

NORTH POINT

Geotechnical & Environmental
Engineering Consultancy



LAND AT LARK HOUSE,
CORNSAY, DURHAM

COAL MINING RISK ASSESSMENT



Project	Land at Lark House, Cornsay
Proposal	Proposed residential development
Project Ref	NP231203
Prepared By	Stephen Telford
	[REDACTED]
Approved By	Matthew Robson
	[REDACTED]
Revision	REV 0.0
Date	December 2023
Revision Notes	Final – Revision 1.0

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1.0 INFORMATION

1.1 Commission Details

1.1.1 Northpoint Geotechnical Limited (Northpoint) was appointed by Wakefield Chartered Building Surveyors on behalf of Mr & Mrs Thompson to conduct a Coal Mining Risk Assessment for a proposed development site in Cornsay, Durham.

1.2 Proposed Development Details

1.2.1 The area is being considered for a future residential development. The existing dwellinghouse will be demolished and replaced with a new residential building.

1.3 Report Objectives

1.3.1 The purpose of this preliminary Coal Mining Risk Assessment is to assess whether the future end-users and the proposed development is potentially at risk from the past coal mining activity in the region.

1.4 Limitations

1.4.1 The conclusions and recommendations of this report are based on the findings of a desk-based study undertaken by Northpoint. The most current and available data has been used to make an informed assessment; however, other data may exist, or subsequently become available, which has not been considered.

1.4.2 The preliminary Coal Mining Risk Assessment report does not represent a full Phase I Site Investigation (Preliminary Risk Assessment and/or Desk Study Report), but a standalone and specific assessment relating to mine related hazards.

1.4.3 As far as reasonably practicable, this report aims to assess the risks associated with recorded and unrecorded coal mine related hazards; however, there is always the possibility of variation and unidentified hazards (such as historical mine entries). Therefore, this report cannot wholly guarantee against unexpected ground conditions and coal mine-related features.



2.0 SITE SETTING

2.1 Site Location

2.1.1 The site is located in Cornsay in County Durham approximately 13km to the west of Durham City Centre. The centre of the site is positioned at the approximated Ordnance Survey (OS) National Grid Reference (NGR) of 413386, 542174.

Figure 1: Site Location Map



Source: www.bing.com/maps

Figure 2: Site Aerial Image



Source: www.google.com/maps



2.2 Site Description

- 2.2.1 The site consists of a roughly rectangular-shaped parcel of land located to the north of Cowsley Lane. A track extends northward from Cowsley Lane along the western site boundary and leads onto the dwelling house and outbuildings which occupy the northern areas. The central and southern reaches include a grassed field.
- 2.2.2 The site is positioned in a rural setting and is generally surrounded by farmland. A dwelling is located to the immediate southwest of site position off Cowsley Lane.



