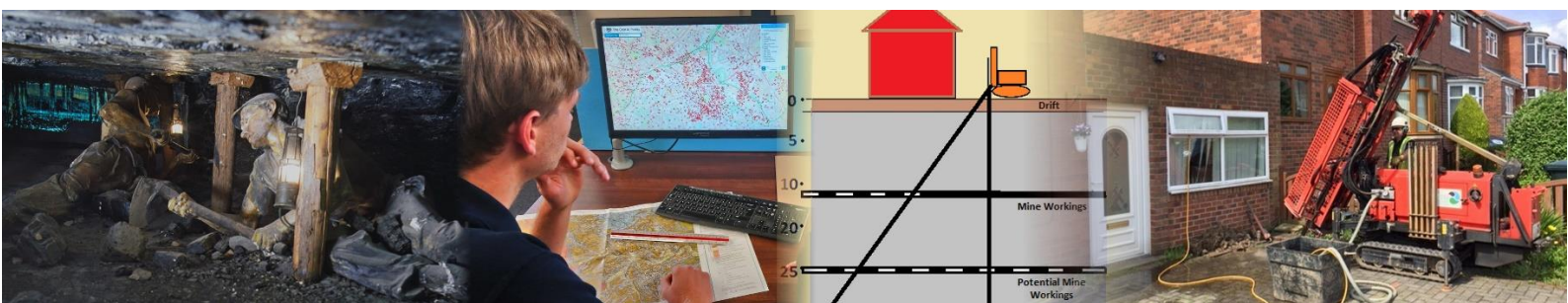




GEOLOGICAL
GEOTECHNICAL
GEOENVIRONMENTAL
CONSULTANCY
DRILLING & DATA ACQUISITION



GEOINVESTIGATE LIMITED

Coal Mining Risk Assessment (CMRA)

LOCATION	Land Adjacent to 53 Mill Street, Frizington CA26 3SL
ISSUE DATE	30 June 2022
FOR	Laurie Crayston
CLIENT REF.	
OUR REF.	G22250a

Prepared by

Checked by

Ross Nicolson BSc (Hons) MSc (Eng) CEng MIMMM
Principle Geotechnical Engineer

Fay Morgan MGeol (Hons) FGS
Senior Geoenvironmental Engineer

SUMMARY FINDINGS

OUTCOME MITIGATION REQUIRED NO/YES

Yes. Owing to the nearby proximity of a coal mine shaft to the development the client has been advised to carry out longer term monitoring in specially installed gas wells as part of the further shallow geoenvironmental investigation of the site. This work is scheduled to be carried out in the next few weeks at the property.

In our opinion even if the gas monitoring results are favourable the new dwelling should as a precaution be fitted with basic gas protection measures commensurate with Characteristic Situation **CS2 of CIRIA publication C655 – ‘Assessing risks posed by hazardous ground gases to buildings’**. In our opinion in this instance the design should preferably incorporate suspended floor with a passively vented under floor void and gas proof membrane.

This CMRA has shown that surface ground stability at the site is not impacted by the presence of historical mine working below it or the presence within the property of a capped mine entry.

In conclusion, with respect to coal mining legacy ground stability issues we see no reason why planning permission should not be granted for the proposed development.

However, further routine shallower geotechnical/geoenvironmental site investigation is required to enable foundation design and to survey the property for ground contamination and ground gases. Geoinvestigate would be pleased to provide a quote for this service.

WHAT TO DO NEXT

Nothing further required with respect to coal mining legacy ground stability issues.

Further routine shallower geotechnical/geoenvironmental site investigation is required to enable foundation design and survey the property for contamination and ground gases. Geoinvestigate would be pleased to provide a quote for this service.

1. CMRA INTRODUCTION

Site Location and Description

The approximate centre of this site is at National Grid Reference E 303062, N 517471 with elevation of approximately 131m AOD. The boundary shown RED on the Coal Authority (CA) report provided in Appendix A corresponds with the planning application area.

Google Satellite and Street View imagery shows the site comprises a benched/platformed grassy slope including two existing barns located on flatter ground. The property includes a short section of hedge, a few small trees, and an access track from Mill Street. Existing row housing is present to the south of the site (See images in Appendix B).

Proposed Development

It is proposed to erect a new single cottage/bungalow dwelling upslope to the north-west of the existing barns and install solar panels on the roof of one barn. Excavation of the slope to a depth of around 3m or so is required to provide space for the new dwelling. Site location and development plans are provided in Appendix C. The plan shows the approximate position of Frizington No 1 Coal Mine Shaft (capped in 2013) in relation to the proposed development. According to this plan the new house lies some 21.5m from the shaft. It is understood that Laurie Crayston's father (a former miner) assisted in the capping of the shaft in 2013 and the clients know more or less exactly where the shaft is located on their property. Geoinvestigate has no reason to doubt this.

Historical Development

The OS map record from 1863 shows the site as undeveloped farmland. By 1899 a single barn and a mine spoil heap are established within the property with row housing to the south of it. A second barn is present by 1991. The site has remained largely unchanged since save that the spoil heap may have been reduced in height or 'flattened' at some time in the past.

The OS map record provides evidence that the site has been subject to surface mining activity.

A brief, limited desk top inspection of buildings, roads and walls in the site vicinity using Google Street View found no obvious visible surface evidence indicative of mining subsidence.

