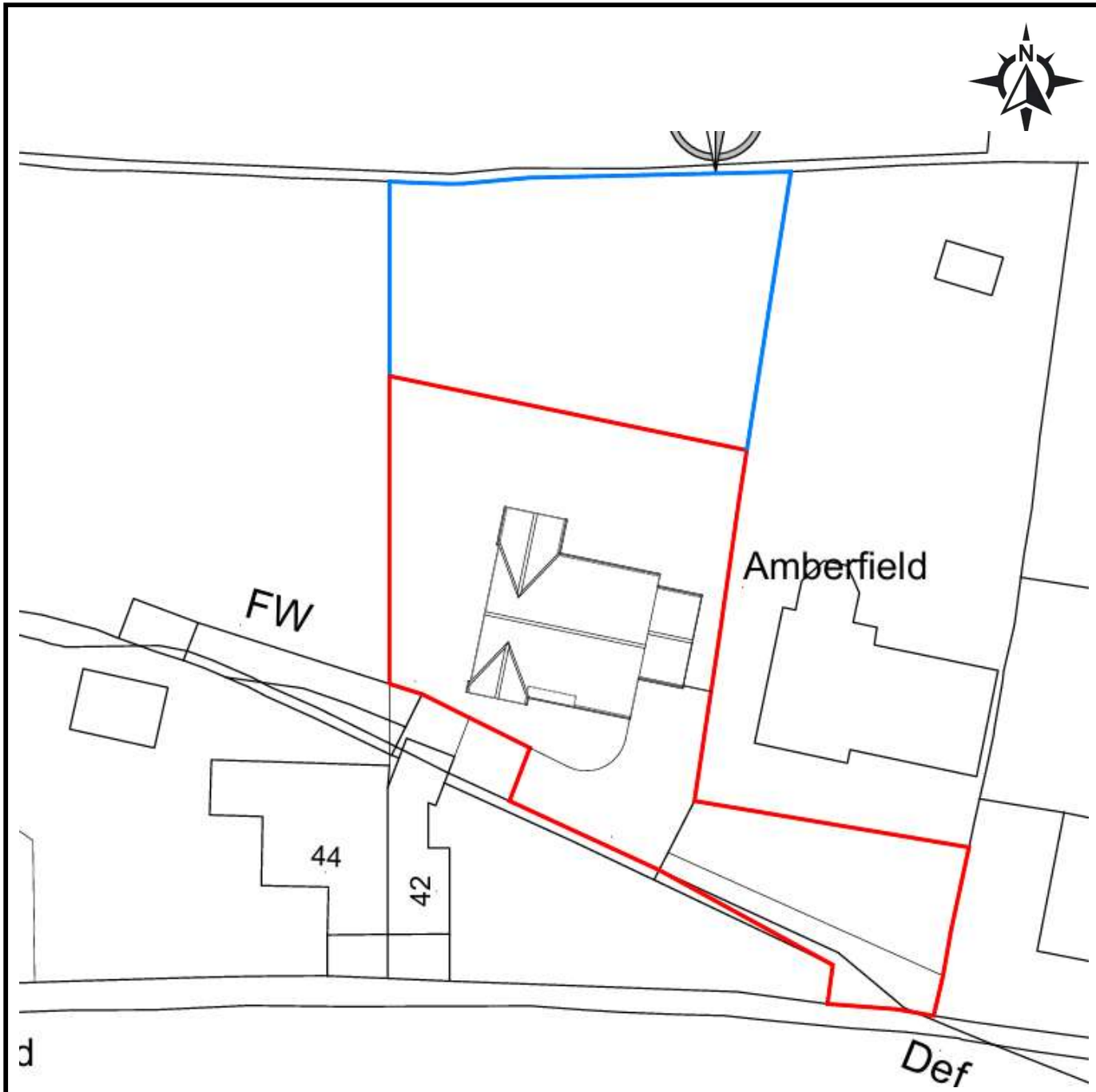
Site Layout

PROJECT:

42 Main Road, Lower Hartshay

PROJECT No:	DATE:
EAL.346.25	12/2025

SCALE :	DRAWN :	DWG No:
NTS	PD	Figure 1



KEY:

