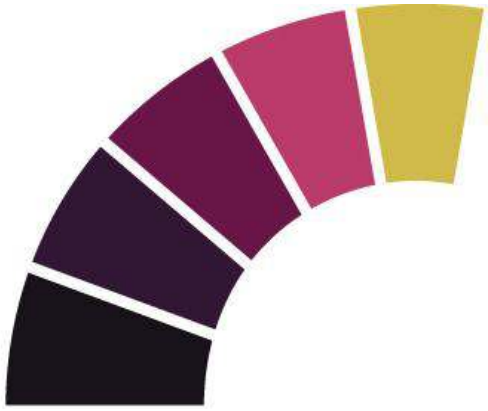
COAL MINING RISK ASSESSMENT AND COAL RECOVERY REPORT

Barugh Green Road Roundabout
Barnsley West

Reference	**4848-JPG-XX-XX-RP-G-0607-S2-P01**
Date	**December 2019**
Author	**JAM**

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APPENDICES

Appendix A Figures

Figure 1 Site Location Plan
Figure 2 Aerial Photograph

JPG. Drawing no. 4848-JPG-XX-00-DR-G-1151-S2-P01. Barugh Green Road Roundabout, Barnsley West. Conceptual Ground Model. Dated December 2019.

Fore Consulting. General Arrangement – Link Road. Barnsley West. Job/Dwg No: 9014 – 100-SK-1000. Dated 02 October 2019 for Strata Sterling Barnsley West Ltd.

Appendix B Coal Authority Mining Reports
Appendix C Coal Authority Abandonment Plans

CONFIDENTIALITY STATEMENT

This report is addressed to and may be relied upon by the following:

Strata Sterling Barnsley West Limited
Quay Point
Lakeside
DONCASTER
DN4 5PL

This report has been prepared for the sole use and reliance of the above-named party. This report shall not be relied upon or transferred to any other parties without the express written authorisation of JPG (Leeds) Limited. No responsibility will be accepted where this report is used, either in its entirety or in part, by any other party.

DOCUMENT HISTORY

Rev	Date	Revision Details	Status	Author(s)	Approved
P01	05.12.2019	First Issue	Information	JAM	JBW

1.0 APPLICATION

Strata Sterling Barnsley West Limited is to submit a planning application for a proposed roundabout on Barugh Green Road (the 'site'), which forms an access to the overall Barnsley West development area.

JPG (Leeds) Ltd has been commissioned to prepare a Coal Mining Risk Assessment Report for the proposed roundabout, in order to provide the Local Planning Authority with information on coal mining and an assessment of its impact on land stability.

1.1 Site Location and Description

The site is located approximately 3.3km to the north west of Barnsley town centre. The approximate centre of the site is located at NGR 431567, 407938.

The site is located approximately 1km to the east of the M1 motorway, on the A635 Barugh Green Road. The site includes the junction between Cannon Way and Barugh Green Road. A site location plan is presented as Figure 1 in Appendix A.

The site is irregular in shape and occupies an area of approximately 0.58 hectares. Ground levels are approximately 90m AOD in the south generally falling to approximately 85m AOD in the north. Barugh Green Road falls gently from the west to the east.

The site generally consists of arable and grazing land in the south and Barugh Green Road and Cannon Way in the north. An overgrown ditch with barbwire fence separates Barugh Green Road from the farmland.

Claycliffe Business Park lies to the north of the site, with the Metro Trading Estate to the north east. Residential properties and Tudor Rose Nurseries are present to the south east. The arable and grazing land extends beyond the southern boundary. Residential housing is located beyond the south-western boundary.

1.2 Description and Layout of Proposed Development

It is proposed to redevelop the site with a new roundabout. The development will provide access to the larger proposed Barnsley West development site.

A drawing of the proposed development has been provided, which is referenced below and a copy is contained in Appendix A.

- Fore Consulting. General Arrangement – Link Road. Barnsley West. Job/Dwg No: 9014 – 100-SK-1000. Dated 02 October 2019 for Strata Sterling Barnsley West Ltd.

1.3 Scope of the Coal Mining Risk Assessment

The purpose of the Coal Mining Risk Assessment Report is to:

- Present a desk-based review of all available information on the coal mining issues which are relevant to the application site.
- Use that information to identify and assess the risks to the proposed development from coal mining legacy, including cumulative impact of 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.
- 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.

2.0 SOURCES OF INFORMATION USED TO INFORM THIS REPORT

Sources of information upon which this risk assessment of coal mining is based are detailed below.

- The Coal Authority. Consultants Coal Mining Report. Barugh Green Road, Barugh Green, Barnsley, S75 1JY. Ref 51002193987002. Date of issue 8 November 2019.
- The Coal Authority. CON29M Non-Residential Mining Report. Barugh Green Road, Barugh Green, Barnsley, S75 1JY. Ref 51002193987001. Date of issue 8 November 2019.
- The Coal Authority. Abandonment Plan (Ref. NE498).
- British Geological Survey, Sheet SE30NW (Barnsley), at 1:10,000 Scale, dated 2005.
- JPG. Geoenvironmental Desk Study Report. Barnsley West. Ref JBW/DS/4848.v2. Date of issue July 2019.
- JPG. Preliminary Geoenvironmental Ground Investigation. Barnsley West. Ref 4848-JPG-SW-XX-RP-G-0603-S2-P01. Date of issue July 2019.
- Sections of Strata of the Coal Measures of Yorkshire (3rd edition, 1950).
- CIRIA Special Publication 32. *Construction Over Abandoned Mine Workings*. Dated 1984.
- CIRIA C758D *Abandoned mine workings manual*. London, 2019.

The above referenced Preliminary Geoenvironmental Ground Investigation report by JPG includes details of intrusive ground investigation works comprising 28 rotary boreholes and 14 trial pits carried out on the wider proposed development land.

A conceptual ground model (JPG drawing no. 4848-JPG-XX-00-DR-G-1151-S2-P01) has been prepared for the site and is presented in Appendix A. This plan includes the recorded location of the highwall associated with the Craven I Opencast Coal Site (OCCS) as well as the location of BGS and JPG borehole records in the vicinity of the site.

A summary of the BGS borehole records is provided below.

Barugh Green, Barnsley TP38
On site
Borehole Reference: SE30NW315
Depth: 2.30m bgl
NGR: 431600, 407960

Depth (m bgl)	Geology
0 – 0.30	Topsoil
0.30 – 1.00	Sandy CLAY.
1.00 – 1.80	Shaley SANDSTONE. Water seepage at 1.50m bgl.
1.80 – 2.30	SHALE/MUDSTONE.

Barugh Green, Barnsley TP39
On site
Borehole Reference: SE30NW316
Depth: 2.30m bgl
NGR: 431650, 407950

Depth (m bgl)	Geology
0 – 0.30	Topsoil
0.30 – 2.00	Sandy CLAY.
2.00 – 2.30	Shaley SANDSTONE.