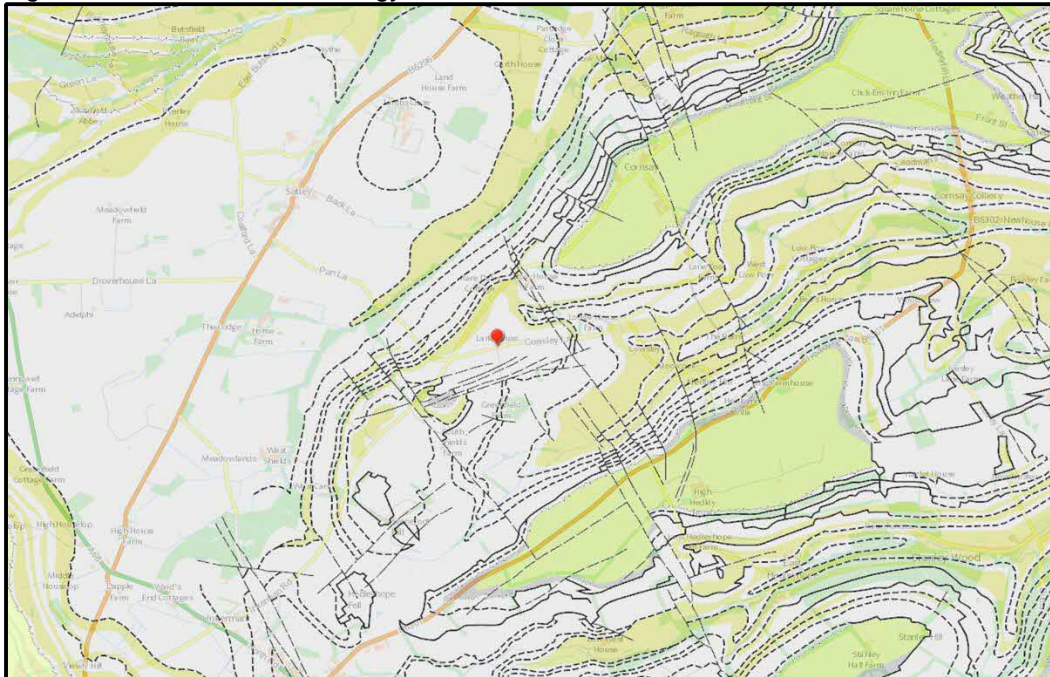
3.0 GEOLOGICAL SETTING

3.0.1 This section provides considerations relating to the published and unpublished geological information on-site and the surrounding area.

3.0.2 The following sources have been reviewed:

- BGS 1:50,000 Scale Mapping, Sheet 26 Wolsingham, Solid & Drift
- BGS 1:10,000 Scale Mapping, Sheet NZ14SW
- BGS Geindex
- Coal Authority Consultants Coal Mining Report
- CIRIA (C758D, 2019) Abandoned Mine Workings Manual

Figure 3: BGS Published Geology



Source: Extract from BGS Geindex

3.0.3 Table 1 provides details relating to the anticipated geology at the site and the surrounding area.

Table 1: Anticipated Geology

Features/Sources	Description/Remarks
Artificial / Made Ground	BGS plans do not record the presence of significantly thick Artificial / Made Ground across the site (i.e. >5m). However, Made Ground materials, albeit thin, may include disturbed natural material with anthropogenic debris beneath existing structures. These materials may be in the region of <1.00m thickness.
Superficial (drift) Geology	The site is shown to lie in an area where drift geology (such as boulder clays) is either thin or absent.
Bedrock (solid) Geology	Geological BGS maps and data shows the site to be underlain by Pennine Lower Coal Measures formation, typically comprising mudstone, siltstone and sandstone with coal seams and seatearth. Borehole records in the area suggest shallow solid geology will be encountered between 1.00m and 2.00m depth beneath the site.



4.0 MINING DATA & ASSESSMENT

4.1 Shallow Coal Mining

- 4.1.1 Shallow coal mining refers to workings/coal extraction within 30m depth of the site surface.
- 4.1.2 Geological mapping (Figure 3 above) shows the outcrop of a series of coal seams to the northwest of the property. Mapping suggests that these coal seams dip south easterly beneath the site area.
- 4.1.3 Coal Authority data (Appendix 2) relies on a review of available mine abandonment plans. Within 30m of the site surface, the coal authority lists three seams of coal in the area that have been worked. At least two of those seams are anticipated to have been worked beneath the site.
- 4.1.4 The Top Busty coal seam is present to the northwest and dips beneath the site. The Top Busty has been worked at a depth of 11m beneath the surface and has an extraction thickness of 0.60m. The Bottom Busty coal has also been worked from a depth of 27m and has an extraction thickness of 0.90m.
- 4.1.5 Based on the above, there is likely to be a sufficient cover of solid geology between the 0.60m coal workings at 11m depth and the site surface. This is anticipated given the drift geology is either thin/absent with solid geological deposits expected at between 1m and 2m depth below ground level.

4.2 Coal Mining At Depth

- 4.2.1 The Coal Authority Consultants Report (Appendix 2) comments that a seam of coal (referred to as the Brockwell coal seam) has been worked beneath the site at depths 33m and 46m below ground level (m bgl). The Brockwell has an extraction thickness of 1.00m.
- 4.2.2 Based on the above, there is likely to be a sufficient thickness of competent solid geological deposits above workings within the Brockwell. Therefore, the proposed site is not considered at risk from coal mining at depth (i.e. beyond 30m of the site surface).

