

ARTHUR LANE
AINSWORTH, BURY

DESK BASED COAL MINING
RISK ASSESSMENT

Job Number: LKC 20 1190
Date: 13th January 2020
Client: Mark Jagger



INCREASING LAND VALUE

LK
GROUP

LK Consult Document Verification			
Site Address	Arthur Lane, Ainsworth, Bolton, BL2 5PN		
Report Title	Desk Based Coal Mining Risk Assessment		
Job Number	LKC 20 1190	Document Ref.	CL-602-LKC 20 1190-01
Date Issued	13 th January 2020	Report Version	R0
Prepared By	Emma Khadun	Signature	
Reviewed By	Colin Crompton	Signature	

Revision Record			
Revision No.	Date	Nature of Revision	Approved By

DISCLAIMER

This report has been prepared by LKC who have 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 LKC which have not been independently produced or verified, LKC gives no warranty, representation or assurance as to the accuracy or completeness of such information.

This report is prepared solely for the benefit of Mark Jagger. It may not be relied upon by, or submitted to, a third party for their reliance for the purposes of valuation, mortgage, insurance and regulatory approval, until all invoices have been settled in full. Those using this information in subsequent assessments or evaluations do so at their own risk.

It should be noted this report pertains solely to potential ground stability issues relating to potential shallow mining within the proposed planning boundary only

Contents

1	Introduction	4
1.1	Background	4
2	Review of Information	5
2.1	Information Sources	5
2.2	Geological Mapping	5
2.3	Coal Authority Consultants Coal Mining Report	8
2.4	Coal Authority Interactive Mapping	9
2.5	Combustible Coal Seams	9
2.6	Historical BGS Logs	9
2.7	Historical Mapping	9
3	Coal Mining Risk Assessment.....	10
4	Conclusions and Recommendations.....	11

Figures

Figure 1:	Site Location Plan
Figure 2:	Site Boundary Plan
Figure 3:	Proposed Site Use Plan
Figure 4:	Development High Risk Area

Appendices

Appendix A:	Coal Authority Response
Appendix B:	BGS Digital Mapping
Appendix C:	Coal Authority Consultants Coal Mining Report
Appendix D:	Coal Authority Policy for Building over or within the influencing distance of a Mine Entry

1 Introduction

1.1 Background

LK Consult (LKC) has been commissioned by Mark Jagger to provide a Desk Based Coal Mining Risk Assessment Report for Arthur Lane, Ainsworth Bury. The report is required in support of a planning application (reference 64 967 to develop the site for residential use.

Following the Coal Authority's response on the 19th December 2019 (Appendix A), a Coal Mining Risk Assessment Report is required within a designated 'Coal Mining Development High Risk Area'. 'Coal Mining Development High Risk Areas' are areas, based upon Coal Authority records, where the potential land instability and other safety risks associated with former coal mining activities are likely to be greatest. They include, for example, areas of known or suspected shallow coal mining, recorded mine entries and areas of former surface mining.

This assessment is based upon guidance provided by the Coal Authority¹ and comprises a review of available desk based information. The scope of this Coal Mining Risk Assessment (as per Coal Authority guidance) is to:

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

A summary of the site details is presented in Table 1-1. Figures 1 and 2 indicate the site location and boundary. Figure 3 indicates the proposed development.

Location	End of Arthur Lane south of Sunnybank, Ainsworth, Bury, BL2 5PN. Centred at approximate National Grid Reference 375906E 410358N.
Approximate Area	405m ² .
Topography	160 metres Above Ordnance Datum (AOD). Site is approximately level.
Current Land Use	<u>Site</u> Scrub land / agricultural field with 3no. storage buildings located in the northern sector of the site. Site accessed off Arthur Lane to the south west of the site via a metal and wooden gate and rough track. <u>Surrounding Area</u> North: Timber structure to the north. East: Agricultural field. South: Agricultural field. West: Arthur Lane, field / garden, warehouse and residential housing beyond.
Proposed Development	1no. single storey dwelling with enclosed garden and parking.

Table 1-1: Summary of the site details.

¹Risk Based Approach to Development Management. Guidance for Developers. Version 4 2017.

2 Review of Information

2.1 Information Sources

LKC have obtained and reviewed information from the following sources, which is summarised in Section 2:

- Review of Published BGS Geological Mapping including:
 - Sheet 87 Little Lever, Published 1850, Scale 1:10,560 (Appendix B).
 - Sheet 85 Manchester Bedrock, Published 1975, Scale 1:50,000 (Appendix B).
 - Sheet 85 Manchester Bedrock, Published 2010, Scale 1:50,000 (Appendix B).
 - Digital mapping Manchester Bedrock, Published 2010, Scale 1:10,000 (Appendix B).
- Coal Authority Consultants Coal Mining Report (Appendix C).
- Coal Authority Interactive Map Viewer² (Figure 4).
- Coal Authority List of Combustible Coal Seams³
- Publicly available historical mapping.

2.2 Geological Mapping

Artificial

No artificial deposits (e.g. Made Ground) are recorded on the site. According to the Landmark mapping, worked ground (void) is recorded approximately 30m to the southeast of the site; according to the 1939 historical mapping this is a cutting / embankment. A quarry is located 130m to the northeast.

Superficial

The superficial geology is mapped as Devensian Till (Diamicton). According to Figure 8 of the BGS Geology of the Manchester of District⁴, superficial drift is anticipated to be 1-5m thick.

Bedrock

The bedrock is mapped as the Pennine Lower Coal Measures Formation (Mudstone, Siltstone and Sandstone). Sandstone strata belonging to the Old Lawrence Rock, is located to the north of the site. Bedrock dips to the southwest by 12 - 15°. The closest shale outcrop to the site is located 365m to the southeast, dipping to the south east by 30°.

A fault is located approximately 50m to the northeast of the site, orientated northwest-southeast. A fault is also present approximately 275m to the southwest with the same orientation.

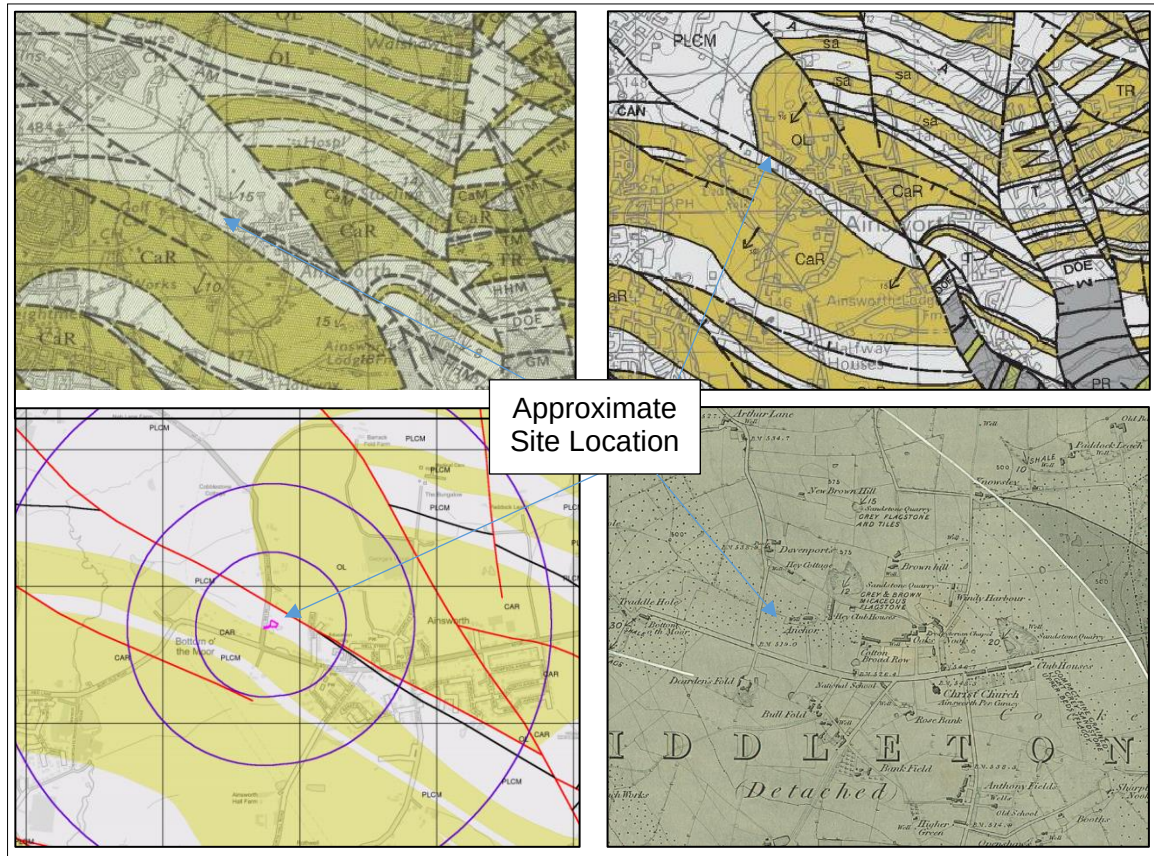
The 1:50,000 and 1:10,000 mapping suggests that due to the presence of the fault to the north of the site, the Cannel Coal Seam is prevented from subcropping on site (see plate 2-1). However, according to the Coal Authority viewer, the Cannel (Black) Coal may subcrop at rockhead approximately 10m to the northeast. The depth at which the coal may subcrop beneath the site is difficult to estimate due to the presence of the fault to the north of the site.

² <http://mapapps2.bgs.ac.uk/coalauthority/home.html>

³ <https://www.gov.uk/government/publications/coal-seams-with-a-history-of-spontaneous-combustion>

⁴ BGS (2012) Geology of the Manchester District: A brief explanation of the geology map Sheet 85 Manchester.

Extracts from geological mapping (1975 1:50,000 Sheet 85; digital extract from 2010 1:50,000 Sheet 85; 2010 1:10,000 digital map) are shown on Plate 2-1. These show the differences in geological mapping between 1975 and 2010 mapping.



