enviro|solution

Coal Mining Risk Assessment

Higham Cricket Club

Pog Well Lane

Higham

Barnsley

S75 1PH

Date: 26th March 2026

Version 1

ENVIROSOLUTION LTD

Suite 53
3a Bridgewater Street
Liverpool
L1 0AB

enviro|solution

EnviroSolution Ltd

Document Verification

Site Address	Higham Cricket Club, Pog Well Lane, Higham, Barnsley, S75 1PH		
Report Title	Coal Mining Risk Assessment		
Job Number	ES04084	Document Ref.	ES04084
Date Issued	26th March 2026	Report Version	1
Prepared by	Tom Craig BSc MSc FGS	Signature	[redacted]
Checked by	Phil Shelton PhD BSc CEng MIMMM FGS	Signature	[redacted]

Disclaimer

This report has been prepared by EnviroSolution Ltd who has exercised such professional skill, care and diligence as may reasonably be expected of a properly qualified and competent consultant experienced in preparing reports of a similar scope.

However, to the extent that the report is based on or relies upon information contained in records, reports or other materials provided to EnviroSolution Ltd, which have not been independently produced or verified, EnviroSolution Ltd, gives no warranty, representation or assurance as to the accuracy or completeness of such information.

Table of Contents

Appendices

1 Introduction

1.1 Site Location and Description

The site for a proposed residential development is located at Higham Cricket Club, Pog Well Lane, Higham, Barnsley, S75 1PH. The British National Grid Reference for the approximate site centre is GR: 430990 407265.

The site is roughly rectangular in shape, tapering to the south and covers an approximate area of 380m^2.

The site is currently occupied by the existing cricket clubhouse / pavilion. The site is accessed directly from Pog Well Lane, with a private access track providing connections for both vehicles and pedestrians.

The site is generally flat at an approximate elevation of 130m aOD. The topography of the surrounding area slopes towards the west and northwest.

A plan showing the location of the site is presented in **Figure 1**.

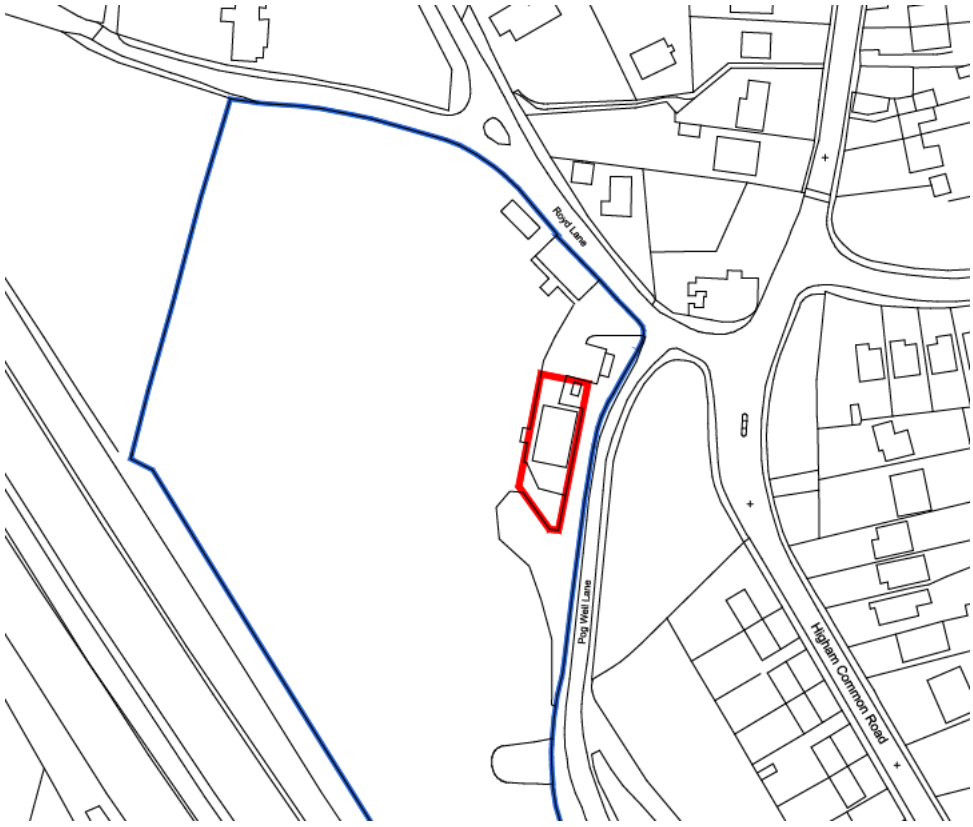


Figure 1) Site Location Map

1.2 Development Proposal

It is understood that the development proposal includes 2 no. extensions to the northern and southern elevation of the clubhouse.

The development plans are included in **Figure 3** in **Appendix A**.

1.3 Scope of Coal Mining Risk Assessment

EnviroSolution Ltd (ES) has been commissioned to prepare a Coal Mining Risk Assessment Report (CMRA) for the proposed development site, in order to provide the Local Planning Authority with information on the coal mining legacy risk(s), an assessment of their potential impact on land stability, and provide recommendations for the need to carry out any further investigations (including intrusive boreholes if necessary) to address these risk(s).

The CMRA has been undertaken in accordance with the principles of best practice including the Coal Authority's guidance document "Risk Based Approach to Development Management - Resources for Developers Version 3" (2014) (Ref. 1), CIRIA "SP32 Construction over Abandoned Mine Workings" (2002) (Ref. 2) and CIRIA "C758D Abandoned Mine Workings Manual" (2019) (Ref. 3), CIRIA, Publication C665, Assessing risks posed by hazardous ground gases to buildings (Ref. 4) and CL:AIRE "Good Practice for Risk Assessment for Coal Mine Gas Emissions", October 2021 (Ref. 5).

The purpose of the CMRA Report is to:

- present a desk-based review of available information on the coal mining issues that 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 issues;
- set out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development; 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.

1.4 Sources of Information

This report is based on current information of past mining activities relevant to the site. The following information sources have been used:

- Consultants Coal Mining Report dated 25th March 2026 (Ref: 51003560744001 **Appendix B**);
- BGS Geoindex geological map
- BGS geological 1:50,000 England and Wales Sheet 87 Barnsley;
- BGS geological map sheet 1:10,000 SE30NW, 2005
- Geology of the Barnsley district — a brief explanation of the geological map Sheet 87 Barnsley;
- Mining Remediation Authority Map Viewer;
- Historical Ordnance Survey maps.

2 Environmental Setting

2.1 Historic Coal Mining Activity

The development site and surrounding area has been reviewed with reference to historical Ordnance Survey (OS) maps. The history of the site and immediate surrounding area are summarised in Table 1. Copies of the historical OS maps are included in **Appendix D**.

Table 1 - Historic Mapping Review

Date	Scale	Historic Mining Activity
1851	1:10,560	- The site is undeveloped and lies within an agricultural field. - Pog Well close to the southern boundary. - Old coal pit 410m west of the site. - Silkstone New Colliery 320m south of the site. - Old sandstone quarry 370m south of the site.
1891	1:10,560	- Higham Colliery 310m south of the site. - Stanhope Colliery 1km west of the site.
1929	1:10,560	- Pog Well no longer marked on the map. - Higham Colliery demolished. - Air shaft 230m southwest of the site.
1948	1:10,560	- No significant change.

The BGS memoir gives the following summary of mining in the Barnsley District:

"Mining in the Barnsley district has a long history, and includes the extraction of coal, fireclay, ganister, ironstone, building stone, and sand. Of these, coal and fireclay have been of greatest importance, and their exploitation dates back to at least the 13th century. It is known that mining subsidence can be particularly severe in the vicinity of fault zones, and can give rise to significant linear subsidence features (Taylor, 1968: Young and Culshaw, 2001)". – See also Chapter 6, C758D Abandoned Mine Workings Manual (*ibid*).

Higham is a former mining village in the Barnsley coalfield, where development and settlement were closely tied to coal extraction from at least the 19th century. Early extraction targeted seams such as the Silkstone, with underground workings characterised by hazardous conditions including poor ventilation and the presence of firedamp (methane gas). A notable incident, the Higham Colliery explosion of 1860, highlighted these risks, resulting in multiple fatalities and demonstrating the dangers of gas accumulation in poorly ventilated workings. Mining infrastructure in the area later included small drift mines and transport links associated with nearby collieries. During the mid-20th century, activity expanded to include opencast mining, with several sites excavated to significant depths and subsequently backfilled using spoil materials. Mining declined in the latter part of the 20th century, leaving a legacy of potential ground instability, including shallow and deep workings, possible unrecorded shafts, and variable Made Ground thicknesses and composition associated with backfilled opencast sites.

2.2 Geological Context

The BGS geological mapping (Geoindex and BGS Sheet 87 Barnsley) shows that the site is not directly underlain by superficial deposits.

The underlying bedrock consists of the Pennine Middle Coal Measures Formation, which is of Carboniferous age. The Pennine Middle Coal Measures Formation generally consists of interbedded grey mudstone, siltstone, pale grey sandstone and commonly coal seams. According to the BGS, the bedrock has an approximate regional dip of 5° towards the northeast – **See Appendix D**.

A geological fault is shown to intersect the southern area of site close to the boundary with an approximate trend of 135° (Whole Circle Bearing). The fault downthrows to the northeast.

