LITHOS



Preliminary Geoenvironmental Investigation

Land at Gynn Lane, Honley

For Yorkshire Country Properties

Report no: 4749/1

Date: June 2024

Tel: 01937 545330 • info@lithos.co.uk • www.lithos.co.uk

GYNN LANE, HONLEY SUMMARY OF GEOENVIRONMENTAL ISSUES

Job No.	4749	**Site area/ha**	2.7ha
Client:	Yorkshire Country Properties	**NGR:**	SE 145 121
Site:	Gynn Lane, Honley	**Nearest postcode:**	HD9 6LF

The site is located off Gynn Lane, approximately 4.7km south of Huddersfield town centre, and currently comprises a single parcel of grassed land used for grazing cattle. In the centre-north of site is a 2-storey stone built detached house with associated gardens and parking. Areas of woodland are present along the northern boundary.

The site has remained essentially undeveloped throughout its history. However, the surrounding area was associated with the coal mining industry, with records of 4 adits and 1 mine entry within 100m of the site.

Lithos were commissioned by Yorkshire Country Properties to provide a preliminary geoenvironmental appraisal of the site. It is understood that the site is to be redeveloped with housing; a proposed layout is not currently available.

Lithos' investigation included an inspection of historical and geological maps and information provided by the Landmark Information Group, the Coal Authority, and QGIS. In addition, a site inspection has been carried out.

A summary of salient geoenvironmental issues is provided in the table below.

Issue	Remarks
Former uses	The site has remained essentially undeveloped throughout its history, however, the surrounding area was associated with the coal mining industry, with records of 4 adits and 1 mine entry within 100m of the site.
Anticipated ground conditions	Made ground is anticipated within the vicinity of 34 Gynn Lane in the north, and in localised patches across the site. Natural ground is anticipated to comprised residual soils (gravelly clay) underlain by shallow bedrock.
Anticipated contamination	Some, likely minor contamination anticipated.
Mining & quarrying	The majority of the site lies within a CA Development High Risk Area due to the likely presence of unrecorded shallow mineworkings associated with the outcrops of the Halifax Soft and Middle Band coal seams on site. 1 mine entry and 2 adits are located on site (total of 4 recorded mine entries/adits within 100m of the site). The possibility of unrecorded bell pits cannot be discounted. There are no recorded quarries within 250m of the site.
Hazardous gas	Given the likely presence of shallow mineworkings and a possible unrecorded landfill c.115m northeast, the site may be affected by sources of hazardous gas generation. Consequently, monitoring is recommended in order to determine appropriate gas protection measures for the proposed dwellings. The site lies in an area where between 5% and 10% of homes are estimated to be above the radon action level, therefore basic radon protection measures are required in all new dwellings.
Flooding & drainage	The site lies in Flood Zone 1, where the risk of flooding from rivers or the sea is classified as low. Soakaways will not provide a suitable drainage solution, and alternative SuDS will be required.
Preparatory works	Topsoil strip & stockpile Grubbing up of surface hardstand Demolition of 34 Gynn Lane (if retention is not proposed) Cut & fill earthworks to create level development platforms Treatment of shallow mine workings (if required) Treatment of the adits / roadways beneath the site where within influencing depth of the surface
Anticipated foundation solutions	Traditional strip and trenchfill foundations will likely be suitable for all plots at the site, founding in shallow bedrock or medium strength residual soils. If shallow mineworkings underlie the site, and require treatment, NHBC typically require foundations to be at least 300mm thick and reinforced. If the workings are at a depth of less than 5 times the seam thickness, then raft foundations may be required.

This brief summary should not be assumed to represent a complete account of all the potential geoenvironmental issues that may exist at the site. As such it is strongly recommended that the report be read in its entirety.