Risk Methodology Applied: This document and the risk assessment methodology adopted herein is based on CA publication RISK BASED APPROACH TO DEVELOPMENT MANAGEMENT - GUIDANCE FOR DEVELOPERS Version 3, 2014 and Version 4 - 2017. The template contained therein is adopted with minor amendments made by Geoinvestigate Limited.

2. ASSESSMENT OF SITE-SPECIFIC COAL MINING ISSUES

The table below summarises the potential risks associated with coal mining legacy for the proposed development site, identified from list sources of information.

Coal Mining Issues	Yes	No	Risk Assessment/Remarks
Past underground coal mining	Yes		2.1.1 (refer below)
Probable unrecorded shallow workings		No	2.1.2
Spine roadways at shallow depth		No	
Mine entries	Yes		2.1.3
Outcrop		No	
Geological faults, fissures and breaklines		No	
Opencast Mines		No	
Coal Mining Subsidence		No	
Mine Gas		No	2.1.4
Site investigations		No	

Note: For those coal mining issues above identified as “Yes” or highlighted “YELLOW” a more detailed discussion and assessment are made of the risks to the application site and the proposed development.

2.1 DETAILED DISCUSSION & ASSESSMENT RESPONSE

2.1.1 Past Underground Mining

According to the Coal Authority report in Appendix A, recorded/past underground mine working has occurred beneath the property at a depth of 83m within the Slatey Coal seam, which dips 8.7 degrees to the north-east, with extraction thickness of 142cm. In our opinion such working lies too deep to impact surface ground stability in the development area therefore the development is safe in this regard.

An extract of an historical mine plan provided by Laurie Crayston showing Frizington Colliery Shaft within the site at coordinates E 303080, N 517438 is presented in Appendix D. The site and this shaft are shown in the top right corner of the plan. The plan records the 4 Foot & 5 Foot Coals at Frizington Pit to the east of the property at 37 & 47 fathoms respectively or 67.7m and 86m depth.

The plan appears to indicate the presence of recorded underground working in the ‘Cleator Moor 4 Foot Coal’ below the site. The spoil heap and a single barn are shown on the plan within the site. The date of the plan is unknown.

2.1.2 Probable Unrecorded Shallow Workings

According to the CA report the site does not fall within an area of probable unrecorded shallow workings. The CA define Probable Unrecorded Shallow Workings as “Areas where the Coal Authority believes there to be unrecorded coal working that exist at or close to the surface” (i.e., less than 30m). However, the site does fall within what the coal authority considers as “Development High Risk Area”.

The location of the site is shown on the extract of the BGS geological map presented in Appendix E. The tentative elevation of the site relative to the vertical geology column is shown below the map. The drift/soil horizon above the solid geology bedrock is not shown on the column.

The geology map shows the site is underlain by Whitehaven Sandstone of unknown thickness. The map suggests that drift/soil cover is largely absent, bedrock lying at or near surface at this locality perhaps below thin soil cover.

BGS borehole log NY01NW/158 presented in Appendix F is the record of the sinking of Frizington Colliery No 1 Shaft (CA ref 303517-007) located towards the southern margin of the site. According to this log drift/bedrock depth is 3.7m and the top of the Cleatmoor 4ft and 5ft coals occur at depths of 66.6m and 81.5m respectively the latter perhaps corresponding with recorded working at 83m in the CA report.

No other shallower coal seams are identified on the log and no coal seam working shallower than 66m is expected below the property. Similarly, the CA report concludes that no probable unrecorded shallow working is present beneath the site.

The log ends with a description of the 2.74m deep 'Sump' to collect water excavated at the bottom of the shaft which is measured at 86.1m depth.

In our opinion there perhaps remains some uncertainty whether log 158 belongs to the shaft located within the site however for the purpose of this CMRA it is assumed it does.

2.1.3 Mine Entries

The CA report identifies a single mine shaft (303517-007) towards the southern margin of the property at grid reference 303082, 517438. The mining plan in Appendix D places the shaft a little further upslope. According to the CA report this shaft was located and capped at rock-head by Egremont Mining Co Ltd in 2013. The 6m by 0.6m thick cap was comprised of steel beams, mesh reinforcement and concrete.

The historical map record indicates the shaft was sunk post 1862 and was perhaps no longer in use by 1889. It is possible that material from the spoil heap that previously occupied the site slope was used to infill the shaft this however is speculation.

It is understood that the treatment description for shaft 007 has recently been changed by the CA in 2022. Previously in January 2022 when Geoinvestigate were initially contacted by the client it is understood that owing to a dispute/misunderstanding between the parties the CA would not recognise the shaft capping works carried out in 2013 by Laurie Crayston's father and the Egremont Mining Company. Previously the CA had allocated the shaft a departure/positional uncertainty of 8m though the exact position of the shaft was known to the clients who had found and capped it themselves.

On receiving further information from the clients including photographs of the 2013 capping works and confirmation that the works had been designed and carried out under the supervision of (Mister) Gilbert Finlinson a renowned and highly respected mining engineering expert Geoinvestigate advised the clients to once again petition the CA to accept the 2013 shaft capping works and ask them to revise their records accordingly.