The BGS memoir gives the following information on the seams:

Coal Seam	Thickness (m)	Types of Working and Former Use
Swallow Wood	0.3m – 1.15m	Worked (crop, mine, opencast)
Top Haigh Moor	0.69m – 1.19m	Worked (crop, mine, opencast)
Low Haigh Moor	0.43m – 1.02m	Worked (opencast)
Lidget	0.3m – 1.52m	Worked (mine)

It is noted that the BGS show the positions of the fault and coal seam outcrops as dashed lines, meaning that these are inferred positions, not physically measured. The exact positions are therefore to some extent uncertain.

The former Craven 1&2 Opencast Coal Site (some 250m away to the east) proved the seam thicknesses as: Top Haigh Moor 1.1m (including a 300mm dirt band), Low Haigh Moor 0.9m (including a 240mm dirt band) and Swallow Wood 0.90m (including a 300mm dirt band).

Two BGS borehole logs have been obtained from BGS online records from 30m north and 70m west of the site boundary.

- Borehole SE30NW268 shows 0.60m of stiff brown sandy clay with broken fragments of sandstone.
- Borehole SE30NW972 shows 0.60m of topsoil and completely weathered bedrock overlying interbedded siltstone, mudstone and sandstone.

These appear to confirm the absence of recent superficial soils.

The borehole records are included in **Appendix E** and the location is shown on **Figure 2** below.

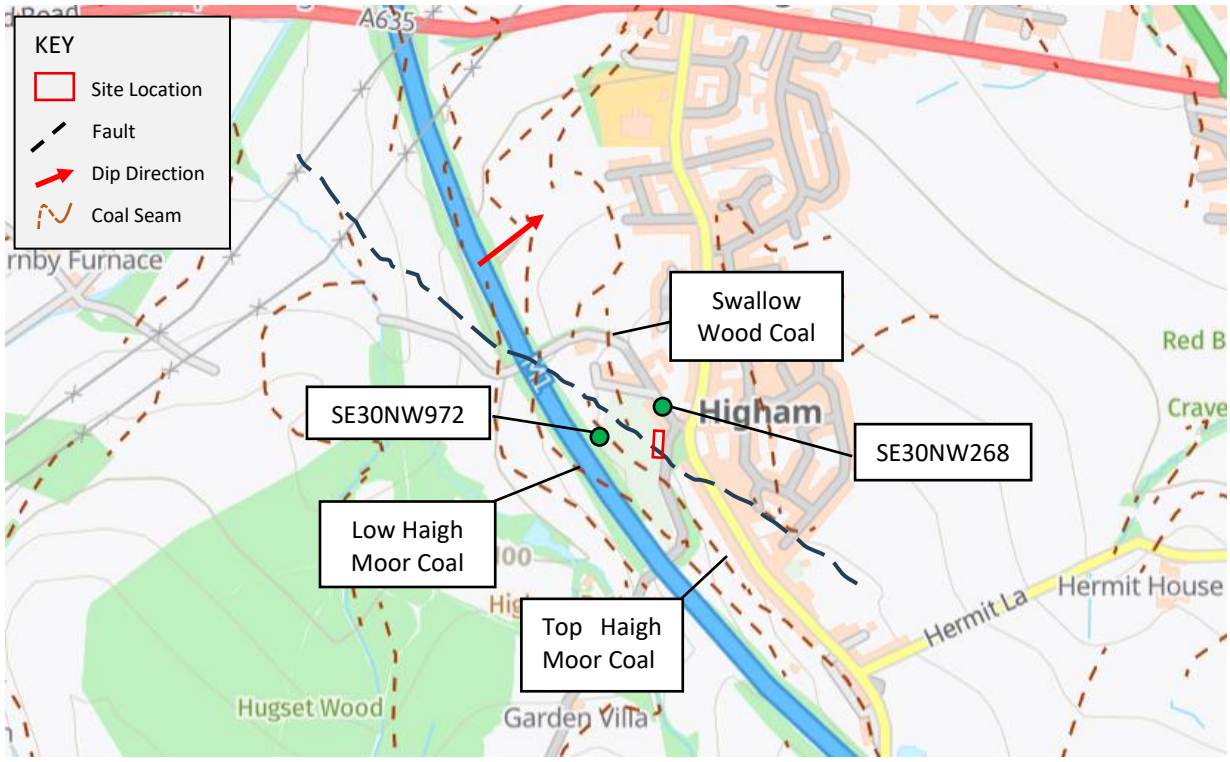


Figure 2) Coal Seam Location Map (Mining Remediation Authority Map Viewer)

Using the trigonometric relationship below, the depth of the Swallow Wood Coal beneath the development site can be estimated:

Tan 5° x 70m + 5m (elevation change) = 11.12m bgl.

It should be noted that the outcrop position of the Swallow Wood seam is conjectured and could differ, meaning an increase or decrease in the expected depth beneath the site.

The site is situated within a Primary Opencast Coal Resource Area (**Appendix F**). The Primary Opencast Coal Resource Area is defined by the BGS as "an area that constitutes the main target for opencast coal extraction and comprises a relatively closely spaced succession of variable but generally thick coals". Notwithstanding this, it is considered to be very unlikely that there will be any interest in developing open cast coal mining operations at this location in the short or medium-term.

3 Identification and Assessment of Site-Specific Coal Mining Risks

Table 2 below summarises the potential risks associated with coal mining legacy for the proposed development site, which have been identified from list sources of information.

Table 2 - Coal Mining Hazards Summary

Coal Mining Issues	Yes	No
Coal outcrops	X	
Underground coal mining (recorded at shallow depths)		X
Underground coal mining (probable at shallow depths)	X	
Recorded mine entries (shafts and adits)		X
Unrecorded mine entries (shafts and adits)	X	
Coal mining geology (fault)	X	
Record of past gas emissions		X
Recorded coal mining surface hazard		X
Surface mining (opencast workings)		X

The MRA Interactive Map Viewer (**Appendix G**) has identified that the majority of the site lies outside of the Development High Risk Area with just the southern area intersected by it, controlled by the presence of a geological fault.

The report obtained from the MRA revealed the property is in a surface area that is affected by recorded underground mining in a single seam of coal (Silkstone) at a depth of 229m bgl. The seam was last worked in 1880.

Using the generally accepted 'rule-of-thumb' guidance that a competent rock strata thickness equivalent to at least ten times the extraction thickness provides adequate protection against crown-hole development and surface instability (Refs 2 and 3), the workings can be considered to be at such a depth that the recorded workings would not result in surface subsidence and/or crown-hole development.

As presented in Section 2.2, a number of potentially economically viable coal seams (Swallow Wood, Top Haigh and Low Haigh) may be present at shallow depths beneath the site and could have been worked in the past. Projected depth calculations for the Swallow Wood seam indicate this may have potential to cause surface subsidence.

The Mining Remediation Authority report states that they are not aware of any recorded mine entries within a 20m radius of the development site boundary. Notwithstanding this, there may be mine entries in the vicinity that have not been recorded.

There are no recorded past mining gas emissions recorded in the surrounding area. However, coal seams and coal mine workings pose a potential gas risk which should be considered in any future investigations and development. At development sites with shallow coal workings, probable shallow coal mine workings, or pathway features such as mine entries and geological disturbances on or nearby the site, it is recommended that a detailed gas risk assessment is

undertaken in accordance with relevant guidance such as the CL:AIRE “Good Practice for Risk Assessment for Coal Mine Gas Emissions”, October 2021.

4 Proposed Mitigation Strategy

- The possibility of unrecorded mine shafts has been highlighted in the Mining Remediation Authority report. The potential risk can be dealt with through vigilance during the earthworks stage of construction.
- The possibility of unrecorded shallow coal workings has been highlighted by the Mining Remediation Authority, and it has been supported by available geological interpretation. It is recommended that 2 no. rotary boreholes are advanced to a minimum depth of 25m below ground level to investigate for unrecorded shallow coal mine workings, to establish the depth to rockhead and to determine evidence of ground disturbance as a result of fault reactivation. Water flush should be used to safeguard against oxidation and potential spontaneous combustion of shallow coal. The boreholes should be installed with gas monitoring standpipes and a programme of gas monitoring should be undertaken. In order to undertake these works it will be necessary to obtain a drilling permit from The Mining Remediation Authority.

5 Conclusions

The Coal Mining Risk Assessment for the site at Higham Cricket Club in Barnsley has concluded that the potential risks associated with coal mining related issues cannot be ruled out based on information from the Mining Remediation Authority and geological interpretation.

The principal risks to the development arise from:

- The potential presence of unrecorded shallow mine workings;
- unrecorded mine entries;
- mine gas.

It is therefore recommended that further intrusive ground investigations are undertaken. These might include the drilling of 2 no. rotary probe borehole(s) to a minimum depth of 25m bgl, located close to the proposed development to determine the depth to rockhead along with obtaining evidence of potential unrecorded coal mine workings. The boreholes should be completed with gas monitoring installations. Ground gas concentrations should be monitored for a minimum period of 6 weeks with fortnightly visits.