The LK Group
Ref: LKC 20 1190

WESTPHALIAN

LANGSETTIAN (WESTPHALIAN A)

BR Blenkins Rock (0-50 m)

Wg2 WIGAN TWO FEET (BLENKINS) COAL

TR TRENCHERBONE (0-15 m)

T TRENCHERBONE (OLDHAM GREAT) COAL

CaR Cannel Rock (0-55 m)

CAN CANNEL (BLACK) COAL

Q QUEEN COAL

RAV RAVINE (STONE, FLOODER) COAL

sa RAVINE (STONE, FLOODER) COAL

HBt HIGHER BENT COAL

LBt LOWER BENT COAL

O OLIVE COAL

Y YARD TOPS (HIGHER TWO) COAL

YB YARD BOTTOMS (OLD, LOWER TWO) COAL

HY HALF YARD (NEW, TOP NEDDY) COAL

Sm SMITH (BOTTOM NEDDY) COAL

PLCM

Riv Royley Sandstone (0-15 m)

A ARLEY COAL

M Sandstone (0-15 m)

OL OL

OL Old Lawrence Rock (15-55 m)

P PASTURE COAL

MS Minrow Sandstone (5-12 m)

M AMALLEE MARINE BAND (AMMB)

M DARWEN FLAGS (0-10 m)

UM UPPER MOUNTAIN COAL

UM UPPER MOUNTAIN COAL

HE Helpet Edge Rock (17-30 m)

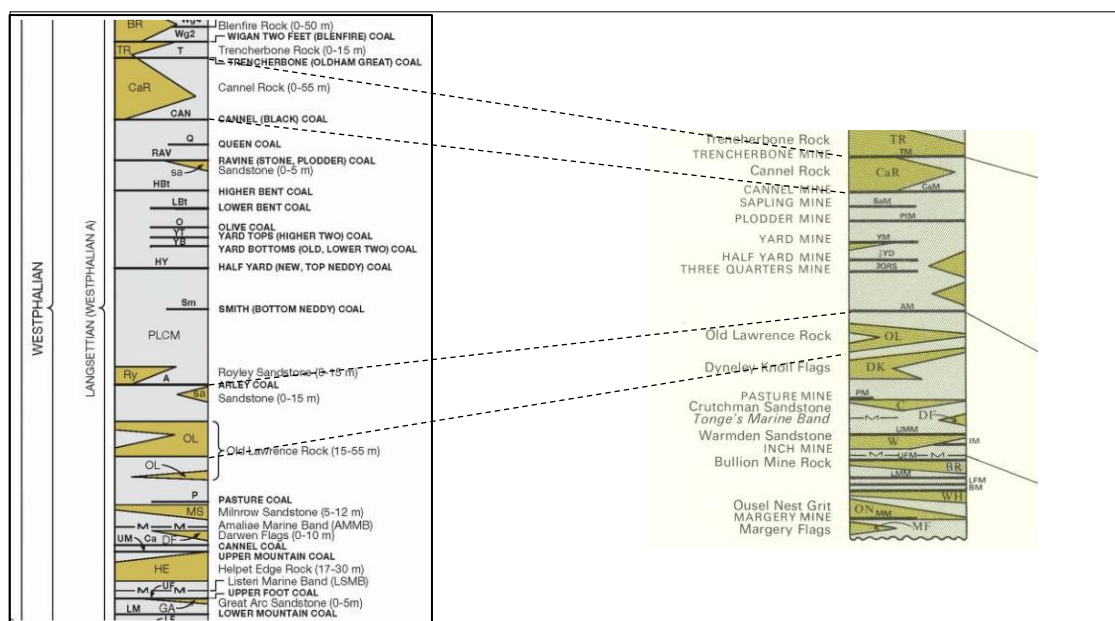
M LISTER MARINE BAND (LSMB)

UM UPPER FOOT COAL

LM GREAT ARN SANDSTONE (0-5m)

GA LOWER MOUNTAIN COAL

Plate 2-3 shows an extract of the generalized vertical sections from Sheet 85 (dated 1975 (west) and 2010) showing the section of strata expected on and below the site. The name and positions of coal seams vary between the two editions of mapping.



Sheet 85 explanatory notes provide additional information on the coal seams within the Manchester Area and this information is summarised in Table 2-1. The table shows the anticipated shallowest coal seam below the site (Cannel) and the coal seams below this in age order. It should be noted that not all coal seams may be present below the site due to geological variation.

Coal Seam (alternative names)	Thickness (m)	Type of Workings
Cannel (Black)	0.3-0.9	Deep mined and surface mined (opencast)
King	0-1.3	Deep mined and surface mined (opencast)
Queen (Foot, Sapling)	0.6-1.5	Deep mined
Ravine (Stone, Plodder)	0.9-2.5	Deep mined
Higher Bent	0-0.5	Not worked
Lower Bent	0.3-0.9	Deep mined
Foot	0-0.2	Not worked
Nayley	0-0.8	Not worked
Davis	0-0.5	Not worked
Seddon	0.4	Not worked
Water	0-0.2	Not worked
Olive	0-0.5	Not worked
Yard Tops (Higher Two)	0-0.8	Deep mined and crop working
Yard Bottoms (Old, Lower Two)	0.6-2.5	Deep mined and crop working
Yard	0-0.8	Deep mined
Half Yard (Top Neddy, New)	0.6-1.2	Deep mined
Three Quarters (Cockloft)	0.2-0.9	Deep mined
Smith (Bottom Neddy, Three Quarters)	0-1.7	Deep mined and crop working
Arley	0.9-2.0	Deep mined, crop working and surface mined

Table 2-1. Extract from the Geology of Manchester district explanatory notes (Figure 5).

2.3 Coal Authority Consultants Coal Mining Report

The consultants coal mining report is summarised in Table 2-2.

Mining Activity and Geology	
Past underground mining	No past mining recorded.
Probable unrecorded shallow workings	Yes.
Spine roadways at shallow depth	No spine roadway recorded at shallow depth.
Mine entries (within 100m)	None recorded within 100m of the enquiry boundary.
Abandoned mine plan catalogue numbers	16820.
Outcrops	No outcrops recorded.
Geological faults, fissures and breaklines	No faults, fissures or breaklines recorded.
Opencast mines	None recorded within 500m of the enquiry boundary.
Coal Authority managed tips	None recorded within 500m of the enquiry boundary.
Investigative or Remedial Activity	
Site investigations	None recorded within 50m of the enquiry boundary.
Remediated sites	None recorded within 50m of the enquiry boundary.
Coal mining subsidence	Not received a damage notice or claim for the subject property, or any property within 50m, since 1994. No current Stop Notice delaying remedial works or repairs to property. Not aware of any request made to carry out preventative works before coal is worked.

Table 2-2: Summary of Coal Authority Consultants Coal Mining Report.

Investigative or Remedial Activity	
Mine gas	None recorded within 500m of the enquiry boundary.
Mine water treatment schemes	None recorded within 500m of the enquiry boundary.
Licensing and Future Mining Activity	
Future underground mining	None recorded.
Coal mining licensing	None recorded within 200m of the enquiry boundary.
Court Orders	None recorded.
Section 46 notices	No notices have been given, stating that the land is at risk of subsidence.
Withdrawal of support notices	Not in an area where a notice to withdraw support has been given or where a notice has been given cancelling the entitlement to withdraw support.
Payments to owners of former copyhold land	Not in an area where a relevant notice has been published.
Further Information	
Based on the response in this report, no further information has been highlighted.	

Table 2-2 continued: Summary of Coal Authority Consultants Coal Mining Report.

Probable unrecorded shallow workings are defined as ‘*areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30m deep)*’.

2.4 Coal Authority Interactive Mapping

The site is within a Development High Risk Area, with the following features identified:

- Probable Shallow Coal Mine Workings – majority of the site.
- A coal outcrop is located approximately 10m to the northeast.
- Coal seam level in the Ainsworth area is between 7m and 80m last worked in 1900.
- A mine entry is located 175m to the northeast within the former sandstone quarry.

These features are shown on Figure 4.

2.5 Combustible Coal Seams

Some coal seams have been known to suffer from occurrences of spontaneous combustion and are consequently regarded as at ‘high risk’ of succumbing to spontaneous combustion when being entered, worked or disturbed. The Coal Authority have produced a list of seams for different areas of the UK.

None of the coal seams listed are expected at shallow depth below the site. However, if roof coal has been left, this could also pose a risk.

2.6 Historical BGS Logs

No nearby historical boreholes of significance are available.

2.7 Historical Mapping

The following historical features have been identified associated with coal mining:

- A former sandstone quarry is located 160m to the northeast. A mine shaft is located within this quarry on the 1893 mapping.

3 Coal Mining Risk Assessment

Table 3-1 below summarises the potential risks associated with coal mining legacy for the proposed development site.

Coal Mining Issue	Potential Risk	Risk Assessment
Underground coal mining (recorded at shallow depths)	X	No recorded shallow underground workings below the site.
Underground coal mining (probable at shallow depths)	✓	Probable underground shallow workings are recorded by the Coal Authority, based on geological mapping and Coal Authority Outcrop information, LKC considered there to be a potential risk of shallow underground workings. This is associated with the CD020C / Canel seam, which may be present a shallow depth. Further coal seams may also be present. Investigation work recommended and a watching brief during groundworks.
Mine entries (shafts / adits)	?	No recorded mine entries within influencing distance of the site. However, there is also a risk of unrecorded mine entries as the site is within a coal mining area. No specific investigation work is advised. However, a watching brief should be undertaken during any intrusive investigation work and groundworks to check for any signs of unrecorded mine entries.
Coal mining geology (geological faults, fissures and breaklines)	?	Not recorded on Coal Authority data. The nearest fault is located 50m to the northeast of the site.
Record of past mine gas emissions	?	Not recorded on Coal Authority data. However, shallow potentially worked coal seams may be present below the site, which have the potential to be a source of ground gas. This should include monitoring during any intrusive mining investigation. In addition, either precautionary gas protection measures of gas monitoring in line with CIRIA 655 ⁵ may be required depending on the outcome of the mining investigation.
Recorded coal mining surface hazard	X	No recorded coal mining surface hazard.
Surface mining (opencast workings)	X	No recorded surface mining (opencast workings).

Table 3-1: Potential Coal Mining Risks.

⁵ CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings". CIRIA C665.

4 Conclusions and Recommendations

Summary

Based upon the available information, LKC have identified potential shallow coal mining risks which are summarised in Table 4-1.