DO NOT SCALE

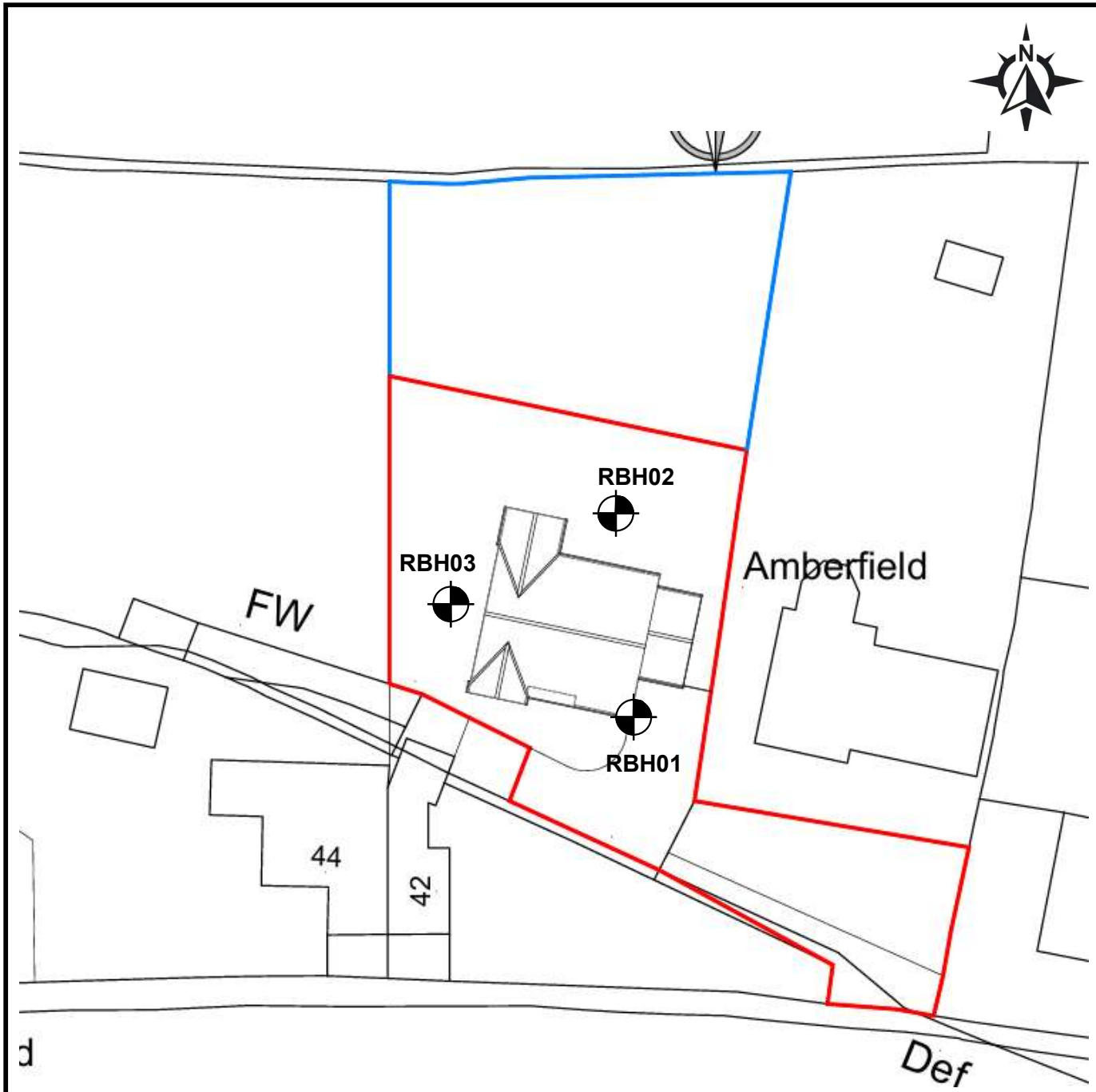
Erda Associates ltd

TITLE:
Development Proposal

PROJECT:
42 Main Road, Lower Hartshay

PROJECT No:	DATE:
EAL.346.25	12/2025

SCALE :	DRAWN :	DWG No:
NTS	PD	Figure 2



KEY:

Rotary Borehole

DO NOT SCALE

erda Associates ltd

TITLE: Proposed Borehole Plan		
PROJECT: 42 Main Road, Lower Hartshay		
PROJECT No: EAL.346.25	DATE: 12/2025	
SCALE : NTS	DRAWN : PD	DWG No: Figure 3

Appendix B

GEO Environmental Engineering

EAL : Main Road, Lower Hartshay, Ripley. RBH01

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / ROP Samples
0.00	0.30	Grass over dark brown sandy TOPSOIL. Some clinker and coal.		
0.30	3.10	Light brown very sandy, silty CLAY with some gravel.		1.50-3.00: 6 mins 3.00-4.50: 9 mins
3.10	5.10	Light brown fine grained muddy SANDSTONE.		4.50-6.00: 12 mins
5.10	7.80	Grey-brown MUDSTONE.		6.00-7.50: 15 mins 7.50-9.00: 15 mins
7.80	19.00	Grey MUDSTONE with occasional sandstone bands.		9.00-10.50: 20 mins 10.50-12.00: 22 mins 12.00-13.50: 25 mins 13.50-15.00: 20 mins 15.00-16.50: 27 mins 16.50-18.00: 25 mins 18.00-19.50: 17 mins
19.00	20.30	Black COAL.		19.50-21.00: 7 mins
20.30	25.10	Grey MUDSTONE with occasional dark grey and carbonaceous bands and coal flashes.		21.00-22.50: 19 mins 22.50-24.00: 22 mins 24.00-25.50: 33 mins
25.10	25.90	Black COAL.		25.50-27.00: 20 mins
25.90	30.00	Grey MUDSTONE with occasional harder light grey sandstone layers. High water back pressure noted below 25.50m.		27.00-28.50: 19 mins 28.50-30.00: 20 mins
		End of borehole. Full flush throughout borehole unless stated in log. Borehole backfilled with bentonite and installed 3.00m slotted/1.00m plain pipe/gas bung and steel cover. No adverse gas detected while drilling.		Hand dug before drilling. Cased to 1.50m.

Site: 42 Main Road, Lower Hartshay, Ripley.
Client: Erda
Client Reference: EAL
Driller: GE
Site Works Date: 20-21/01/2026
Plant: Beretta T21 Tracked rotary rig with water flush

Log Notes:
ROP = Rate of penetration (rotary drilling)
Spt = Standard Penetration test (blows per 300mm n300)
HSV = Hand Shear Vane (result in kN/m^2)
CBR = California Bearing Ratio by Mexe Cone Penetrometer (result as percentage)
LP = Limited Penetration (HSV/CBR)
NP = No penetration (HSV/CBR)
B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub

Website: www.geoenvironmentalengineering.com
Email: info@geoenvironmentalengineering.com
Telephone: 08456 768 895 / 07883 440 186

GEO Environmental Engineering

EAL : Main Road, Lower Hartshay, Ripley. RBH02

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / ROP Samples
0.00	0.25	Grass over dark brown sandy TOPSOIL. Some clinker and coal.		
0.25	2.75	Light brown very sandy, silty CLAY with some gravel.		1.50-3.00: 6 mins
2.75	5.90	Light brown fine grained muddy SANDSTONE.		3.00-4.50: 10 mins 4.50-6.00: 17 mins
5.90	8.00	Grey-brown MUDSTONE.		6.00-7.50: 16 mins 7.50-9.00: 15 mins
8.00	18.30	Grey MUDSTONE with occasional sandstone bands.		9.00-10.50: 14 mins 10.50-12.00: 19 mins 12.00-13.50: 22 mins 13.50-15.00: 25 mins 15.00-16.50: 19 mins 16.50-18.00: 21 mins 18.00-19.50: 7 mins
18.30	19.55	Black COAL.		
19.55	24.35	Grey MUDSTONE with occasional dark grey and carbonaceous bands and coal flashes.		19.50-21.00: 21 mins 21.00-22.50: 19 mins 22.50-24.00: 47 mins 24.00-25.50: 15 mins
24.35	25.20	Black COAL.		
25.20	30.00	Grey MUDSTONE with occasional harder light grey sandstone layers. High water back pressure noted below 25.50m.		25.50-27.00: 16 mins 27.00-28.50: 24 mins 28.50-30.00: 22 mins
		End of borehole. Full flush throughout borehole unless stated in log. Borehole backfilled with bentonite and installed 3.00m slotted/1.00m plain pipe/gas bung and steel cover. No adverse gas detected while drilling.		Hand dug before drilling. Cased to 1.50m.