Ross Nicolson is professionally acquainted with the work of Mister Finlinson who is both mine owner & mining manager, mining engineer and mine captain at Florence Haematite Mine, Egremont, Cumbria also with considerable overseas mining experience. In my opinion few in the UK today share Gilberts very considerable expert practical mining experience. In my opinion based on the photographs I reviewed and the knowledge that the works were undertaken by the Egremont Mining Company under his supervision I have no hesitation in accepting that the capping work was done competently, and the shaft has subsequently been made safe with regard to ground stability issues. Consequently, the shaft poses no further ground stability risk to the proposed development within the site.

Photographs of the capping works provided by the client are included in Appendix G. Gilbert Finlinson is shown watching the pouring of the concrete and middle in last image.

The current revised CA report now describes the capping works carried out in 2013 by the Egremont Mining Company.

According to Laurie Crayston the shaft departure has subsequently been reduced by the CA from 8m in January 2022 to 3m currently though the CAs online record still has to be adjusted in this respect. Extracts of the CAs earlier and current online information on the shaft is presented in Appendix H.

While the CA report now agrees that the shaft has been capped it does not mention that the shaft was found to be infilled before it was capped.

Other remaining contradictions regarding the CAs current online shaft information appear to include its depth of 146m whereas the original shaft sinking journal records 86m while the actual circular shaft diameter measured in 2013 is 10 feet or 3.05m rather than the 2.5m assumed by the CA. However, the drift depth of 3.7m recorded by the CA agrees with the 9 feet of the shafting sinking log 158 obtained from the BGS record. Perhaps these differences still need to be reviewed by the CA.

The differences between the shaft depths provided by the shaft sinking log of 86m the CA record of 146m and the BGS record of length 158.77m raise some uncertainty about whether BGS log 158 belongs to the site. The BGS also provide different coordinates for this log at 303060, 517460 placing it much further north within the site and right next to the new house. Clearly the BGS shaft coordinates are incorrect as the shaft was found further south.

In our opinion as the shaft position is known accurately and drift/bedrock depth is 3.7m or thereabouts adjacent to it then most of the new development including particularly the new house lie beyond its zone of influence calculated to be 5m to < 10m. In our opinion because the shaft is infilled and capped it will have no impact on the stability of the adjacent proposed section main sewer line and new site access track where both approach close to it.

Therefore, in our opinion this capped mine entry poses no risk to any part of the proposed development in terms of ground stability.

However, the 2013 mine shaft capping images suggest the concrete cap was not fitted with a gas vent pipe.

2.1.4 Mine Gas

No mine gas incident or remediation is recorded within 500m of the proposed development and typically, in the UK mine gas is Low risk. Consequently, in this instance the risk from mine gas is assessed to be low from underground coal seam mine working located at depth below the site.

However, in our opinion in this instance the mine gas risk is raised owing to the close proximity of a coal mine shaft providing a potential pathway to surface for mine gas and the absence of a gas vent pipe through the cap.

Owing to the perceived raised gas risk Geoinvestigate has previously advised the client to carry out longer term monitoring in specially installed gas wells as part of the shallower geoenvironmental investigation of the site. This work is scheduled to be commenced in the next few weeks.

In our opinion even if the gas monitoring results are favourable the new dwelling should as a precaution be fitted with basic gas protection measures commensurate with Characteristic Situation **CS2 of CIRIA publication C665 – ‘Assessing risks posed by hazardous ground gases to buildings’**. In our opinion in this instance the design should preferably incorporate suspended floor with a passively vented under floor void and gas proof membrane.

3. SUMMARY AND OUTCOME

This CMRA has shown the proposed development is unlikely to be impacted by surface ground instability arising from historical underground coal mining legacy and that capped mine shaft 303517 – 007 within the site has no impact on ground stability either. Consequently, no further mitigation is required with regard to mining related ground stability issues.

While in our opinion mine gas is unlikely to pose a hazard to the new development given the nearby proximity of an unvented coal mine shaft it is recommended that longer gas monitoring is carried out in specially installed gas wells as part of the scheduled forthcoming shallower geotechnical/geoenvironmental investigation of the site both for foundation design and ground contamination checking.

In our opinion even if the gas monitoring results are favourable the new dwelling should as a precaution be fitted with basic gas protection measures commensurate with Characteristic Situation **CS2 of CIRIA publication C665 – ‘Assessing risks posed by hazardous ground gases to buildings’**. In our opinion in this instance the design should preferably incorporate suspended floor with a passively vented under floor void and gas proof membrane.

On the basis of the CMRA work to date, we are of the opinion that the mining stability and mine gas risks posed by the strata beneath this site from coal mining legacy can be mitigated by routinely adopted measures and should not preclude planning permission being registered with regard to coal mining legacy issues.

In conclusion, we see no reason why Planning Permission should not be granted in the interim with respect to coal mining legacy issues and that the further site investigation works recommended in this report form a condition on the planning approval.

Appendices:

- A. CA Consultants Coal Mining Report issued 24 June 2022 ref. 51003213985001
- B. Site images.
- C. Proposed development plan.
- D. Extract of historical mine plan.
- E. Extracts of BGS Geology Map, Sheet 28 - Whitehaven at 1:50000 scale.
- F. BGS borehole log.
- G. Images of 2013 shaft capping works.
- H. Extracts of CA online interactive map with shaft details.