Coal Mining Issue	Potential Risk
Underground coal mining (recorded at shallow depths)	X
Underground coal mining (probable at shallow depths)	✓
Mine entries (shafts / adits)	?
Coal mining geology (fissures)	?
Record of past mine gas emissions	?
Recorded coal mining surface hazard	X
Surface mining (opencast workings)	X

Table 4-1: Summary of coal mining potential risks.

Site Investigation Recommendations

Considering the available information and guidance given in C758⁶ and SP32⁷ LKC consider that intrusive investigation work should be carried out to confirm the risk associated with coal mining. The intrusive investigation works should be designed by a suitably qualified mining engineer; these works are likely to include the options detailed in Table 4-2.

Coal Mining Issue	Investigation Work
Underground coal mining (recorded at shallow depths)	N/A.
Underground coal mining (probable at shallow depths)	Rotary drilling across the site to confirm the depth to coal seam, the thickness of seams and any signs of workings. Watching brief during groundworks to check for any signs of mining related ground instability (see below).
Mine entries (shafts / adits)	No specific investigation work required. However, watching brief during intrusive investigation work and groundworks to check for any signs of mine entries (see below).
Coal mining geology (fissures)	N/A.
Record of past mine gas emissions	Gas monitoring during mining investigation (rotary drilling). Depending on findings of mining investigation, possible precautionary gas protection measures or gas monitoring in line with CIRIA 665 ⁸ .
Recorded coal mining surface hazard	N/A.
Surface mining (opencast workings)	N/A.

Table 4-2: Summary of investigation requirements.

Investigation work should be carried out in line with CIRIA C758, SP32 and Coal Authority guidance.

A Coal Authority Permit⁹ is required for intrusive activities which will disturb or enter any coal seams, coal mine workings or coal mine entries (shafts and adits).

⁶ CIRIA (2019). "Abandoned Mine Workings Manual". C758.

⁷ CIRIA (1984). "Construction over abandoned Mine Workings". SP32.

⁸ CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings". CIRIA C665.

⁹ <https://www.gov.uk/get-a-permit-to-deal-with-a-coal-mine-on-your-property>

Watching Brief

A watching brief is recommended in all coal mining areas. This could be undertaken by experienced site staff on low risk sites or by a suitably qualified coal mining engineer or consultant on high risk sites. This site is considered to be a low to medium risk from unrecorded workings in the Cannel coal seam. However, this may need to be revised following the findings of the mining investigation.

The watching brief should cover the period in which any earthworks, reduce level dig or foundation excavation works are being undertaken. Particular care should be taken to identify any potential features which may indicate the presence of shallow coal mining hazards.

Such hazards may include, but not limited to, features such as unexplained depressions or voids, outcropping coal seams, localised areas of deep made ground (which could represent backfilled areas of coal mining related ground subsidence, crown holes or mine entries), or unexpected man-made items at depth (e.g. brickwork, concrete, timber or steelwork).

Mine entries may manifest during excavation works as circular, square or rectangular areas of deep Made Ground (typically several metres in size) set against the natural strata (e.g. Glacial Till or weathered rock). Mine shafts may also be covered with a large, thick concrete cap.

If any of the above features are identified during the course of the development works then work should be stopped to allow the mining engineer / consultant to assess them and if necessary design further or additional investigation and / or remediation works.

Mitigation Measures

Depending on the findings of the mining investigation, mitigation measures may be required. Table 4-3 provides possible mitigation options.

Coal Mining Issue	Mitigation Measures
Underground coal mining (recorded at shallow depths)	N/A.
Underground coal mining (probable at shallow depths)	Move structures to 'safe' areas of the site. Stabilisation of the ground (i.e. grouting) and suitable foundations to be implemented.
Mine entries (shafts / adits)	Move structures to 'safe' areas of the site. Treat mine entry (backfill, cap). Follow The Coal Authority's 'Policy for Building Over or Within The Influencing Distance of A Mine Entry' (See Appendix D).
Coal mining geology (fissures)	N/A.
Record of past mine gas emissions	Gas protection measures.
Recorded coal mining surface hazard	N/A.
Surface mining (opencast workings)	N/A.

Table 4-3: Summary of potential mitigation measures.

Conclusions and Safe Development

At this stage the possibility for shallow workings can only be ascertained from site investigation; however, LKC consider that the site could be safely developed with regards to shallow mining subject to an appropriate site investigation and, if required,

appropriate mitigation measures which may include some of those measures as detailed above.

Therefore, LKC consider the study site should be capable of being made safe and stable to meet the requirements of national planning policy with regard to development on unstable land.

Following the conclusion of the CMRA, LKC recommend an appropriate coal mining site investigation to confirm that the development of the site is feasible.

Figures

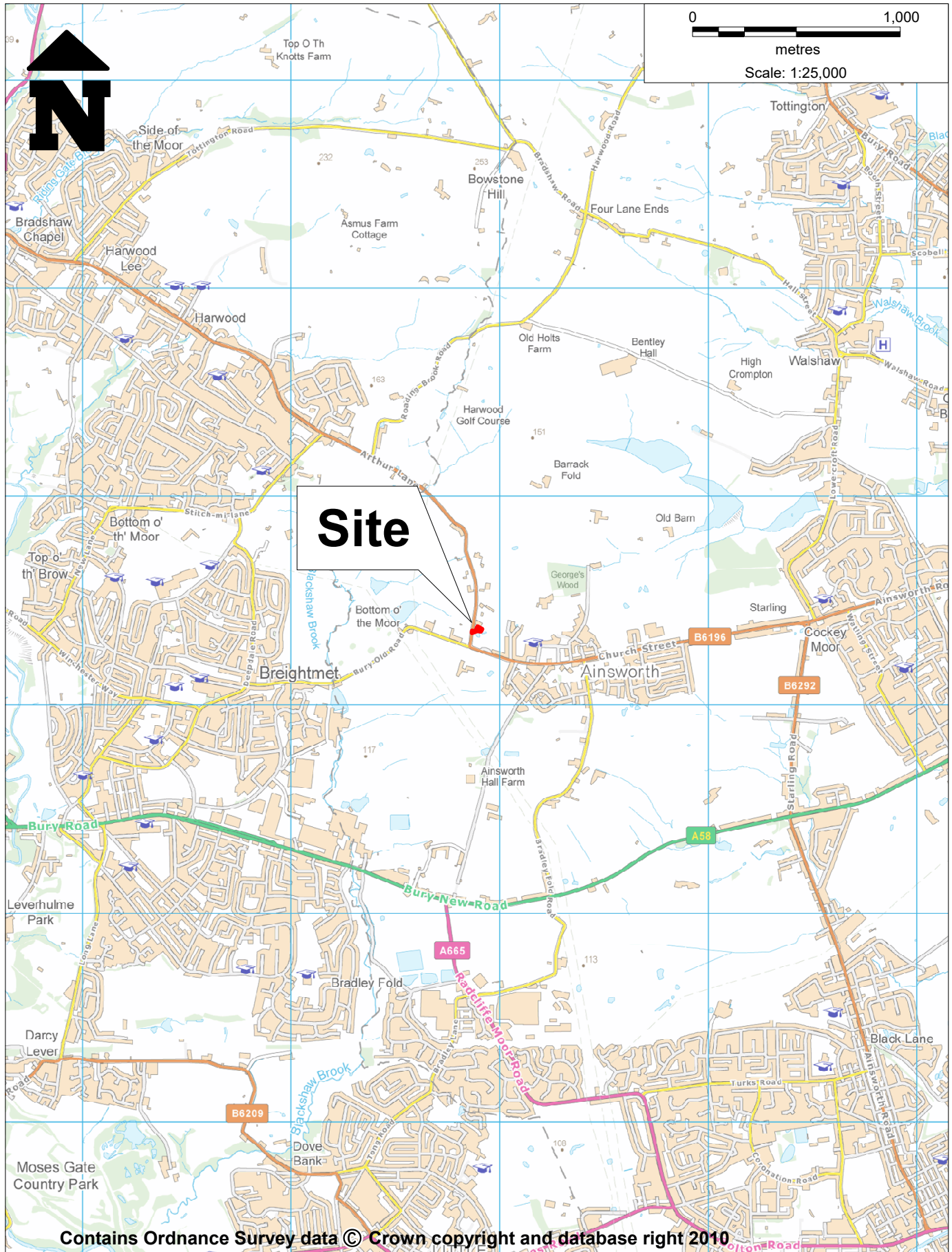
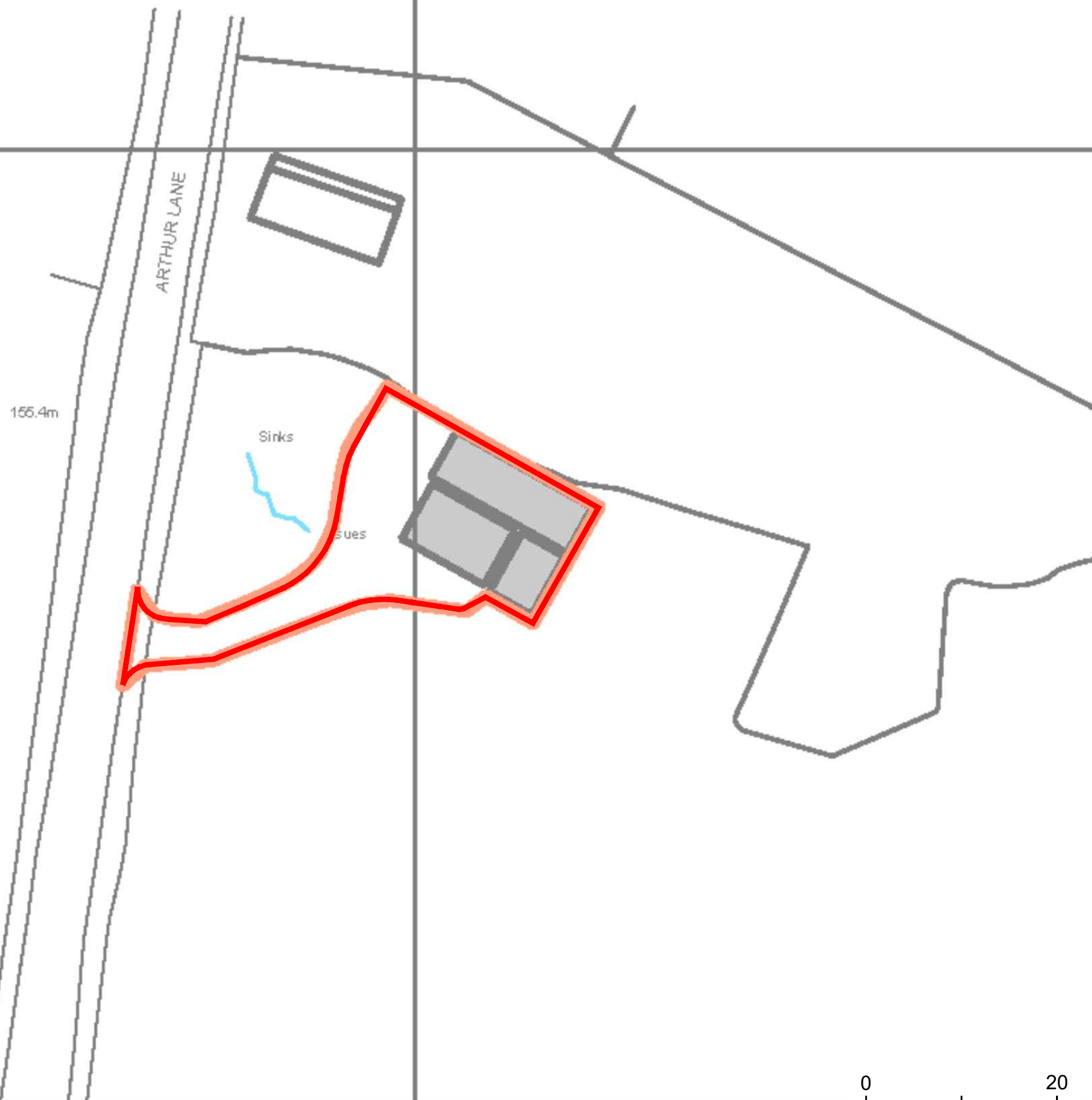
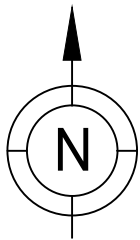