GYNN LANE, HONLEY SUMMARY OF GEOENVIRONMENTAL ISSUES

Job No.	4749	**Site area/ha**	2.7ha
Client:	Yorkshire Country Properties	**NGR:**	SE 145 121
Site:	Gynn Lane, Honley	**Nearest postcode:**	HD9 6LF

	If rock is encountered at shallow depth, foundations should be placed entirely on rock and not partially on rock and partially on residual soil. This may, depending on surface gradient, necessitate significant over deepening of foundations.
Recommendations for ground investigation	• Machine-excavated trial pits to determine near surface ground conditions including depth to bedrock, the presence of obstructions, groundwater and stability. • Machine excavated trenches to determine the location of the on-site mine entry and adits. • Topsoil strip in 10m x 20m panels down dip of the coal seams to check for the presence of bell pits. • Geotechnical soils analysis with grading and compaction testing to inform the design of appropriate cut & fill earthworks, and to enable foundation recommendations. • Chemical testing on soil samples to assess the significance of contamination and to confirm the topsoil is suitable for re-use. • Rotary probeholes to confirm depths and seam thicknesses in order to assess risks associated with possible old mineworkings and surface stability. • Gas monitoring and risk assessment.

At this stage, anticipated significant abnormals relating to geoenvironmental issues at the site are:

- Slopes of 1 in 5 are present in the east and west of site, in addition to an overall slope of 1 in 9 across the site. Retaining walls are also present along the eastern and southwestern boundaries, in addition to a retaining wall along the garden of 34 Gynn Lane. Significant earthworks will be required across the site to create level development platforms and provide suitable gradients for highways and gardens.
- Shallow mineworkings (including bell pits) may be present across the majority of site, associated with the outcrops of the Halifax Soft and Middle Band coal seams. If shallow workings are encountered, these will require treatment via drilling and grouting.
- 4 adits and 1 mine entry are recorded within 100m of the site boundary. Of these, 2 adits and 1 mine entry are located within the site's red line boundary. These will need to be located and treated in accordance with Coal Authority guidance.
- An area of woodland is present along the northern boundary of site. Ludhill Dyke flows west through the woodland. This area will need to be taken into consideration when designing the site layout.

This brief summary should not be assumed to represent a complete account of all the potential geoenvironmental issues that may exist at the site. As such it is strongly recommended that the report be read in its entirety.

CONTENTS

1 INTRODUCTION 1
1.1 THE COMMISSION AND BRIEF 1
1.2 THE PROPOSED DEVELOPMENT 1
1.3 REPORT FORMAT AND LIMITATIONS 1

2 SITE DESCRIPTION 2
2.1 GENERAL 2
2.2 SITE FEATURES 2

3 SITE HISTORY 3

4 ENVIRONMENTAL SETTING 4
4.1 GENERAL 4
4.2 COAL & MINING 5
4.3 UNRECORDED MINEWORKINGS 7
4.4 MINERAL SAFEGUARDED AREAS 7
4.5 LANDFILLS 8
4.6 HAZARDOUS GAS 8
4.7 AGRICULTURE 9

5 PRELIMINARY CONCEPTUAL SITE MODEL 10
5.1 POTENTIAL CONTAMINANTS 10
5.2 ANTICIPATED GROUND CONDITIONS & POTENTIAL ISSUES 10

6 LAND CONTAMINATION – PART IIA & PLANNING 11

7 GROUND INVESTIGATION DESIGN 12

8 CONCLUSIONS & RECOMMENDATIONS 14
8.1 GENERAL 14
8.2 MINING AND QUARRYING 14
8.3 HAZARDOUS GAS 15
8.4 FOUNDATIONS 15
8.5 HIGHWAYS AND EXTERNAL WORKS 16
8.6 SOAKAWAYS & DRAINAGE 16
8.7 CONTAMINATION 17
8.8 POTENTIAL DEVELOPMENT CONSTRAINTS 17
8.9 FURTHER INVESTIGATION 18

APPENDICES

Appendix A – General notes

01	Environmental setting

Appendix B – Drawings

Drawing	Revision	Title
4749/1	-	Site Location Plan
4749/3	-	Site Features
4749/4	-	Site Photographs
4749/5	-	Preliminary Conceptual Site Model
4749/8	-	CA Abandonment Plan M185 1 of 2
4749/9	-	Geology & Coal Mining Features

Appendix C - Commission

Appendix D – Historical OS plans*

Appendix E – Search responses*

From	Date	Content
Landmark	17 05 2024	Envirocheck report
Coal Authority	17 05 2024	Consultants Mining Report

* Some of this data is not included within the paper or PDF copies of this report can be provided on request.