Barugh Green, Barnsley TP37
On site
Borehole Reference: SE30NW314
Depth: 1.10m bgl
NGR: 431550, 407970

Depth (m bgl)	Geology
0 – 0.40	Topsoil
0.40 – 0.85	Sandy CLAY with sandstone fragments.
0.85 – 1.10	Shaley SANDSTONE.

Barugh Green, Barnsley TP36
3m north of the site.
Borehole Reference: SE30NW313
Depth: .2.50m bgl
NGR: 431500, 407980

Depth (m bgl)	Geology
0 – 0.30	Topsoil
0.30 – 0.90	Sandy CLAY.
0.90 – 1.50	Grey CLAY.
1.50 – 1.80	SHALE/MUDSTONE with ironstone fragments.
1.80 – 2.10	COAL. Coal dips slightly to the east.
2.10 – 2.50	Fireclay/Shale.

As part of the JPG preliminary ground investigation BH101 and TP101 were carried out in the vicinity of the roundabout. The strata encountered in these exploratory holes is summarised below. The borehole location is shown on Drawing no. 4848-JPG-XX-00-DR-G-1151-S2-P01 in Appendix A.

BH101
NGR 431503.18, 407852.92
Ground level 91.68m AOD

Depth (m bgl)	Proven Ground Conditions
0.00 – 0.20	Topsoil.
0.20 – 10.00	Brown grey COLLIERY SPOIL with coal.
10.00 – 10.50	Black grey mudstone.
10.50 – 11.50	Grey sandstone.
11.50 – 12.50	Grey mudstone.
12.50 – 15.00	Hard grey sandstone.
29.20 – 29.50	Coal.
29.50 – 30.30	Grey mudstone.
30.30 – 33.50	Grey brown sandstone.
33.50 – 37.50	Grey mudstone.
37.50 – 40.00	Grey sandstone.

TP101

NGR 431465.29, 407779.61

Ground level 95.94m AOD

Depth (m bgl)	Proven Ground Conditions
0.00 – 0.20	Reworked topsoil.
0.20 – 0.50	Firm gravelly clay (Reworked natural).
0.50 – 3.00	Firm to stiff slightly sandy slightly gravelly clay (Colliery Spoil).

3.0 IDENTIFICATION AND ASSESSMENT OF SITE SPECIFIC COAL MINING

Coal Mining Issue	Yes	No	Remarks
Surface mining (opencast workings)	Yes		The Consultants Coal Mining Report indicates an opencast coal site (OCCS) encroaching below the southern part of the site. The OCCS is referred to as Craven I and extends to the south. The Thin (locally) and Swallow Wood coal seams were extracted in Craven I between July 1950 and November 1951. The lowest point of excavation was recorded as 68.29m AOD, with a maximum thickness of made ground of approximately 12.00m. The coal was not extracted from the central part of the Craven I due to a faulted zone. There is a risk to the proposed roundabout due to differential settlement over the buried highwall associated with the made ground and natural strata. An intrusive investigation is required to assess the characteristics of the backfilled materials and the geometry of the highwall. Proposed mitigation measures are outlined in Section 4.
Underground coal mining.	Yes		The Consultants Coal Mining Report and CON29M Non-Residential Mining Report, included in Appendix B, state that the site is affected by past recorded underground coal mining in five coal seams from 120m to 320m depth, last worked in 1979. Based on the coal seam depth, respective seam and extraction thicknesses and the reported vertical seam separation, any workings in these seams are not considered to pose a risk to the surface stability of the site. No coal seams are recorded to outcrop on site. However, a risk remains on site from unrecorded underground shallow coal workings in the Thin, Swallow Wood, Top Haigh Moor and Low Haigh Moor seams where they are present within influencing depth of the surface. Below the base of the OCCS (bottom of Swallow Wood), the next shallowest coal seam is recorded to be the Top Haigh Moor Coal with a reported thickness of between 0.69m and 1.19m; the seam separation being approximately 26m (based on the generalised vertical section on the 1:10,000 scale geological map). JPG borehole BH101 (drilled within the OCCS to the south of the proposed roundabout as part of the 2019 JPG preliminary investigation) confirmed the base of the OCCS at 10.00m bgl and the next shallowest coal seam at 29.20m bgl (0.30m thick). The borehole was extended to 40m bgl. No further coal seams were encountered. During the 2019 JPG preliminary site investigation the boreholes carried out within the area of Craven I did not encounter any underground coal workings either outwith the opencast coal site (OCCS) or extending below the base of the OCCS. In addition, no historical coal workings were recorded on the abandonment plans for the Craven I OCCS. On this basis it is considered unlikely that there is any risk of coal seams below the base of the OCCS affecting the site. In addition, it is considered unlikely that unrecorded underground workings in the Thin and the Swallow Wood coal seams extend below the roundabout. It is proposed that further rotary boreholes are drilled to confirm the absence (or otherwise) of underground coal workings within influencing depth of the surface below the proposed roundabout. If any underground coal workings are proven, mitigation measures will be required; these are outlined in Section 4.
Mine entries (shafts and adits)		No	There are no known mine entries on the site or within 20m of the site boundary, according to the CA mining reports. However, the presence of unrecorded mine entries (shafts, adits or bell pits) cannot be discounted.
Coal mining geology (fissures/faults)		No	The BGS 1:10,000 scale geological map and the Consultants Coal Mining Report indicates one fault, trending south west to north east, crossing the western end of the site. The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

Coal Mining Issue	Yes	No	Remarks
			It is considered unlikely that geological faults or fissures could affect the proposed development on the site.
Record of past mine gas emissions		No	No records of past mine gas emissions have been recorded within 500m of the site. As part of the 2019 JPG site investigation ground gas monitoring wells were installed in the opencast. Preliminary ground gas monitoring of the wells installed in the opencast confirms elevated concentrations of carbon dioxide. However, this will not affect the proposed use of the site as a roundabout.
Recorded coal mining surface hazard		No	The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50m 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.
Coal Outcrop		No	The BGS 1:10,000 scale map indicates there are no outcropping coal seams within the site boundary. The thin coal seam outcrops approximately 14m north east of the site and dips towards the north east. Mitigation measures for areas where coal may outcrop under the proposed development are outlined in Section 4.

4.0 MITIGATION STRATEGY PROPOSED

4.1 Settlement of Opencast Backfill below the Development

A robust geotechnical solution is required for development over the backfilled opencast coal workings, in particular the highwall.

The thickness of made ground below the site is estimated to be up to approximately 12m. The properties of the backfilled materials within the opencasts will need to be further investigated as part of a comprehensive ground investigation.

In order to mitigate against undue settlement within the backfilled OCCS, it will be necessary to replace the upper made ground soils with engineered fill.

It is likely that that proposed highway will span the opencast highwall. Due to the different depths to bedrock, there is a risk of differential settlement and deformation of the highway surface.

Depending on the highwall geometry and thickness and properties of the made ground in the opencast, the following treatment methods may be appropriate.

- Removal of any shallow bedrock from the high side of the highwall and replacement with engineered fill.
- Geogrids to be placed across the highwall and below all services and highway construction.