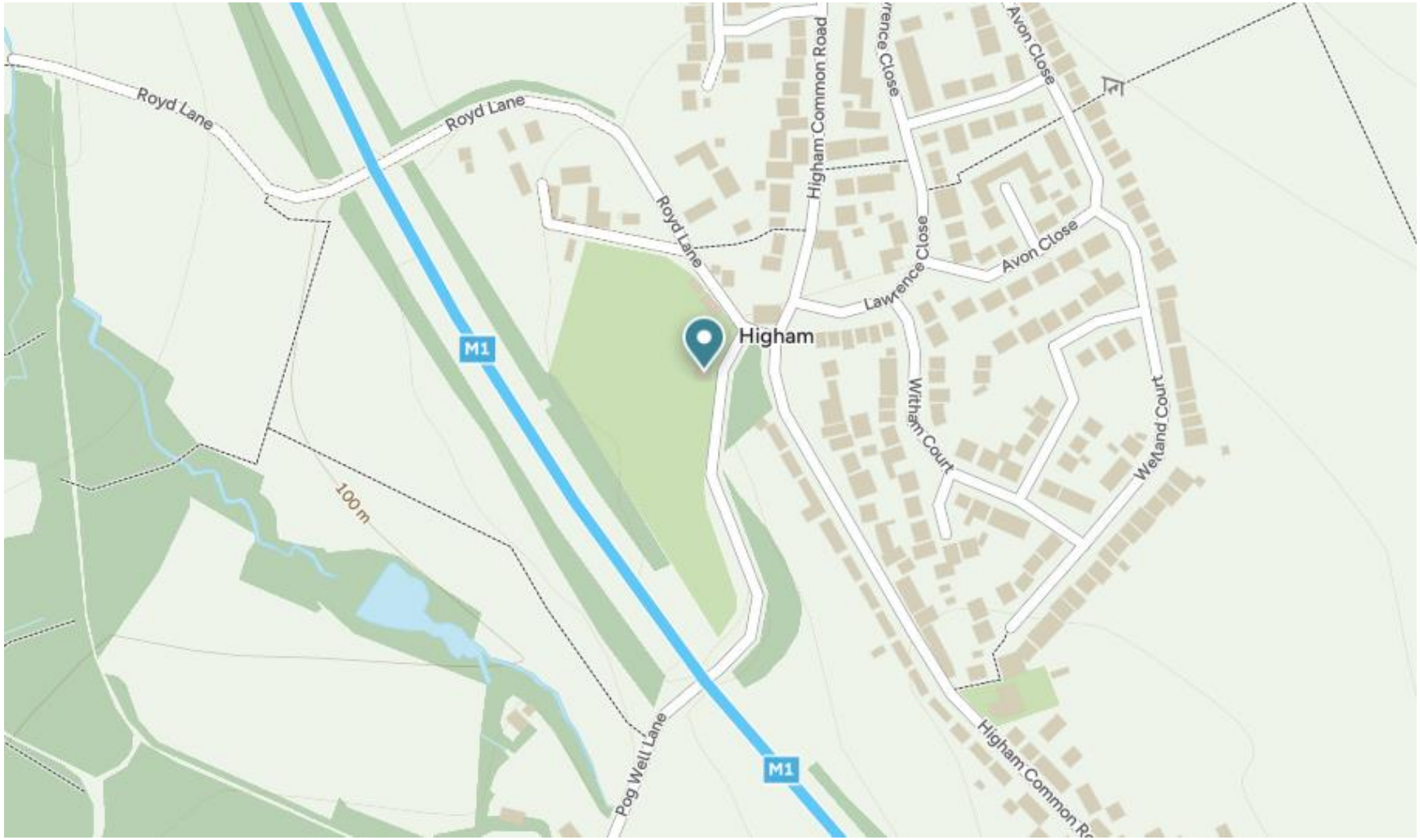
Prior to the commencement of intrusive works, a Mining Remediation Authority Permit will be required for drilling activities, that will disturb or enter any coal seams, coal mine workings or coal mine entries (shafts and adits). The scope of works for the investigation will need to be submitted and approved by the local authority prior to the commencement of the intrusive works.

Historic mapping records show the proposed southern extension lies close to the historic location of Pog Well which is no longer shown on mapping from the 1920s. Care should be taken during foundation construction to avoid building over this potential void feature. It is unclear if the well was backfilled.

6 References

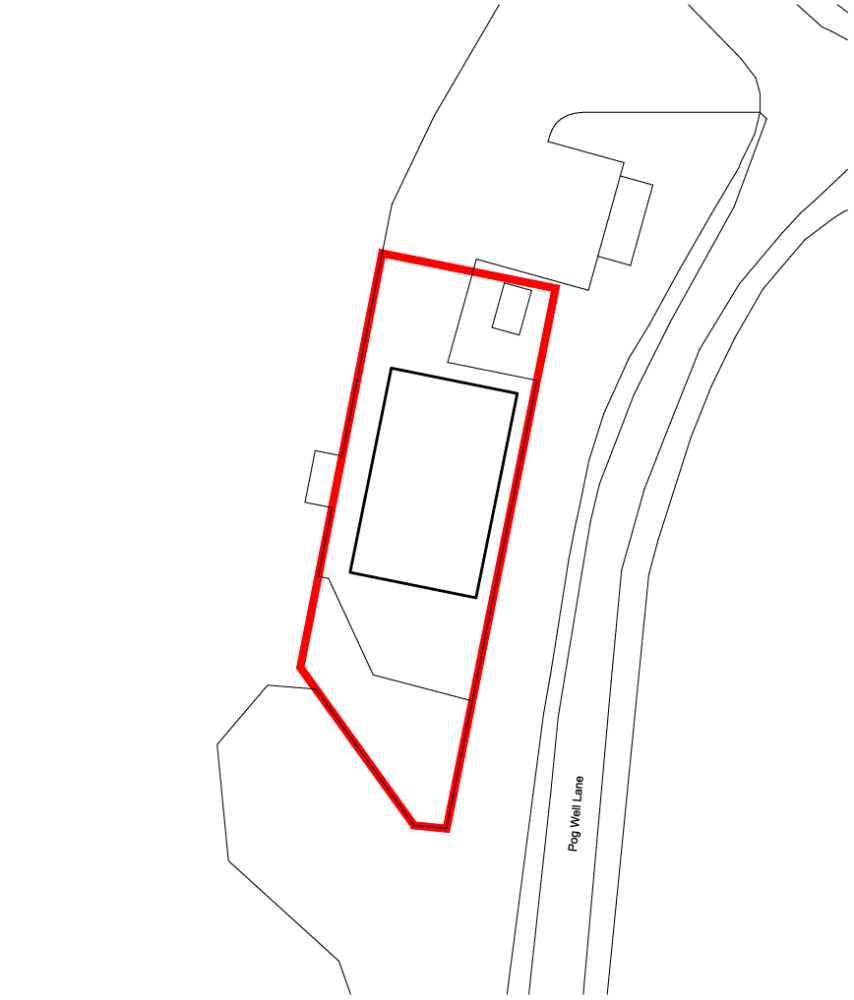
1. Coal Authority, 2014, Risk Based Approach to Development Management Resources for Developers, Version 3.
2. CIRIA, 2002, SP32 Construction over Abandoned Mine Workings.
3. CIRIA, 2019, C758D Abandoned Mine Workings Manual.
4. CIRIA, Publication C665, Assessing risks posed by hazardous ground gases to buildings.
5. CL:AIRE, 2021, Good Practice for Risk Assessment for Coal Mine Gas Emissions.

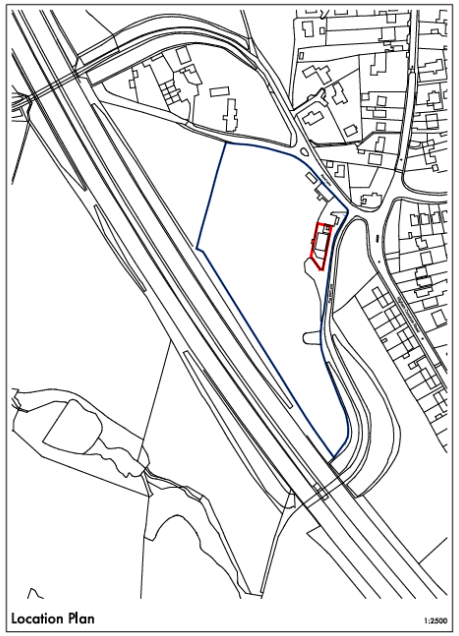
Appendix A – Site Location



enviro | solution

Location Plan





enviro | solution

Existing Site Plan

footpath to rear of clubhouse is to remain and be extended to the new extensions; there will be a need to form a new retaining structure alongside the existing parking bays to the north as part of the works to transition the level change on site

dashed lines denote extent of existing clubhouse footprint

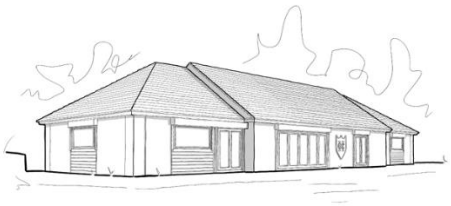
existing external stairs leading from the clubhouse down to the cricket pitch to be retained

existing clubhouse to remain as part of the proposed works, with 2no new side extensions proposed to increase space withing; external appearance of clubhouse is to remain as existing

canopy to the southern elevation of the existing clubhouse to be demolished in place of the new extension

new terrace area to be formed across adjacent, upper level ground, overlooking the cricket pitch; area to be accessed through perimeter footpath or through the new layout, with double doors leading out onto the terrace

Existing **SITE PLAN**



Proposed **VISUAL 1**

Proposed **VISUAL 2**

The information on this page identifies the proposed site plan arrangement that has been included as part of this Planning application. The proposed scheme is for the provision of 2no new build extensions to both sides of the existing Higham Cricket Club clubhouse to improve the hospitality facilities are the venue, as per the details included on the supporting proposed floor plans and elevations drawing: 042026-OP-ZZ-ZZ-DR-A-01015-S2-P2_Proposed_PlansElevations

The design of the 2no proposed extensions have been sized to main symmetry across the built form, with the existing structure of the original clubhouse being retained centrally. The clubhouse's aesthetics are to be remain as existing, with the facing brickwork and openings. The proposed elevations and associated visuals have been enhanced to include the Higham Cricket Club emblem on the front of the building. The positioning of the badge corresponds with the external steps down to the cricket pitch. The 2no new extensions are to be consistent and relate to the appearance of the recently completed changing facilities, with the inclusion of through colour render and composite cladding board to assist in contrasting with the facing brickwork used elsewhere on the elevations.

