Coal Mining Risk Assessment

Parkside, Hoyland Common, Barnsley

October 2023

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Client Name:	Barnsley MBC
Document Reference:	WIE20198-100-R-1.1.3-CMRA
Project Number:	WIE20198

Quality Assurance – Approval Status

This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS EN ISO 45001:2018)

Issue	Date	Prepared by	Checked by	Approved by
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Comments

Comments

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1. Introduction

1.1 General

Waterman Infrastructure and Environment Ltd (WIE) have been commissioned by Barnsley Metropolitan Borough Council (BMBC, "the Client") to undertake a desk-based Coal Mining Risk Assessment to inform the level of risk associated with mining legacy in respect of the proposed construction of a pavilion and associated car parking.

The property is located within a Coal Mining Reporting area and lies within a Development High Risk Area, and much of the site is known to be a backfilled opencast site. As such, this report has been prepared in the format of a Coal Mining Risk Assessment, and in general accordance with the layout advocated by The Coal Authority, such that it will be suitable to support a planning application.

1.2 Site Location and Description

The Site is located at National Grid Reference 436069, 399771, off Sheffield Road, Hoyland Common, nearest postcode S74 0AH.

The site currently comprises an open field, covering an area of approximately 5.5 hectares. The site has a generally undulating topography, with an overall downhill slope towards the southeast from approximately 137m AOD in the north-western corner of the site to approximately 124m AOD on the south-eastern corner of the site.

1.3 Proposed Development

Current proposals are understood to include the construction of an all-weather sports pitch, archery range, car parking and a pavilion in the western corner of the site. It is understood that the design works are only for the proposed pavilion and car parking area, and not the wider site, as shown on Barnsley MBC Drawing No. 012, presented in Appendix A.

The pavilion building has undergone several design iterations in an attempt to locate the entirety of the build off the footprint of the backfilled opencast mine. A summary of the initial proposals is detailed below and in Figure 1.

The first option looked to position the building to the south towards Sheffield Road; however, this led to the pitch users having to cross the access road and car park in order to reach the pitches. Additionally, there would be loss of views from the activity spaces and no available space for the terrace. The rear elevation of the building would also face the road, with no active frontage.

The second option proposed that the building be orientated along the northern boundary; however, this would not suit the sites' topography and restrict the access road coming onto the site.

The final option was to relocate the building further north, wholly onto the opencast backfill deposits where the mine workings are known to be at a greater depth. This would also create issues with regard to pitch layout and restrict visibility from the access road.

Figure 1: Initial design proposals

1.4 Scope and Objectives of Report

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

- Present a desk-based review of all readily available information on the coal mining issues which are relevant to the Site;
- Use that information to identify and assess the potential for coal mining legacy to be the cause for current structural issues at the site; and
- Set out appropriate mitigation measures to address any coal mining legacy issues affecting the Site, including any necessary remedial works and/or demonstrate how coal mining issues may influence the proposed structure.

1.5 Limitations

The scope of this report is limited to assigning levels of risk associated with coal mining legacy, as informed by desk study review of information available at the time of writing and specifically listed within the report.

The report considers Shallow Coal Mining only. In accordance with current Coal Authority guidance, this is defined as lying at a depth of up to 10 times the thickness of coal seam extraction down to a maximum depth of 30 metres. Workings below this depth (deep mining) do not normally constitute a threat to surface stability, except in particular circumstances.

2. Sources of Information

The sources of information consulted in undertaking this study are listed below. Relevant reports or extracts are appended:

1. British Geological Survey (BGS) database of historical boreholes "GeoIndex" (http://mapapps2.bgs.ac.uk/geoindex/home.html);
2. British Geological Survey (BGS) map Barnsley Sheet 87 Bedrock and Superficial edition (1:50,000) (2008);
3. Coal Authority Consultants Report (Ref: 51003381239001, dated October 2023)
4. Coal Authority Interactive Map Viewer (http://mapapps2.bgs.ac.uk/coalauthority/home.html);
5. Applied Geology Ltd: Desk Study and Phase I Coal Mining Risk Assessment for Parkside, Hoyland, referenced HOY-AG-VGT-XX-RP-CE-AG3080D-20-AK84 and dated August 2020;
6. Applied Geology Ltd: Ground Investigation Report for Parkside, Hoyland Common, Barnsley, referenced HOY-AG-VGT-XX-RP-CE-AG3080D-20-AL24 and dated November 2020;
7. Met Engineers Ltd: Supplementary Site Investigation Report for Parkside Sports and Community Centre, Hoyland, referenced P22-01115-Met-RP-GE-001 and dated April 2023.

3. Coal Mining Assessment

3.1 Historical Context

Prior to the introduction of the Coal and Metalliferous Mines Regulation Acts in 1872, there was no legal requirement to record workings and it was only from as late as 1947 that records were considered as fully complete. Consequently, there is a legacy of 'unrecorded' workings within former coal field areas.

A search of publicly available resources has recorded that the site lies within a Development High Risk Area, with the majority of the central and southern areas of the site covered by an area known to have been subject to past surface mining (opencast). Coal outcrops are recorded adjacent to the south-western and south-eastern site boundaries. In addition, past shallow underground coal mining is shown to have occurred within 500m of the site boundary to the south-east and south.

3.2 Geology

The anticipated geology has been determined by reference to the BGS map Sheet Number 87 (Barnsley, 1:50,000 Bedrock and Superficial edition, 2008), the BGS database of historical boreholes and geological records "GeoIndex", and the ground investigations completed at the site by Applied Geology Ltd in 2020 and MET Engineers in 2022-23, referenced in Section 2 above.

Data available from the sources summarised above indicate that the site is underlain by bedrock geology of the Pennine Middle and Lower Coal Measures Formation. Ground investigation information indicates that the site is underlain by a layer of topsoil and cohesive Made Ground (typically less than 0.4m thick) across the whole site. The central area of the site is underlain by a significant thickness of opencast backfill, proven to a maximum depth of 5.45m by Applied Geology (although mine plans show this to be significantly deeper in places), generally comprising firm to very stiff friable brown and dark grey gravelly clay with a number of boulder-sized obstructions recorded at shallow depth. Strata of the Pennine Middle Coal Measures Formation were encountered at shallow depth along the perimeter of the site, generally comprising medium strong locally very weak orange brown and grey siltstone with occasional thin bands of firm clay and cobble-sized ironstone nodules.

The Pennine Middle Coal Measures has a regional dip of between 3 and 4 degrees to the north-east in this area. The Dunsil (Harley) Coal seam is shown to outcrop on the site, trending approximately north-west – south-east. The underlying Gawber Coal and Swallow Wood Coal seams are expected to dip below the site.

An old shaft section to the south east of the site recorded the following general succession, which is anticipated to be representative of the strata below the site:

Table 1: Skiers Spring Colliery Section

Stratum	Thickness (m)	Typical Seam Thickness (m)	Alternative Name
Swallow Wood Coal	1.58	0.2 – 3.7	
measures	46.74		
Rock with binds	4.57		Probably represents the Haigh Moor Coal
measures	6.40		

Lidgett Coal	1.07	0.3 – 1.5	
measures	38.91		
Joan Coal	0.51	0 – 1.4	
measures	20.78		
Flockton Thick Coal	3.65	0 – 3.7	
measures	18.06		
Flockton Thin Coal	1.14	0 – 2.2	Top Deep Soft
measures	17.91		
High Fenton Coal	1.45	0 – 4.1	Deep Hard (combined with the Low Fenton)
measures	2.09		
Low Fenton Coal	1.01		
measures	16.74		
Parkgate Coal	2.31	0 – 3.9	Middleton Little
measures	16.97		
Thorncliffe Thin Coal	0.76	0 – 3.1	Middleton Main
measures	70.21		
Silkstone Coal	2.32	0 – 1.6	
measures			

The boundary between the Middle and Lower Coal Measures strata is between the Lidgett and Joan seams.

The bedrock in the general area appears to have been moderately faulted, with two unnamed inferred faults mapped near to, and may encroach onto, the site. These are to the north-west and south-west of the site, downthrown to the south-east and south-west respectively.

3.3 Coal Authority Mining Report

The entire site lies within a Coal Authority Reporting Area, with a Development High Risk Area encroaching onto the site from the south-east. Therefore, as part of this study a Consultants Coal Mining Report was procured from the Coal Authority. The full report is presented in Appendix B and is summarised below.

- Past underground coal mining has been recorded in sixteen seams below or within close proximity to the site at depths of between 32m and 312m below ground level (bgl).
- No probable unrecorded shallow workings are noted.
- No spine roadways are recorded at shallow depth.
- No mine entries are recorded within 100m of the site boundaries.
- Nine mine abandonment plans are recorded to intersect with the Site boundaries.
- Two coal outcrops are recorded below the site; the Dunsil Coal and an unnamed coal seam.
- One geological fault is recorded to intersect with the southern site boundary, trending in an approximate north-west – south-east orientation. No other faults, fissures or breaklines are recorded within the site

boundary.

- Much of the site has been subject to opencast mining to an unspecified depth.

The Coal Authority does not have records of any remediated sites (within 50m of the site boundary), claims for coal mining subsidence, records of mine gas or mine water treatments within 500m of the site boundary.