FOREWORD (GEOENVIRONMENTAL APPRAISAL REPORT)

This report has been prepared for the sole internal use and reliance of the Client named on page 1. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Lithos Consulting Limited (Lithos); such authorisation not to be unreasonably withheld. If any unauthorised third party comes into possession of this report, they rely on it at their peril and the authors owe them no duty of care and skill.

This report has been reviewed by a Competent Person, as defined in the National Planning Policy Framework. We ensure that all projects are managed by individuals with necessary experience, relevant qualifications, and current membership of a relevant professional organisation. Records of engineers, project managers and reviewers involved in this project are maintained by us. Lithos QA/QC procedures for all our work forms an integral part of our ISO9001 accreditation and as such is regularly audited.

The report presents observations and factual data obtained during our site investigation and provides an assessment of geoenvironmental issues with respect to information provided by the Client regarding the proposed development. Further advice should be sought from Lithos prior to significant revision of the development proposals.

The report should be read in its entirety, including all associated drawings and appendices. Lithos cannot be held responsible for any misinterpretations arising from the use of extracts that are taken out of context. However, it should be noted that in order to keep the number of pages to a minimum, some information (e.g. full copy of the Landmark/Groundsure Report) is not included in the PDF; by request it can be provided.

The findings and opinions conveyed in this report (including review of any third-party reports) are based on information obtained from a variety of sources as detailed within this report, and which Lithos believes are reliable. Reasonable care and skill has been applied in examining the information obtained. Nevertheless, Lithos cannot and does not guarantee the authenticity or reliability of the information it has relied upon.

Where the report refers to the potential presence of invasive weeds such as Japanese Knotweed, or the presence of asbestos containing materials, it should be noted that the observations are for information only and should be verified by a suitably qualified expert.

Lithos cannot be responsible for the consequences of changing practices, revisions to waste management legislation etc that may affect the viability of proposed remediation options.

The report represents the findings and opinions of experienced geoenvironmental consultants. Lithos does not provide legal advice and the advice of lawyers may also be required.

Lithos standard terms and conditions apply to the report, a copy of the terms and conditions is available on request or can be found with our proposal in Appendix C.

PRELIMINARY GEOENVIRONMENTAL INVESTIGATION OF LAND AT GYNN LANE, HONLEY

1 INTRODUCTION

1.1 The commission and brief

1.1.1 Lithos Consulting were commissioned by Yorkshire Country Properties to carry out a Preliminary Geoenvironmental Investigation of land at Gynn Lane, Honley.

1.1.2 Correspondence regarding Lithos' appointment, including the brief for this investigation, is included in Appendix C. The agreed scope of works included:

- A site walkover and inspection
- An assessment of land use history
- Determination of the site's environmental setting
- A mining risk assessment in accordance with Coal Authority guidance
- Assessment of anticipated ground conditions, including potential contaminants
- Assessment of anticipated foundation and engineering issues associated with redevelopment for a residential end-use
- Provision of recommendations for an appropriate ground investigation

1.1.3 This Preliminary Investigation comprises an inspection of historical and geological maps and information provided by the British Geological Survey, the Landmark Information Group, the Coal Authority and QGIS[1]. In addition, a site inspection has been carried out by Lithos.

1.1.4 Primary aims of this investigation were to identify salient geoenvironmental issues affecting the site to enable design and costing of an appropriate intrusive investigation, and to support the submission of a planning application.

1.2 The proposed development

1.2.1 It is understood that consideration is being given to redevelopment of the site with traditional two and three storey domestic dwellings, associated gardens, POS and adoptable roads and sewers. No site layout has been provided at this stage.

1.2.2 The proposed development lies within the H584 allocation for Kirklees council, for the development of 75 dwellings.

1.3 Report format and limitations

1.3.1 Standard definitions, procedures and guidance are contained within Appendix A, which includes background, generic information on assessment of the site's environmental setting.