Externally, the proposed works are to correspond with the existing topography and primarily maintain the movement along the existing Clubhouse. The northern extension will project into the adjacent banking slightly, which will require some minor retaining to the perimeter footpath. To the southern extension, a new terraced area will be formed to create further external seating provision, which is accessed directly from the larger bar area.

enviro | solution

Proposed Site Plan

Appendix B – Coal Authority Report

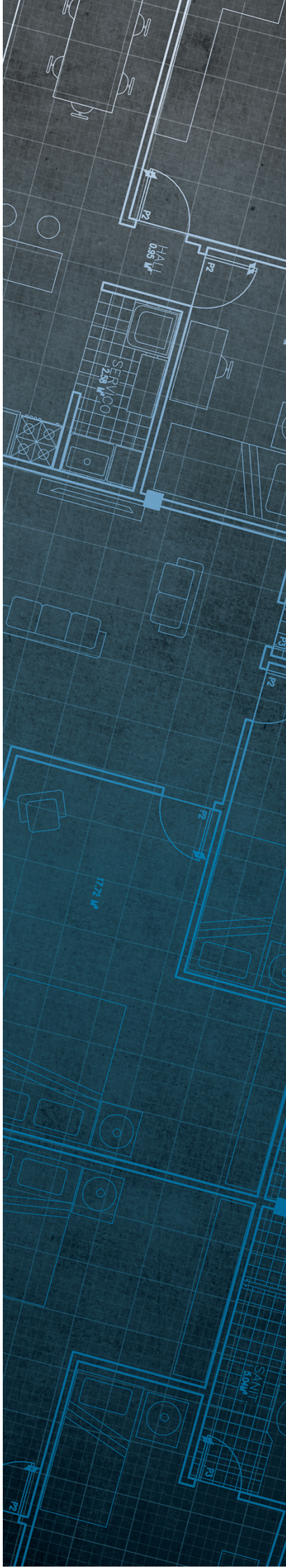
The Coal Authority

Consultants

Coal Mining Report

Pavilion
Higham Cricket Club
Royd Lane
Higham
Barnsley
Barnsley
S75 1PH

Date of enquiry:	**25 March 2026**
Date enquiry received:	**25 March 2026**
Issue date:	**25 March 2026**
Our reference:	**51003560744001**
Your reference:	**Higham Cricket Club**



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

EnviroSolution Limited

Enquiry address

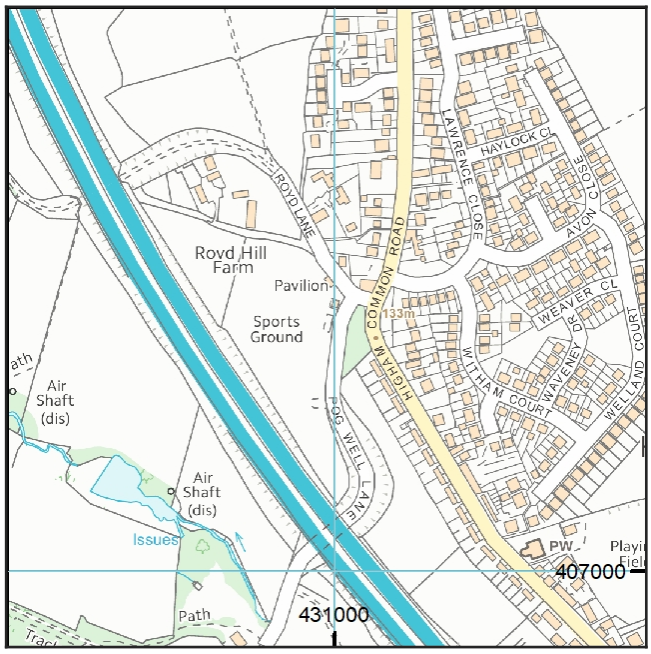
Pavilion
Higham Cricket Club
Royd Lane
Higham
Barnsley
Barnsley
S75 1PH

How to contact us

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

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

reports@miningremediation.gov.uk



Approximate position of property

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
HIGHAM	SILKSTONE	Coal	6NES	229	Beneath Property	3.6	North-East	147	1880

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

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

NE498	SCC9	NE584
9170	M726	NE762
NE565		

For assistance in identifying the specific abandoned mine plans relevant to your requirements, **please contact us at InformationManagers@MiningRemediation.gov.uk**.

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
SWALLOW WOOD	Coal	Yes	54.5	West	342
TOP HAIGH MOOR	Coal	Yes	36.9	South-West	122

Geological faults, fissures and breaklines

Please refer to the 'Summary of findings' map (on separate sheet) for details of any geological faults, fissures or breaklines either within or intersecting the enquiry boundary.

Fault under or close to the property recorded.

Opencast mines

Please refer to the “Summary of findings” map (on separate sheet) for details of any opencast areas 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.

Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

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 email us at reports@miningremediation.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 **email us at reports@miningremediation.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. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

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.

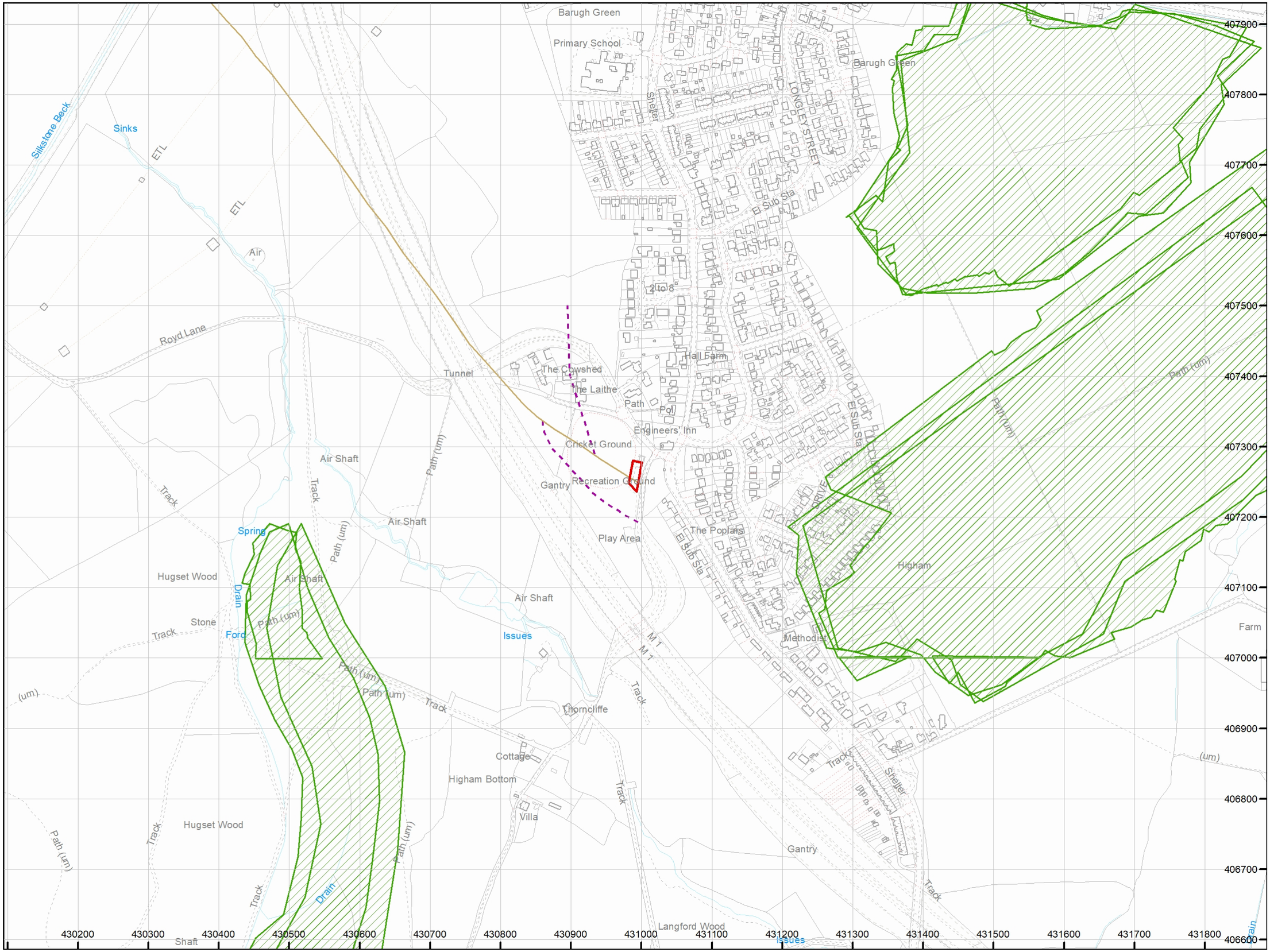
The Coal Authority

Summary of findings

The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

- Approximate position of the enquiry boundary shown
- Outcrop (Conjectured)
- Geological faults
- Unlicensed opencast site