Site: 42 Main Road, Lower Hartshay, Ripley.
Client: Erda
Client Reference: EAL
Driller: GE
Site Works Date: 20/01/2026
Plant: Beretta T21 Tracked rotary rig with water flush

Log Notes:
ROP = Rate of penetration (rotary drilling)
Spt = Standard Penetration test (blows per 300mm n300)
HSV = Hand Shear Vane (result in kN/m^2)
CBR = California Bearing Ratio by Mexe Cone Penetrometer (result as percentage)
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NP = No penetration (HSV/CBR)
B = Bulk Bag, J = Amber Glass Jar, T = Plastic Tub

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GEO Environmental Engineering

EAL : Main Road, Lower Hartshay, Ripley. RBH03

Depth From (m)	Depth To (m)	Strata Description	Legend	Testing / ROP Samples
0.00	0.25	Grass over dark brown sandy TOPSOIL. Some clinker and coal.		
0.25	2.60	Light brown very sandy, silty CLAY with some gravel.		
2.60	5.50	Light brown fine grained muddy SANDSTONE.		3.00-4.50: 7 mins 4.50-6.00: 9 mins
5.50	7.50	Grey-brown MUDSTONE.		6.00-7.50: 10 mins 7.50-9.00: 6 mins
7.50	18.10	Grey MUDSTONE with occasional sandstone bands.		9.00-10.50: 15 mins 10.50-12.00: 27 mins 12.00-13.50: 23 mins 13.50-15.00: 19 mins 15.00-16.50: 23 mins 16.50-18.00: 15 mins 18.00-19.50: 5 mins
18.10	19.35	Black COAL.		
19.35	24.00	Grey MUDSTONE with occasional dark grey and carbonaceous bands and coal flashes.		19.50-21.00: 28 mins 21.00-22.50: 19 mins 22.50-24.00: 17 mins 24.00-25.50: 13 mins
24.00	24.80	Black COAL.		
24.80	30.00	Grey MUDSTONE with occasional harder light grey sandstone layers. High water back pressure noted below 25.00m.		25.50-27.00: 14 mins 27.00-28.50: 20 mins 28.50-30.00: 20 mins
		End of borehole. Full flush throughout borehole unless stated in log. Borehole backfilled with bentonite and installed 3.00m slotted/1.00m plain pipe/gas bung and steel cover. No adverse gas detected while drilling.		Hand dug before drilling. Cased to 2.00m.

Site: 42 Main Road, Lower Hartshay, Ripley.
Client: Erda
Client Reference: EAL
Driller: GE
Site Works Date: 19/01/2026
Plant: Beretta T21 Tracked rotary rig with water flush

Log Notes:
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Appendix C

Mining Remediation Authority

Permit Closure Summary Form

Permit Ref.	30984	Project / Site Location	42 Main Road, Lower Hartshay, Derbyshire, DE5 3RP

Please supply all relevant documents, including this completed form within 3 months of the permitted works being completed.

Where relevant the report should include; borehole logs and details of mine or mine entry treatment works carried out (incl. engineering drawings, grout takes etc.) and a scaled site layout plan (correlated to O.S N' Grid) showing all relevant mine entry positions, coal seams, voids and broken ground proved by the works.

Summary of works **Start date** 20.01.26 **Finish date** 22.01.26

Have any variations occurred? ☒ No ☐ Yes **If so was the Authority notified?** ☐ No ☐ Yes

Please describe;

Did if any of the following incidents occur?

☐ Spontaneous combustion ☐ Water emission ☐ Gas emission (elevated or above action levels)
☐ Geotechnical instability ☐ Legal issues incl. damage or potential claims ☒ **None**

If yes, please detail each item;

Were any of the following encountered? Please give a brief summary of the works undertaken.

☒ Intact coal only ☐ Broken ground ☐ Backfilled ground ☐ Voids

Description;

Will further works be necessary that require a Permit? ☒ No ☐ Yes

If yes, please describe, including any recommendations;

Name: Vicky Evans	**Email:** v.evans@erda-ltd.co.uk
Company: Erda Associates Ltd	**Tel:** 07531 051197