- No future underground mining is recorded.
- No Coal mining licenses are recorded within 200m of the site boundary.
- No court orders are recorded.
- No Section 46 notices have been given, under section 46 of the Coal Mining Subsidence Act 1991 stating that the land is at risk of subsidence.
- The site is in an area where notices to withdraw support were given in 1946, 1971 and 1977. The site 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.
- The Site is not in an area where a relevant notice has been published under the Coal Industry Act 1975/ Coal Industry Act 1994.
- No further information has been highlighted.

3.4 Previous Ground Investigations

Three previous reports relating to the subject site have been issued to Waterman for information as part of this report. These have been outlined in Section 2, and are listed again below followed by a summary of information relevant to this study:

1. Applied Geology Ltd: Desk Study and Phase I Coal Mining Risk Assessment for Parkside, Hoyland, referenced HOY-AG-VGT-XX-RP-CE-AG3080D-20-AK84 and dated August 2020;
2. Applied Geology Ltd: Ground Investigation Report for Parkside, Hoyland Common, Barnsley, referenced HOY-AG-VGT-XX-RP-CE-AG3080D-20-AL24 and dated November 2020;
3. Met Engineers Ltd: Supplementary Site Investigation Report for Parkside Sports and Community Centre, Hoyland, referenced P22-01115-Met-RP-GE-001 and dated April 2023.

3.4.1 Applied Geology Desk Study and Phase 1 Coal Mining Risk Assessment

The desk study and coal mining risk assessment was issued by Applied Geology Ltd. in 2020, for the sports field, access road and parking are; no building was proposed at that time.

Historical Opencast and Underground Mining

In the southwestern area of the site, where the proposed building is to be located, a section shows topsoil onto a 5.8m thick layer of sandstone, above the Dunsil (Harley) Seam; it is unclear from the mine abandonment plans whether the opencast mine had a near vertical face or was benched. If the latter, it is likely that the whole site is underlain by Made Ground to a significant depth, with the sandstone layer removed.

Based on information from an Abandonment Plan (NE419 (5 Sheets)), included in the appendix of the report, there were 5No. coal seams worked on site, summarised below in Table 2. The depth information included is based upon figures from the abandonment plans, the actual depths of excavation on site may be shallower than presented.

Table 2: Worked Coal Seams from Opencast Abandonment Plan

Geology / Seam Name	Location on Site	Depth to top of seam (mbgl.)	Depth to base of seam (mbgl.)	Seam Thickness (m)
Unidentified Seam (Mined via opencast methods)	Northeastern section of the site.	6.10	6.35	0.25
Dunsil (Harley) Seam (Mined via opencast methods)	Sitewide coverage, excluding long sections along the north and southern boundaries.	6.10	6.86	0.76
Thin Seam (Mined via opencast methods)	Central and southeastern areas of the site.	12.80	13.11	0.31
Swallow Wood Seam (Mined via underground and opencast methods)	Central and southeastern areas of the site.	Maximum extraction depth 26.62		0.99*
Lidgett Seam (Mined via Underground methods)	Central and southeastern areas of the site.	Various between 91.00-94.00		0.3-1.5

*It is noted on the 'General Description' that the top 10'' (25.4cm) of the Swallow Wood Seam was discarded owing to high ash content.

The abandonment plans detail the greatest depth from which coal was worked via opencast mining was 87.32' (26.62m bgl.) from the Swallow Wood coal seam to the southeast of the site boundary (seams dipping to the northeast). However, from the abandonment plans it is believed that the Swallow Wood seam was first worked by underground methods which plans show extend to the northwest of the site.

Subsequent mine abandonment plans (5843) detail the Lidgett Coal Seam being extracted below the site in the early 19th century, with the Applied Geology Ltd. report suggesting a depth of 91-94mbgl where extracted. This assessment corresponds to the Skiers Spring shaft section which recorded circa 58m of measures between the Swallow Wood and Lidgett Coal seams.

Coal Mining Issues

The report highlights a low risk from recorded underground shallow mine workings, classified as low due to the purported extraction depths of >38mbgl. with any related settlements / movements having ceased. The report does not suggest that the Swallow Wood seam was worked via opencast methods, and instead was mined solely through underground methods; hence AG have commented that the 15m of solid stratum between the base of the Thin Seam, and the top of the Swallow Wood seam would provide sufficient capping to support the development.

AG suggested that the risk of unrecorded mine entries on the site cannot be discounted, however these

would likely be situated outside of the opencast mining footprint and have been classified as having a very low risk.

The report also highlights a low risk on site due to the potential for uncontrolled backfilling of the opencast mining pit.

Recommendations

The report recommends a ground investigation be carried out on site to locate the highwalls associated with the former opencast mining on site; this was proposed to be completed through a series of trial pits. Several continuous boreholes were also proposed to carry out in-situ testing and retrieve samples for geotechnical testing on the opencast backfill material.

3.4.2 AG Ground Investigation Report

Ground Investigation Summary

Applied Geology Ltd. undertook a ground investigation on the subject site during September 2020; the ground investigation included the following intrusive tests:

- 15 No. machine excavated trial pits;
- 7 No. trenches to investigate the opencast boundary and coal seam outcrops;
- 3 No. soakaway tests in trial pits;
- 14 No. cone penetration tests; and,
- 10 No. driven continuous samples boreholes.

Six monitoring wells were installed during the investigation with five having response zones within the Made Ground – Opencast backfill, and one with a response zone in the Pennine Middle Coal Measures Formation. No groundwater was recorded during the ground investigation or in any of the subsequent monitoring visits.

The report states that the maximum expected depth of the opencast pit was anticipated to be 26mbgl. at the base of the Swallow Wood seam; however, the boreholes carried out reached a maximum of 5.45mbgl. and hence the base of the opencast mine has not been proven. The report speculates that the base of the pit was encountered in several locations; however, this may be CPT refusals on boulders / or the testing locations being towards the outer edge of the opencast pit.

Geological Summary

A layer of topsoil was present on site underlain by Made Ground typically comprising 0.50-0.75m of firm to stiff dark grey and dark brown slightly sandy gravelly to very gravelly clay with rare cobbles of mudstone and siltstone. Underlying the Made Ground was the Opencast Backfill comprised of firm to very stiff friable brown and dark grey slightly gravelly to gravelly clay with occasional to frequent subangular cobbles of mudstone, siltstone and locally ironstone. Gravel was fine to coarse angular to subangular mudstone, siltstone, coal and ironstone.

The trial trenches highlighted that the shallow section of the highwall was a near vertical face, with the exception of the north western corner where the gradient was notably shallow.

The Pennine Middle Coal Measures Formation was recorded around the southern and western perimeter of the site to depths of between 0.9 and 3.0mbgl. The stratum was recorded as firm to stiff becoming very stiff grey and light brown slightly sandy clay with occasional becoming frequent fine to medium gravel lithorelics of mudstone, siltstone and locally clarain and vitrain coal fragments.

A single coal seam was recorded during the ground investigation in the north east of the site, between 2.30

– 2.70mbgl., logged as a black vitrain and clarain coal; interpreted as the Unidentified Seam.

Revised Coal Mining Risk Assessment

Following the ground investigation Applied Geology updated their risk assessment in line with the findings, and in summary retained the initial risk factors and stated that the extent and nature of the opencast backfill has been confirmed by the trial trenching.

The report concluded that there is a low to negligible risk of coal mining related issues affecting the development. It should be borne in mind that no buildings were proposed at this time. The main highlighted risk being the subsidence hazard from the opencast backfill materials. No recommendations for additional works were given; however a recommendation for a concrete classification of DS-2 AC-2 was deemed appropriate for the site (also suggested that in areas where a pH value of 5.4 is recorded, AC-3z is required).

3.4.3 Met Engineers Supplementary Site Investigation Report

Ground Investigation Summary

Met Engineers Ltd. undertook a ground investigation on the subject site between December 2022 and January 2023; the ground investigation included the following intrusive tests:

- 6 No. machine excavated trial pits;
- 5No. windowless sample boreholes; and,
- 1No. cable percussion borehole.

The purpose of the investigation was to target the area of the proposed building footprint, specifically targeting the overlap with the location of the highwall.

The recorded geology was consistent with that recorded during the Applied Geology ground investigation in 2020; topsoil overlying Made Ground layers comprising soft slightly sandy slightly gravelly clay, onto silty sandy gravelly clay with a moderate cobble/boulder content and anthropogenic materials including plastic, wood, brick, rope and ceramic. Made Ground – Opencast Backfill material was logged as sand, gravel and clay with grey cobbles and boulders to depths from 0.80 – 8.00mbgl. The cable percussion borehole identified bedrock at a top depth of 8.00mbgl. with the borehole terminating at 8.10m.

It is noted that the trial pitting potentially identified a stepped edge to the highwall within two trial pits at depths of 1.20mbgl and 3.00mbgl.

Proposed Foundation solutions and recommendations

Met Engineers proposed a mixed foundation solution of trench fill on the underlying natural stratum, where the building footprint is situated off the opencast backfill, and a piled solution on the opencast backfill. Furthermore a suspended ground floor was proposed.

Based on the testing results a concrete classification AC-1s was recommended; with allowance to be made for the low to medium volume change potential of the underlying cohesive soils.

It is recommended within the report that additional ground investigation is carried out in the form of 3No. rotary boreholes to confirm the pile design.