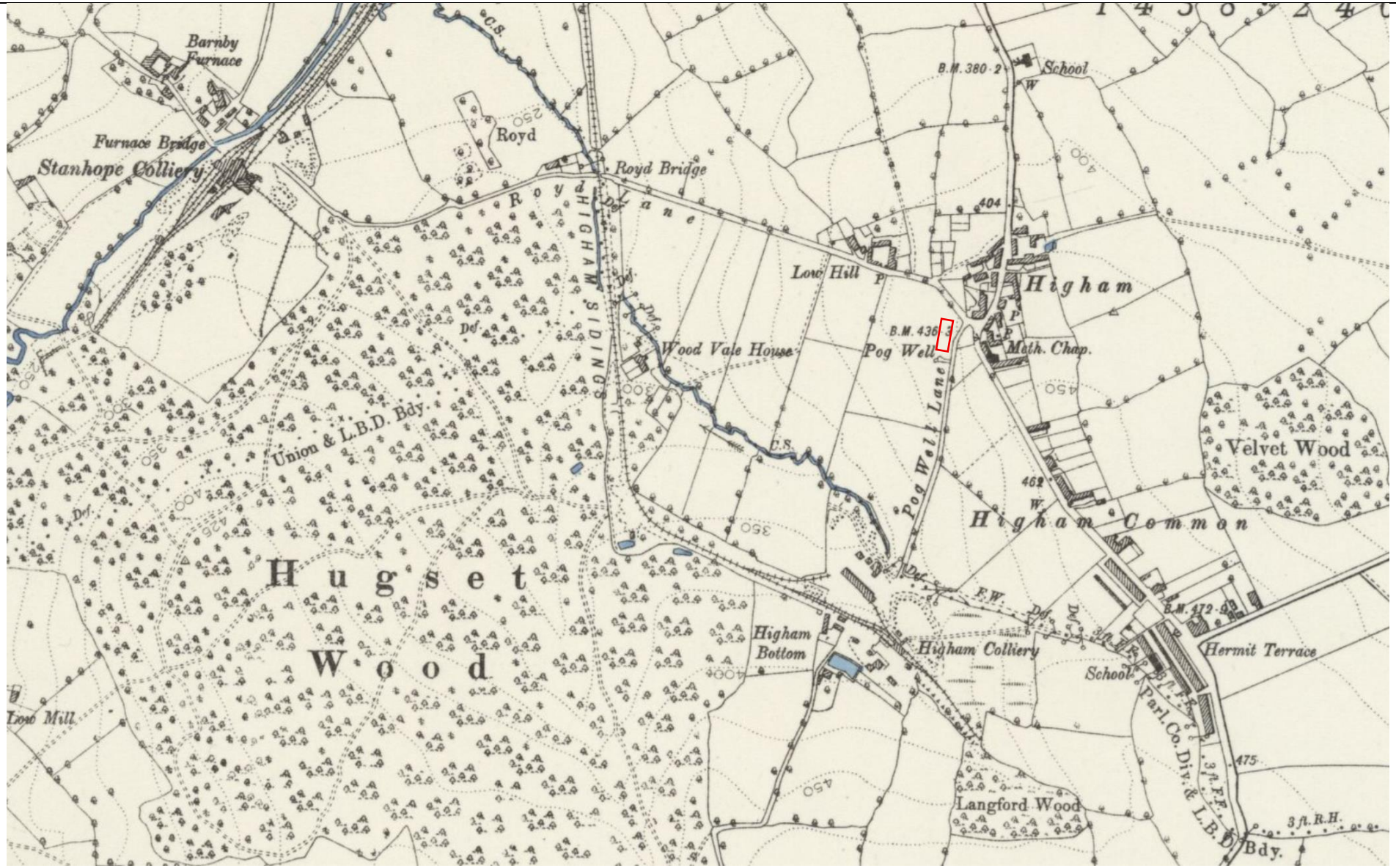


How to contact us

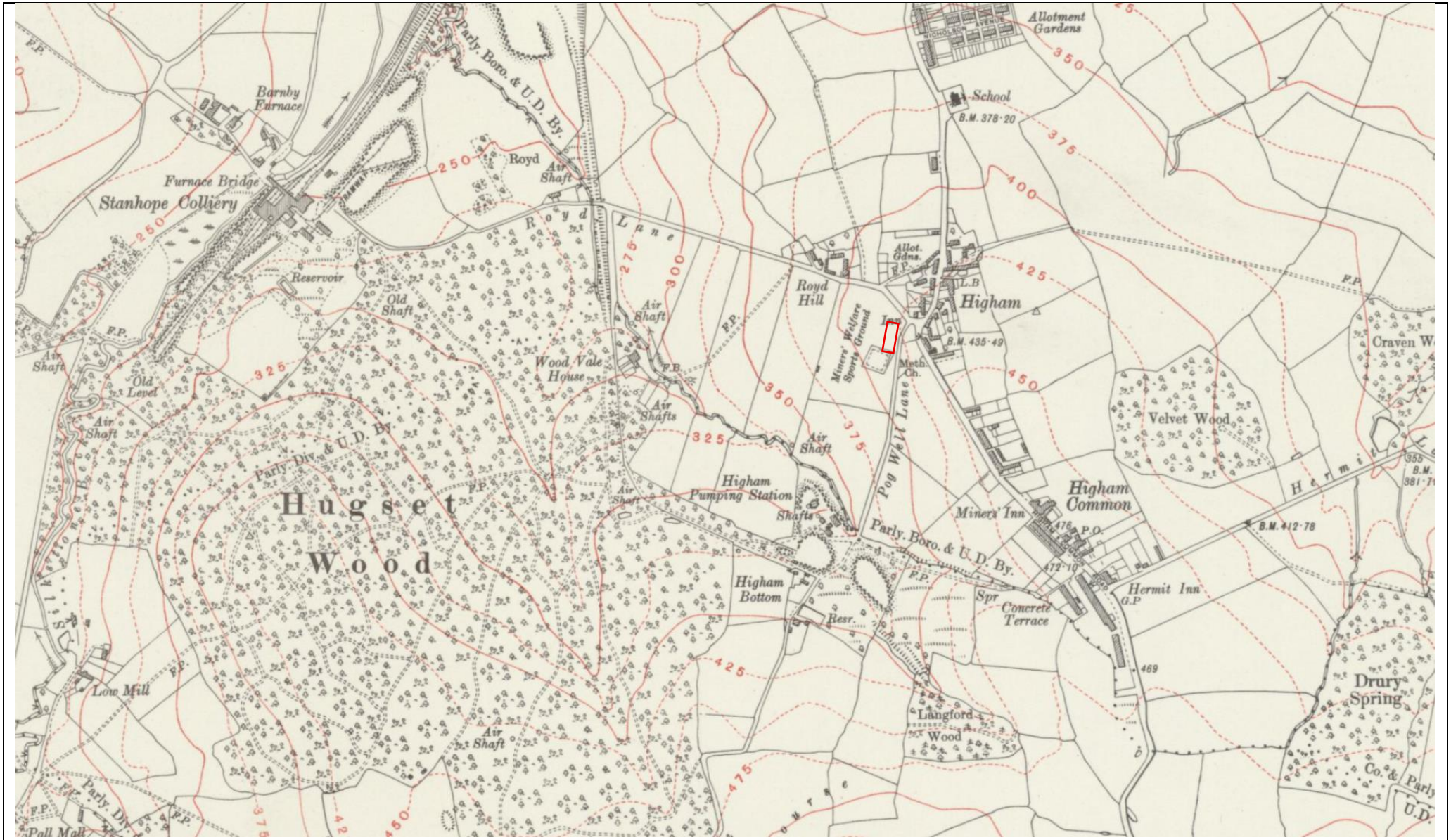
0345 762 6848 (UK)
+44 (0)1623 637 000 (International)
reports@miningremediation.gov.uk