Any earthworks should be carried out in accordance with the Manual of Contract Documents for Highway Works, Volume 1 Specification for Highway Works, Series 600 Earthworks.

An assessment of the suitability of the colliery spoil materials and also natural 'cut' soils for re-use in earthworks was carried out as part of the 2019 JPG ground investigation. The laboratory testing confirmed that the materials could be re-engineered.

4.2 Underground Coal Workings

There is a risk from potentially unrecorded underground shallow coal workings in the Thin seam, Swallow Wood seam, Top Haigh Moor seam and Low Haigh Moor seam where insufficient rock cover is present, possibly leading to progressive failure.

A site-specific coal mining investigation is required to confirm the absence of unrecorded underground coal workings below the footprint of the proposed roundabout.

If shallow mine workings are proven, mitigation measures are likely to comprise the drilling and grouting on a 3m grid below the footprint of the proposed highway. A Permit to Treat the coal workings will be required from the Coal Authority.

Pavement (road construction) design will need to take into consideration the presence of the treated underground workings (if proven below the site).

4.3 Ground Gas

Potential sources of ground gas include: deep made ground associated with the backfilled opencast below the site and to the south and coal/mines gas associated with the deep underground coal workings and possible unrecorded shallow coal workings and coal seams.

Although there are no recorded mine gas emission incidents within 500m of the site, ground gas hazards in relation to construction workers on the site will need to be taken into consideration by the principal contractor as part of their Health and Safety requirements.

4.4 Other

Although the made ground and natural soils below the site are not expected to contain any significant quantities of coal debris, it will be necessary to obtain samples and test for calorific value as part of future ground investigation works.

If any potentially combustible soils are proven, they will need to be removed at least 1m below the finished ground level and from service corridors.

5.0 COAL RECOVERY

The site is located within a Surface Coal Resource Area, in accordance with the Coal Authority Interactive Map.

Shallow coal seams have already been extracted from below the southern half of the site, yet coal may still be present in areas where no opencast extraction has been undertaken.

There is the potential for the extraction of the coal seam(s) where present at very shallow depth during future earthworks operations. Where this 'incidental' coal is present in areas of development, it will be limited in volume and the economic value will need to be assessed.

Should it be viable to extract the coal and remove it from site for its economic value, a 'Incidental Coal Agreement' between the Coal Authority and the Site Operator is required. This is an 'Agreement to Dig and Carry Away Coal in the Course of Non-Mining Activities'. A report detailing the extraction of coal and any historical mine workings encountered will need to be submitted to the Coal Authority on completion of any extraction.

6.0 CONCLUSION

Following implementation of the above mitigation methods, outlined in Section 4 above, with regard to the site's coal mining legacy, the site can be considered suitable for development.

Coal may be encountered during the earthworks operations. Any coal encountered during the earthworks shall be treated as 'incidental' and an agreement to remove the coal from the Coal Authority will be required.



J Morley
B.Sc. (Hons.), M.Sc., F.G.S
For and on behalf of JPG (Leeds) Limited

December 2019

Appendix A Figures



Figure 1 – Site Location Plan	
Site	**Barugh Green Road Roundabout, Barnsley West**
Client	**Strata Sterling Barnsley West Limited**
Job Number	**4848**
Scale	**NTS**

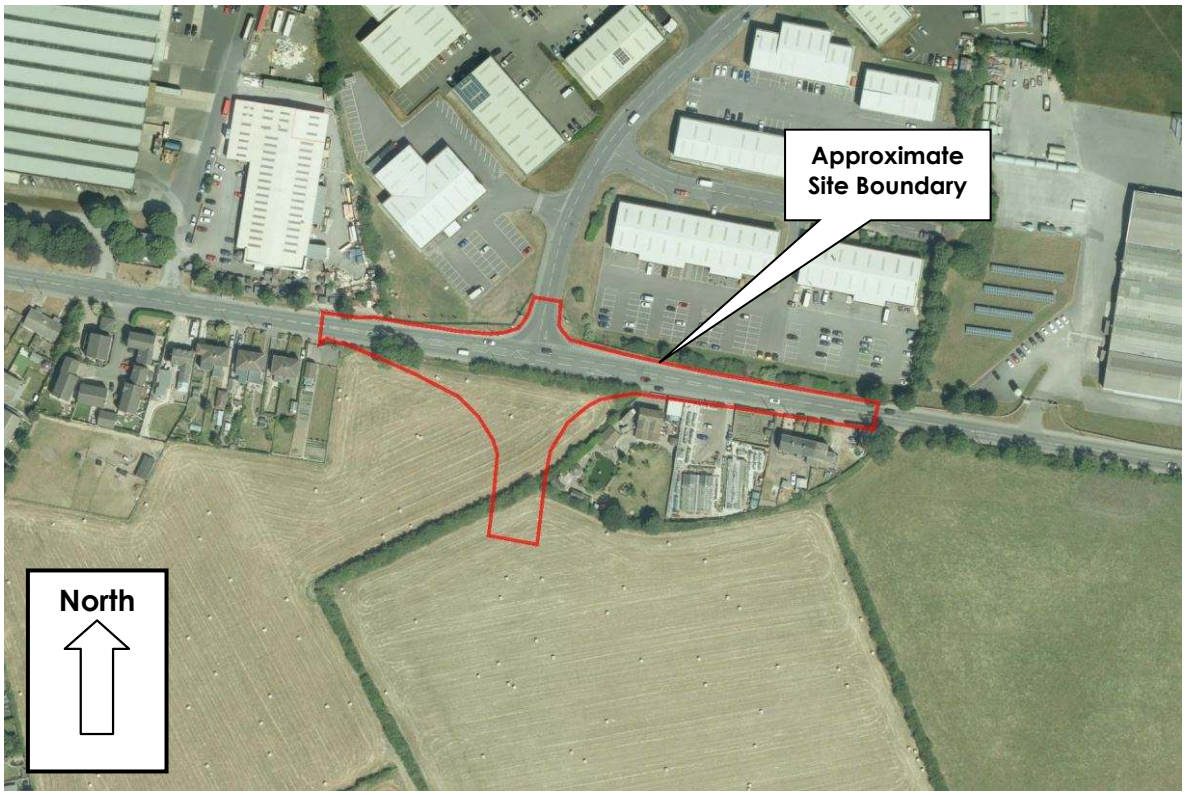


Figure 2 – Aerial Photograph	
Site	**Barugh Green Road Roundabout, Barnsley West**
Client	**Strata Sterling Barnsley West Limited**
Job Number	**4848**
Scale	**NTS**