APPENDIX A
COAL AUTHORITY REPORT



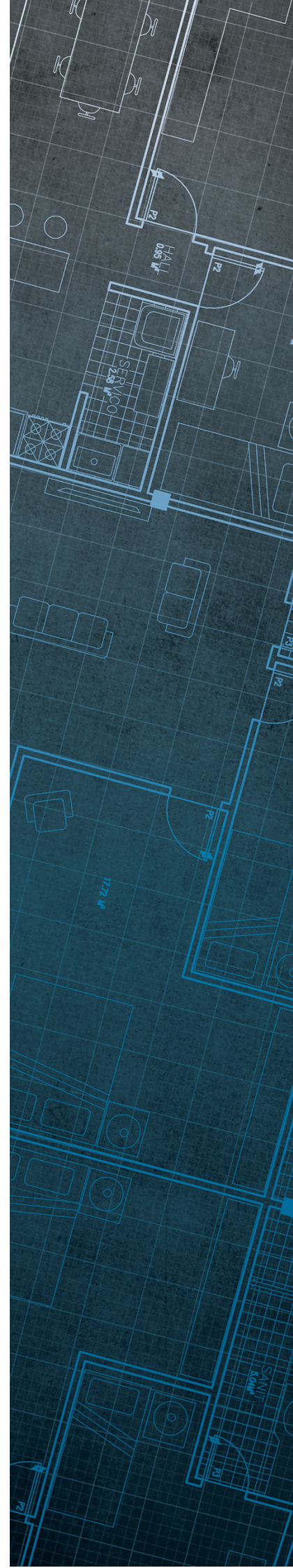
The Coal
Authority

Consultants Coal Mining Report

Land At Mill Street
Frizington
Cumbria
CA26 3SL

Date of enquiry:	24 June 2022
Date enquiry received:	24 June 2022
Issue date:	24 June 2022

Our reference:	51003213985001
Your reference:	G22250a



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

GEOINVESTIGATE

Enquiry address

Land At Mill Street
Frizington
Cumbria
CA26 3SL

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

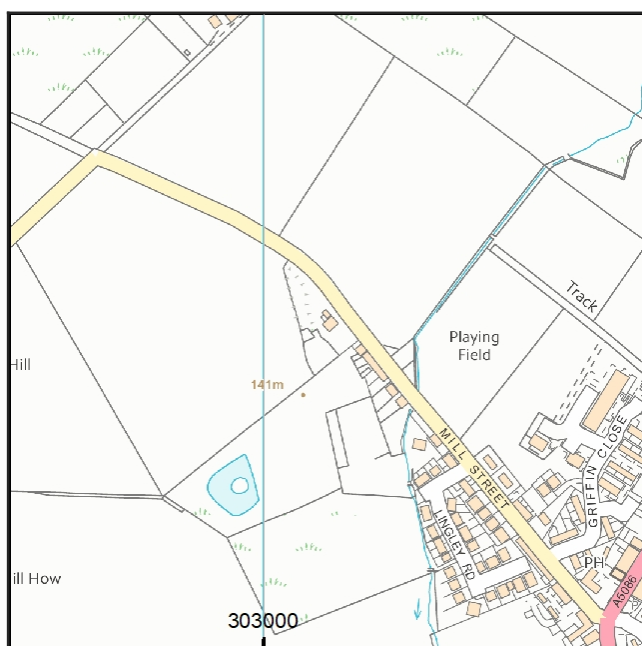
www.groundstability.com

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 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	SLATEY	Coal	007X	83	Beneath Property	8.7	North-East	142	1863

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	303517-007	303082 517438	Shaft located and capped at rock-head by Egremont Mining Co Ltd in 2013. The 6m by 0.6m thick cap was comprised of steel beams, mesh reinforcement and concrete	Coal	

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

NC176	PO0	NW1299
2921		

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

No outcrops recorded.