4.3 Mine Entries

- 4.3.1 There are no mine entries (such as shafts or adits) located onsite or within 20m of the site boundary.
- 4.3.2 Two mine entries (shafts) are present approximately 70m to the west of the site. Whilst both respective shafts have not been treated or conveyed, it is considered that they do not represent a risk to the development given their distance from site.

4.4 Opencast Coal Mining

- 4.4.1 There are no opencast mines recorded within 100m of the site.
- 4.4.2 Land from 120m southeast of the site is recorded as an unlicensed opencast site. Given this features distance to the development area, there are currently no risks to the site.

4.5 Coal Mining Subsidence

- 4.5.1 There are no damage notices or claims recorded within 50m of the site.



4.6 Mine Gas

4.6.1 The Coal Authority do not record mine gasses with 500m of the site boundary. There are no Coal Authority Managed tips or mine treatment schemes within 500m of the site.

4.7 Risk Assessment

4.7.1 From the information presented within Section 4.0 of this report, Table 2 summarises the overall risk to the proposed development from mining-related activity.

Table 2: Mining Risk Assessment

Features/Sources	Potential Risk	Description/Remarks
Shallow coal mining	No	Two seams of coal have been worked beneath the site at anticipated depths of 11m and 27m. Given that shallow solid geology is expected (i.e. between 1m and 2m depth beneath the surface), it is considered this should provide a sufficient cover to protect the site from the coal workings of 0.60m extraction thickness at 11m depth beneath the surface.
Coal mining at depth	No	The Brockwell coal seam outcrops beneath the site. Brockwell coal of 1.00m thickness has been worked at 33m and 46m depth beneath the site. It is likely that there is a sufficient competent rock cover above the workings.
Mine Entries on or within 20m of the site boundary	No	There are no mine entries located within 20m of the site boundary.
Opencast coal mining	No	There are no opencast mines located within 100m of the site boundary.
Coal mining subsidence	No	There are no records of coal mine subsidence claims within 50m of the site boundary.
Mine gas	No	There are no recorded activities relating to mine gas within 500m of the site boundary.



5.0 CONCLUSIONS & RECOMMENDATIONS

- 5.0.1 The site is being considered for a future residential development. A desk-based Coal Mining Risk Assessment has been completed to make an initial assessment of the risks to the site from coal mining related activities.
- 5.0.2 The report has determined that there is a very low-risk risks to the site from shallow mining, mine entries, open cast workings, coal mining subsidence claims or mine gas.
- 5.0.3 No further works are considered necessary at this stage.

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APPENDIX 1



LEGEND/KEY
— Site Boundary

GENERAL NOTES
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0.0	ST	07/12/2023
REV. DETAILS	BY	DATE
DRAWING STATUS		
FINAL		
CLIENT		
MR & MRS THOMPSON		
PROJECT		
LARK HOUSE, CORNSAY		
DRAWING TITLE		
SITE LOCATION MAP		
SCALE	NTS	DATE 07/12/2023
DRAWN BY	ST	CHECKED BY MR
DRAWING NO. NP231203_DWG_01		