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DO NOT SCALE

NOTES

JPG 2019 Site Investigation

BH121 — Rotary Borehole Location

TP108 — Trial Pit Location

Site Investigation Locations Surveyed Using Leica Geosystems, GNSS Rover

BGS Information

SE30NW262 — Borehole/ Trial Pit Location

Locations Are Approximate

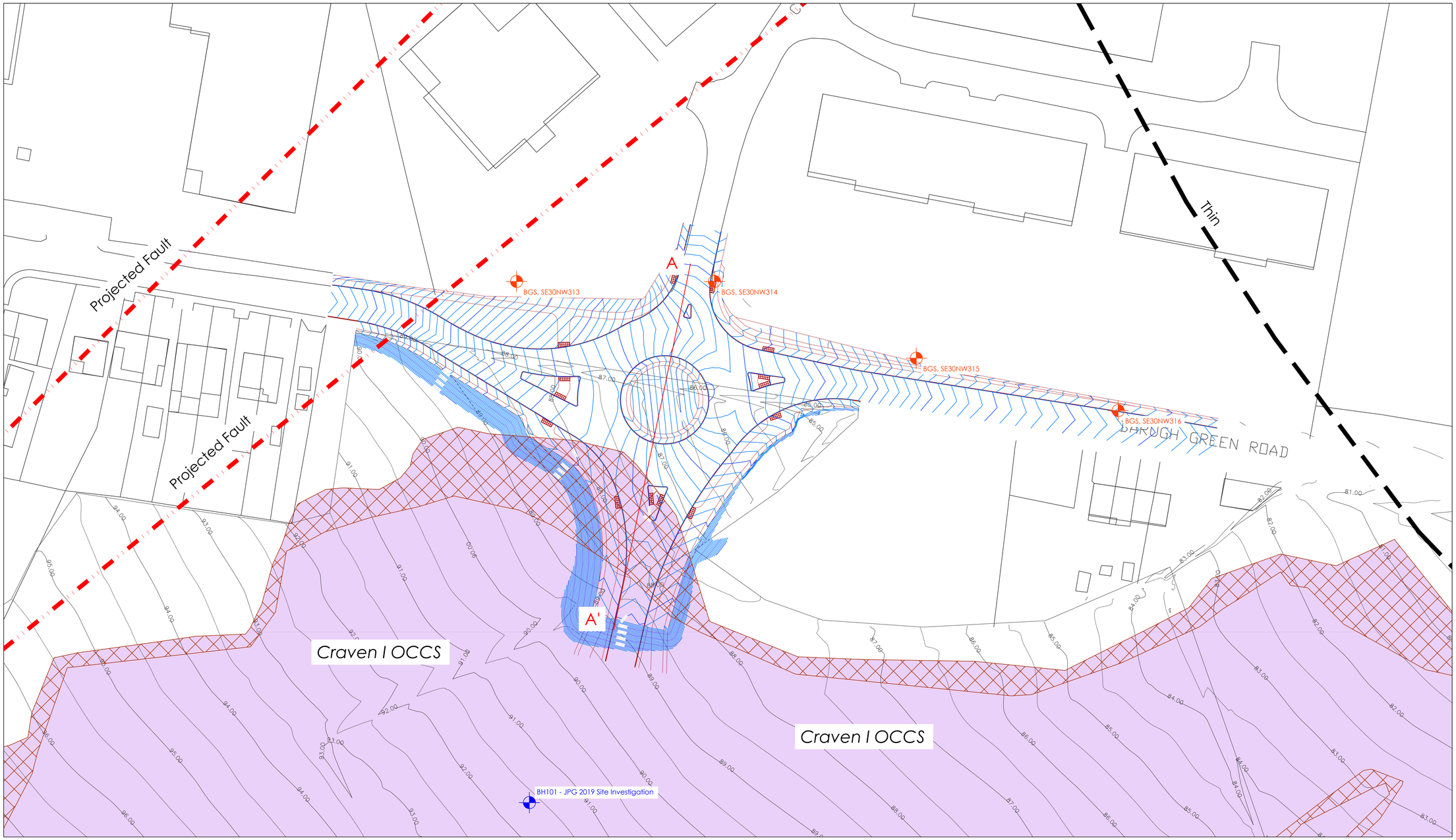
Projected Fault

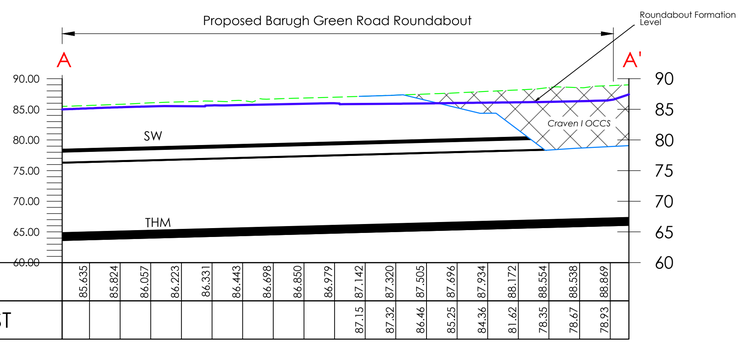
Projected Coal Seam Outcrop

Formation Levels.

Possible Craven I OCCS Backfill Material.

Projected Highwall As Taken From Abandonment Plans.





EXISTING LEVELS	85.635	85.824	86.057	86.223	86.331	86.443	86.698	86.850	86.979	87.142	87.320	87.505	87.696	87.934	88.172	88.554	88.538	88.869
BASE OF OPENCAST										87.15	87.32	86.46	85.25	84.36	81.62	78.35	78.67	78.93

SECTION A-A'
SCALE 1:500

Projected Coal Seams And Opencast Profile Have Been Established Using Historic Opencast Abandonment Plan 'OE/COMP/O3/311, Craven I & II', BGS Information & JPG 2019 Site Investigation Findings. True Thickness And Level Of Projected Coal Seams In This Area To Be Confirmed With Further Site Investigation.

Opencast Backfill Material.

REV	DESCRIPTION	DATE	BY
P01	FIRST ISSUE.	04.12.19	OLT

Project
BARNSLEY WEST

Drawing Title
BARUGH GREEN ROAD
ROUNDABOUT
CONCEPTUAL GROUND MODEL

INFORMATION ISSUE

Architect
BOND BRYAN

JPG
www.jpg.group
Leeds London Birmingham 0113 263 1155

JPG Project Ref	Scale at A1	Date	Checked	Drawn
4848	1:500	DEC'19	JBW	OLT

4848 - JPG - XX - 00 - DR - G - 1151 | S2 | P01

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N O T E S

GENERAL NOTES

a. THE TOPOGRAPHICAL SURVEY IS BASED ON INFORMATION PRODUCED BY HAYCOCK & TODD, JOB NO. S7970, FILE NAME S7970-3D-BARNSLEY WEST.DWG. THE INFORMATION USED IN PREPARATION OF THIS AND ALL OTHER FORE INFRASTRUCTURE DESIGNS AND DRAWINGS IS NOT WARRANTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL SURVEY INFORMATION PROVIDED AND REPORT ANY ANOMALIES TO FORE INFRASTRUCTURE.