1.3.2 General notes and limitations relevant to all Lithos preliminary investigations are described in the Foreword and should be read in conjunction with this report. The text of the report draws specific attention to any modification to these procedures and to any other special techniques employed.

[1] *An Open Source Geographic Information System used by Lithos to access publicly available Government held digital data.*

2 SITE DESCRIPTION

2.1 General

2.1.1 The site's location is shown on Drawing 4749/1 presented in Appendix B to this report. Site details are summarised in the table below.

Detail	Remarks
Location	4.7km south of Huddersfield town centre
NGR	SE 145 121
Area	2.7ha (6.7 acres)
Known services	None known

2.2 Site features

2.2.1 Lithos completed a walkover survey of the site on the 23rd May 2024.

2.2.2 Existing salient features, at the time of the walkover are presented on Drawing 4749/3 in Appendix B to this report, and summarised in the table below.

Feature	Remarks
Current access	Off Gynn Lane
Topography	Overall slope of 1 in 9 to the southwest Two steeper slopes of 1 in 5 in the east and west Gabion retaining wall c. 1.7m – 1.9m high along the eastern boundary Stone retaining wall c. 5m high in the southwest corner Stone retaining wall c. 1.5m high along the southern boundary of the house
Approximate areas	100m² buildings 200m² tarmac hardstand 200m² concrete hardstand 3,800m² woodland 22,700m² grass
Nature of boundaries	North – Gynn Lane. Woodland separated by wooden post & wire fencing in the northeast and northwest. East – Gabion retaining wall with railway embankment & line behind. South – Stone walls with wooden post & wire fencing in front. West – Wooden post & wire fencing.
Surrounding land uses	North – Houses off Gynn Lane. East – Railway embankment with fields and woodland beyond. South – Fields. Houses off Marsh Platt Lane to the southwest. West – Houses off Marsh Platt Lane & Gynn Lane. Woodland in the northwest.

2.2.3 The site is located off Gynn Lane via an un-made track which leads to a two-storey detached, stone-built dwelling (no. 34 Gynn Lane) with concrete hardstanding and soft landscaping.

2.2.4 A 1.5m high stone retaining wall is present along the southern boundary of the garden of 34 Gynn Lane.

2.2.5 To the north and south of the access track is an area of dense woodland. Ludhill Dyke flows west through the centre of the woodland, and is culverted beneath the access track.

2.2.6 Access into the woodland was not possible due to dense vegetation and the presence of wooden post & wire fencing, however, the topography appears hummocky and variable, likely due to past coal mining activities.

2.2.7 Access into the fields to the south of the house is gained via a metal field gate, located to the west of the house.

2.2.8 The fields are currently grassed, used for the grazing of cattle and slope down towards the west at a gradient of 1 in 9.

2.2.9 A roughly T-shaped dilapidated stone wall runs north to south in the east of the site, and east to west in the centre of site. These walls appear to have previously formed field boundaries. Three mature trees are present in the east of site, along the former field boundaries.

2.2.10 A gabion retaining wall, c.1.7m – 1.9m high and 0.5m wide (where visible), which frequently steps by 0.5m to match the site topography, is present along the eastern boundary. Behind the gabion retaining wall is an area of dense overgrowth, which provides a screen for the railway line that runs north to south along the site's eastern boundary.

2.2.11 A stone wall is also present along the site's southern boundary, dividing the site from adjacent fields. Houses off Marsh Platt Lane to the south abut the site's southwestern boundary.

2.2.12 In the southwest of site, a stone retaining wall is located along Marsh Platt Lane, where the site lies c.5m higher than surrounding land.

2.2.13 A selection of site photographs are included on Drawing 4749/4.

3 SITE HISTORY

3.1 In order to investigate the development history and previous land uses at the site and immediate surrounding land, site centred extracts from Ordnance Survey (OS) plans dating back to 1854 have been examined. These plans are presented in Appendix D to this report.