Figure 1: Site Location Plan, Arthur Lane, Ainsworth, Bury

Drawn: January 2020 Scale: 1:25,000 @ A4 (see scale bar)



KEY

 Site Boundary

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.



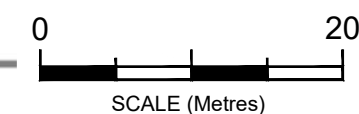
Client:
Peel Design Partnership Ltd

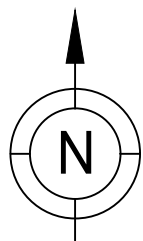
Site:
Arthur Lane, Ainsworth, Bury

Title:
Site Boundary Plan

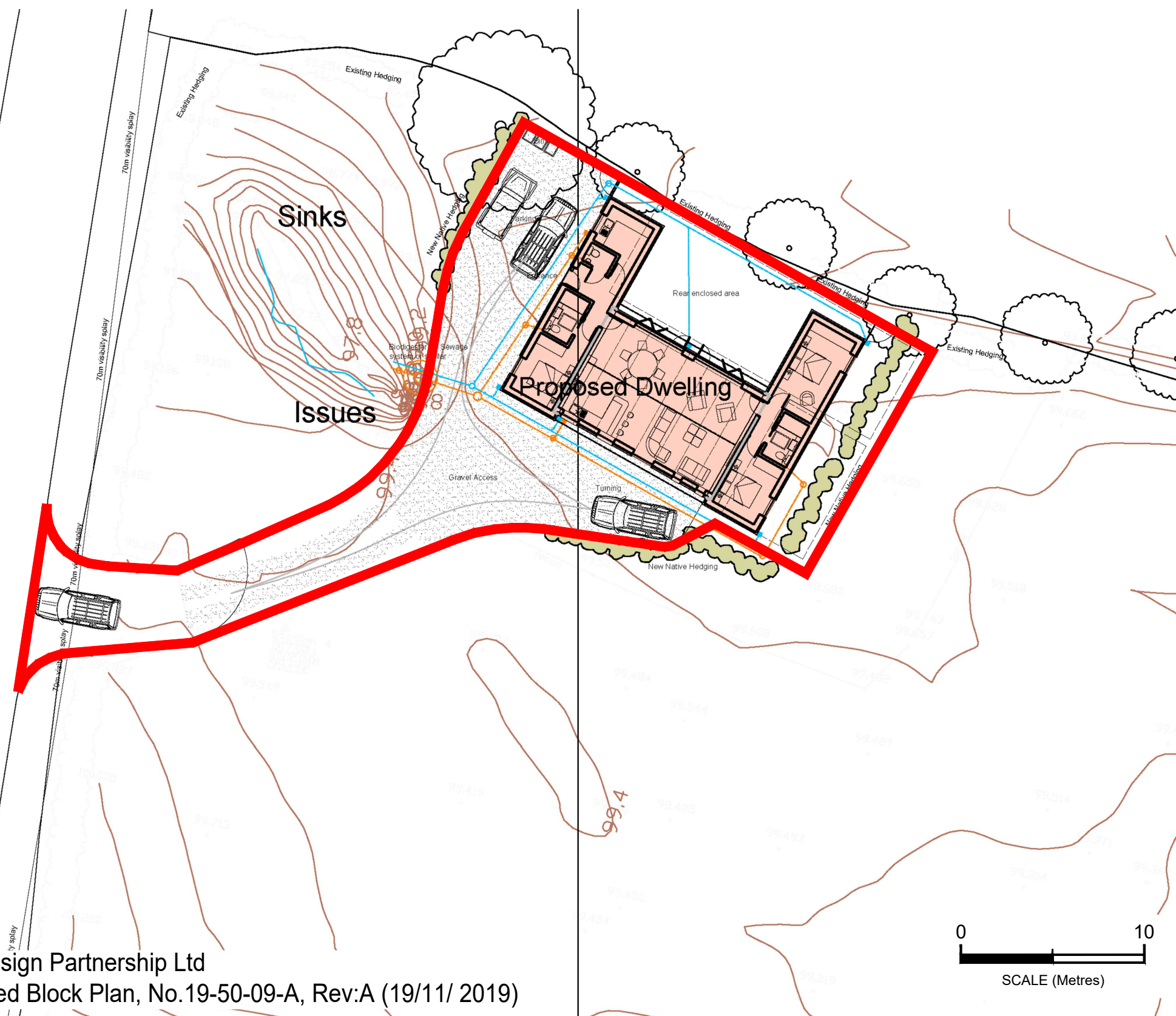
Job No.:	Scale (See Scale Bar):	Figure:	Revision:
LKC 20 1190	1:500 @ A3	2	
Drawn By:	Checked By:	Drawn:	
AC	EK	Jan 2020	

Extract from: Peel Design Partnership Ltd
Drawing Ref: Proposed Block Plan, No.19-50-01, (August 2019)





155.4m



KEY

 Site Boundary

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.



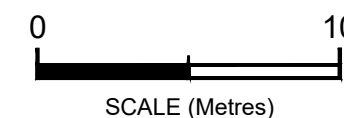
Client:
Peel Design Partnership Ltd

Site:
Arthur Lane, Ainsworth, Bury

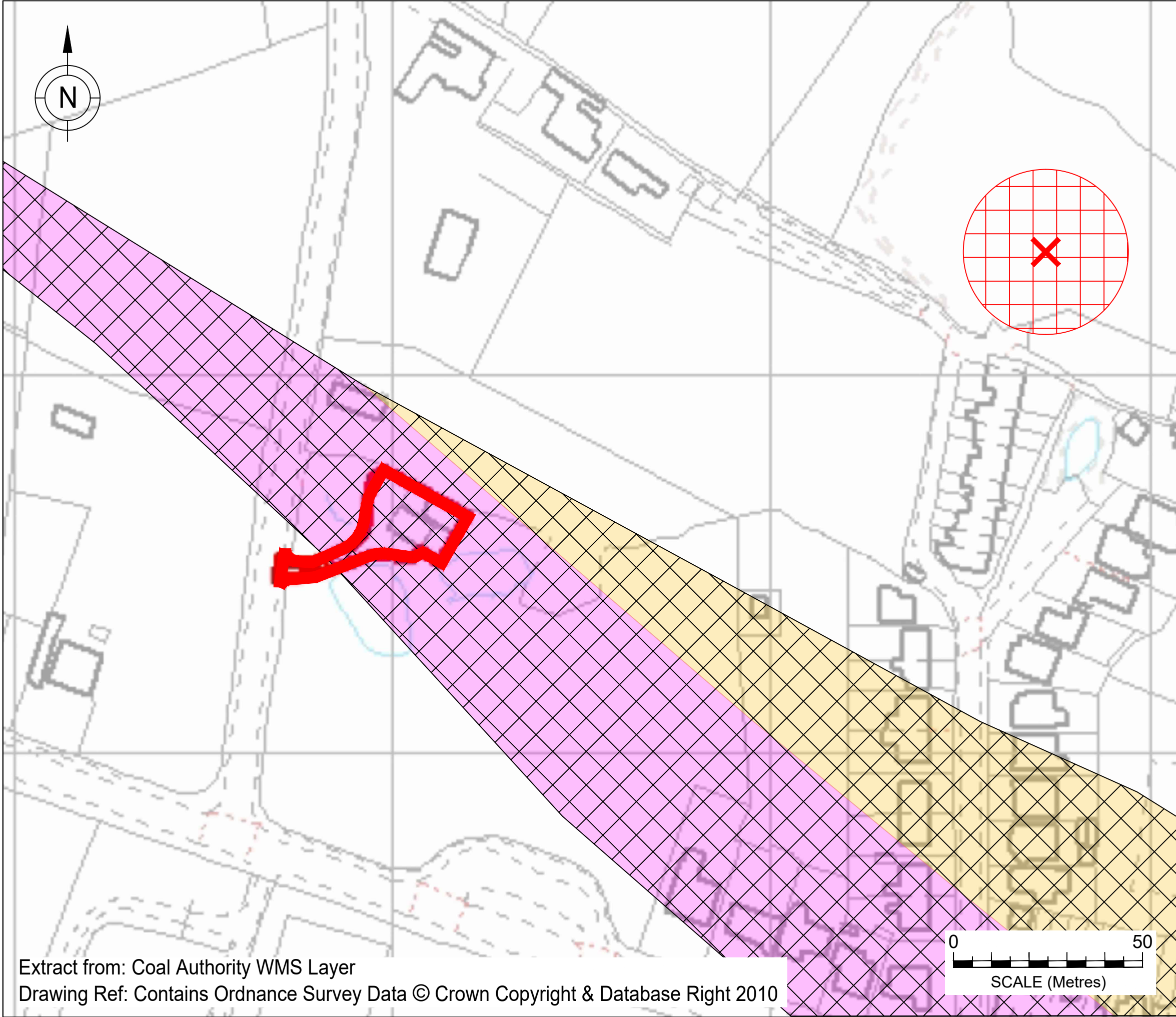
Title:
Proposed Development Plan

Job No.: LKC 20 1190	Scale (See Scale Bar): 1:250 @ A3	Figure: 3	Revision:
Drawn By: AC	Checked By: EK	Drawn: Jan 2020	