DESIGN NOTES

1. ALL DESIGN AND WORKS TO COMPLY WITH CURRENT VERSION OF THE FOLLOWING DOCUMENTS:
   - DESIGN MANUAL FOR ROADS AND BRIDGES (DMRB);
   - SPECIFICATION FOR HIGHWAY WORKS (SHW);
   - MANUAL FOR STREETS (MFS); AND
   - BARNSLEY METROPOLITAN BOROUGH COUNCIL (BMBC) DESIGN GUIDE AND SPECIFICATION.

north

BARUGH GREEN ROAD ROUNDABOUT GEOMETRICAL LAYOUT SUBJECT TO BARNSLEY COUNCIL APPROVAL

ROUNDABOUT GEOMETRICAL LAYOUT SUBJECT TO TRAFFIC ANALYSIS AND ARCHITECT LAYOUT REQUIREMENTS

ROUNDABOUT GEOMETRICAL LAYOUT SUBJECT TO TRAFFIC ANALYSIS AND ARCHITECT LAYOUT REQUIREMENTS

HIGHAM COMMON ROAD ROUNDABOUT GEOMETRICAL LAYOUT SUBJECT TO BARNSLEY COUNCIL APPROVAL

REV	DESCRIPTION	DATE	BY

Client:
STRATA STERLING BARNSLEY WEST LTD

Project
BARNSLEY WEST

Drawing Title
GENERAL ARRANGEMENT - LINK ROAD

FOR COMMENT

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www.foreconsulting.co.uk

Drawn by	Checked by	Issue Date	Scale	Format
ML	PI	02.10.2019	1:2000	A1

Job Number	Drawing Number	Revision
9014	100-SK-1000	-

Appendix B Coal Authority Mining Reports

The Coal Authority

CON29M
coal mining report

BARUGH GREEN ROAD, BARUGH GREEN, BARNSLEY, S75 1JY

Known or potential coal mining risks

Past underground coal mining	Page 4
Future underground coal mining	Page 4
Past opencast coal mining	Page 5
Withdrawal of support	Page 6

Further action

No further reports from the Coal Authority are required. Further information on any next steps can be found in our Professional opinion.

For more information on our reports please visit www.groundstability.com

Professional opinion

According to the official mining information records held by the Coal Authority at the time of this search, evidence of, or the potential for, coal mining related features have been identified. In view of the coal mining circumstances we would recommend that any planned or future development should follow detailed technical advice before beginning work on site. Please see page 3 for further details on Future development.

Your reference: 4848_Barugh Green Rd
Our reference: 51002193987001
Date: 8 November 2019
Client name: JPG (LEEDS) LIMITED

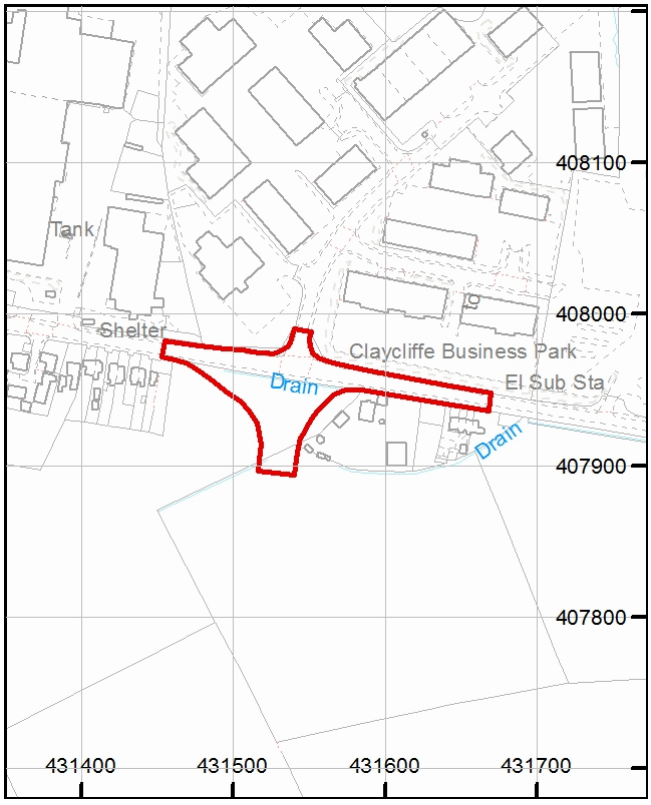
If you require any further assistance please contact our experts on:
0345 762 6848
groundstability@coal.gov.uk

The Law Society

Enquiry boundary

Key

Approximate position of enquiry boundary shown



We can confirm that the location is **on the coalfield**

Map data

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This report is prepared in accordance with the latest Law Society's Guidance Notes 2018, the User Guide 2018 and the Coal Authority's Terms and Conditions applicable at the time the report was produced.

Accessibility

If you would like this information in an alternative format, please contact our communications team on 0345 762 6848 or email communications@coal.gov.uk.

Professional opinion

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. 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.

If you are looking to develop, or undertake works, within a coal mining development high risk area your Local Authority planning department may require a Coal Mining Risk Assessment to be undertaken by a qualified mining geologist or engineer. Should you require any additional information then please contact the Coal Authority on 0345 762 6848 or email cmra@coal.gov.uk.

Detailed findings

Information provided by the Coal Authority in this report is compiled in response to the Law Society's CON29M Coal Mining enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL.

The Coal Authority owns the copyright in this report and the information used to produce this report is protected by our database rights. All rights are reserved and unauthorised use is prohibited. If we provide a report for you, this does not mean that copyright and any other rights will pass to you. However, you can use the report for your own purposes.

1 Past underground coal mining

The property is in a surface area that could be affected by underground mining in 5 seams of coal at 120m to 320m depth, and last worked in 1979.

Any movement in the ground due to coal mining activity associated with these workings should have stopped by now.

2 Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3 Future underground coal mining

The property is not in an area where the Coal Authority has received an application for, and is currently considering whether to grant a licence to remove or work coal by underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

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

4 Mine entries

There are no recorded coal mine entries known to the Coal Authority within, or within 20 metres, of the boundary of the property.

5 Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6 Past opencast coal mining

The property is within the boundary of an opencast site from which coal has been removed by opencast methods.

The property is within the boundary of an opencast site from which coal has been removed by opencast methods.

The property is within the boundary of an opencast site from which coal has been removed by opencast methods.

7 Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8 Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9 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.

10 Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11 Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Coal Authority, under its Emergency Surface Hazard Call Out procedures.

12 Withdrawal of support

The property is in an area where notices to withdraw support were given in 1956, 1977 and 1987.

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.

13 Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14 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.

Statutory cover



Coal mining subsidence

In the unlikely event of any coal mining related subsidence damage, the Coal Authority or the mine operator has a duty to take remedial action in respect of subsidence caused by the withdrawal of support from land or property in connection with lawful coal mining operations.

When the works are the responsibility of the Coal Authority, our dedicated public safety and subsidence team will manage the claim. The house or land owner ("the owner") is covered for these works under the terms of the Coal Mining Subsidence Act 1991 (as amended by the Coal Industry Act 1994). Please note, this Act does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

If you believe your land or property is suffering from coal mining subsidence damage and you need more information on what to do next, please use the following link to our website which sets out what your rights are and what you need to consider before making a claim.
www.gov.uk/government/publications/coal-mining-subsidence-damage-notice-form



Coal mining hazards

Our public safety and subsidence team provide a 24 hour a day, 7 days a week hazard reporting service, to help protect the public from hazards caused by past coal workings, such as a mine shaft or shallow working collapse. To report any hazards please call 01623 646 333. Further information can be found on our website: www.gov.uk/coalauthority.

