

Report No: C328

Date: April 2019

COAL MINING RISK ASSESSMENT
For land at
WOODBINE COTTAGE, DONCASTER ROAD, BILLINGLEY,
S72 0JE



Prepared for

Mr Stephen Selway

Prepared by
G&M Consulting Ltd, The Chestnuts, Brackenhill Road, East Lound, Haxey,
Doncaster, DN9 2LR





REPORT NUMBER:	C328	REPORT STATUS:	Final
REPORT TYPE:	Coal Mining Risk Assessment		
REPORT DATE:	April 2019		
SITE:	Land at Woodbine Cottage, Doncaster Road, Billingley, S72 0JE		
PREPARED FOR:	Mr Stephen Selway		
PREPARED BY:	G Swinbourne BSc. (Hons) MSc. DIC, FGS		
REVIEWED BY:	A Swinbourne BSc. (Hons) FGS		

This report is written for the sole use of Mr Stephen Selway or his representative. No other third party may rely on or reproduce the contents of this report without the written approval of G&M. If any unauthorised third party comes into possession of this report, they rely upon it entirely at their own risk and the authors do not owe them any of Duty of Care or Skill.

Introduction

G & M Consulting Ltd (G&M) were instructed by Mr Stephen Selway, to carry out a coal mining risk assessment (CMRA) for land at Woodbine Cottage, Doncaster Road, Billingley, Barnsley, S72 0JE. It is understood that it is proposed to develop the land with a residential development comprising five residential dwellings.

The site location and its boundaries is shown below;



Figure 1

The proposed development is shown below;



Figure 2

Scope of the Coal Mining Risk Assessment

This coal mining risk assessment is compiled in accordance with the guidance given in the Coal Authority publication *Risk Based Approach to Development Management Guidance for Developers Version 3, 2014*.

The above publication sets out the scope for a CMRA as follows:

- Present a desk-based review of all available information on 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 coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development; and
- Demonstrate to the Local Planning Authority that the application site is, or can be made safe and stable to meet requirements of national planning policy with regard to development on unstable land.

Site Location and Description

The site lies approximately 9.5 km south east of Barnsley town centre, South Yorkshire. It stands on the north side of the Dearne Valley. The site is currently occupied by an existing two storey stone built residential dwelling with associated gardens, known as Woodbine Cottage. The property lies on the south side of the A635 trunk road, Doncaster Road, (Dearne Valley Parkway) which runs east west.

The approximate National Grid Reference for the centre of the site is SE 440 040.

Sources of Information

In compiling the CMRA information has been obtain from various sources:

- Historical Ordnance Survey Maps;
- British Geological Survey Records (BGS)
 - Geological Map 1:50,000 Scale Sheet 87 Barnsley (1976 & 2008)
 - Historical borehole records
- Coal Authority Consultants Coal Mining Report Ref 51002075958001
- Coal Authority interactive Viewer
<http://mapapps2.bgs.ac.uk/coalauthority/home.html>
- General Internet Search

Historical Development

Historical Ordnance Survey plans examined (1854 to 1991) show a building on the site as early as 1854 and identified as Woodbine Cottage as early as 1892. The surrounding area is shown as fields up to the present day (1991) with some localised residential developments.

Published Geology

The geological records for the area, 1:50,000 scale geological map, show the site to be underlain by strata of the Pennine Middle Coal Measures Formation which comprise interbedded mudstone, siltstone and sandstone with subordinate beds of coal, ironstone and seatearth. No superficial deposits are shown to be present on site, but there are a significant number of areas of infilled ground (defined as '*mainly restored opencast coal sites, brick pits and quarries*') shown, which presumably coincides with the opencast sites shown on the CA records discussed below.

The site is shown underlain by an unnamed sandstone within the Coal Measure Formation.