3.5 Coal Seams Below Site

Data acquired from the BGS, the Coal Authority and mine abandonment plans indicates that the Site is underlain at shallow depths by coal seams, which were worked by opencast methods; in addition, deeper seams were extracted through underground methods. The anticipated succession of coal seams and their expected depths below the site have been listed below:

- Unidentified Seam at 6.10 – 6.35m depth (Northern site area).
- Dunsil (Harley) Seam at 6.10 – 6.86m depth (Central and Southern site area).
- Thin Seam at 12.8-13.11m depth.
- Swallow Wood Seam at a maximum depth of 26.2m.
- Lidgett Seam at 91-94m depth.
- Tankersley Ironstone at 142-143.5m depth.
- Top Fenton Seam at 189-190m depth.
- Low Fenton Seam at 196-197m depth.
- Parkgate Seam at 222-223.5m depth.
- Middleton Main Seams (various) at 233-246m depth.

3.6 Summary

The Coal Authority Consultants Coal Mining Report notes the Site is predominantly located in a Development High Risk Area, relating to the historical opencast coal mining in the central and eastern sections of the site.

From mine abandonment plans it is understood that coal was extracted from the site in a number of phases;

- 1911; the extraction of the Lidgett coal seam via underground methods at depths of 91-94mbgl.
- 1949-1951; extraction of the Unidentified Seam, Dunsil (Harley) Seam, Thin Seam and the Swallow Wood coal seam within the Stead Lane opencast mine, with the maximum recorded depth of excavation being 26.2mbgl.
- 1951; partial extraction of the Swallow Wood coal seam via underground methods at the Skiers Spring and Rockingham Collieries.

Abandonment plans for the opencast workings and selected underground workings have been overlain on the proposed layout, identifying that the base of the opencast within the Swallow Wood seam crosses the south-eastern corner of the proposed building footprint. Overlain plans are provided in Appendix D. The base of the opencast in the corner which underlies the proposed building footprint is recorded on the abandonment plan as being 405.37ft (123.4m) which suggests the base of the backfilled opencast should be circa 12m below the current ground level (approx. 135m).

The Coal Authority records do not detail any mine entries on, or within proximity of the site; given the nature of the coal extraction it is considered unlikely that there are any unidentified mine entries on site, however, this potential cannot be discounted.

Two ground investigations have been carried out on site, the first in 2020 by Applied Geology ltd. and the second in 2022-2023 by Met Engineers. Both ground investigation recorded a layer of topsoil, overlain by Made Ground typically comprising 0.50-0.75m of firm to stiff dark grey and dark brown slightly sandy gravelly to very gravelly clay with rare cobbles of mudstone and siltstone. Underlying the Made Ground was the Opencast Backfill comprised of firm to very stiff friable brown and dark grey slightly gravelly to gravelly clay with occasional to frequent subangular cobbles of mudstone, siltstone and locally ironstone. Gravel was fine to coarse angular to subangular mudstone, siltstone, coal and ironstone. The greatest depth of borehole sunk in the two investigations was 8.10mbgl, in a borehole just to the south of the proposed building footprint.

Several trial pits / trenches have been carried out around the perimeter of the opencast pit in an attempt to gain an understanding of its form. The 2020 investigation suggested that the highwall was a near vertical

face, except in the northwestern corner of the site; whereas the 2022-23 investigation suggested a stepped highwall.

4. Identification and Assessment of Site-Specific Coal Mining Risks

Table 3 below summarises the potential risks associated with coal mining legacy for the property, as identified from the listed sources of information.

Table 3: Summary of Potential Risks Associated with Coal Mining Legacy

Coal Mining Issue	Yes	No	Risk Assessment	Risk Level
Recorded deep underground coal mining (>30m depth)	✓		Coal Authority mine abandonment plans indicates historical coal mining in the Lidgett coal seam below the site at depths of between 91-94m bgl.	Very Low
Recorded shallow underground coal mining (< 30m depth)	✓		Coal Authority mine abandonment plans and the mining report detail the Swallow Wood coal seam around 26mbgl. being extracted on site via underground mine workings, later extracted via opencast methods.	Very Low
Unrecorded shallow underground coal mining (< 30m depth)	✓		Coal Authority mine abandonment plans detail underground workings of the Swallow Wood coal seam within the site and in the wider area, so the presence of unrecorded workings outside the extent of the opencast site cannot be discounted.	Low
Recorded surface mining (i.e. recorded opencast working)	✓		Opencast mining has been recorded on the central and southern areas of the site to a maximum depth of 26mbgl., through 4 coal seams. Two investigations have recorded the edge of the former opencast, but it is unclear if the highwall is stepped or a near vertical face.	Medium
Unrecorded surface mining (i.e. unrecorded opencast working)		X	It is considered that there is unlikely to be any unrecorded opencast mining on site, due to the available abandonment plans and the findings of the two ground investigations recently carried out on site.	No Risk
Mine entries (shafts, adits)		X	No recorded mine entries have been identified on site; however, the risk cannot be discounted due to historical mining activities in the local area.	Very Low
Coal mining geology (fissures)		X	None identified.	Very Low
Record of past mine gas emissions or potential	✓		Monitoring data from borehole installations has shown maximum concentrations of CH_4 to be <0.1%, CO_2 to be 8.9% and several readings of depleted oxygen with the lowest being 2.6%.	Low
Recorded coal mining surface hazard (hazards relating to mine entries and shallow workings)	✓		The nature of the backfill materials is known to a depth of circa. 5-8mbgl but the mine plans suggest it could be as deep as 12m below existing ground level. Previous investigations were also inconclusive on the shape of the highwall, whether it being stepped or a near vertical face. The predominant risk to the development is differential settlement between the opencast backfill and the natural stratum and the design of a suitable foundation solution.	Medium

5. Conclusions/Mitigation Strategy

The risk posed by the historical underground and opencast mining is considered to be low to medium, comprising:

- the potential for unrecorded shallow workings to the north of the former opencast site;
- determining an appropriate foundation solution for the building;
- the potential for differential settlement, particularly across the high wall.

The proposed layout has the building straddling the recorded location of the high wall. We would not recommend that approach suggested by MET Engineers (pile the section under the opencast backfill and trench fill the remaining area), but would recommend a piled solution for the full building footprint. This will require the highwall location and profile to be confirmed by further ground investigation. The recorded geology identifies in the region of 58m of measures between the Swallow Wood and Lidgett coal seams, and hence a piled solution founding in the coal measures stratum below the Swallow Coal seam / opencast backfill is considered appropriate.

No mine entries are recorded on the site or within 100m of the site boundary; the risk of an unrecorded mine entry cannot be discounted around the perimeter of the site however is considered unlikely.

The Coal Authority report did not report any issues regarding mine gases within 500m of the site boundary, however monitoring of borehole installations has recorded the following maximum concentration of ground gases within the opencast backfill; CH_4 to be <0.1%, CO_2 to be 8.9% and several readings of depleted oxygen with the lowest being 2.6%.

5.1 Further Works

It is recommended that additional ground investigation is carried out for the proposed building footprint to better understand the depth of the backfill, its geotechnical properties and inform on pile design. It is also recommended that additional works are carried out to investigate the nature of the highwall, to ascertain if it is stepped or a near vertical face and confirm the mining situation below the section of the footprint off the former opencast.

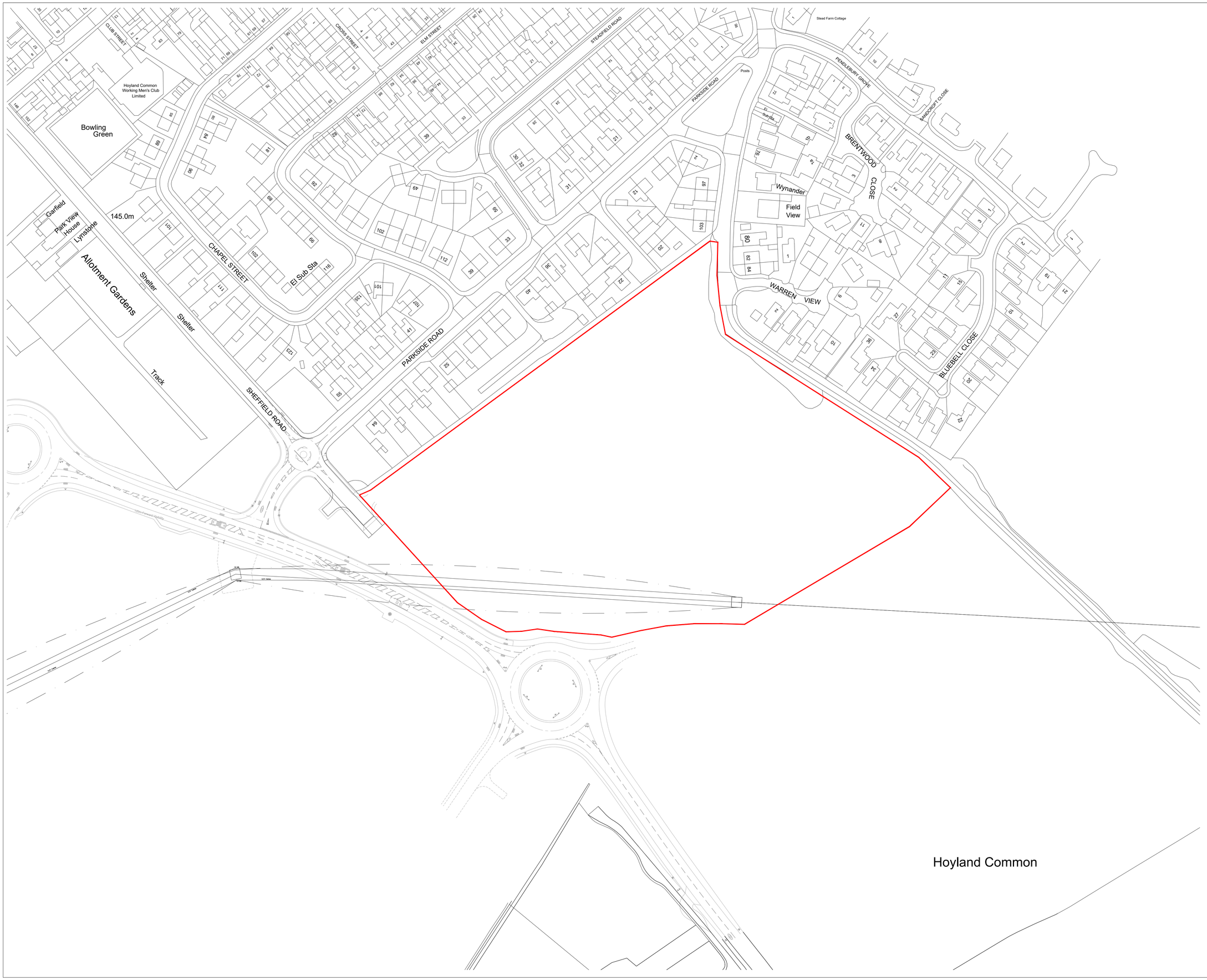
Based on the requirements for the investigation it is recommended that the following scope of works is adopted:

- Rotary openhole boreholes to 15-20m, or natural stratum, to identify the highwall.
- Rotary cored hole to obtain geotechnical parameters for pile design and to confirm mining structure outside the backfilled opencast.
- Geotechnical testing.

Given the two previous investigations, it is not deemed necessary to undertake any additional geoenvironmental samples from the near surface unless the proposed end use was to be changed from the current plans.

APPENDICES

A. Site Location and Layout Plan



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DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER PROJECT DOCUMENTS INCLUDING BUT NOT LIMITED TO DRAWINGS, SPECIFICATIONS, SCHEDULES

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NOTES

Rev	Notes	Date	Issued By
P1	First Issue	26/04/23	BST

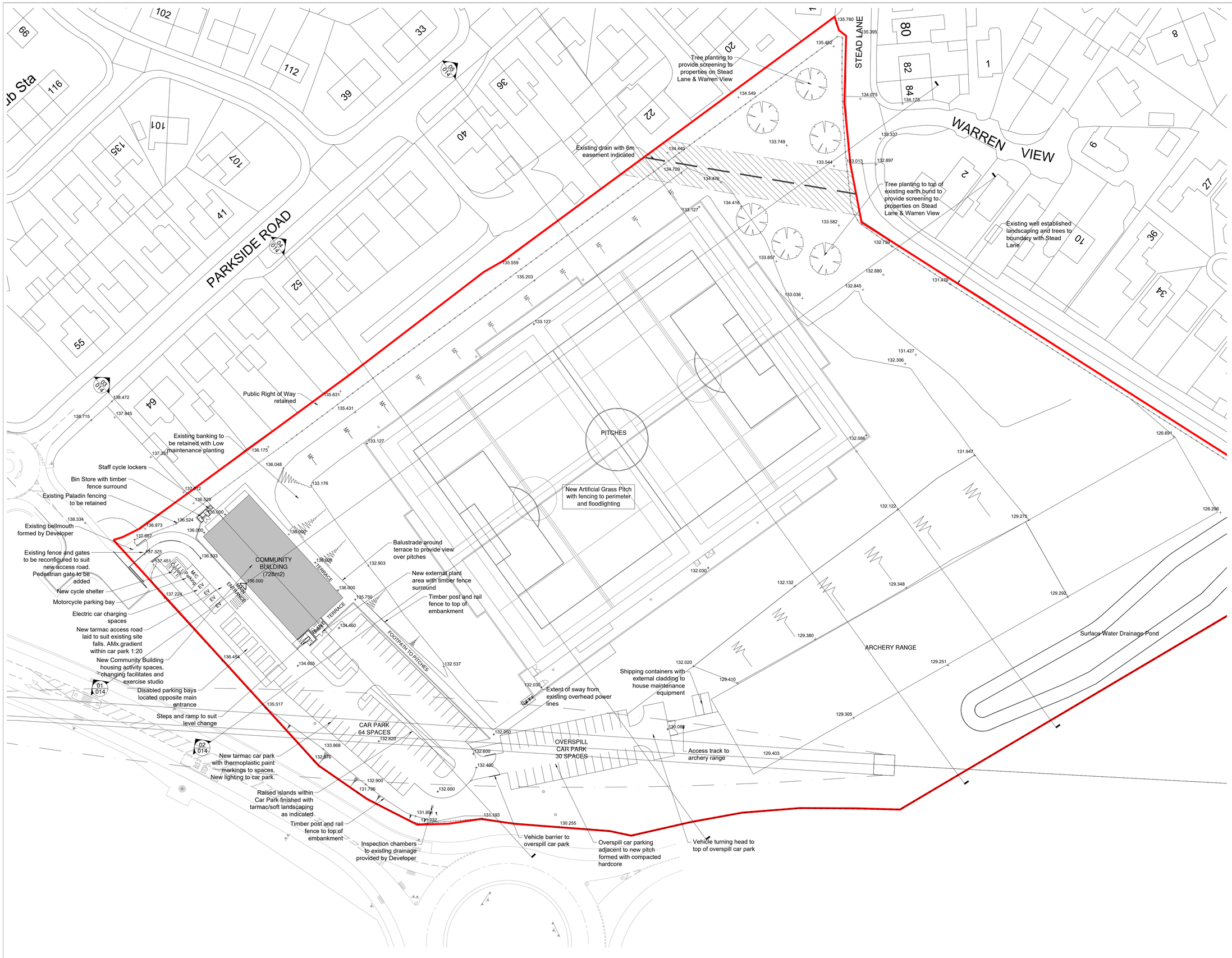
BARNSLEY Metropolitan Borough Council
PROPERTY SERVICES

SERVICE
B.E.S.T

PROJECT
Parkside Sports & Community Centre

TITLE
Site Location Plan

PROJECT REF	DRAWING REFERENCE	REV
	001	P1
SCALE: 1:1000	DISCIPLINE: ARCHITECTURE	SHEET SIZE: A1
PURPOSE OF ISSUE: PRELIMINARY	Drawn: BST	Checked



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NOTES

Rev	Notes	Date	Issued By
P10	Bellmouth and access road alignment updated. Notes updated to bin store and staff cycle lockers inline with planning drawings.	15/09/23	BST
P9	External Plant relocated. Car park layout amended to create walkway along central island. Motorcycle parking added. Cycle parking added. Steps/Ramp amended to car park. Landscape hatching added. Notes updated.	21/07/23	BST
P8	Overspill layout reconfigured.	09/02/23	BST
P7	Layout updated in line with topo survey information. Pitch layout added from Football Foundation. Overspill car parking added.	16/01/23	BST
P6	Building footprint amended to 730m2.	29/06/22	BST
P5	Building footprint amended to 700m2. Parking increased to 68 spaces. Terrace added. Mover storage added. Steps/ramp removed.	14/04/22	BST
P4	Building arrangement amended to suit single storey first phase build working with slope of site.	21/01/22	BST
P3	Tiered seating omitted. Steps and ramped access introduced down to pitch level. Building name amended.	20/01/22	BST
P2	Building footprint reduced to suit existing provision. Future phase extensions indicated. Disabled parking spaces relocated and no. additional standard spaces added. Car park notes updated.	18/01/22	BST
P1	First Issue	06/12/21	BST

BARNSLEY Metropolitan Borough Council
PROPERTY SERVICES

SERVICE
B.E.S.T

PROJECT
Parkside Sports & Community Centre

TITLE
Proposed Site Layout

PROJECT REF	DRAWING REFERENCE	REV
	012	P10
SCALE	DISCIPLINE	SHEET SIZE
1:500	ARCHITECTURE	A1
PURPOSE OF ISSUE	INFORMATION	Drawn BST / Checked

B. Coal Authority - Consultants Mining Report

The Coal Authority

Consultants

Coal Mining Report

Sheffield Road
Hoyland Common
Barnsley
South Yorkshire

Date of enquiry:	**3 October 2023**
Date enquiry received:	**3 October 2023**
Issue date:	**3 October 2023**
Our reference:	**51003381239001**
Your reference:	**WIE20198-100**