3.2 The table below provides a summary of the salient points relating to the history of the site with respect to the proposed end use. It is not the intention of this report to describe in detail all the changes that have occurred on or adjacent to the site. Significant former uses/operations are highlighted in **bold** text for ease of reference.

Date	Site	Surrounding land
1854	Open fields Road along northern boundary	Gynn House located c.100m north **Railway embankment** c.20m east
1892	House in north of site. **Well** in the gardens of the house	Marsh Platt Houses directly south of site Woodland directly northeast of site. **Mill pond** c.5m west **Grove Mills** (corn) & associated house c.5m west **Slope** directly along northwestern boundary **Honley Dye Works** c.150m northeast
1906	No significant changes	Grove Mills now a woollen mill
1918	**Slopes** along northern boundaries **Watercourse** along northern boundary	No significant changes
1963	Watercourse labelled **Ludhill Dyke, flowing west**	**Works** c.80m southwest **Refuse Tip** c.115m northeast Houses constructed directly north off Gynn Lane
1989	No significant changes	Refuse tip no longer shown
2000	No significant changes	Mill and Mill pond no longer shown

4 ENVIRONMENTAL SETTING

4.1 General

4.1.1 Notes describing how the site's environmental setting has been assessed are included in Appendix A to this report. Reference has been made to publicly available Government held digital data via QGIS (an Open Source Geographic Information System). The responses received from the Coal Authority and extracts from the Landmark Report are presented in Appendix E.

Issue	Data reviewed	Remarks
Geology	1:50,000 BGS map (Sheet 86) 1:10,000 BGS map (Sheet SE11SW)	Made ground – recorded along eastern boundary within the footprint of the railway line & embankment – likely located off site. Drift soils – None recorded. Solid (bedrock) – Soft Bed Flags – sandstone in the west. Pennine Lower Coal Measures in the east. Middle Band Rock – sandstone in the far east Shallowest coal seam – two coal seams (Halifax Soft & Middle Band coal) outcrop on site and dip to the east/southeast. Strata Dip - unknown. Faults – None recorded.
Mining	Coal Authority BGS maps	Further details in Section 4.3 below
Quarrying	Historical OS plans	None within 250m.
Landfills	Envirocheck	No recorded landfills within 250m, however, the 1963 and 1975 historical map shows a 'refuse tip' c. 115m northeast.
Radon	Public Health England	The site lies in an area where 5-10% of homes are estimated to be above the radon action level. Therefore, basic measures required.
Hydrogeology	Environment Agency electronic open data via QGIS	Source Protection Zone? None. Aquifer: Secondary A Aquifer (Solid). Groundwater abstractions? General industrial abstraction at Crossley Mills c.226m southwest from groundwater (unknown source and date). Soil leaching potential - High. Pollution incidents? None of significance.
Hydrology	Defra Catchment data explorer Envirocheck Report	Nearest watercourse(s) – Ludhill Dyke located in the north of site, flowing west. Within the Holme from New Mill Dyke to River Colne water body catchment. Water quality – chemical fail, moderate ecology. Pollution incidents? Nearest is cattle slurry c.117m north into Calder tributaries, March 1995. Fire water into Ludhill Brook 134m northeast in September 1997. Abstractions? General industrial abstraction from unknown surface water 282m northeast. Discharge consents? Sewage storm water overflow in the north of site into Ludhill Dyke between 1997 and 2011.
Flood risk	Environment Agency electronic open data via QGIS	The site lies in Flood Zone 1, where the risk of flooding from rivers or the sea is classified as low. In accordance with Chapter 14 of the National Planning Policy Framework, a site-specific flood risk assessment is required for proposals of 1 hectare or greater in Flood Zone 1, or in an area within Flood Zone 1 which has critical drainage problems (as notified to the local planning authority by the Environment Agency).

4.2 Coal & mining

4.2.1 In July 2011 the Coal Authority (CA) formalised their requirements in relation to planning applications and introduced some new terminology relating to coal mining development areas. This Section provides the necessary mining risk assessment required by the proposed planning application.

4.2.2 The majority of the site lies within a High Risk Area - an area with specific mining legacy risks to the surface, including mine entries; shallow coal workings etc.