Two coal seams are shown to out crop within the general area of the site, one to the south of the site and the second north of the site. These seams are shown as the Shafton Coal to the south and the Highgate Coal to the north. Based on the stratigraphical sequence, indicated dip direction and the local topography, it is only the Shafton Coal which would be present beneath the site. The stratigraphic sequence, together with recorded thickness is shown as follows:

Highgate Coal	0.0 – 0.7 m
Impersistent Sandstone / undifferentiated coal measures	
Thin Coal	
Impersistent Sandstone / undifferentiated coal measures	
Shafton Coal	0.2 – 2.3 m

The outcrop of the Shafton Coal is shown on the most recent geological map approximately 120 m south of the site, however, by its profile it is evident that it follows the highwall of the former opencast site.

Earlier geological maps show the inferred outcrop of the Shafton Coal to be up to 350 m south of the site. On the most recent map the outcrop of the Shafton Coal east of the opencast sites is shown as not inferred. Projecting this line back through the area of opencast the original outcrop (prior to opencast) would appear to be approximately 220 m south of the site.

The BGS web site contains records of previous investigations and boreholes. The records of three boreholes drilled 500 m to the west of the site are available. These record the Shafton Coal at a depth of 30 m or greater with a thickness of 5 ft (1.5 m). These boreholes are at a slightly higher elevation than the site, from about 32 m AOD or greater.

Mining

An inspection of the Coal Authority (CA) interactive viewer shows the site to lie within a development high risk area and area of probable shallow coal mining. Areas of past shallow mining are shown to the north west and north east of the site. Four mine entries identified as shafts are shown east of the site, two north of the A635 and two are shown south of the road. Two adits are shown approximately 500 m west of the site.

A Consultants Coal Mining Report was obtained from the CA by G&M, a copy of which is included in Appendix A of this assessment. The Consultants report details information available from records held by the CA.

Within the report the CA indicates that:

- The shallowest seam recorded to have been worked beneath the site is the Newhill Coal, last worked in 1980. The seam is shown at a depth of 287m with a worked thickness of 1.52m. The dip of the seam is recorded as 3.8° to the north west.
- The report also says “Yes” to probable unrecorded shallow workings and
- “No” to the presences of a spine roadway at shallow depth.
- One shaft is shown recorded within 100m of the enquiry boundary north east of the site.
- A significant number of open cast sites are shown surrounding the site, but none are shown associated with the site. These are shown on the “Summary of findings” plan which accompanies the CA report.

The report also states:

- *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.*

The shaft identified in the CA report within 100 m of the site is presumably the closest of the group of shafts shown on the CA interactive map, the others are presumably greater than 100 m from the site.

Risk Assessment

The potential risks associated with coal mining legacy of the site are summarised in the following table.

Table 1 Risk Assessment

Coal Mining Issue	Yes	No	Risk
Underground coal mining (recorded at deep depths >30m)	X		Low
Underground coal mining (recorded at shallow depths <30m)		X	
Underground coal mining (probable at shallow depths <30m)	X		Low
Mine entries (shafts and adits within 20m)		X	
Coal mining geology (fissures)		X	
Record of past mine gas emissions		X	
Recorded coal mining surface hazard		X	
Surface mining (opencast workings)	X		Low

The inferred outcrop of the Shafton Coal is shown on the earlier geological maps approximately 350 m south of the site. Assuming a dip of 3.8° (as indicated by the CA report) the Shafton Coal would underlie the site at a depth of 23 m. There is a general rise in ground level of between 3 m and 4 m from where the inferred out crop is shown and the site which would place the coal deeper beneath the site.

The most recent geological map shows the outcrop as proved in the opencast, but no depth to the seam is given. The outcrop outside the opencast is shown to the east as defined i.e. not inferred. Extrapolating this line, the original natural outcrop of the coal appears to be within 220 m of the site. Assuming this distance the seam would underlie the site at a depth of 15 m plus whatever rise in ground level occurs between the outcrop location and the site.

The historical boreholes, whilst some distance from the site and at a slightly higher elevation are roughly along the strike and recorded the Shafton Coal at a depth of 30 m with a thickness of 1.5 m.