Consultants

Coal Mining Report

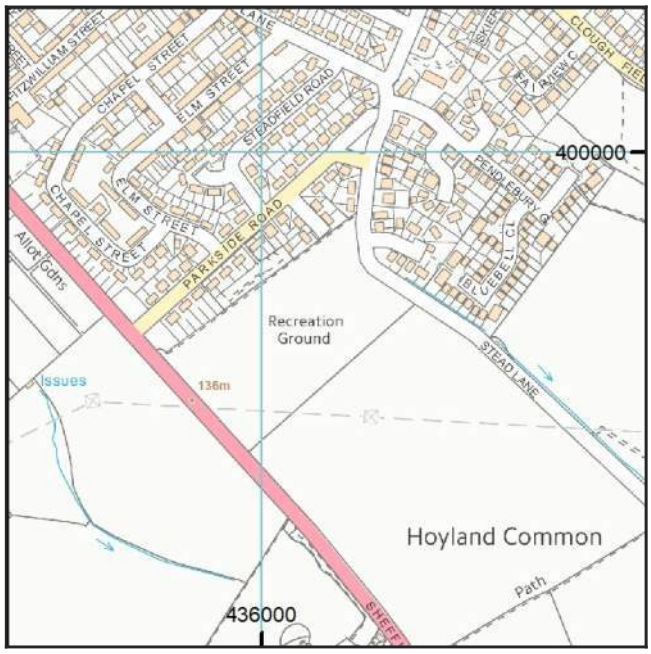
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

WATERMAN GROUP

Enquiry address

Sheffield Road
Hoyland Common
Barnsley
South Yorkshire



Approximate position of property

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How to contact us

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200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

@coalauthority
/company/the-coal-authority
/thecoalauthority
/thecoalauthority

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
SKIERS SPRING	SWALLOW WOOD	Coal	4IVL	32	Beneath Property	2.7	East	106	1956
LIDGETT	LIDGETT	Coal	4IVS	86	Beneath Property	3.8	North-East	70	1892
unnamed	LIDGETT	Coal	6IYZ	93	Beneath Property	3.2	North-East	75	1906
LIDGETT	LIDGETT	Coal	6IYY	93	South-West	3.0	South-East	80	1899
unnamed	LIDGETT	Coal	6IZ0	95	North-West	3.2	North-East	75	1907
unnamed	LIDGETT	Coal	5NM7	100	North	0.0	East	75	1907
TANKERSLEY	TANKERSLEY	Ironstone	A0GN	142	Beneath Property			152	1879
unnamed	TOP FENTON	Coal	6IZ7	189	Beneath Property	3.6	North-East	91	1930
ROCKINGHAM	LOW FENTON	Coal	6XRH	190	Beneath Property	4.1	North-East	130	1950
SKIERS SPRING	LOW FENTON	Coal	4IW1	196	Beneath Property	3.0	North-East	106	1972
SKIERS SPRING	TOP FENTON	Coal	4IVW	197	Beneath Property	0.9	East	91	1936
ROCKINGHAM	TOP FENTON	Coal	6IZ6	205	South-West	3.5	East	97	1927
SKIERS SPRING	TOP FENTON	Coal	4IVX	206	Beneath Property	1.4	North-East	90	1926
unnamed	TOP FENTON	Coal	64RH	206	North-West	3.5	North-East	109	1923
unnamed	PARKGATE	Coal	6XRE	208	Beneath Property	4.0	North-East	140	1910
ROCKINGHAM	LOW FENTON	Coal	64RK	210	North-West	3.4	North-East	137	1943
unnamed	TOP FENTON	Coal	5OUD	213	North	3.2	North-East	104	1924
unnamed	LOW FENTON	Coal	5NMC	216	North	3.2	North-East	104	1949
SKIERS SPRING	PARKGATE	Coal	4RRP	222	Beneath Property	1.9	East	145	1911
unnamed	PARKGATE	Coal	6XRD	222	South-West	3.5	East	145	1875
unnamed	PARKGATE	Coal	64PM	229	North-West	2.3	East	152	1900
ROCKINGHAM / HARLEY	PARKGATE	Coal	4OWH	230	North	3.0	North-East	168	1898

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
unnamed	MIDDLETON MAIN	Coal	661X	233	Beneath Property	4.1	North-East	76	1898
ROCKINGHAM	MIDDLETON MAIN	Coal	4IW3	240	Beneath Property	2.9	North-East	76	1915
unnamed	MIDDLETON MAIN	Coal	661W	246	Beneath Property	1.9	East	76	1899
unnamed	MIDDLETON MAIN	Coal	661Y	248	South-West	0.7	South-East	65	1913
unnamed	MIDDLETON MAIN	Coal	661Z	251	South-West	3.9	East	76	1910
unnamed	MIDDLETON MAIN	Coal	64RT	253	North-West	3.7	North-East	102	1904
ROCKINGHAM	THORNCLIFFE	Coal	5OUK	257	North	2.8	North-East	64	1908
unnamed	SILKSTONE	Coal	6IZF	298	Beneath Property	3.4	East	180	1900
unnamed	SILKSTONE	Coal	6IZE	310	South-West	3.5	East	180	1900
UNAMED	SILKSTONE	Coal	64SB	311	North-West	3.5	North-East	180	1917
SKIERS SPRING	SILKSTONE	Coal	4RRR	312	Beneath Property	1.6	North-East	86	1904
ROCKINGHAM	SILKSTONE	Coal	4OWA	324	North	2.7	East	86	1891
WHARNCLIFFE	WHINMOOR	Coal	6XM2	360	South-West	2.9	East	100	1948

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

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

M796	NE433	NE814
NE855	SY28	SY5
NE853	2250	OM1137

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

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
DUNSIL	Coal	Yes	Within	N/A	141
UNNAMED 6	Coal	Yes	Within	N/A	138

Geological faults, fissures and breaklines

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

Fault under or close to the property recorded.

Opencast mines

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

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

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

Site investigations

Distance to site investigation (m)	Direction
26.0	South-West
16.7	South-West
Within	N/A

See Section 4 for further information.

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.

Site investigations

The site is within an area of previous interest. It is close to where the Coal Authority has received information relating to past site investigations.

The site requires further investigation and may influence how you approach your risk assessment.

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.