Appendix C – Historic Maps

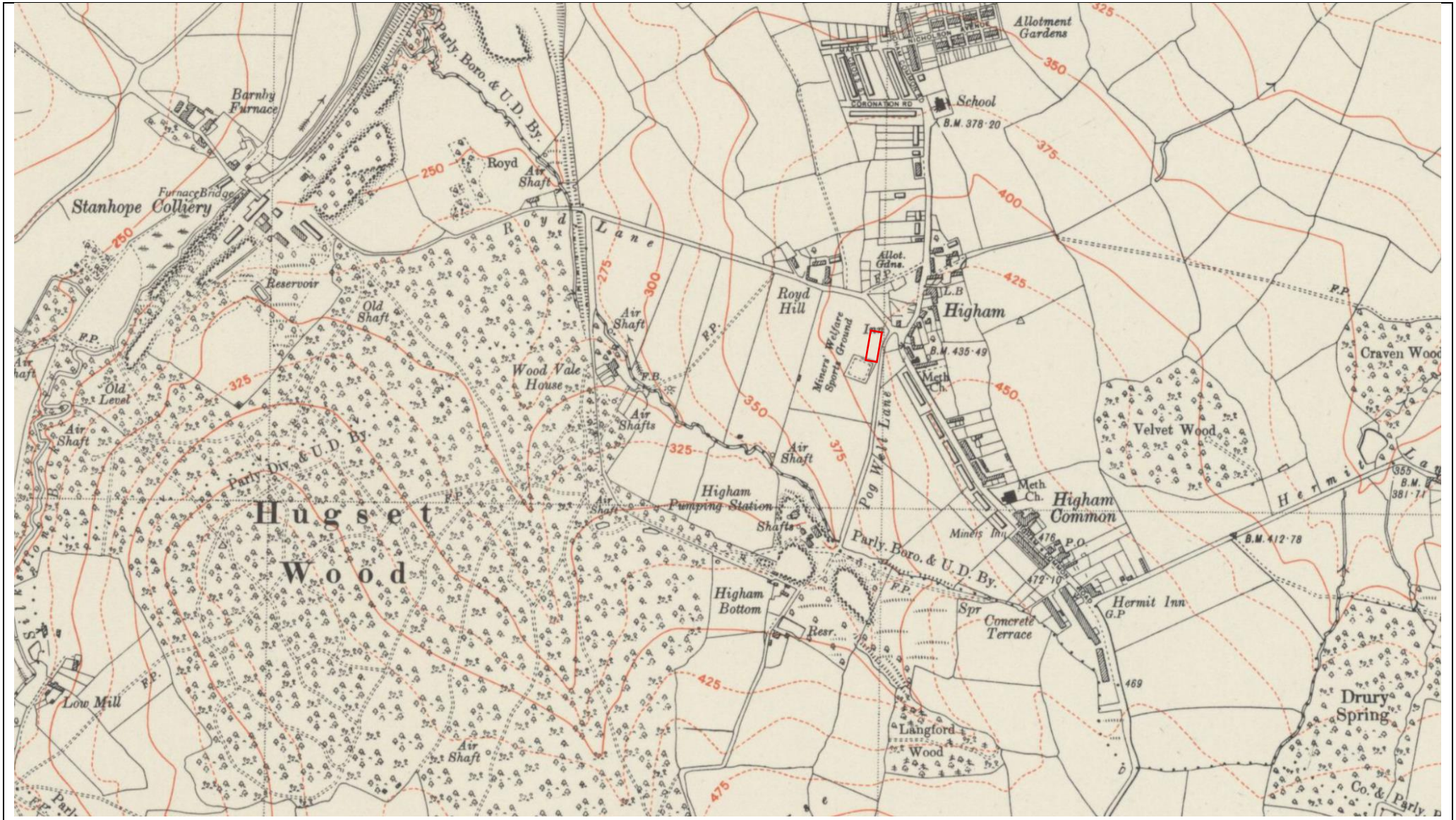
1851


Barnby Furnace
Furnace Bridge
Stanhope Colliery
Royd
Royd Bridge
Royd Lane
HIGHAM SIDINGS
Low Hill
Higham
Wood Vale House
Pog Well
Meth. Chap.
Pog Well Lane
Velvet Wood
Higham Common
Union & L.B.D. Bdy.
Hugset Wood
Higham Bottom
Higham Colliery
Hermit Terrace
School
Parl. Co. Div. & L.B.D. Bdy.
Langford Wood
Low Mill
B.M. 380·2
B.M. 436·3
B.M. 472·9
404
462
475

1891


Allotment Gardens
School
B.M. 378·20
Barnby Furnace
Parly. Boro. & U.D. By.
Royd Air Shaft
Furnace Bridge
Stanhope Colliery
Royd Lane
Reservoir
Old Shaft
Air Shaft
Old Level
Wood Vale House
Air Shafts
Royd Hill
Allot. Gdns.
Miners' Welfare Sports Ground
Meth. Ch.
Higham
B.M. 435·49
Pog Well Lane
Craven W
Velvet Wood
Parly. Div. & U.D. By.
Hugset Wood
Higham Pumping Station
Shafts
Higham Common
Miners' Inn
P.O.
B.M. 412·78
Parly. Boro. & U.D. By.
Higham Bottom
Resr.
Spr
Concrete Terrace
Hermit Inn
G.P.
Low Mill
Langford Wood
Drury Spring
Co. & Parly U.D.
Pall Mall

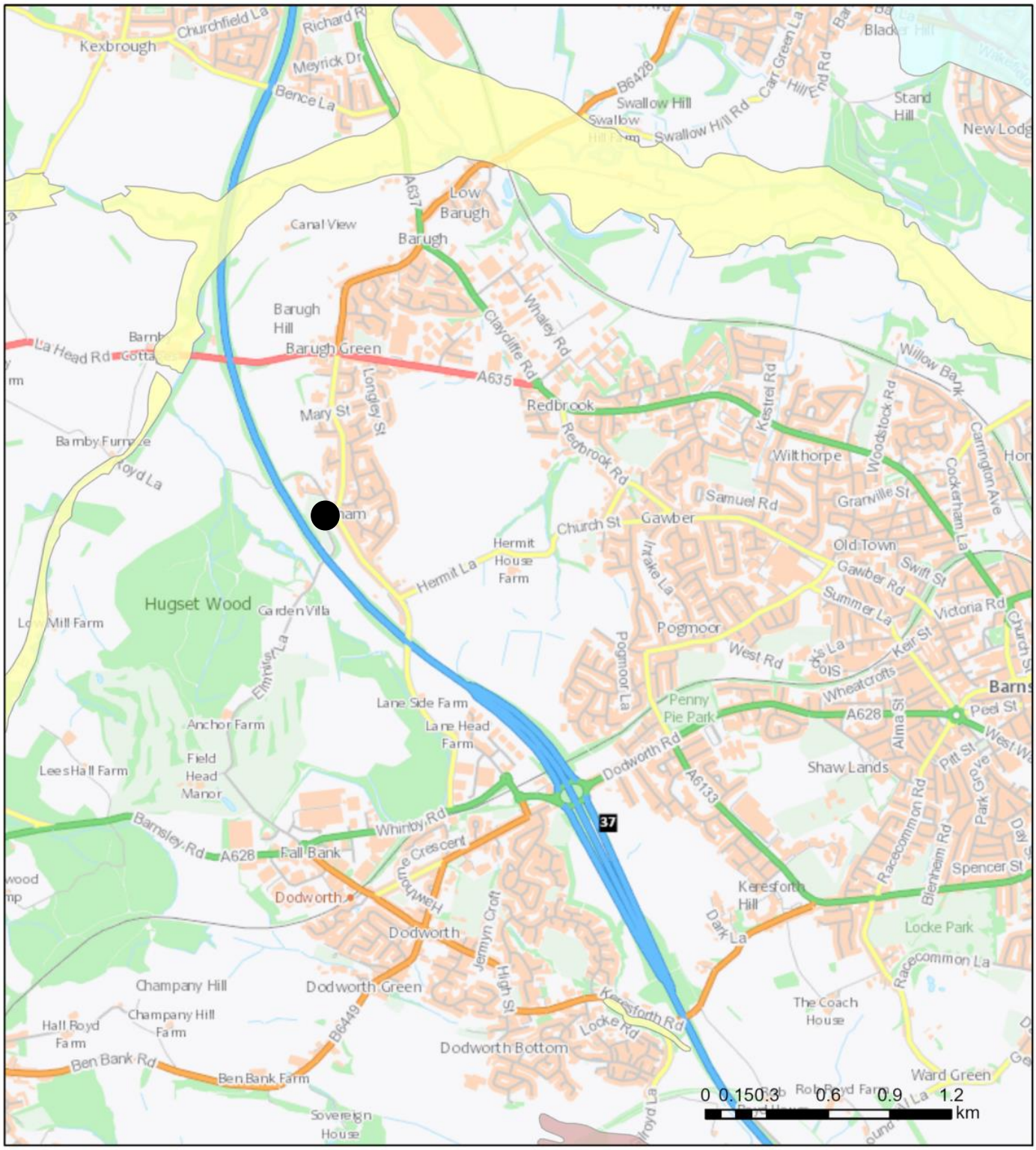
1929


Barnby Furnace
Parly. Boro. & U.D. By.
Royd Air Shaft
Furnace Bridge
Stanhope Colliery
Royd Lane
Reservoir
Old Shaft
Air Shaft
Wood Vale House
Old Level
Parly. Div. & U.D. By.
Hugset Wood
Higham Pumping Station
Shafts
Higham Bottom
Resr.
Low Mill
Allotment Gardens
School
B.M. 378·20
Allot. Gdns.
Royd Hill
Miners' Welfare Sports Ground
Inn
Higham
B.M. 435·49
Meth. Ch.
Dog Well Lane
Craven Wood
Velvet Wood
Higham Common
Miners Inn
P.O.
B.M. 412·78
Hermit Inn
G.P
Spr
Concrete Terrace
Langford Wood
Drury Spring
Co. & Parly.