The general rule of thumb for assessing the risk from shallow coal mining is the presence of competent rock cover over the seam equal to or greater than 10 x the seam thickness. Given the recorded thickness of the Shafton Coal west of the site of 1.5 m a rock cover of 15 m or greater would be required. This appears to be present at this site and therefore the risk is considered to be low.

A significant amount of opencast mining has occurred in the general vicinity of the site. However, none are shown associated with the site and considering the property has been on the site since before 1854 it is considered unlikely that the immediate area around the site has been worked by opencast means.

Further work

Although the Coal Authority records indicate the site to be in a development high risk area the Shafton Coal is considered to be at sufficient depth to lie outside the zone of influence of the surface. The risk from shallow workings is therefore considered to be low.

However, it may be prudent to drill a borehole to confirm the depth to the Shafton Coal and confirm the above conclusion. A permit is required from the Coal Authority giving permission to drill prior to carrying out any intrusive investigation to assess the potential of the presence of a coal seam or workings.

Given the proximity of the site to backfilled opencast workings it is considered prudent that gas monitoring is carried out. This would require monitoring wells to be installed in shallow boreholes.

A ground investigation for geotechnical purposes should be carried out on the site, this would help to confirm / identify any variation in the ground that may indicate opencast workings or other historical disturbance associated with the mining industry. It would also be prudent to maintain a watching brief when construction work is carried.



ATTACHMENT A

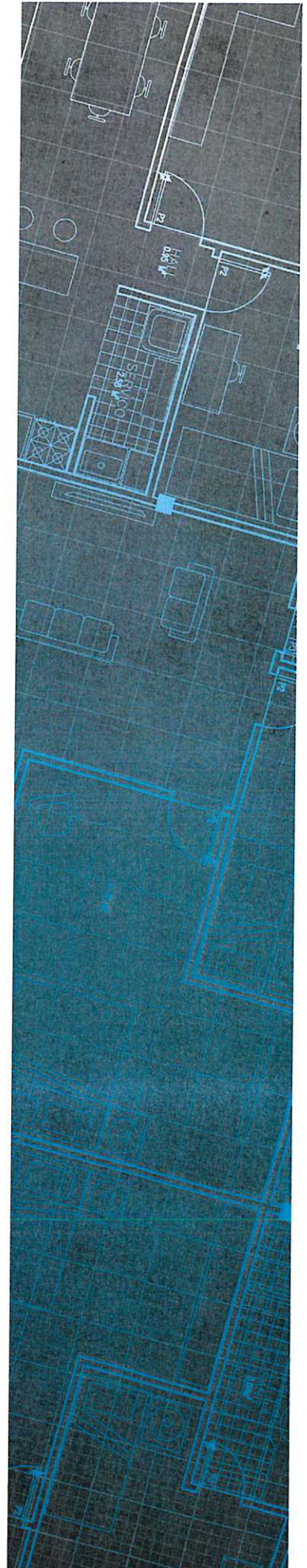


The Coal
Authority

Consultants Coal Mining Report

Woodbine Cottage
Doncaster Road
Billingley
Barnsley
S72 0JE

Date of enquiry:	15 April 2019
Date enquiry received:	15 April 2019
Issue date:	15 April 2019
Our reference:	51002075958001
Your reference:	