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LEGEND/KEY

— Site Boundary

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REV.	BY	DATE

DRAWING STATUS FINAL

CLIENT MR & MRS THOMPSON

PROJECT LARK HOUSE, CORNSAY

DRAWING TITLE AERIAL IMAGE

SCALE	NTS	DATE	07/12/2023
DRAWN BY	ST	CHECKED BY	MR

DRAWING NO. NP231203_DWG_02



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APPENDIX 2



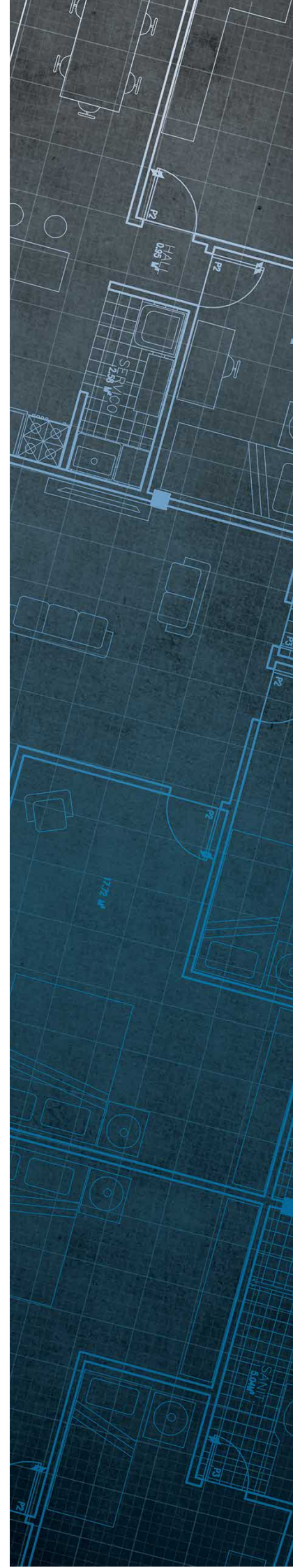
The Coal
Authority

Consultants Coal Mining Report

Lark House Farm, Cornsay
Durham
Durham
DH7 9EP

Date of enquiry: 6 December 2023
Date enquiry received: 6 December 2023
Issue date: 6 December 2023

Our reference: 51003393600001
Your reference: 327514499_1



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.

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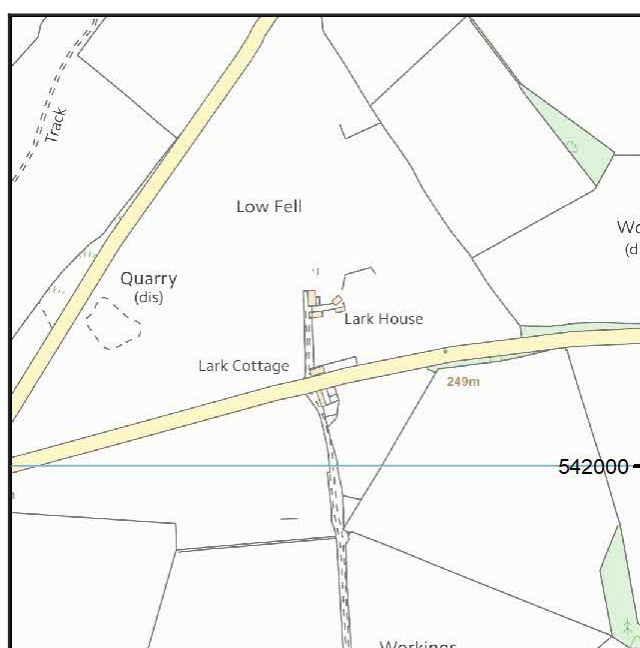
www.groundstability.com

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Approximate position of property



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Section 1 –Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
BLACK PRINCE	TOP BUSTY	Coal	5Y33	11	Beneath Property	1.6	South	60	1947
BLACK PRINCE	BTM. BUSTY	Coal	5Y9V	16	West	1.7	South-West	90	1929
BLACK PRINCE	BTM. BUSTY	Coal	5YAG	27	Beneath Property	1.6	South-West	90	1929
BLACK PRINCE	BROCKWEL L	Coal	5Y37	33	Beneath Property	2.0	North-East	100	1928
BLACK PRINCE	BROCKWEL L	Coal	5Y36	46	Beneath Property	1.3	South-East	100	1928

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	413542-003	413295 542121		Coal	
Shaft	413542-004	413295 542167		Coal	

Abandoned mine plan catalogue numbers

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

D1409	D1434	9674
PO0	1827	13636
9936	0	11291

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

Please refer to the “Summary of findings” map (on separate sheet) for details of any opencast areas within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 –Investigative or remedial activity

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

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

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

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

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

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 –Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