1948

Appendix D – Geological Maps

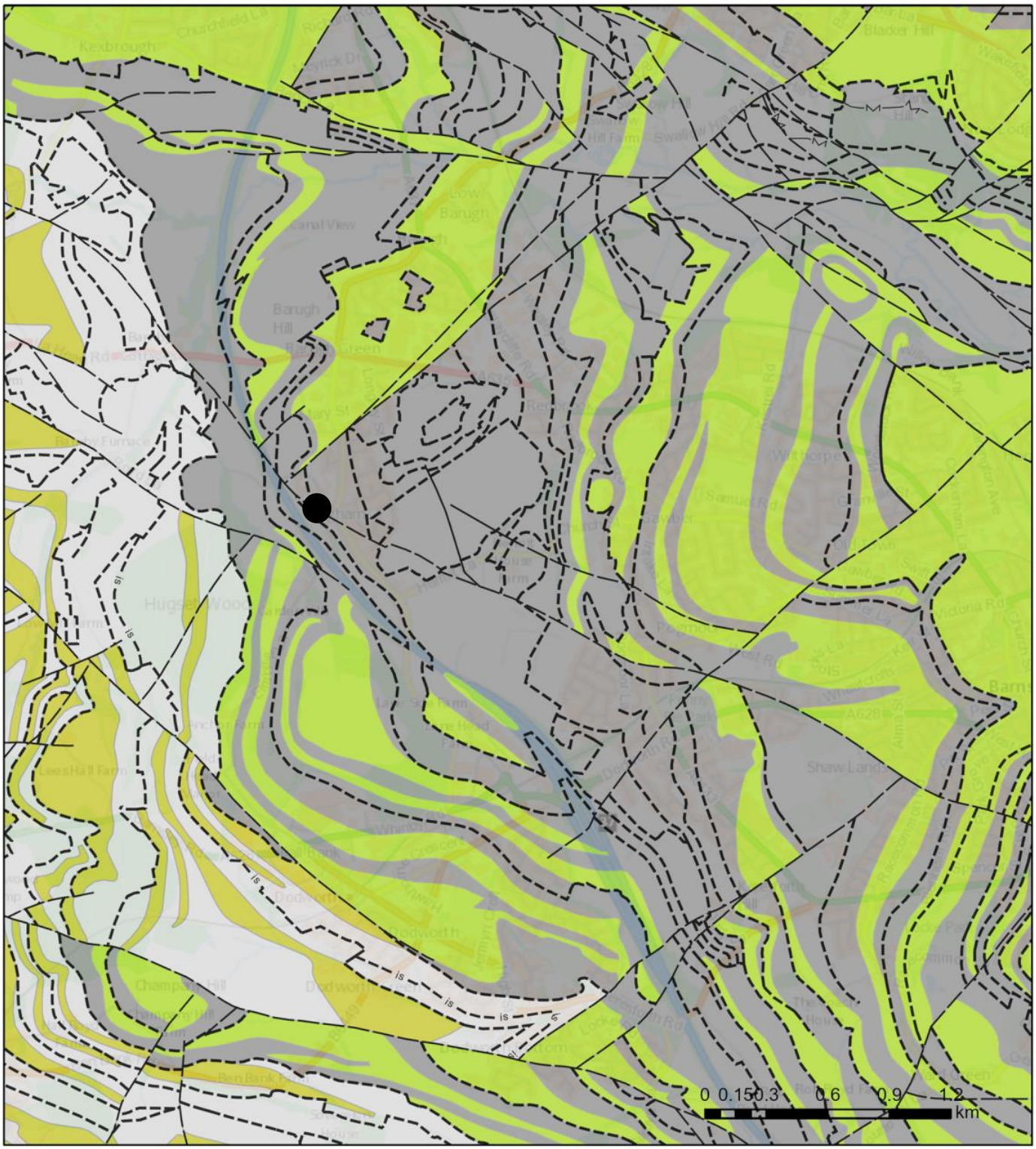
Superficial Geology



Superficial deposits 1:50,000 scale

- Glaciofluvial deposits, Mid Pleistocene-Sand and gravel
- Till, Mid Pleistocene-Diamicton
- Alluvium-Clay and silt
- Alluvium-Clay, silt, sand and gravel
- Head-Diamicton

Bedrock Geology



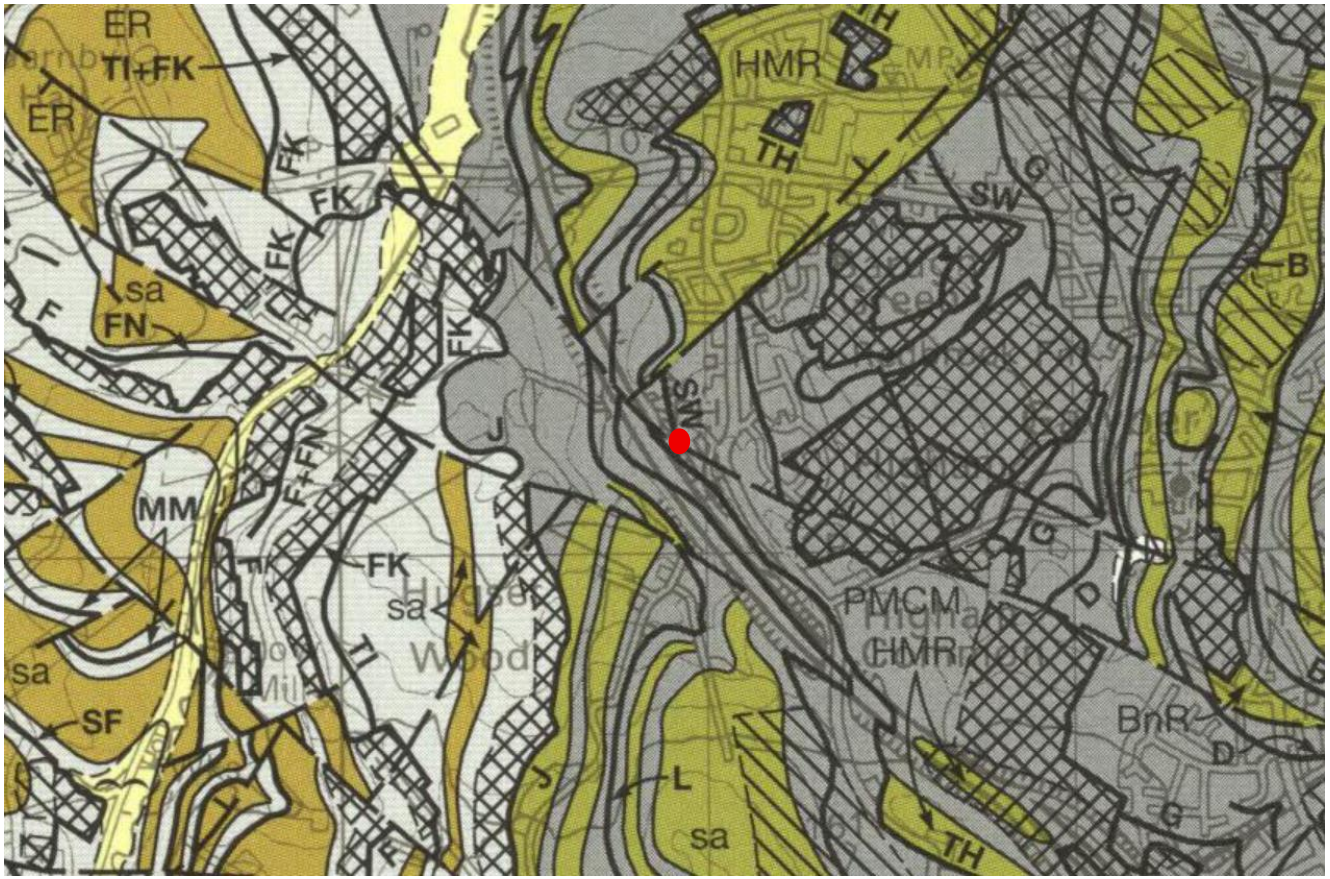
Linear features 1:50,000 scale

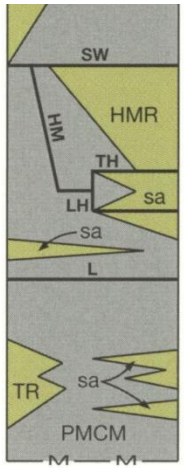
- Coal_seam_Inf
- Coal_seam_Obs
- Fault_Inf_Crossmark_on_downthrow_side
- Fault_Inf_Downthrow_unspecified
- Fault_Obs_Downthrow_unspecified
- Ironstone_bed_Inf
- Marine_band

Bedrock geology 1:50,000 scale

- Pennine Lower Coal Measures Formation-Mudstone and siltstone
- Pennine Lower Coal Measures Formation-Mudstone, siltstone and sandstone
- Pennine Middle Coal Measures Formation-Mudstone, siltstone and sandstone
- Emley Rock-Sandstone
- Grenoside Sandstone-Sandstone
- Penistone Flags-Sandstone
- Parkgate Rock-Sandstone
- Pennine Lower Coal Measures Formation-Sandstone
- Silkstone Rock-Sandstone
- Ackton Rock-Sandstone
- Glass Houghton Rock-Sandstone
- Mexborough Rock-Sandstone
- Abdy Rock-Sandstone
- Barnsley Rock-Sandstone
- Haigh Moor Rock-Sandstone
- Kent's Rock-Sandstone
- Oaks Rock-Sandstone
- Pennine Middle Coal Measures Formation-Sandstone
- Woolley Edge Rock-Sandstone

BGS Geological Survey 1:50,000 Series England and Wales Sheet 87, Barnsley





SWALLOW WOOD COAL (0.2 to 3.7 m)

HAIGH MOOR (KEXBROUGH) ROCK (0 to 28 m)

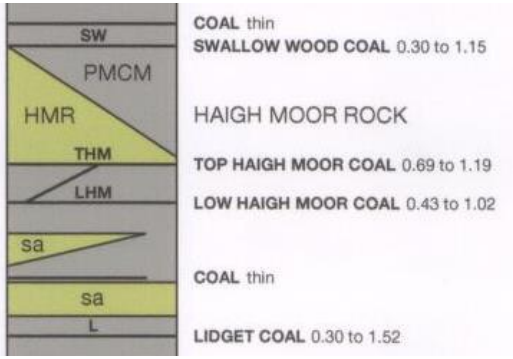
TOP HAIGH MOOR COAL (0 to 4.3 m)
HAIGH MOOR COAL (0.6 to 2.0 m)
LOW HAIGH MOOR COAL (0 to 2.6 m)

LIDGET COAL (0.3 to 1.5 m)

THORNHILL ROCK (0 to 24 m)

Vanderbeckei (Clay Cross) Marine Band (VMB) (not shown on map face)

BGS Geological Survey National Grid 1:10,000 Series England and Wales Sheet SE30NW