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

Graeme Swinbourne

Enquiry address

Woodbine Cottage
Doncaster Road
Billingley
Barnsley
S72 0JE

How to contact us

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

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

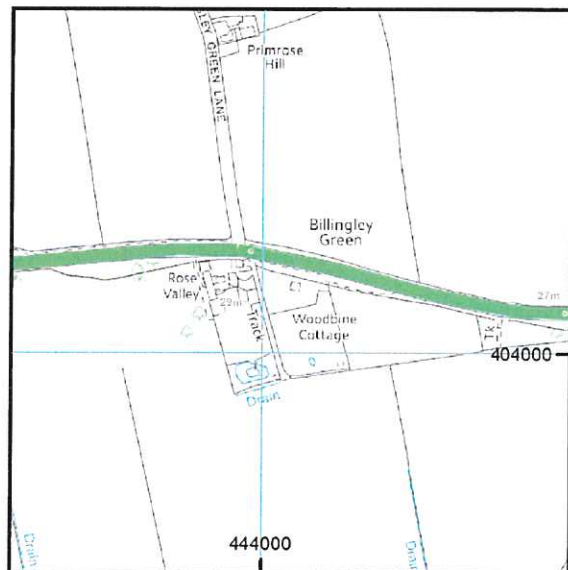
www.groundstability.com

 @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

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
WATH	NEWHILL	Coal	N29	287	Beneath Property	3.8	North-West	152	1980
WATH	NEWHILL	Coal	5TY4	287	South-West	3.4	North	152	1979
WATH	NEWHILL	Coal	N27	288	South-West	3.4	North	152	1981
WATH	NEWHILL	Coal	5TY3	288	Beneath Property	3.9	North	152	1979
unnamed	MELTONFIELD	Coal	5NPX	299	East	2.4	North-West	110	1967
unnamed	MELTONFIELD	Coal	5NPW	308	South	5.0	North-West	110	1977
DARFIELD	MELTONFIELD	Coal	4P4G	310	South-West	4.0	North	128	1972
BARNBURGH	MELTONFIELD	Coal	5RAG	312	Beneath Property	4.0	North-West	116	1977
WATH	MELTONFIELD	Coal	5TYF	312	Beneath Property	3.2	North	117	1976
unnamed	TOP HARD BARNSLEY	Coal	5NPD	455	South	5.8	North	183	1906
WATH WOOD	TOP HARD BARNSLEY	Coal	4P45	459	South	2.1	North	181	1904
HOUGHTON MAIN	TOP HARD BARNSLEY	Coal	5R4H	460	Beneath Property	4.0	North-West	183	1904
WATH	TOP HARD BARNSLEY	Coal	5TYA	461	Beneath Property	3.5	North	206	1908
unnamed	PARKGATE	Coal	5NPF	673	South	7.6	North	160	1931
unnamed	PARKGATE	Coal	5NPG	687	South	2.8	North-West	160	1943
WATH	PARKGATE	Coal	4PAV	693	South	5.4	North	166	1941
HOUGHTON	PARKGATE	Coal	5R5H	694	Beneath Property	4.2	North-West	198	1947
WATH	PARKGATE	Coal	5TY6	696	Beneath Property	3.5	North	160	1947
HOUGHTON	PARKGATE	Coal	5TY7	697	North-West	2.0	North-East	180	1969
HOUGHTON / DARFIELD	SILKSTONE	Coal	X53	761	South-East	4.8	North-West	128	1990
HOUGHTON	SILKSTONE	Coal	X51	779	Beneath Property	4.4	North-West	119	1988
HOUGHTON	SILKSTONE	Coal	X52	780	Beneath Property	4.6	North-West	121	1989

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
HOUGHTON	SILKSTONE	Coal	X51	780	Beneath Property	3.5	North	116	1988
HOUGHTON	SILKSTONE	Coal	SOVM	781	North-West	2.0	North-East	112	1979

Probable unrecorded shallow workings

Yes.

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	444404-003	444156 404124		Coal	

Abandoned mine plan catalogue numbers

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

NE825	NE262	NE54
NE209	NE1065	NE999
16924	13930	NE1024

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

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 in an area where notices to withdraw support were given in 1982 and 1983.

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

Payments to owners of former copyhold land

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

Section 4 – Further information

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

Development advice

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

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

Section 5 – Data definitions

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

Past underground coal mining

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

Probable unrecorded shallow workings

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

Spine roadways at shallow depth

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

Mine entries

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

Abandoned mine plan catalogue numbers

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

Outcrops

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

Geological faults, fissures and breaklines

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

Opencast mines

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

Coal Authority managed tips

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

Site investigations

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

Remediated sites

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

Coal mining subsidence

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

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

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

Mine gas

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

Mine water treatment schemes

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

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

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

Future underground mining

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

Coal mining licensing

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

Court orders

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

Section 46 notices

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

Withdrawal of support notices

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

Payment to owners of former copyhold land

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

This page left intentionally blank