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices

Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land

Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

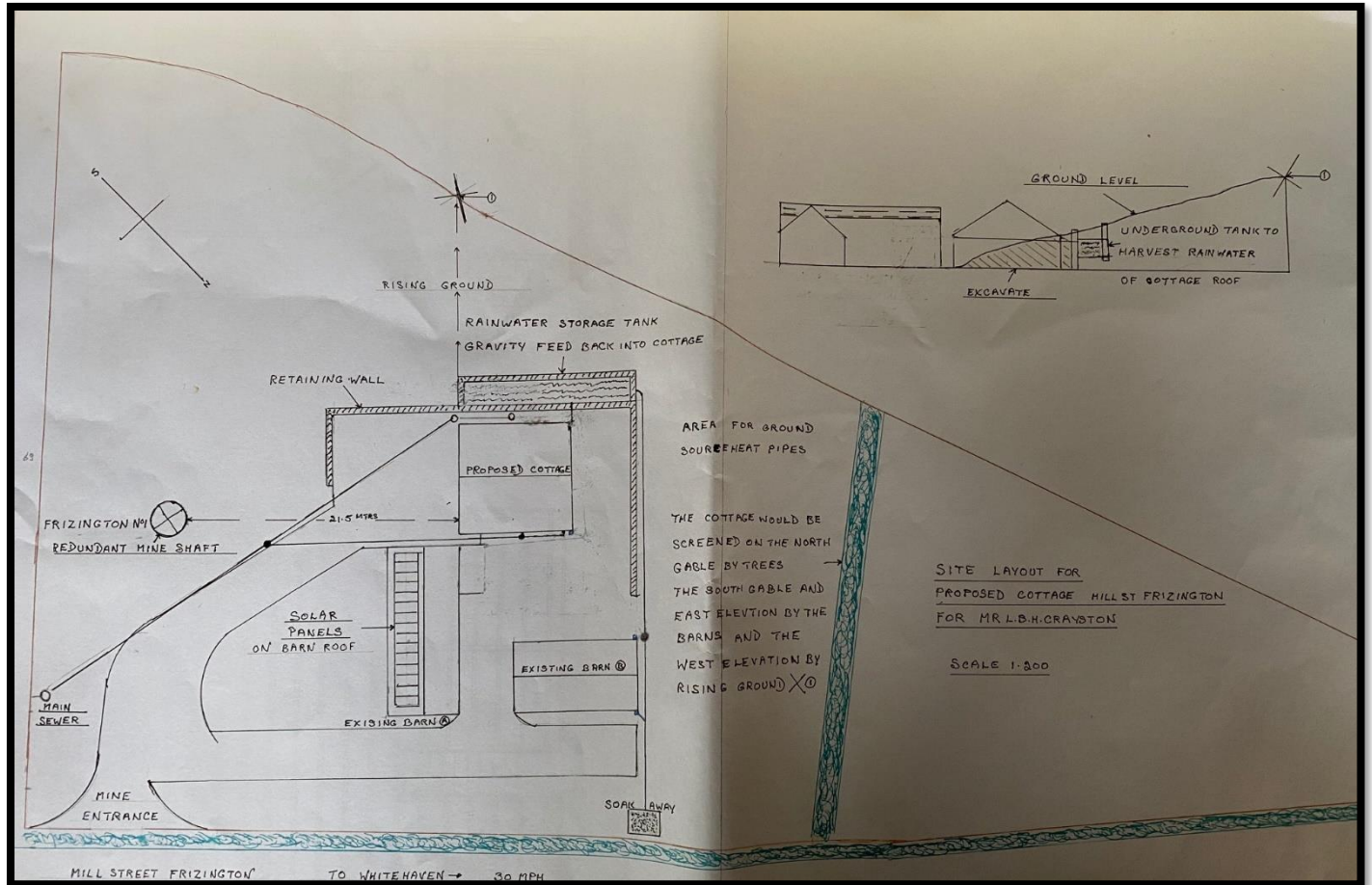
0345 762 6848 (UK)
+44 (0)1623 637 000 (International)
www.groundstability.com