Appendix E – BGS Borehole Logs

SE30NW268

SE 30 NW 265 – 268

Pogwell Lane and Royd Lane — APPENDIX 1

BOREHOLE No. AND LOCATION	DEPTH From	DEPTH To	SOIL DESCRIPTION	SAMPLES Depth	SAMPLES Test and Result
1.			Surface erased in wheel tracks		
3099 0720 SE30NW/265	0	½"	Fine cold asphalt		
	½"	4"	Coated slag		
	4"	7"	Crushed stone		
	7"	1'8"	Poor quality red shale - partially burnt		
	1'8"	2'6"	Dense black ash filling	2'0"-2'6"	Fm 22 CBR R 13 DD 93 m 21
2.	0	9"	Topsoil		
3102 0711 SE30NW/266	9"	4'6"	Firm brown and grey silty clay with bands of black weathered shale from 3'9"	3'0"	Fm 29 LL 66 PI 33 CBR R 2 DD 94 m 29
	4'6"	6'0"	Stiff friable grey silty clay	5'0"	Fm 21 LL 44 PI 16 CBR R 6 DD 105 m 21
	6'0"		Fine grained sandstone and siltstone Too hard for further boring Hole dry		
3.			Slight crazing in wheel tracks		
3095 0700 SE30NW/267	0	½"	Fine cold asphalt		
	½"	4"	Coated slag		
	4"	7"	Crushed stone		
	7"	1'6"	Poor quality red shale		
	1'6"	3'0"	Firm black sandy clay and shale filling	2'0"-2'6"	Fm 17 CBR R 8 DD 104 m 17
4.			Unmade road		
3100 0731 SE30NW/268	0	6"	Broken sandstone in a clayey matrix		
	6"	2'0"	Stiff brown sandy clay with broken sandstone	1'0"-2'0	Fm 20 CBR R 3 DD 104 m 20

SE30NW972

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Site	Borehole Number
South Yorkshire COA NMCS2 Upgrade	M37

Machine:	Casing Diameter	Ground Level (mOD)	Client	Job Number
Flush :	121mm cased to 1.50m		Tarmac	F11288A
Core Dia: mm				
Method :	Location	Dates	Engineer	Sheet
	430909 E 407236 N	24/03/1999	WSP Environmental Ltd	1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							(0.20)	TOPSOIL.		
	100	0	0	0			0.20 (0.40)	Firm to stiff (friable) very silty CLAY. (Completely weathered Bedrock)		
0.60	66	12	7	0			0.60 (1.00)	Grey brown very thinly subhorizontally bedded moderately weathered SILTSTONE, weak to moderately weak. Discontinuities: extremely closely spaced subhorizontal and subvertical open tight, smooth, planar		
1.60 1.60 1.60 1.60	100	80	80	0	C C16 C2		1.60 (1.50)	Grey thinly horizontally laminated moderately weathered MUDSTONE weak to moderately weak. Discontinuities: extremely closely spaced open, random, smooth, planar, clay smeared.		
3.10-3.55					8,9/8,11,10,12 SPT(C) N=41		3.10 (0.75)	Black grey SHALE. (Driller's description)		
3.60	93	13	0	0			3.85 (1.35)	Grey fine grained thickly horizontally bedded locally thinly laminated slightly weathered SANDSTONE, strong. Discontinuities: medium spaced horizontal and subvertical open rough, planar, stained. ---from 4.60m moderately weathered with extremely closely spaced fractures		
4.60	66	0	0	0			5.20 (0.90)	Grey brown thinly laminated slightly to moderately weathered MUDSTONE weak. Discontinuities: extremely closely spaced, random open and tight smooth, planar clay smeared.		
6.10	46	0	0	0	Water strike(1) at 7.10m.		6.10 (3.00)	Grey slightly weathered MUDSTONE weak to moderately weak. Discontinuities: very closely spaced, random, open, smooth, planar, stained. ---from 7.60m becomes dark grey fractures clean		▽1
7.60 7.60-7.78	73	12	9	0	15,0/50,0,0,0 SPT(C) 50/25					
9.10 9.10-9.27	82	10	10	0	10,0/50,0,0,0 SPT(C) 50/18		9.10 (0.35) 9.45	Grey brown fine grained thinly subhorizontally bedded slightly to moderately weathered SANDSTONE, weak to moderately weak. Discontinuities: very closely spaced subhorizontal and vertical open rough, pla Soft to firm grey silty CLAY (Completely weathered mudstone).		

Remarks
1. Inspection pit excavated to 0.60m. 2. Borehole complete at 12.00m. 3. Bore

Scale (approx)	Logged By
1:50	CMM

Figure No.

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

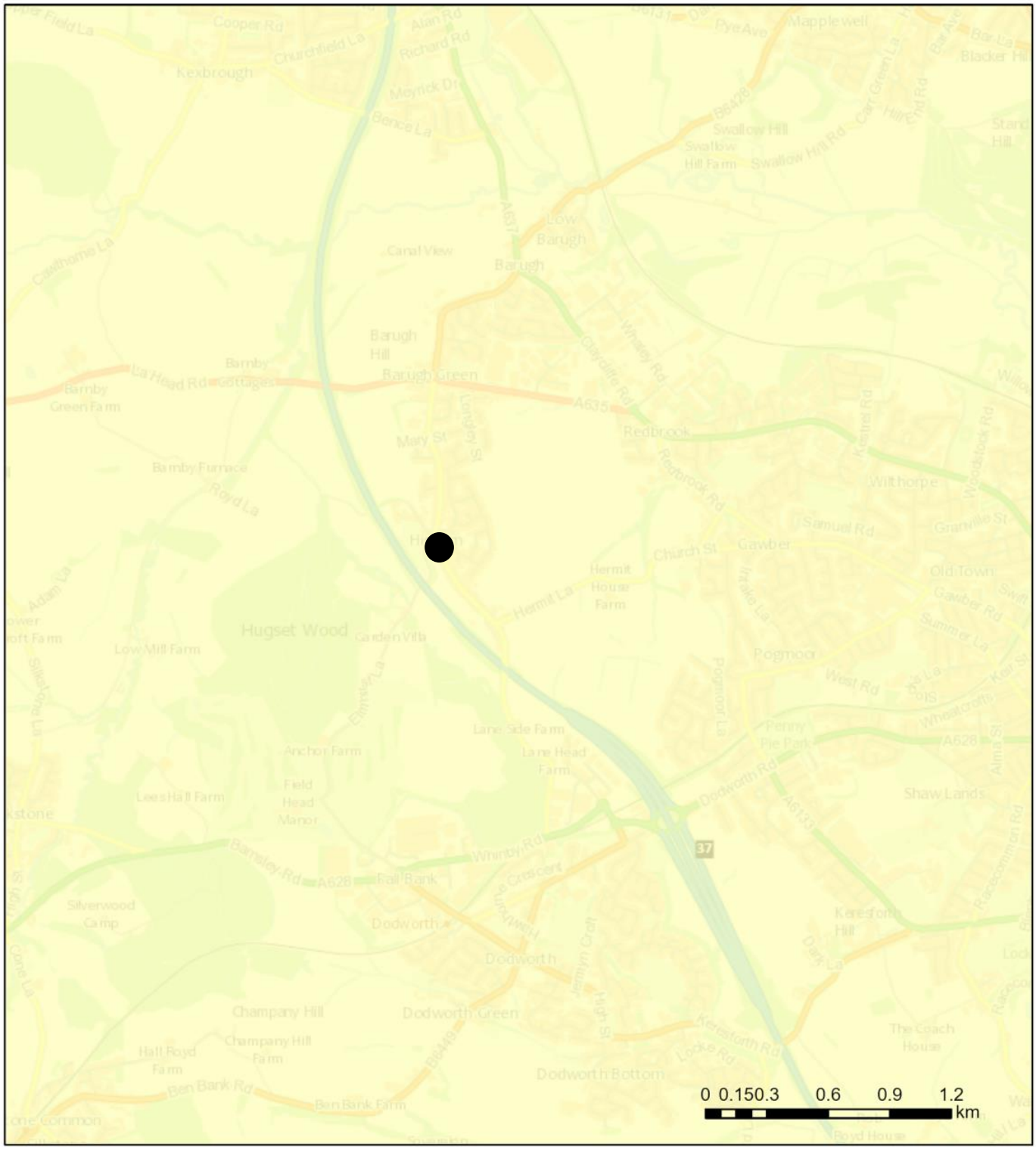
Site	Borehole Number
South Yorkshire COA NMCS2 Upgrade	M37

Machine:	Casing Diameter	Ground Level (mOD)	Client	Job Number
Flush :	121mm cased to 1.50m		Tarmac	F11288A
Core Dia: mm				
Method :	Location	Dates	Engineer	Sheet
	430909 E 407236 N	24/03/1999	WSP Environmental Ltd	2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
10.60					24/03/1999:5.20m		(2.35) 11.80 (0.20) 12.00	Light grey fine grained thickly horizontally bedded slightly weathered silty SANDSTONE, weak to moderately weak. Discontinuities: very closely spaced horizontal open rough, planar, stained. Complete at 12.00m		

Remarks	Scale (approx)	Logged By
	1:50	CMM
	Figure No.	

Appendix F – Coal Resource Map



Shallow Coal

- **Buried coal resource overlain by up to 50m overburden**
- **Primary opencast coal resource area**
- **Secondary opencast coal resource area**
- **Tertiary opencast coal resource area**

Appendix F – Coal Mining Summary Map

enviro | solution

Mining Remediation Authority Map