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

Withdrawal of support notices

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

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

Payments to owners of former copyhold land

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

Section 4 –Further information

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

Future development

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

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

Development advice

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

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

Section 5 –Data definitions

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

Past underground coal mining

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

Probable unrecorded shallow workings

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

Spine roadways at shallow depth

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

Mine entries

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

Abandoned mine plan catalogue numbers

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

Outcrops

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

Geological faults, fissures and breaklines

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

Opencast mines

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

Coal Authority managed tips

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

Site investigations

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

Remediated sites

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

Coal mining subsidence

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

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

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

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

Mine water treatment schemes

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

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

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

Future underground mining

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

Coal mining licensing

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

Court orders

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

Section 46 notices

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

Withdrawal of support notices




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

Payment to owners of former copyhold land

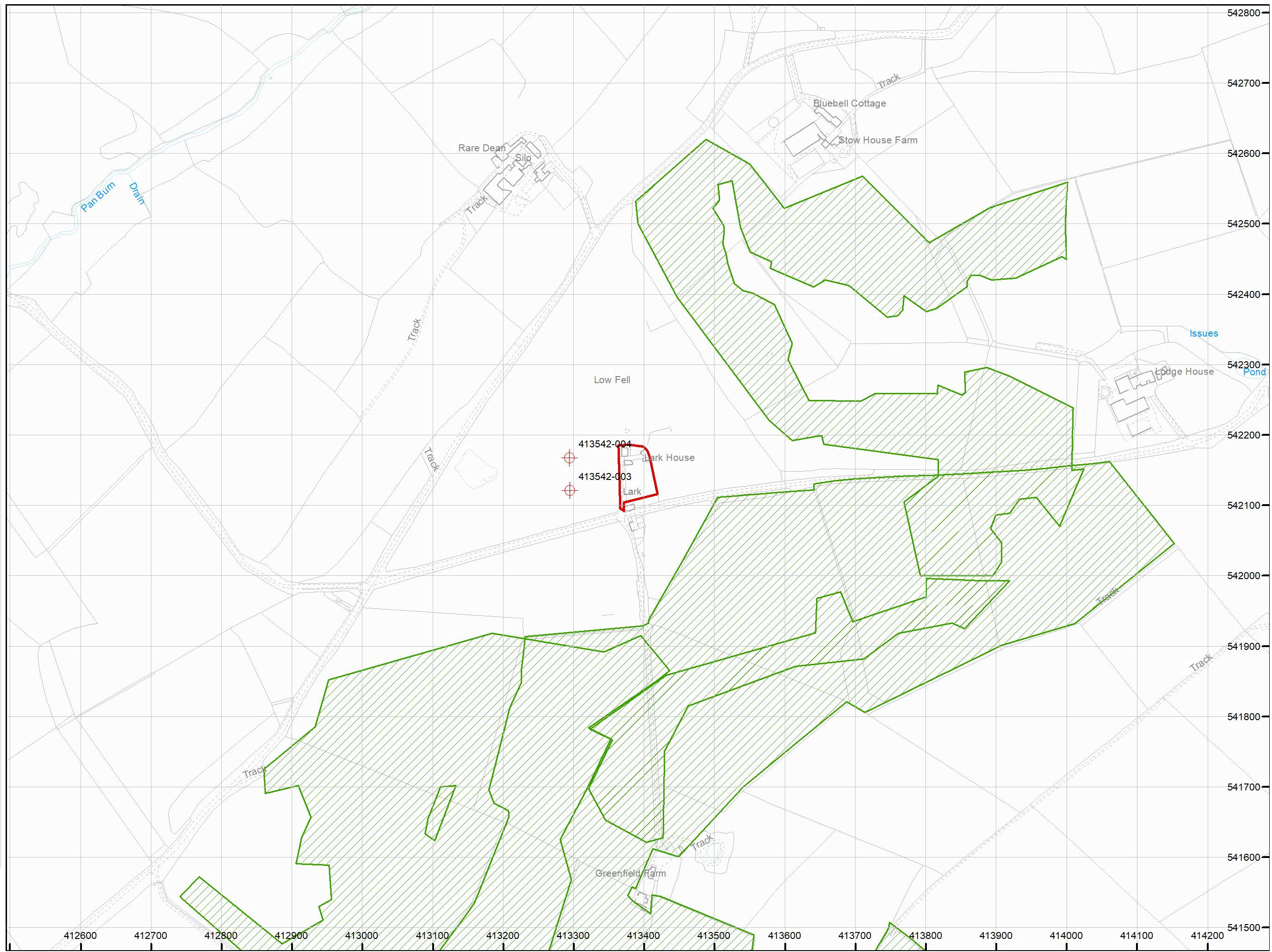
Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

The 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 
- Disused mine shaft 
- Unlicensed opencast site 

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