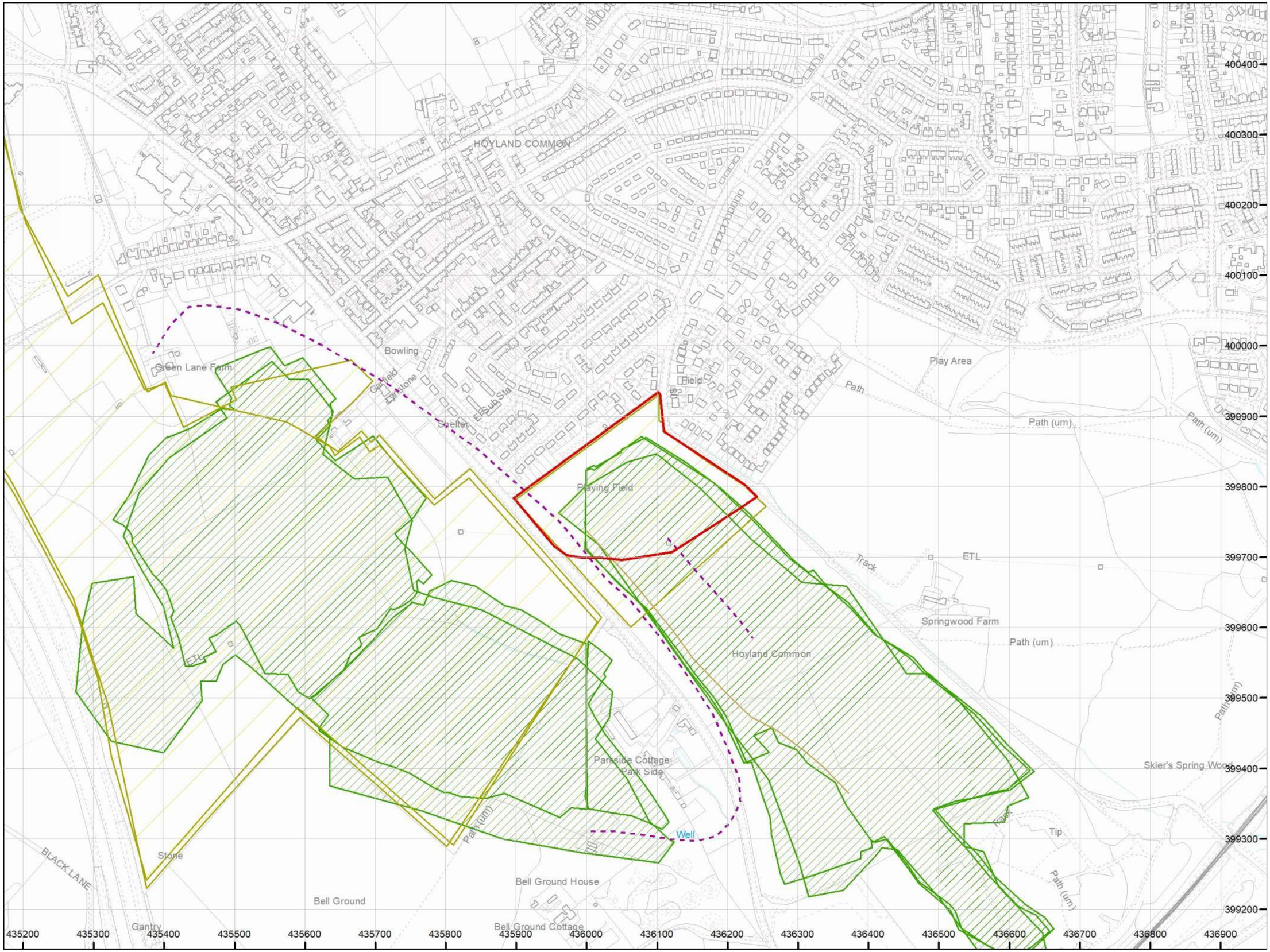
The Coal Authority

Summary of findings

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

Key

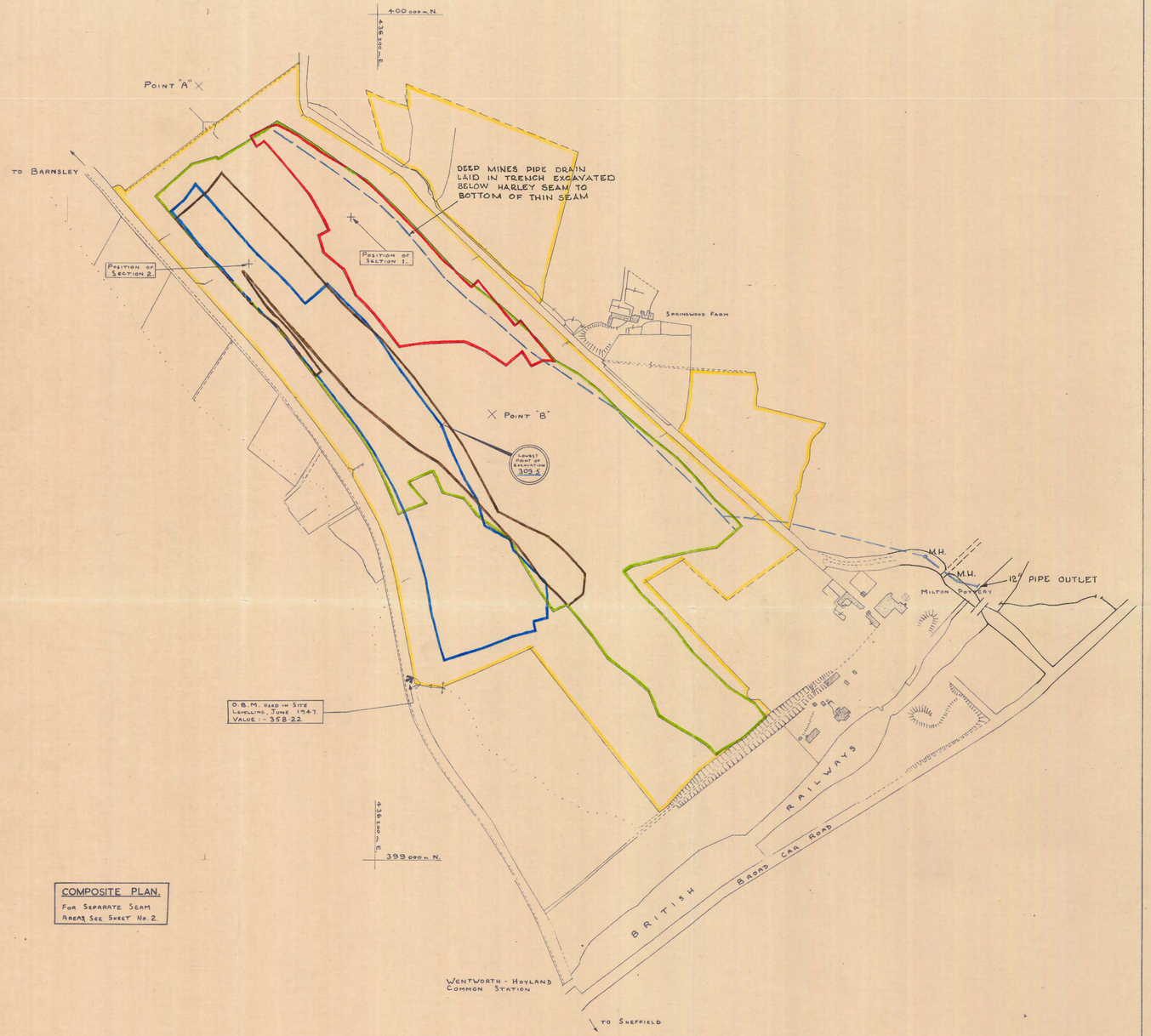
- Approximate position of the enquiry boundary shown
- Outcrop (Conjectured)
- Geological faults
- Unlicensed opencast site
- Site investigations



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

C. Mine Abandonment Plans (abstract from Applied Geology Report)

N.E.419.



COMPOSITE PLAN.
FOR SEPARATE SEAM AREAS SEE SHEET No. 2.

LEGEND

LOCATION

1:2500 SCALE ORDNANCE SHEET REFERENCE	282 : 8 + 12
DATE OF ORDNANCE SHEET	1931
NAME OF SITE	STEAD LANE
LOCATION OF SITE	6 MILES S.S.E. OF BARNSLEY
COUNTY	YORKSHIRE
PARISH	HOYLAND NETHER

QUANTITIES WORKED

TOTAL AREA REQUISITIONED 78·811 ACRES, SHEWN
TOTAL AREA WORKED EXCLUDING BATTERS 46·21 ACRES
TOTAL COAL RECOVERED FROM ABOVE 168,769 TONS

	Unidentified	Harley	Thin	Swallow Wood		
NAMES OF SEAMS WORKED FOR ABOVE TONNAGE (SEAMS NAMED FROM LEFT TO RIGHT IN GEOLOGICAL DESCENDING ORDER)						
AREA OF COAL SEAM WORKED COLOUR EDGED (SEAMS COLOURED FROM LEFT TO RIGHT IN GEOLOGICAL DESCENDING ORDER)						
TOTAL OLD WORKING VOIDS IN COAL SEAM IN CUBIC YDS.						
AREA OF SEAM WHERE OLD WORKING VOIDS WERE LOCATED						
DIP AND DIRECTION OF EACH SEAM SHEWN		DIP 1 IN 16		DIP 1 IN 14		
REDUCED LEVELS TO ORDNANCE DATUM SHEWN (RELATIVE TO NEWLYN) GROUND LEVEL		G.L. 445·9	G.L. 447·1	G.L. 442·9	G.L. 444·8	
REDUCED LEVELS TO ORDNANCE DATUM SHEWN (RELATIVE TO NEWLYN) BOTTOM OF COAL		B.C. 422·8	B.C. 422·5	B.C. 400·1	B.C. 367·9	
FAULTS SHEWN WITH THROW IN FEET ON DOWNTHROW SIDE				11'		

DEEP MINE PROTECTION DRAIN SHEWN THUS — — — — —

GENERAL DESCRIPTION

TYPE OF LAND — AGRICULTURAL

NATURE OF OVERBURDEN — TOPSOIL, CLAY, SANDSTONE & MUDSTONE

NATURE OF COAL — HARLEY SEAM ~ GOOD QUALITY UNDER DEEP COVER.
THIN SEAM ~ FAIR QUALITY - RATHER HIGH ASH CONTENT.

SPECIAL REMARKS — SWALLOW WOOD SEAM ~ TOP 10" DISCARDED OWING TO HIGH ASH CONTENT, BUT MAIN LEAF OF VERY GOOD QUALITY.

OPERATIONAL DATA

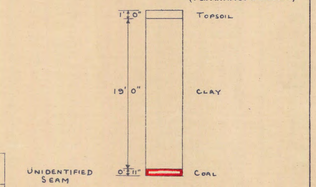
DATE REQUISITIONED	18·5·1949
COMMENCEMENT OF COALING	28·7·1949
COMPLETION OF COALING	16·3·1951
COMPLETION OF RESOILING	JULY 1951
SITE HANDED BACK TO AGRICULTURE	OCT. 1951
FINAL DEREQUISITION OF SITE	SEPT. 1958

COPIES TO	DATE	INITIALS
Mining Records (2)		
R.L. Surveyor (1)		
Geological Survey (1)		

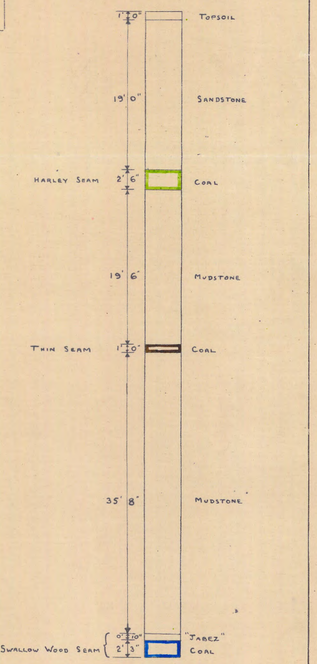
VERTICAL SECTION THROUGH ALL SEAMS

VERTICAL SCALE 8FT TO 1 INCH

SPECIAL REMARKS (re PARTINGS & STRATA)



SECTION 1.



SECTION 2.

SHEET 1 OF 2.

CROWN COPYRIGHT RESERVED

NATIONAL COAL BOARD OPENCAST EXECUTIVE 85/87 JERMYN STREET LONDON, S.W.1.	LAND SURVEY BRANCH DRAWN BY: M.J. Taylor DATE: 17-11-60 CHECKED BY: DATE: SCALE 1:2500	NAME OF ZONE OR CONTRACT	NAME OF SITE STEAD LANE	SITE REFERENCE NUMBER 030530 OPERATIONAL CONTRACT NUMBER OE/CON/2817	DRAWING NUMBER OE/COMP/03/160

OE/CLS/70

NE 419.