APPENDIX B SITE IMAGES

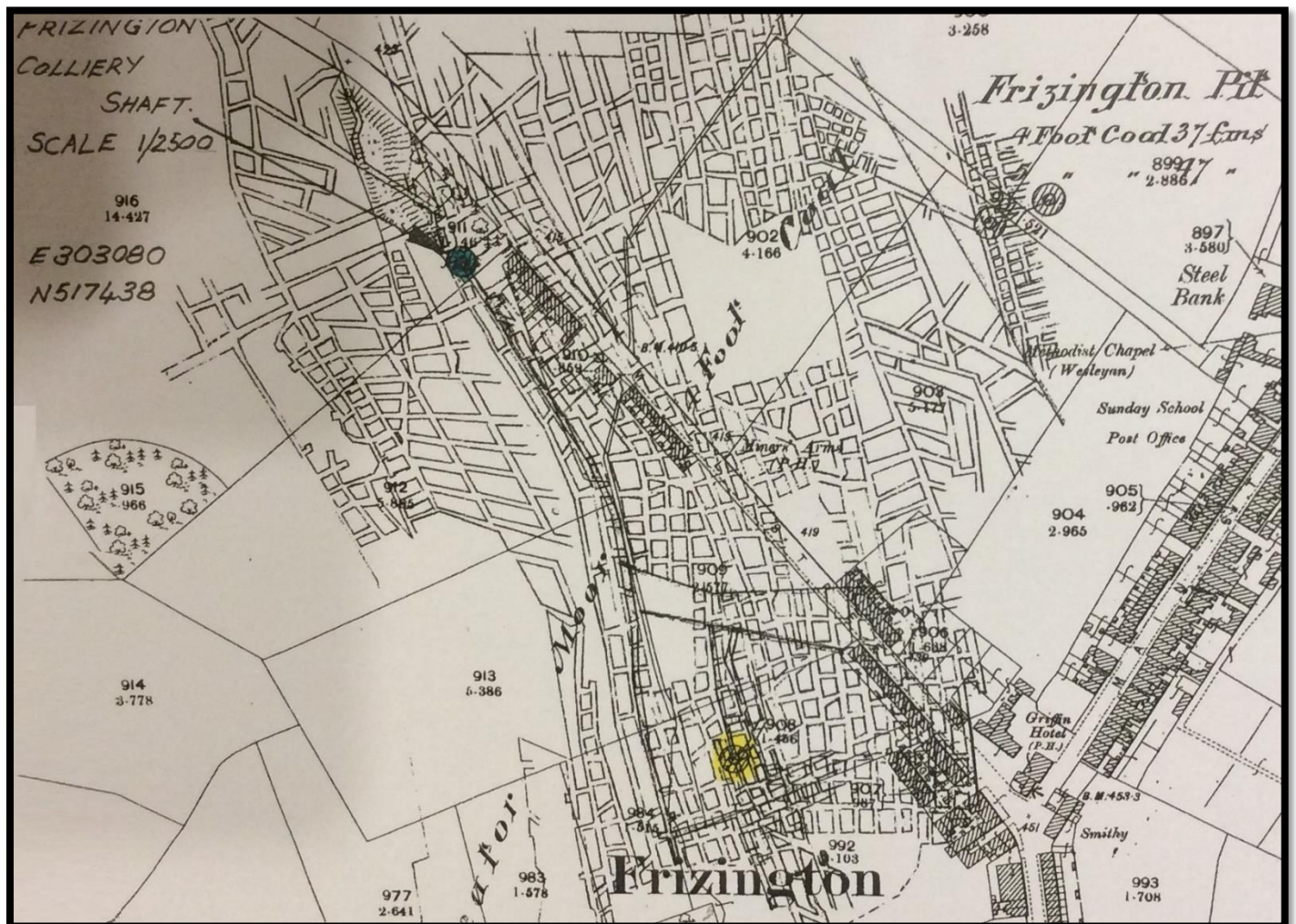


APPENDIX C

PROPOSED DEVELOPMENT PLAN

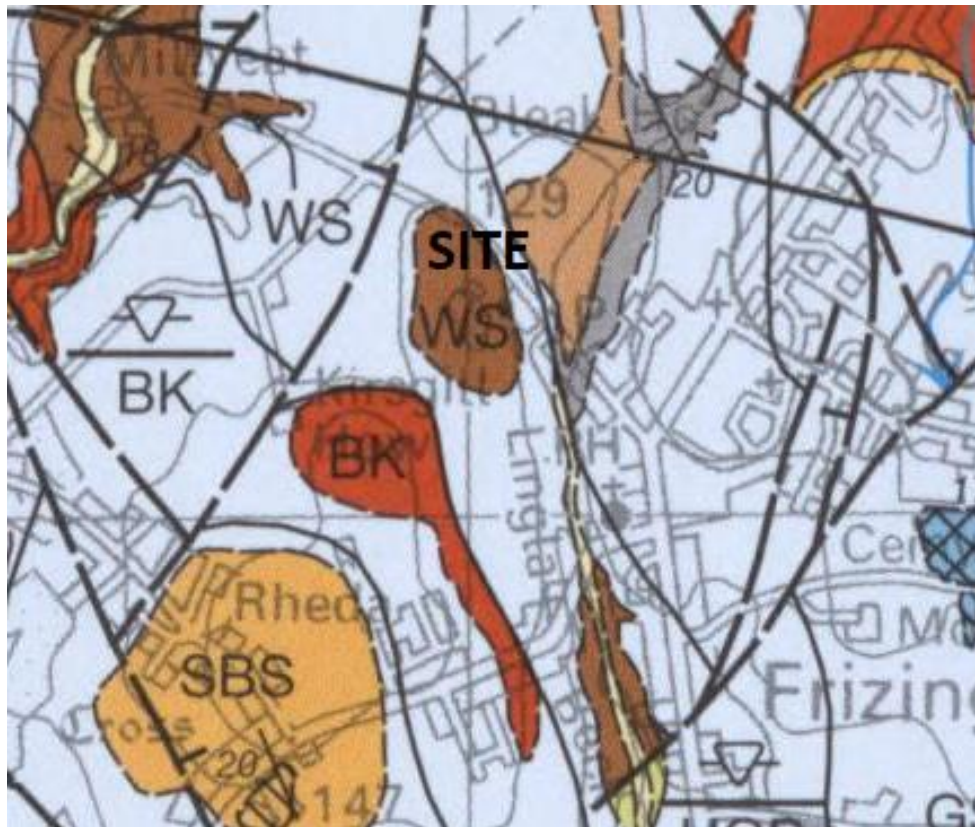


EXTRACT OF HISTORICAL MINE PLAN

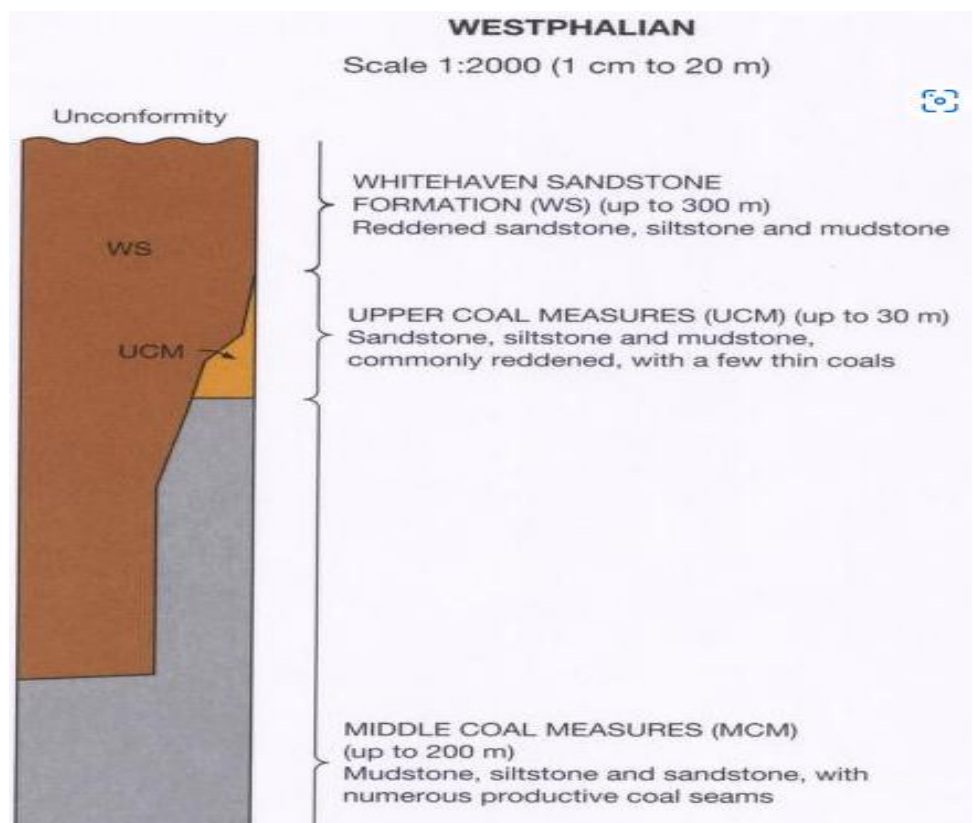
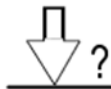


APPENDIX E

EXTRACT OF BGS GEOLOGY MAP



Tentative elevation of site
relative to vertical
geology section



APPENDIX F

BGS BOREHOLE LOG

JUMBLED		NY 01 NW 158	
Journal of sinking at Hayston Colliery		No. Hayston Ho. 6715 E. END	
British Geological Survey		NY 01 NW 158	
Soil & clay		12	12
Shale, brown & red coloured		9	21
Freestone, red coloured & shivery		14	35
Shale, red coloured		27	62
Fireclay		2	64
Brown comes with ironstone modules		37	102
Freestone very hard		1	103