Extract from: Peel Design Partnership Ltd
Drawing Ref: Proposed Block Plan, No.19-50-09-A, Rev:A (19/11/ 2019)



SCALE (Metres)



KEY

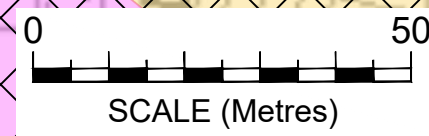
- Site Boundary
- Mine Entry
- Mine Entry Potential Zone of Influence
- Development High Risk Area
- Probable Shallow Coal Mine Workings
- Coal Outcrops

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.



Client: Peel Design Partnership Ltd			
Site: Arthur Lane, Ainsworth, Bury			
Title: Development High Risk Area			
Job No.: LKC 20 1190	Scale (See Scale Bar): 1:1000 @ A3	Figure: 4	Revision:
Drawn By: AC	Checked By: EK	Date: Jan 2020	

Extract from: Coal Authority WMS Layer
Drawing Ref: Contains Ordnance Survey Data © Crown Copyright & Database Right 2010



Appendix A

Coal Authority Correspondence



200 Lichfield Lane
Berry Hill
Mansfield
Nottinghamshire
NG18 4RG

Tel: 01623 637 119 (Planning Enquiries)

Email: planningconsultation@coal.gov.uk

Web: www.gov.uk/coalauthority



The Coal Authority

For the Attention of: Tom Beirne – Case Officer
Bury Metropolitan Borough Council

[By Email: development.control@bury.gov.uk]

19 December 2019

Dear Mr Beirne

PLANNING APPLICATION: 64967

Demolition, conversion and extension of existing livestock buildings to create 1no. single storey dwelling with enclosed garden and parking at Land at Junction of Arthur Lane/bury Old Road, Ainsworth, Bury

Thank you for your consultation letter of 11 December 2019 seeking the views of the Coal Authority on the above planning application.

The Coal Authority is a non-departmental public body sponsored by the Department of Business, Energy & Industrial Strategy. As a statutory consultee, the Coal Authority has a duty to respond to planning applications and development plans in order to protect the public and the environment in mining areas.

The Coal Authority Response: Fundamental Concern

I have reviewed the site location plans, the proposals and the supporting information submitted and available to view on the LPA website. I can confirm that the site falls within the defined Development High Risk Area and that a Coal Mining Risk Assessment, or equivalent report, is required to be submitted to support this application.

The Coal Authority records indicate that the application site lies in an area where historic unrecorded underground coal mining is likely to have taken place at shallow depth.

In accordance with the agreed risk-based approach to development management in the defined Development High Risk Areas, the applicant should be informed that they need to submit a Coal Mining Risk Assessment Report, or equivalent report, to support this planning application. As no relevant information has been submitted at this time the Coal Authority **objects** to this planning application.

The Coal Authority would be pleased to receive for further consultation and comment any additional information submitted by the applicant.

Please do not hesitate to contact me if you would like to discuss this matter further.

Yours sincerely

James Smith

James Smith *BSc. (Hons), Dip.URP, MRTPI*
Planning Liaison Manager

General Information for the Applicant

The Coal Mining Risk Assessment needs to interpret the coal mining risks and should be based on up-to-date information of past coal mining activities in relation to the application site. A variety of Coal Mining Report products which provide baseline information on coal mining legacy risks are available from www.groundstability.com. A Coal Mining Risk Assessment should then take the information contained in the Coal Mining Report and interpret the risks identified specifically in relation to the proposed development. If you merely submit a Non Residential Coal Mining Report, an Enviro All-in-One Report or other factual report obtained from www.groundstability.com (or a similar product from private land search suppliers) this will not overcome our objection to your planning application.

The need for a Coal Mining Risk Assessment is set out in the National Planning Practice Guide at: www.planningguidance.planningportal.gov.uk/blog/guidance/land-stability/land-stability-guidance/

This coal mining information you obtain from a Non-Residential Coal Mining Report, an Enviro-All-in-One Report or other factual report should then be used to assess whether or not past mining activity poses any risk to the development proposal and, where necessary, propose mitigation measures to address any issues of land instability. This could include further intrusive investigation on site to ensure that the Local Planning Authority has sufficient information to determine the planning application.

The Coal Mining Risk Assessment should be prepared by a “competent body”. Links to the relevant professional institutions of competent bodies can be found at: www.gov.uk/planning-applications-coal-mining-risk-assessments

Guidance on how to produce a Coal Mining Risk Assessment and a template which the “competent body” can utilise is also contained at:

www.gov.uk/planning-applications-coal-mining-risk-assessments

Under the Coal Industry Act 1994 any intrusive activities, including initial site investigation boreholes, and/or any subsequent treatment of coal mine workings/coal mine entries for ground stability purposes require the prior written permission of the Coal Authority, since such activities can have serious public health and safety implications. Failure to obtain permission will result in trespass, with the potential for court action. In the event that you are proposing to undertake such work in the Forest of Dean local authority area our permission may not be required; it is recommended that you check with us prior to commencing any works. Application forms for Coal Authority permission and further guidance can be obtained from the Coal Authority's website at:

www.gov.uk/get-a-permit-to-deal-with-a-coal-mine-on-your-property

Disclaimer

The above consultation response is provided by the Coal Authority as a Statutory Consultee and is based upon the latest available coal mining data on the date of the response, and electronic consultation records held by the Coal Authority since 1 April 2013. The comments made are also based upon only the information provided to the Coal Authority by the Local Planning Authority and/or has been published on the Council's website for consultation purposes in relation to this specific planning application. The views and conclusions contained in this response may be subject to review and amendment by the Coal Authority if additional or new data/information (such as a revised Coal Mining Risk Assessment) is provided by the Local Planning Authority or the applicant for consultation purposes.

Appendix B

Geology Maps

Geology 1:10,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WGR	Worked Ground (Undivided)	Void	Holocene - Holocene
	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene
	WMGR	Infilled Ground	Artificial Deposit	Holocene - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Pleistocene
	TILLD	Till, Devensian	Diamicton	Devensian - Ipswichian
	HEAD	Head	Clay, Silt, Sand and Gravel	Quaternary - Ryazanian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	PMCM	Pennine Middle Coal Measures Formation	Mudstone, Siltstone and Sandstone	Bolsoviaian - Duckmantian
	PMCM	Pennine Middle Coal Measures Formation	Sandstone	Bolsoviaian - Duckmantian
	PLCM	Pennine Lower Coal Measures Formation	Mudstone, Siltstone and Sandstone	Langsettian - Langsettian
	CAR	Cannel Rock (South Lancashire)	Sandstone	Langsettian - Langsettian
	OL	Old Lawrence Rock	Sandstone	Langsettian - Langsettian
	PLCM	Pennine Lower Coal Measures Formation	Sandstone	Langsettian - Langsettian
	TRBR	Trencherbone Rock	Sandstone	Langsettian - Langsettian
	Fault			
	Rock			



Geology 1:10,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:10,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around a site. This mapping may be more up to date than previously published paper maps.

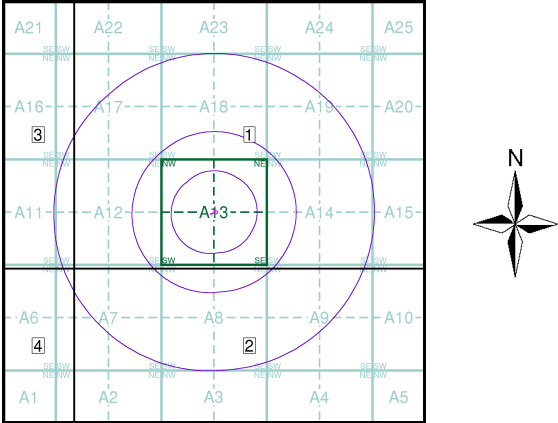
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page.