Green

to BARNSLEY

PARK SIDE

STEAD LANE

WENTWORTH-HOYLAND COMMON STATION

to SHEFFIELD

SPRINGWOOD FARM

MILTON POTTERY

RAILWAYS

BRITISH ROAD

CAR ROAD

STEAD LANE

282-8
282-12

282-8
282-12

N 400000 E 436200

B.M. 420·45

B.M. 358·22

399200 N 436200 E

GREATEST DEPTH OF EXCAVATION 32·44

GREATEST DEPTH OF EXCAVATION 53·85

LOWEST DATUM LEVEL 368·66

LOWEST DATUM LEVEL 326·08

Coal in this area lost thro' faults.

Dip 1 in 17·1

Dip 1 in 12·5

GL 415·22 BC 422·66
GL 441·92 BC 413·63
GL 440·42 BC 417·67
GL 442·59 BC 400·65
GL 437·51 BC 404·98
GL 437·21 BC 397·97
GL 432·80 BC 420·94
GL 421·45 BC 394·88
GL 423·14 BC 420·05
GL 441·97 BC 403·41
GL 439·76 BC 397·97
GL 415·68 BC 387·84
GL 421·47 BC 372·84
GL 414·57 BC 405·30
GL 408·85 BC 384·08
GL 459·89 BC 398·97
GL 413·58 BC 390·55
GL 400·33 BC 401·70
GL 387·40 BC 381·66
GL 421·37 BC 382·68
GL 405·76 BC 360·57
GL 365·62 BC 397·97
GL 412·51 BC 377·85
GL 392·17 BC 378·57
GL 388·66 BC 389·66
GL 406·11 BC 371·14
GL 404·10 BC 366·79
GL 385·80 BC 347·24
GL 400·74 BC 389·27
GL 390·70 BC 398·33
GL 393·82 BC 393·15
GL 384·15 BC 390·30
GL 384·78 BC 393·78
GL 375·40 BC 391·70
GL 379·49 BC 388·04
GL 371·33 BC 326·08
GL 372·25 BC 382·22
371·51 BC 378·27

AVERAGE SECTIONS

UNIDENTIFIED SEAM — 11½"

THIN SEAM — 10½"

SCALE 1" = 2'0"

SCALE 1/2500ft.

No 2 OF 3 DWGS.

ABAN. 7228.

DRAWN BY: B.W.TASKER.

NE 419.

Red

to BARNSLEYE

400000m N

436200m E

GREATEST DEPTH OF EXCAVATION 57·02.

282-8 / 282-12

Fault (Down-throw)

Harley top and bottom seame in this area

Harley Bottom Seam only recovered in this area

No coal recovered in this area

Dip 1 in 16

EDMAY

Unidentified Seam approx. 6" thick recovered from this area

SPRINGWOOD FARM

LOWEST DATUM LEVEL 310·16

MILTON POTTERY

PARK SIDE

B.M. 420·45

B.M. 312·68

499200m N

436200m E

Coal Wedges Left in.

RAILWAYS

CAP

ROAD

BRITISH

ROAD

WENTWORTH-HOYLAND COMMON STATION

to SHEFFIELD

STEAD LANE

AVERAGE SECTION HARLEY SEAM.

2'·4"

SCALE 1" = 2'·0"

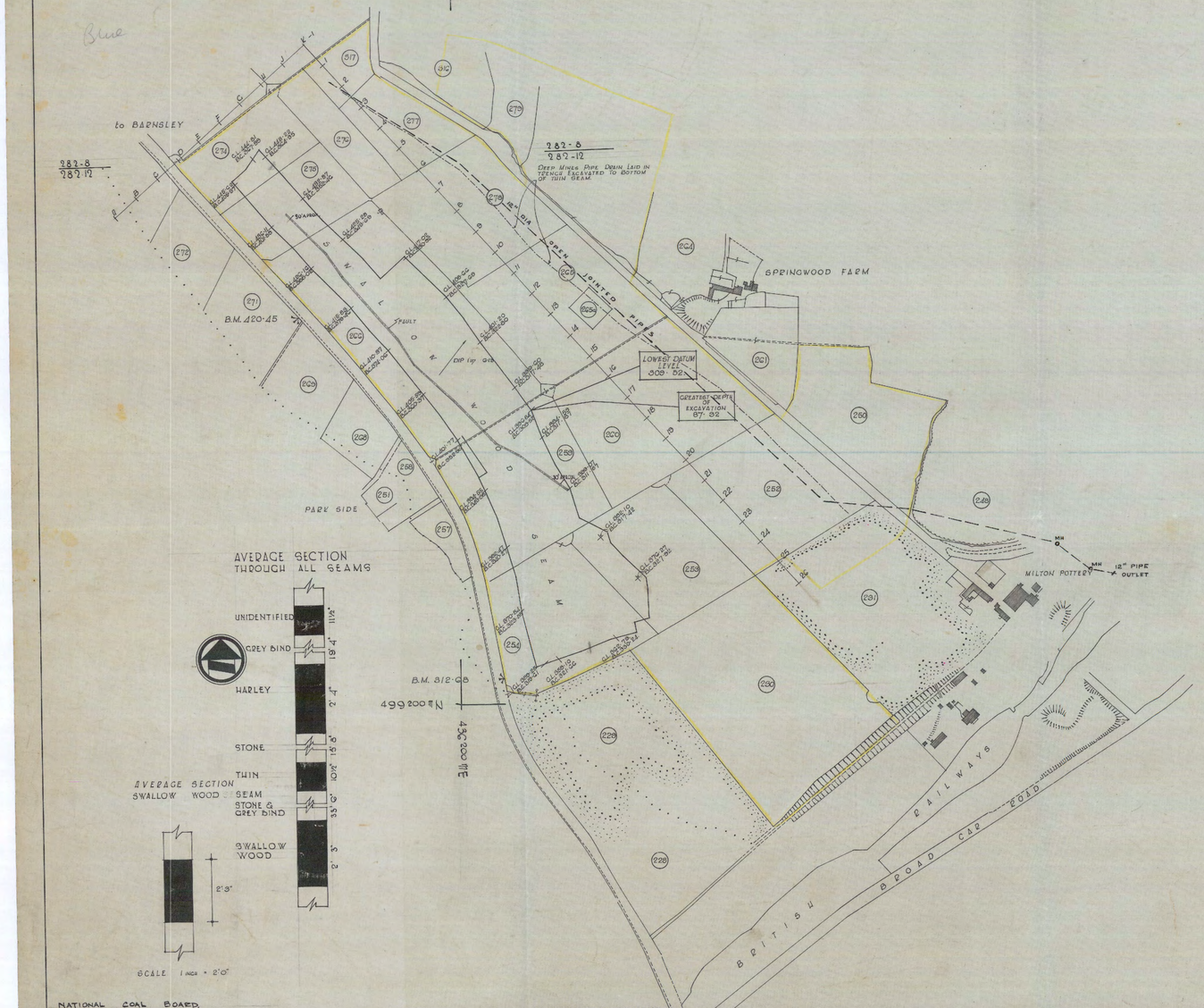
SCALE 1/2500ft

Nº 3 OF 3 DWGS.

ABAN. 7228.

DRAWN BY: B. W. TASKER.

NE419.



LOCATION OF SITE		6 mls S. of BARNSLEY
ORDNANCE SHEET REFERENCE	6" SCALE	282. N.E. S.E.
	1/2500th.	282. 8·12.
DATE OF ORDNANCE SHEETS		1931.
COUNTY		YORKS.
PARISH		HOYLAND NETHER
NAME OF SEAMS		UNIDENTIFIED, TWIN, HARLEY, SWALLOW WOOD.
AMOUNT OF COAL WON		108,769 TONS.
AREA WORKED		46·21 ACRES.
GREATEST DEPTH FROM WHICH COAL WAS WORKED		87·32'
DATE OF COMPLETION OF BACKFILL		JULY 1951.
DATE OF COMPLETE RESTORATION		OCTOBER 1951.
MINISTRY'S RESIDENT ENGINEER		MR. E. BROWN
CONTRACTORS		M.J. GLEESON. LTD.
DATE COMMENCED COALING		28TH JULY 1949
DATE CEASED COALING.		10TH APRIL 1951

THE AREA FROM WHICH THE COAL IS EXTRACTED IS SHOWN BY COLOURED SHADING.

THE LEVELS PRECEDED BY THE LETTERS "G.L." REFER TO A SURFACE GROUND LEVEL AT A POINT MARKED THUS.

THE LEVELS PRECEDED BY THE LETTERS "BC" REFER TO A BOTTOM OF COAL LEVEL AT THE EDGE OF THE COAL AREA.

Nº 1 OF 3 DWGS.

NATIONAL COAL BOARD.
OPENCAST EXECUTIVE,
No. 3. YORKSHIRE REGION
HOLMWOOD HOUSE,
ECCLESALL RD. STH, SHEFFIELD 11

NATIONAL COAL BOARD.
OPENCAST EXECUTIVE..
Nº 3. N.E. REGION, YORKS,
MOUNT PLEASANT SCHOOLS
SHAFFOW LANE, SHEFFIELD 11,

DRAWN BY	B.W. TASKER
DATE	
SCALE	1·2500.
CHECKED BY	
DATE	30/10/52.