Strong brown comes with sandstone		25	128
Comes with freestone bars		4	133
Brown claes, very soft		2	136
Freestone with ironstone girdles		3	139
Brown & red parting		"	139 1/2
Freestone, coarse & very hard		29	169 1/2
Grey metal mixed with cash		3	172 8 1/2
Freestone very hard		1	174 5 1/2
Dark blue claes mixed with limestone balls		14	189 1 1/2
Cash		1	190 2 1/2
Coal, sparrey		"	190 6 1/2
Light grey sill		2	193 5 1/2
Strong dark blue comes with girdles and ironstone bars		21	215 2 1/2
Blue comes, very dark		2	217 1 1/2
Coal		"	218 7 1/2
Grey metal		"	219 4 1/2
Stone Coal		"	219 10 1/2
Dark metal		"	220 8
Coal, good		1	222 3 1/2
Cash		"	222 7
Light grey metal		3	225 8

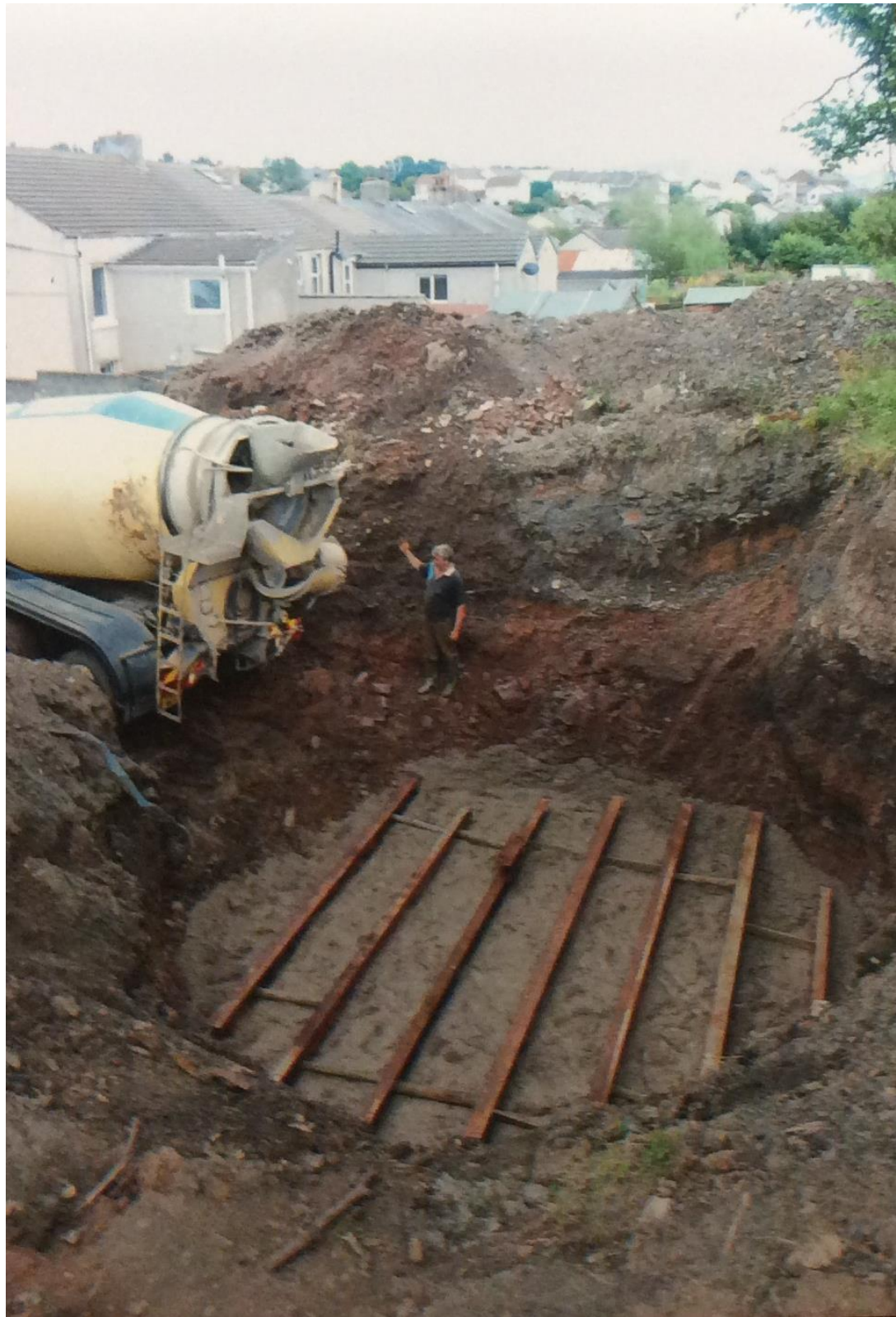
CUM'D B'D ~~67NE21~~ NY 01 NW 158 ~~21~~