Please Note: Not all of the layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:10,000 Maps Coverage

Map ID:	2	Map ID:	3
Map Name:	SD70NE	Map Name:	SD71SW
Map Date:	2008	Map Date:	2007
Bedrock Geology:	Available	Bedrock Geology:	Available
Superficial Geology:	Available	Superficial Geology:	Available
Artificial Geology:	Available	Artificial Geology:	Available
Faults:	Available	Faults:	Available
Landslip:	Available	Landslip:	Available
Rock Segments:	Available	Rock Segments:	Available
Map ID:	1	Map ID:	4
Map Name:	SD71SE	Map Name:	SD70NW
Map Date:	2007	Map Date:	2008
Bedrock Geology:	Available	Bedrock Geology:	Available
Superficial Geology:	Available	Superficial Geology:	Available
Artificial Geology:	Available	Artificial Geology:	Available
Faults:	Available	Faults:	Available
Landslip:	Available	Landslip:	Available
Rock Segments:	Available	Rock Segments:	Available

Geology 1:10,000 Maps - Slice A

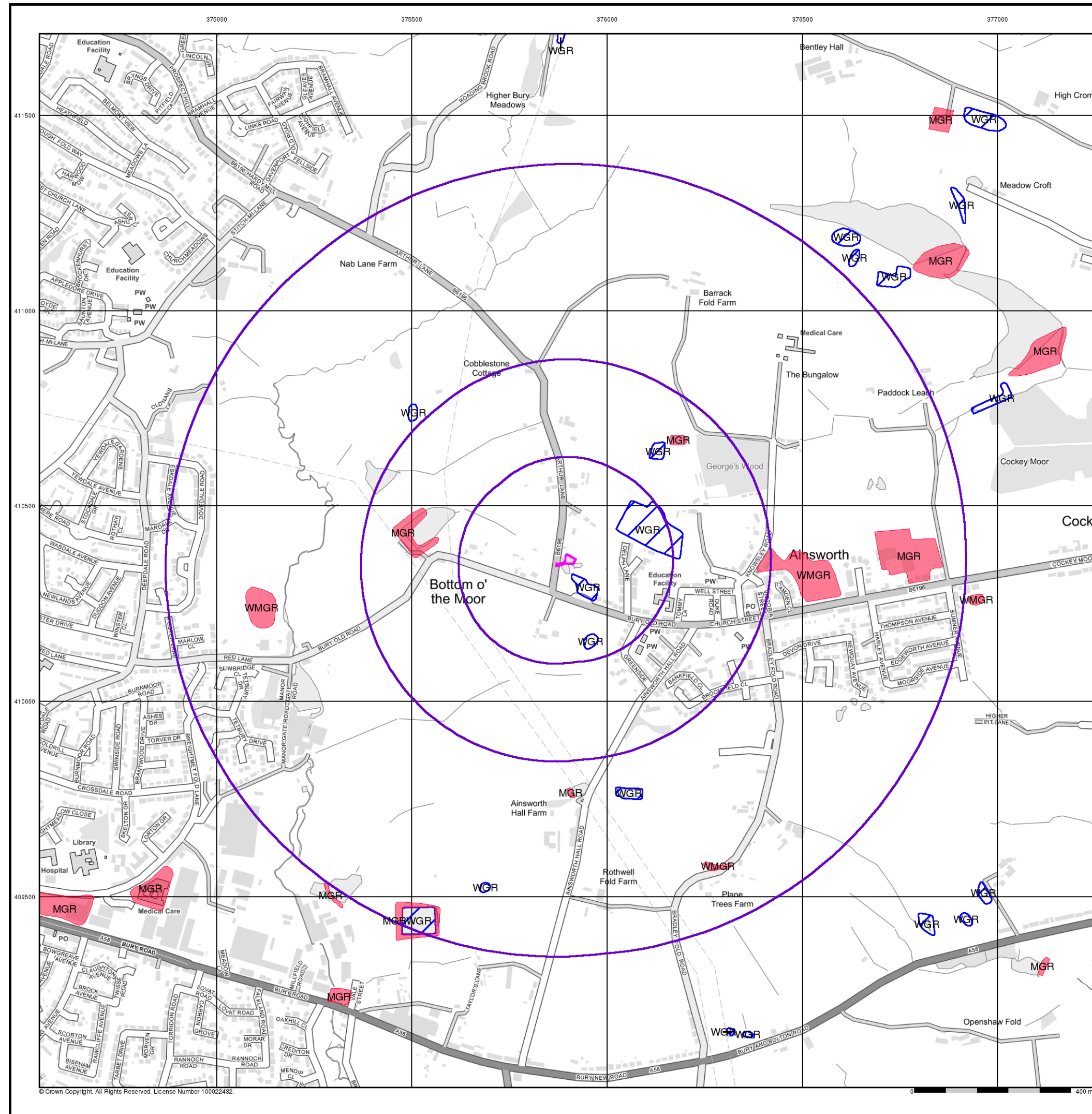


Order Details

Order Number:	229689822_1_1
Customer Ref:	LKC 20 1190
National Grid Reference:	375890, 410360
Slice:	A
Site Area (Ha):	0.06
Search Buffer (m):	1000

Site Details

Arthur Lane, Ainsworth, Bolton, BL2 5PN



© Crown Copyright. All Rights Reserved. License Number 100022432.



Artificial Ground and Landslip

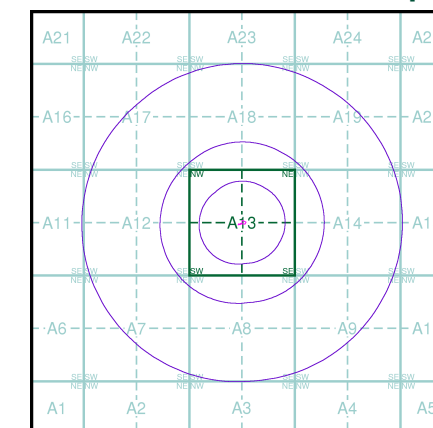
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes founded strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



Order Details

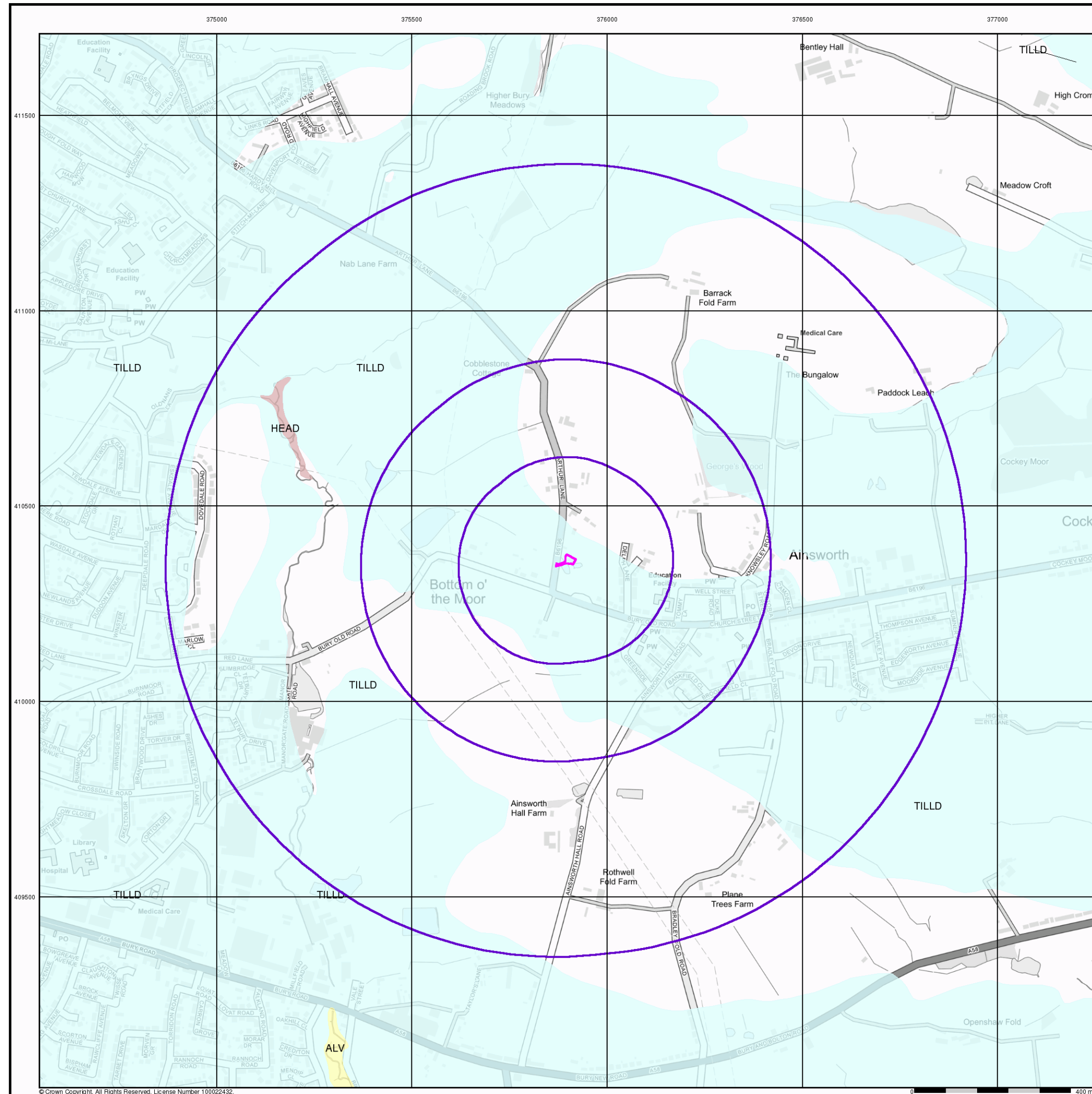
Order Number: 229689822_1_1
Customer Ref: LKC 20 1190
National Grid Reference: 375890, 410360
Slice: A
Site Area (Ha): 0.06
Search Buffer (m): 1000

Site Details

Arthur Lane, Ainsworth, Bolton, BL2 5PN



Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.