STEAD LANE

NE.2.K.530 ABAN.7228.

NE.820

NATIONAL GRID NORTH

WATERLOGGED AREA

Workings in LIDGETT SEAM

PROBABLE WATERLOGGED AREA.

Roadways LIDGETT SEAM

WATERLOGGED AREA

Workings in HARLEY SEAM

BOREHOLE Swallow Wood up to Harley Seam 60'0" Swallow Wood 10032·0 Harley Seam 10029·0

11in Drift 9ft 9in HARLEY Seam

11in Drift up to HARLEY Seam

STEAD LANE OPENCAST WORKINGS N.E.·2K·530 Abandoned July 1951

OLD WORKINGS NO RECORDS AVAILABLE

OLD HEADING PROBABLY TO BLEACAR WATER DRIFT

To S.Wood (Filled in)

To T.P.I. (Filled in)

To T.R.I. (Filled in)

Swallow Wood Seam 31 Yds.

SKIERS SPRING SHAFT

SURFACE LEVEL 10338·90
HARLEY SEAM 10302·99
SWALLOW WOOD SEAM 10240·24
LIDGETT SEAM 10047·41
DEPTH OF SHAFT 368·7 yds.

SURFACE DRIFT

No.4 Pit 120yds to T.P.I.

Lidgett Pit Depth 120 yds.

VIEW TREE OPENCAST WORKINGS 0·3·04968 Abandoned August 1952

120/- approx.

WATERLOGGED Ponds AREAS

Ponds

Roadway

Not known

247'S 246'S 245'S 244'S 243'S 242'S 241'S 240'S 250'S 249A 249'S 253'S 252'S 254'S 259'S 256'S 255'S 200'S 201'S 202'S 5.012 5.022 255A

This plan is a true copy of the working plan of the mine as completed up to 27th February 1976 and I certify after thorough examination and enquiry that to the best of my knowledge and belief it is an accurate plan of the mine.

Signed R. Shaw Surveyor.
Date 1/3/76
Certificate No 1802 Dated 30.9.46

	ROCKINGHAM COLLIERY No.1. SHAFT 44/3501/277005	ROCKINGHAM COLLIERY No.2. SHAFT 44/3501/300036	HOYLAND SILKSTONE SHAFT 44/3601/956483
SURFACE LEVEL	10421·10	10418·43	10465
SWALLOW WOOD SEAM LEVEL	10352·44	10349·77	9916
SWALLOW WOOD SEAM INSET LEVEL			
LIDGETT SEAM LEVEL	10145·99	10126·90	
LIDGETT SEAM INSET LEVEL	10145·99	10126·90	
JOAN SEAM LEVEL			
JOAN SEAM INSET LEVEL			
FLOCKTON THICK SEAM LEVEL	9922·89	9907·60	
FLOCKTON THICK SEAM INSET LEVEL	9922·89	9907·80	
FLOCKTON THIN SEAM LEVEL			
FLOCKTON THIN SEAM INSET LEVEL			
TOP FENTON SEAM LEVEL	9756·40	9741·31	9319
TOP FENTON SEAM INSET LEVEL			9319
LOW FENTON SEAM LEVEL	9746·00	9731·91	9311
LOW FENTON SEAM INSET LEVEL			
PARKGATE SEAM LEVEL	9685·92	9671·83	9254
PARKGATE SEAM INSET LEVEL			
THORNCLIFFE SEAM LEVEL	9587·52	9573·83	9168
THORNCLIFFE SEAM INSET LEVEL			9168
INSET LEVEL	9514·35		
SILKSTONE SEAM LEVEL	9418·60	9410·00	9946
DEPTH OF SHAFT	355·27 yds	334·14 yds	506·33 yds

43/3699

ROCKINGHAM COLLIERY

I hereby certify that no further working has taken place after the date of abandonment which would affect the accuracy of this plan.

Signed S. Gillender Manager.
Date 1/3/76
Certificate No 7580 Dated MAY 1958

SCALE — 1/2500

DATUM FOR LEVELS
10,000 feet below ORDNANCE DATUM

SCALE OF METRES 100 50 0 100 200

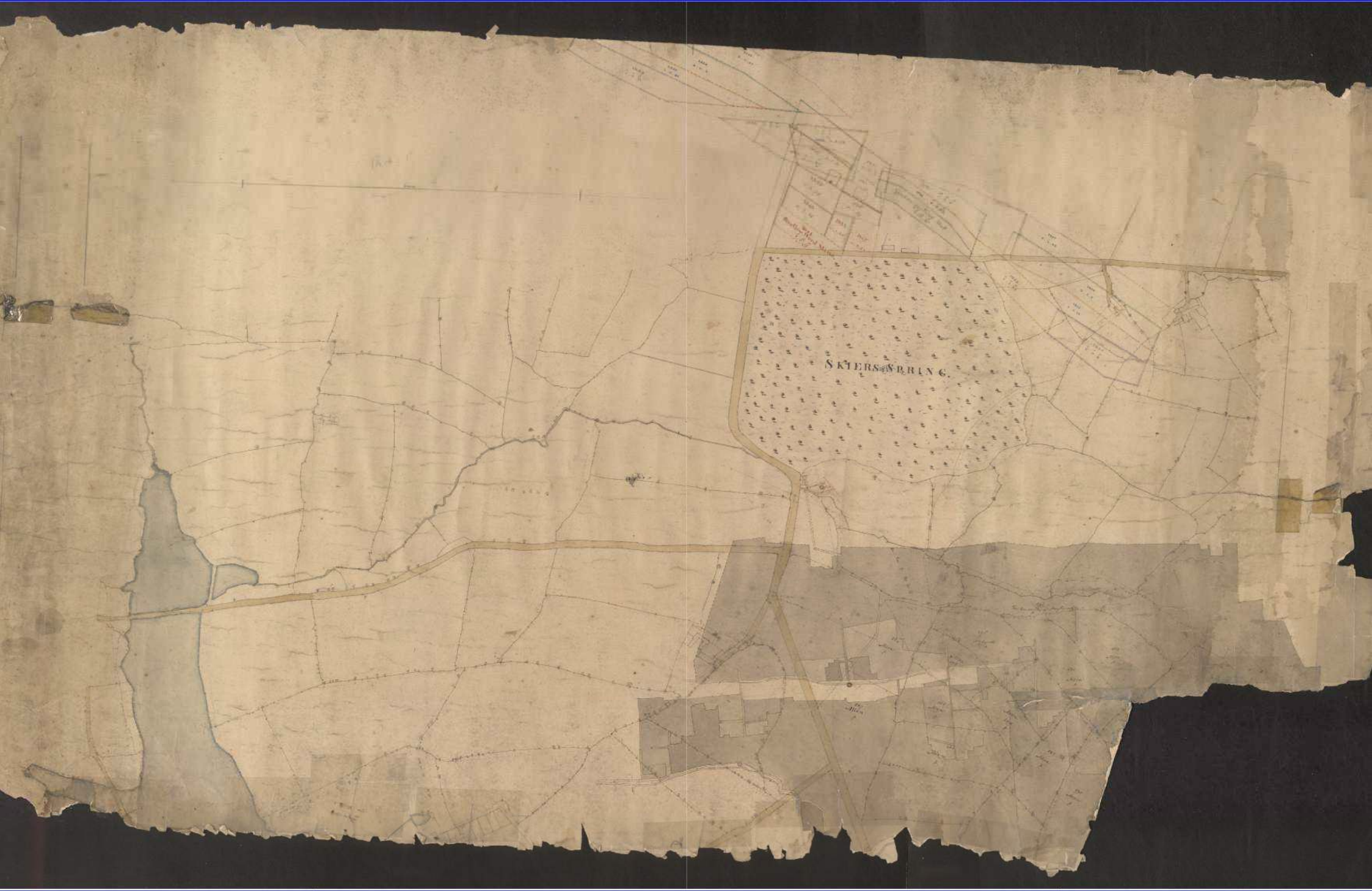
SCALE OF FEET 100 0 100 300 500 700 900

SECTION OF SEAM

STONE BIND	
IRONSTONE	3' 2"
COAL	4"
DIRT	2"
COAL	3' 0"
DIRT	3"
COAL	3"
DIRT	9"
COAL	1' 5"
SPAVIN	

SWALLOW WOOD SEAM

DATE OF ABANDONMENT 27th Feb. 1976
DATE OF CONSTRUCTION NOVEMBER 1957



Catalogue No.: M796 Sheet Info:

Date: 20/08/2020

Scale: 33 YARDS TO 1 INCH (1 TO 1188)

Diane Paradise 1 - The Coal Authority 200 Lichfield Lane,Mansfield,Notts,NG18 4RG UK

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ity

Mail: Derby Hill, Stanwick, Northamptonshire NN10 4RG. www.coal.gov.uk

The Coal Authority

Catalogue No.: 5843 Sheet Info: 1 OF 1 PART A

Date: 10/10/2018

Scale: 1 TO 2500

Steve Meredith 2 - The Coal Authority,200 Lichfield Lane,Mansfield,Nottinghamshire,NG18 4FQ,UK

D. Overlain Mine Abandonment Plans