British Geological Survey	Freestone	British Geological Survey	225	8
	Flakes or freestone bands		1 5	227 1
	Dark blue comes		1 3	228 4
	Strong grey flakes		12 10	241 2
	Freestone, grey-		1 5	242 7
	Dark blue comes.		9 3	251 8
	Soft silt parting		7 11	259 3
	Light blue metal or comes		" 6	260 3
	Very dark metal	267.6 226.2 41.4	7 1	267 4
British Geological Survey	Coal, good	3.9	" 2	267 6
	Fire clay		3 9	271 3
	Coal	Cleat below 2	" 8 1/2	271 1 1/2
	Metal parting	5 ft	" 2	272 1 1/2
	Coal	3 1/2	" 2	272 3 1/2
	Metal		" 3 1/2	272 7
	Coal		" 4	272 11
	Strong grey metal sunk below seam for	91.05 2.87	" 6	273 5
	blump		9 "	285 5
British Geological Survey		British Geological Survey		
British Geological Survey		British Geological Survey		

APPENDIX G
IMAGES OF 2013 SHAFT CAPPING WORKS











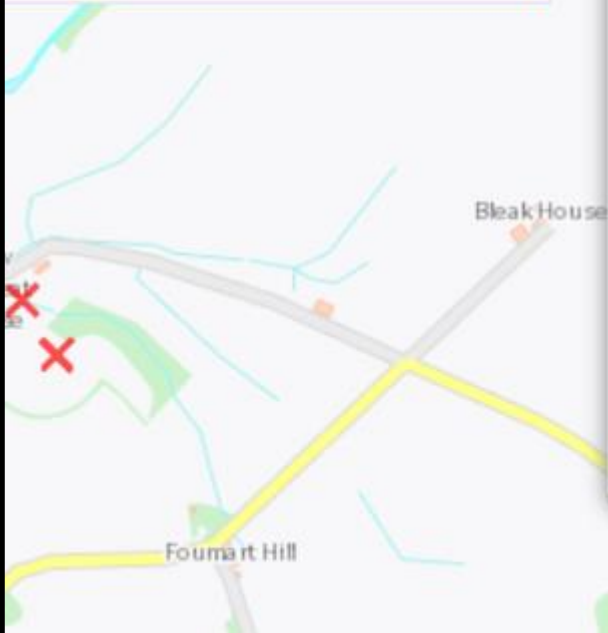
APPENDIX H

EXTRACTS OF CA INTERACTIVE MAP

JANUARY 2022 – CA ONLINE SHAFT DETAILS

Coal Authority

ca263tf



Mine Entry

Verified: TRUE
Mineral: Coal
Conveyed: FALSE
Adit Angle: Null
Reference: 303517-007
Treated: TRUE
Date of Conveyance: Null
Mine Entry Type: Shaft
Assumed Shaft Diameter: 2.5
Actual Shaft Diameter: Null
Shaft Depth: 146
Date of Treatment: Null
Drift Thickness: 3.7
Name: Boghole Pit
Opencast Flag: FALSE
Colliery Name: Null
Departure: 8
GLOBALID: 88FCB0EB-2744-4767-BA1E-C8962D7DF95B
[Zoom to](#)

CURRENT – CA SHAFT DETAILS 29/06/2022

Authority

Coal Mining Data

Results

Mine Entry

Verified: TRUE
Mineral: Coal
Conveyed: FALSE
Adit Angle: Null
Reference: 303517-007
Treated: TRUE
Date of Conveyance: Null
Mine Entry Type: Shaft
Assumed Shaft Diameter: 2.5
Actual Shaft Diameter: Null
Shaft Depth: 146
Date of Treatment: Null
Drift Thickness: 3.7
Name: Boghole Pit
Opencast Flag: FALSE
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100%
Transparency

Key