LK GROUP

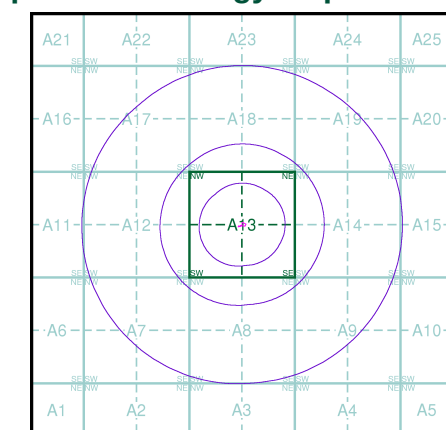
Superficial Geology

BGS 1:10,000 Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



Order Details

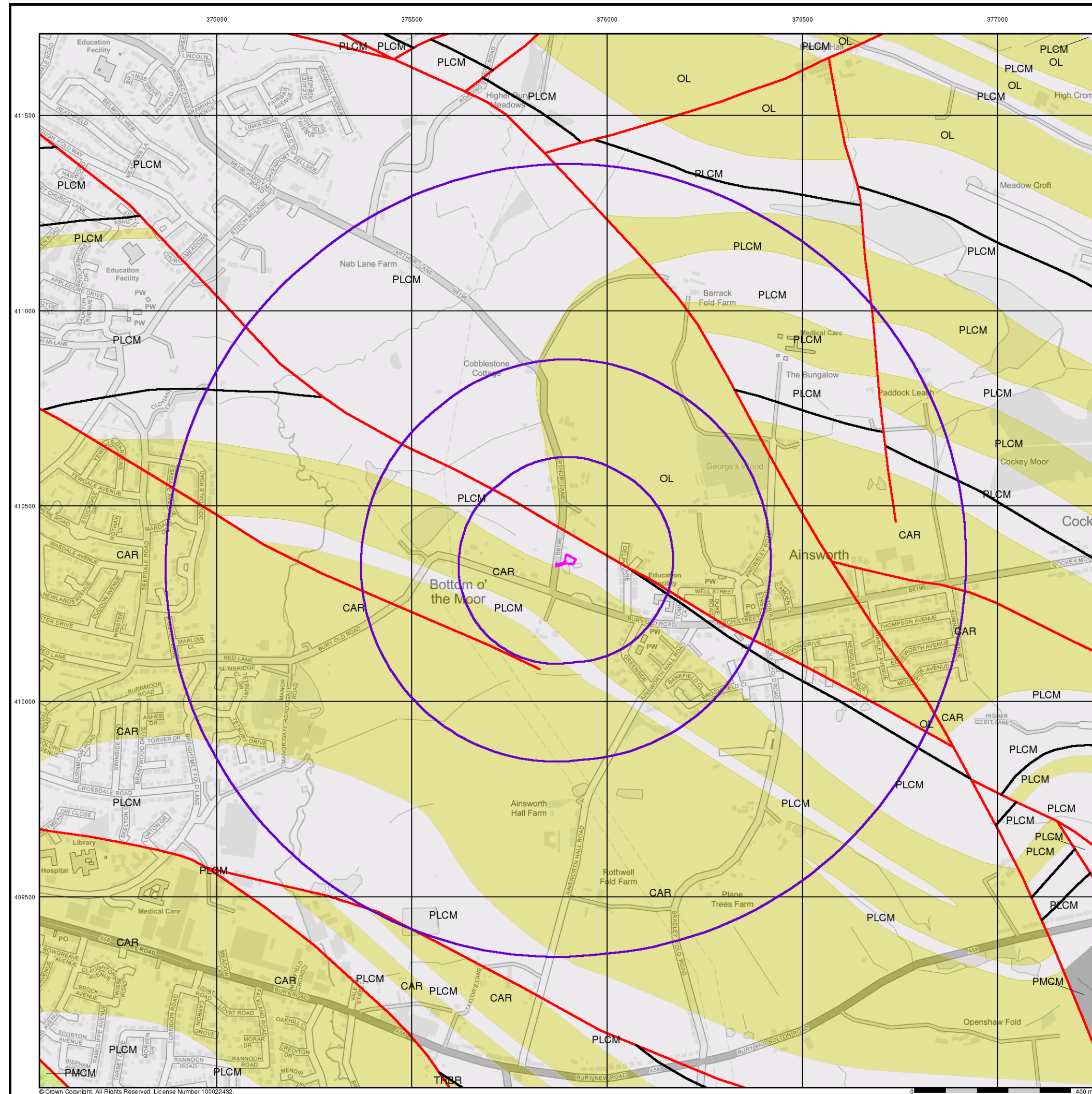
Order Number: 229689822_1_1
Customer Ref: LKC 20 1190
National Grid Reference: 375890, 410360
Slice: A
Site Area (Ha): 0.06
Search Buffer (m): 1000

Site Details

Arthur Lane, Ainsworth, Bolton, BL2 5PN

Landmark
INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.



Bedrock and Faults

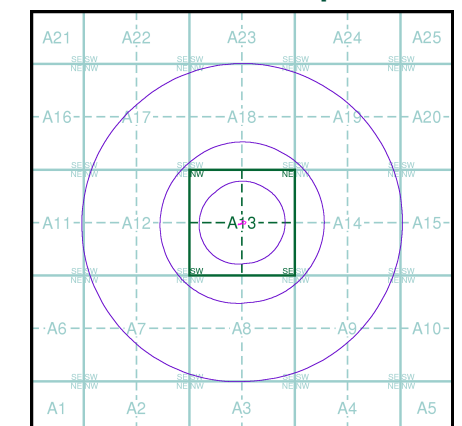
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults and thin beds mapped as lines such as coal seams and mineral veins. These are not restricted by age and could relate to features of any of the 1:10,000 geology datasets.

Bedrock and Faults Map - Slice A



Order Details

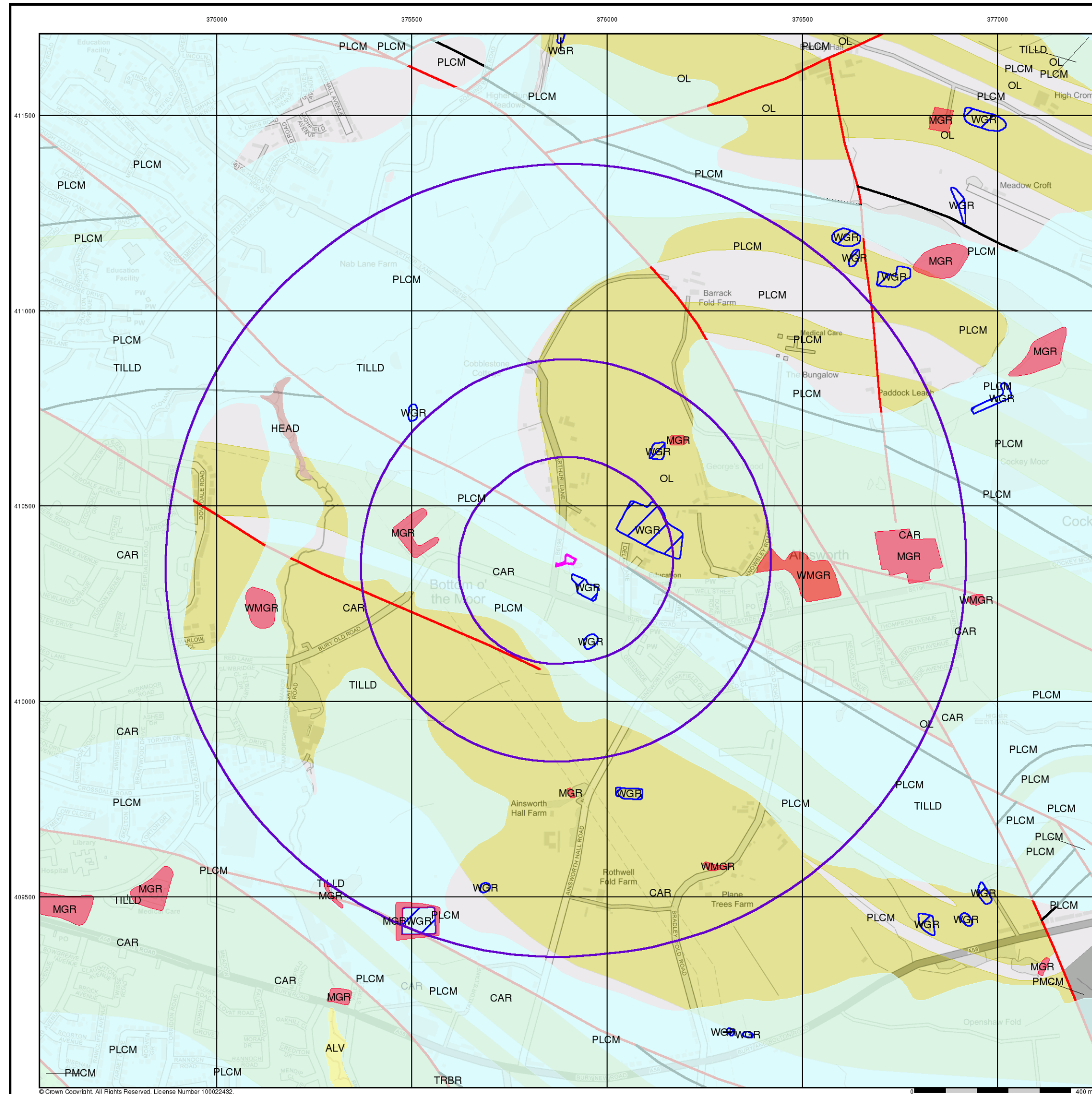
Order Number: 229689822_1_1
Customer Ref: LKC 20 1190
National Grid Reference: 375890, 410360
Slice: A
Site Area (Ha): 0.06
Search Buffer (m): 1000

Site Details

Arthur Lane, Ainsworth, Bolton, BL2 5PN



Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.