Glossary

Key terms

adit - horizontal or sloped entrance to a mine

coal mining subsidence - ground movement caused by the removal of coal by underground mining

Coal Mining Subsidence Act 1991 - the Act setting out the duties of the Coal Authority to repair damage caused by coal mining subsidence

coal mining subsidence damage - damage to land, buildings or structures caused by the removal of coal by underground mining

coal seams - bed of coal of varying thickness

future opencast coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal from the surface

future underground coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal underground. Although it is unlikely, remaining coal reserves could create a possibility for future mining, which would be licensed by the Coal Authority

mine entries - collective name for shafts and adits

payments to owners of former copyhold land - historically, copyhold land gave rights to coal to the copyholder. Legislation was set up to allow others to work this coal, but they had to issue a notice and pay compensation if a copyholder came forward

shaft - vertical entry into a mine

site investigation - investigations of coal mining risks carried out with the Coal Authority's permission

stop notice - a delay to repairs because further coal mining subsidence damage may occur and it would be unwise to carry out permanent repairs

subsidence claim - a formal notice of subsidence damage to the Coal Authority since it was established on 31 October 1994

withdrawal of support - a historic notice informing landowners that the coal beneath their property was going to be worked

working facilities orders - a court order which gave permission, restricted or prevented coal mine workings

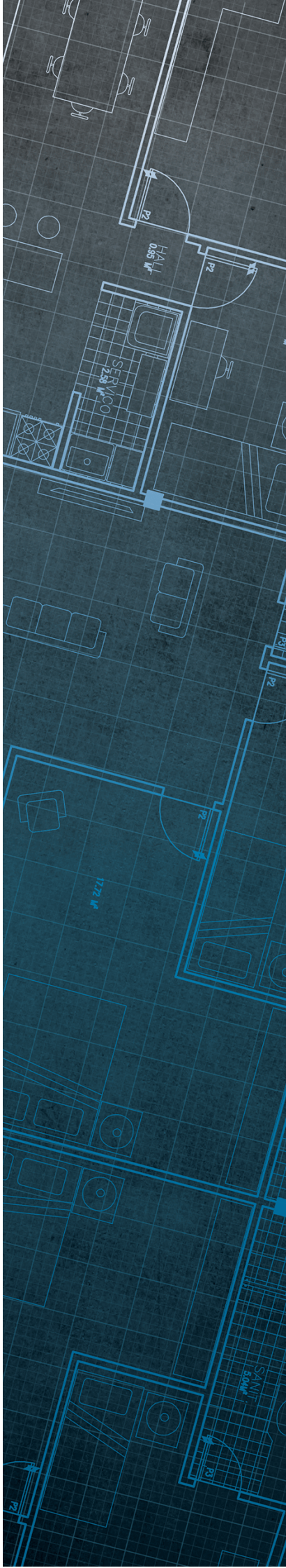
The Coal Authority

Consultants

Coal Mining Report

Barugh Green Road
Barugh Green
Barnsley
S75 1JY

Date of enquiry:	**8 November 2019**
Date enquiry received:	**8 November 2019**
Issue date:	**8 November 2019**
Our reference:	**51002193987002**
Your reference:	**4848_Barugh Green Rd**



Consultants

Coal Mining Report

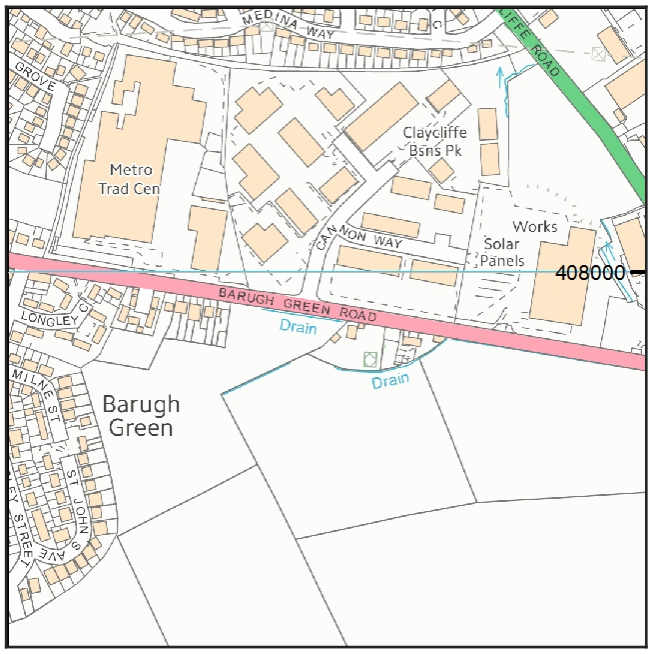
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

JPG (LEEDS) LIMITED

Enquiry address

Barugh Green Road
Barugh Green
Barnsley
S75 1JY



Approximate position of property

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NG18 4RG

www.groundstability.com

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/company/the-coal-authority
/thecoalauthority
/thecoalauthority

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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
DODWORTH	FLOCKTON THICK	Coal	6NJR	116	Beneath Property	3.8	North-East	71	1959
DODWORTH	FLOCKTON THICK	Coal	6NFT	126	North	4.2	North-East	56	1960
DODWORTH	TOP FENTON	Coal	6NDR	139	West	3.3	East	81	1958
DODWORTH	FENTON	Coal	6NNT	141	North	3.4	North-East	91	1958
DODWORTH	TOP FENTON	Coal	6NER	142	Beneath Property	3.1	North	86	1958
STANHOPE SILKSTONE	SILKSTONE	Coal	6NDS	245	Beneath Property	4.4	North-East	107	1928
STANHOPE SILKSTONE	SILKSTONE	Coal	6NCV	245	North	3.9	North-East	107	1928
unnamed	SILKSTONE	Coal	6NFS	252	South	4.7	North-East	107	1928
DODWORTH	SILKSTONE	Coal	6NGS	264	Beneath Property	4.0	North-East	105	1979
DODWORTH	SILKSTONE	Coal	6NDW	274	North-East	3.0	North-East	100	1978
WOOLLEY	WHINMOOR	Coal	6NLS	309	South-East	4.3	North-East	107	1978
WOOLLEY	WHINMOOR	Coal	6NEV	321	North-East	4.8	North-East	115	1978

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

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Abandoned mine plan catalogue numbers

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

NE3	7196	NE584
NE919	NE1034	NE498
NE124	7197	NE762

Our records show we have more plans than those shown above which could affect the enquiry boundary.

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

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.

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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.

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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 in an area where notices to withdraw support were given in 1956, 1977 and 1987.

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.

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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.

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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.

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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.

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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.