GROUP

Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

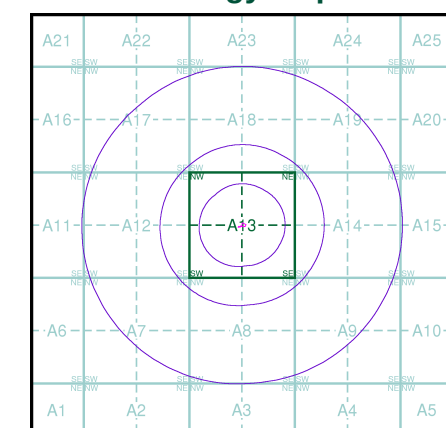
Additional Information

More information on 1:10,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: www.bgs.ac.uk

Combined Geology Map - Slice A



Order Details

Order Number: 229689822_1_1
Customer Ref: LKC 20 1190
National Grid Reference: 375890, 410360
Slice: A
Site Area (Ha): 0.06
Search Buffer (m): 1000

Site Details

Arthur Lane, Ainsworth, Bolton, BL2 5PN



Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Appendix C

Coal Authority Consultants Coal Mining Report



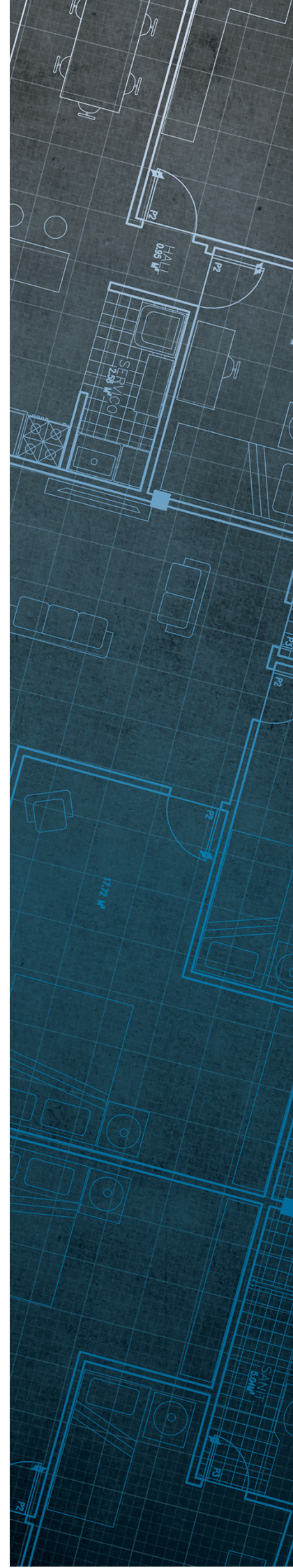
The Coal
Authority

Consultants Coal Mining Report

Arthur Lane, Ainsworth
Greater Manchester

Date of enquiry: 7 January 2020
Date enquiry received: 7 January 2020
Issue date: 7 January 2020

Our reference: 51002223430001
Your reference: LKC 20 1190



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

The LK Group

Enquiry address

Arthur Lane, Ainsworth
Greater Manchester

How to contact us

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

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

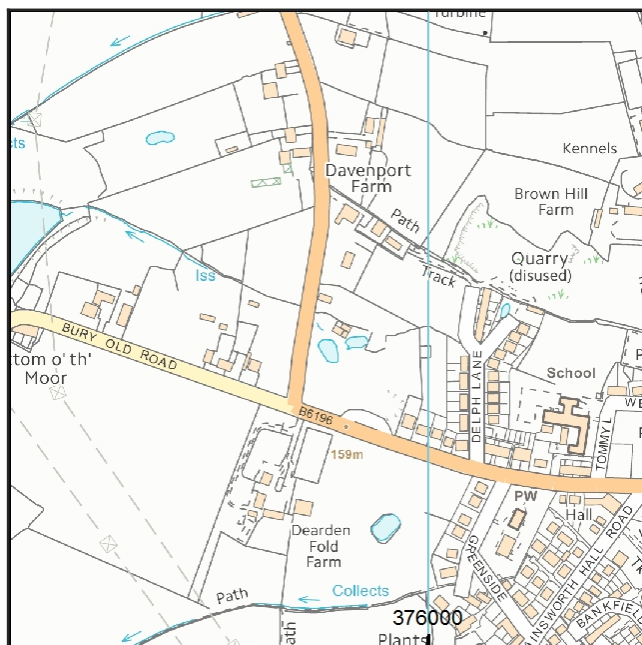
www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



Reproduced by permission of
Ordnance Survey on behalf of
HMSO. © Crown copyright and
database right 2018. All rights
reserved.

Ordnance Survey Licence number: 100020315

Section 1 – Mining activity and geology

Past underground mining

No past mining recorded.

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:

16820		
-------	--	--

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

Outcrops

No outcrops recorded.

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

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

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

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

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

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

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

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

Withdrawal of support notices

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

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

Payments to owners of former copyhold land

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

Section 4 – Further information

Based on the responses in this report, no further information has been highlighted.

Section 5 – Data definitions

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

Past underground coal mining

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

Probable unrecorded shallow workings

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

Spine roadways at shallow depth

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

Mine entries

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

Abandoned mine plan catalogue numbers

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

Outcrops

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

Geological faults, fissures and breaklines

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

Opencast mines

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

Coal Authority managed tips

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

Site investigations

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

Remediated sites

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

Coal mining subsidence

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

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

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

Mine gas

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

Mine water treatment schemes

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

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

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

Future underground mining

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

Coal mining licensing

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

Court orders

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

Section 46 notices

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

Withdrawal of support notices

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

Payment to owners of former copyhold land

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

This page left intentionally blank

VAT receipt

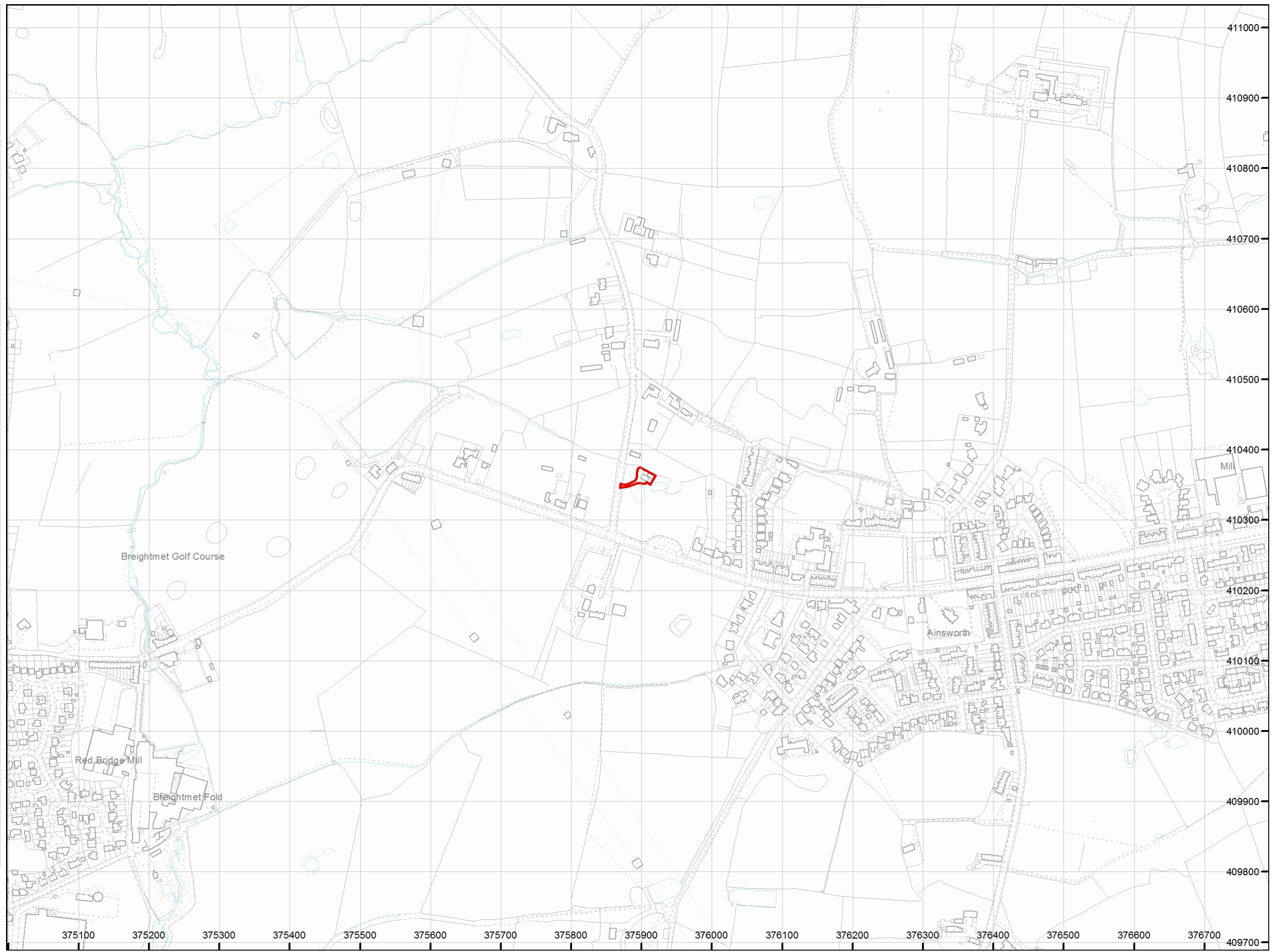
Issued by	The Coal Authority 200 Lichfield Lane Mansfield Nottinghamshire NG18 4RG
Tax point date	07 January 2020
Issued to	THE LK GROUP ETON BUSINESS PARK UNIT 29 ETON HILL ROAD RADCLIFFE GREATER MANCHESTER M26 2ZS
Property search for	ARTHUR LANE, AINSWORTH GREATER MANCHESTER
Reference number	51002223430001
Date of issue	07 January 2020
Cost	£112.13
VAT @ 20%	£22.43
Total received	£134.56
VAT registration	598 5850 68

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 

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



Appendix D

Policy For Building Over Or Within The Influencing Distance Of A Mine Entry



**The Coal
Authority**

Policy For Building Over Or Within The Influencing Distance Of A Mine Entry

Building over or within the influencing distance of a mine entry (shaft or adit) can be dangerous and has the potential for significant risks to both the development and the occupiers if not undertaken appropriately.

The Coal Authority own the majority of the coal mine entries in Britain and has adopted the following policy position for landowners and/or developers when considering building over or within the influencing distance of a mine entry.

1. Building over or within the influencing distance of a mine entry raises significant safety and engineering risks and exposes all parties to potential financial liabilities and as a general precautionary principle, should wherever possible be avoided
2. Building over or within the influencing distance of a mine entry will only be permissible when:
 - Expertise advice allows a suitable engineering design to be developed and agreed to take account of all the relevant safety and environmental risk factors including gas and mine-water.
 - The Coal Authority will not be responsible for financial or maintenance liabilities associated with the design and implementation of the works.
 - Appropriate engineering precautions are taken to safeguard the safety of the public and any structure during and following the completion of the works.
 - Approval for the works is obtained from The Coal Authority Permissions Service which will also monitor the implementation of the works to ensure public safety.
3. The position and recorded treatment details for the mine entry will be revealed in any future coal mining report produced for prospective purchasers of the property. Consequently it is necessary for the landowner and/or developer to undertake any work precisely in accordance with the agreed scheme and provide detailed information to The Coal Authority for inclusion within its records for future reference and disclosure.
4. Where any damages result as a consequence of failing to comply with this policy the Coal Authority will seek to recover any costs incurred.

Policy Approved by: S Reed, Director of Operations, January 2012