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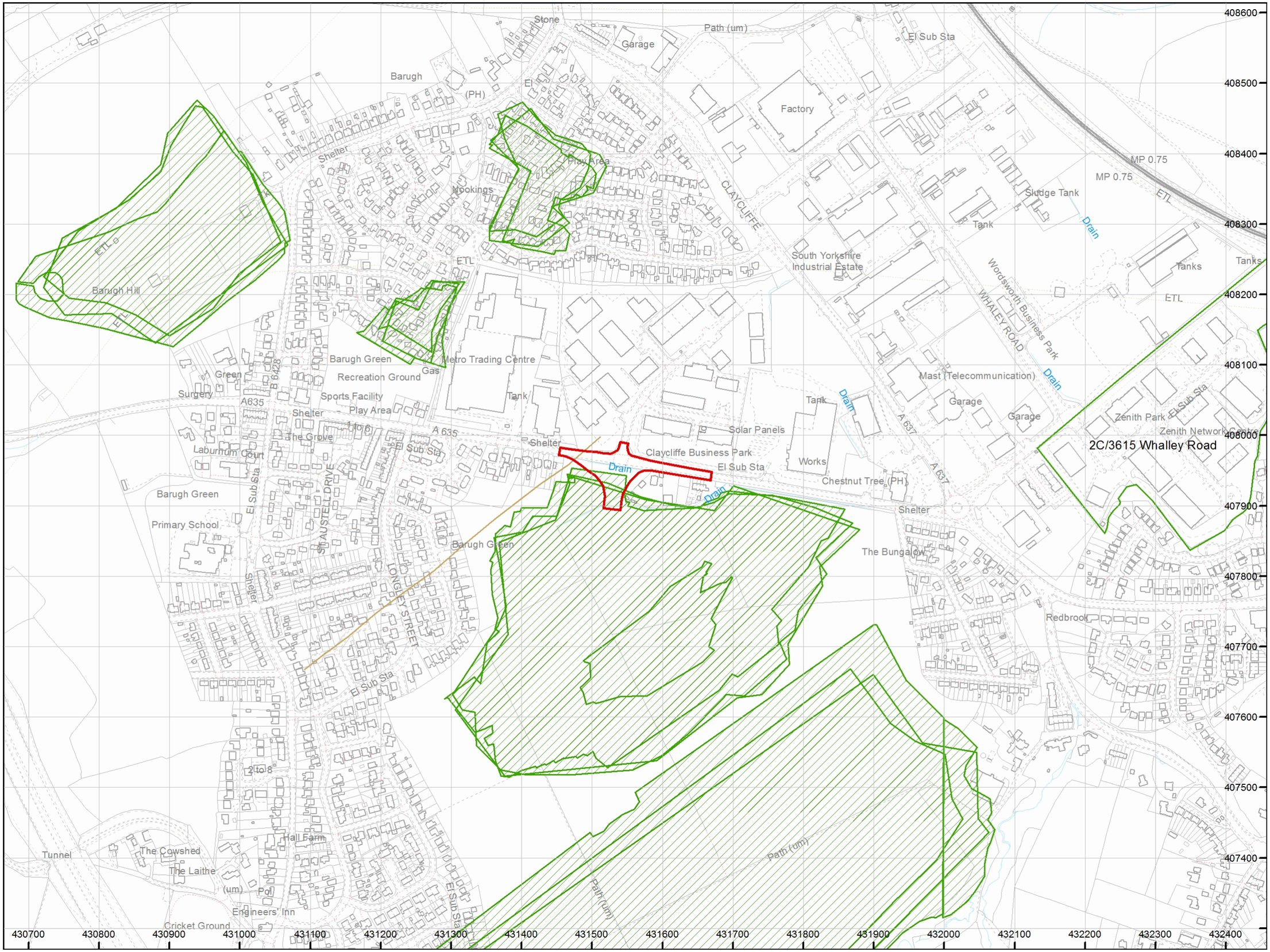
Summary of findings

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

Key

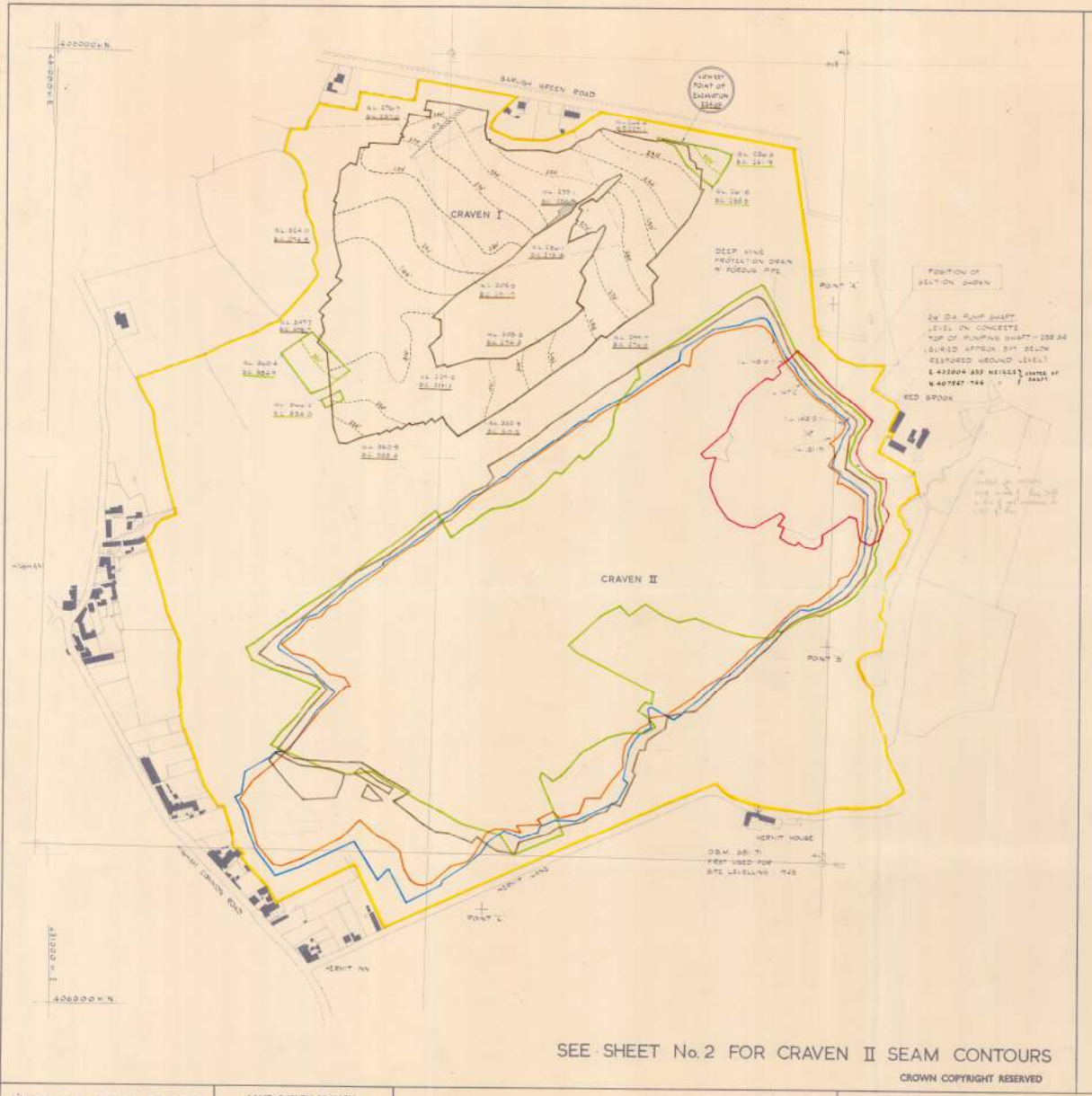
- Approximate position of the enquiry boundary shown
- Geological faults
- Opencast mine licence area
- Unlicensed opencast site



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

Appendix C Coal Authority Abandonment Plans

N.E. 498



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LEGEND

LOCATION

1:2500 SCALE ORDNANCE SHEET REFERENCE 274-E 274-A
DATE OF ORDNANCE SHEET 1961
NAME OF SITE CRAVEN I & II
LOCATION OF SITE 2 MILES N.W. OF BARNSLEY
COUNTY YORKSHIRE WEST RIDING
PARISH DARTON

QUANTITIES WORKED

TOTAL AREA REQUISITIONED 184.15 ACRES, SHEWN
TOTAL AREA WORKED EXCLUDING BATTERS 171 ACRES
TOTAL COAL RECOVERED FROM ABOVE 800,000 TONS

NAMES OF SEAMS WORKED FOR ABOVE TONNAGE (SEAMS NAMED FROM LEFT TO RIGHT IN GEOLOGICAL DESCENDING ORDER)
AREA OF COAL SEAM WORKED COLOUR EDGED (SEAMS COLOURED FROM LEFT TO RIGHT IN GEOLOGICAL DESCENDING ORDER)
TOTAL OLD WORKING VOIDS IN COAL SEAM IN CUBIC YDS.
AREA OF SEAM WHERE OLD WORKING VOIDS WERE LOCATED
BASE COAL CONTOURS OF EACH SEAM (10' INTERVALS) SHOWN.
REDUCED LEVELS TO ORDNANCE DATUM SHEWN (RELATIVE TO NEWLYN) (GROUND LEVEL / BOTTOM OF COAL)
FAULTS SHEWN WITH THROW IN FEET ON DOWNTHROW SIDE

	HAWKE	THIN	SWALLOW WOOD	TOP HAIGH MOOR	LOW HAIGH MOOR
NAMES OF SEAMS WORKED FOR ABOVE TONNAGE (SEAMS NAMED FROM LEFT TO RIGHT IN GEOLOGICAL DESCENDING ORDER)					
AREA OF COAL SEAM WORKED COLOUR EDGED (SEAMS COLOURED FROM LEFT TO RIGHT IN GEOLOGICAL DESCENDING ORDER)					
TOTAL OLD WORKING VOIDS IN COAL SEAM IN CUBIC YDS.					
AREA OF SEAM WHERE OLD WORKING VOIDS WERE LOCATED					
BASE COAL CONTOURS OF EACH SEAM (10' INTERVALS) SHOWN.	880	870	860		
REDUCED LEVELS TO ORDNANCE DATUM SHEWN (RELATIVE TO NEWLYN) (GROUND LEVEL / BOTTOM OF COAL)	OL 274.7 / BC 271.9	OL 267.4 / BC 262.4	OL 277.4 / BC 264.9	OL 249.3 / BC 244.7	OL 279.2 / BC 264.7
FAULTS SHEWN WITH THROW IN FEET ON DOWNTHROW SIDE					

EXCAVATION ONLY

GENERAL DESCRIPTION

TYPE OF LAND: MIXED FARM LAND WOODLAND AND PREVIOUSLY RESTORED LAND

NATURE OF OVERBURDEN: SOIL CLAY SHALE AND MUDSTONE

NATURE OF COAL:
- HAWKE SEAM TOP LEAF: GOOD QUALITY
- HAWKE SEAM BOTTOM LEAF: MODERATE QUALITY WITH VERY HIGH SULPHUR CONTENT (6%)
- THIN SEAM: EXCELLENT
- SWALLOW WOOD SEAM TOP LEAF: EXCELLENT
- SWALLOW WOOD SEAM BOTTOM LEAF: GOOD QUALITY BUT WITH GLOBEROUS PYRITES PARTINGS
- TOP HAIGH MOOR SEAM TOP LEAF: MODERATE QUALITY CONTAINING BONE SEAM
- TOP HAIGH MOOR SEAM MIDDLE LEAF: GENERALLY RATHER INFERIOR WITH HIGH ASH
- TOP HAIGH MOOR SEAM BOTTOM LEAF: GOOD QUALITY
- LOW HAIGH MOOR SEAM TOP LEAF: GOOD QUALITY
- LOW HAIGH MOOR SEAM BOTTOM LEAF: GOOD QUALITY

SPECIAL REMARKS:
TOTAL AREA REQUISITIONED: CRAVEN I 85.278 ACRES, CRAVEN II 180.850 ACRES
TOGETHER WITH EASEMENT ON 70.44.000 ACRES OF CRAVEN I
TOTAL AREA WORKED: CRAVEN I 77.00 ACRES, CRAVEN II 81.14 ACRES
TOTAL COAL FROM ABOVE: CRAVEN I 421,000 TONS, CRAVEN II 378,000 TONS

OPERATIONAL DATA

	CRAVEN I	CRAVEN II
DATE REQUISITIONED	2ND MAR 1960	14TH OCT 1964
COMMENCEMENT OF COALING	10TH AUG 1960	29TH APRIL 1965
COMPLETION OF COALING	20TH NOV 1961	4TH FEB 1966
COMPLETION OF RESOILING	AUG 1962	
SITE HANDED BACK TO AGRICULTURE	AUG 1962	
FINAL DEREQUISITION OF SITE		

COPIES TO	DATE	INITIALS
Mining Records (2)		
H.C. Surveyor (1)		

VERTICAL SECTION THROUGH ALL SEAMS

VERTICAL SCALE 10' TO 1 INCH

SPECIAL REMARKS (inPARTINGS & STRATA)



NATIONAL COAL BOARD OPENCAST EXECUTIVE 85/87 JERMYN STREET LONDON, S.W.1.	LAND SURVEY BRANCH DRAWN BY: H. PALMER DATE: 27 MAY 1964 CHECKED BY: J. G. E. DATE: 5.5.64 SCALE 1:2500	NAME OF ZONE OR CONTRACT	NAME OF SITE: CRAVEN I & II

SITE REFERENCE NUMBER 030445	OPERATIONAL CONTRACT NUMBER CRAVEN I OE/CON/3139 CRAVEN II OE/CON/4222	DRAWING NUMBER OE/COMP/03/311 SHEET No. 1 OF 2

OE/CLS/7a

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LS12 6QA

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