4.2.3 Geological maps suggest that two coal seams underlie the site at shallow depth. These are the:

- Halifax Soft Bed coal, outcropping in the east/centre east and dipping east. Recorded thickness of 0.5m.
- Middle Band coal, a thin coal, outcropping in the far east, dipping east.

4.2.4 It should be noted that seam outcrops plotted on geological maps have been known to be inaccurate by distances in excess of 100m.

4.2.5 The exact location of the two outcrops is unclear, as the location of the outcrops mapped by the Coal Authority on the Consultants Mining Report differs from the location of the outcrops shown on the 1:10,000 Geological map. It is likely that the true outcrop of the coal seams are somewhere in the middle of where they are currently recorded, and may follow the changes in bedrock, rather than cutting across rock types, as they are currently mapped. The locations of the recorded outcrops are shown on Drawing 4749/9.

4.2.6 Given dip and topography, shallow coal is expected to underlie an area of about 22,000m^2 across the east and southwest of the site. Both seams are underlain by >100m of Coal Measures bedrock within which there are no further significant coal seams recorded.

4.2.7 A CA mining report states that:

- There is **no past underground mining** recorded beneath the site
- The site may be underlain by **probable unrecorded shallow workings**
- There are **two spine roadways** recorded at shallow depth. The direction of the spine roadway is unknown. The spine roadways recorded are likely referring to the roadways extending from the two on site adits, and lead to workings/collieries off site.
- There are **4 adits** and **one mine entry** recorded on or within 100m of the site boundary
- The **Halifax Soft** and the **Middle Band coal** both outcrop on site
- There are no geological faults, fissures or breaklines recorded beneath the site
- There are no recorded opencast mines within 500m of the site boundary
- There are no coal authority managed tips within 500m of the site boundary
- The Coal Authority has not received a damage notice or claim for the site, or for any property within 50m of the site since 31st October 1994
- There have been no incidences of mines gas within 500m of the site boundary
- No notices have been given under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence
- The property is not in an area where notice to withdraw support has been given

4.2.8 The mining reports suggests there are no known shallow workings (i.e. at less than 30m depth). However, it should be noted that it did not become a statutory requirement to maintain and preserve plans of abandoned mines until the Mine (Coal) Regulations Act of 1872 and consequently there may be mineworkings beneath the site for which the Coal Authority have no records.

4.2.9 Conversations with the Coal Authority have revealed there is no further information regarding the location, diameter, depth and treatment of the adits and mine entries.

4.2.10 Prior to finding recorded shafts/adits (i.e. those referenced in the CA mining report), the CA will expect Yorkshire Country Properties' layout to assume a potential no-build "zone of influence" around each shaft based on the following calculation:

(0.5 x assumed shaft diameter) + departure + drift depth = zone of influence

4.2.11 It is worth noting that CA shaft positions are often only approximate, and in some cases the same shaft has been recorded in multiple locations, or some other feature such as a chimney has erroneously been recorded as a shaft.

4.2.12 The table below summarises the potential risks associated with coal mining legacy issues at this site.

Coal mining issue	Yes	No	Remarks
Underground coal mining (recorded at shallow depths)		x	
Underground coal mining (probable at shallow depths)	x		Probable unrecorded workings in the Halifax Soft Bed and Middle Band Coal. May pose a hazardous gas risk.
Mine entries (shafts and adits)	x		Two adits and a mine entry (drift pit) on site or close to the site boundary. May pose a risk of surface instability.
Coal mining geology (fissures)		x	
Record of past mine gas emissions or potential		x	
Recorded coal mining surface hazard		x	
Surface mining (opencast workings)		x	

4.2.13 For those issues identified as "yes" in the above table, a more detailed discussion and assessment of the risks, both individually and cumulatively, to the application site and the proposed development is provided below.

Abandonment Plan

4.2.14 Abandonment plan Ref. M185 1 of 2 has been obtained to gain more information on the potential for unrecorded shallow workings beneath the site. The plan shows the boundaries of mineworkings within the vicinity of the site, however, does not indicate the presence of mineworkings within the red line boundary.

4.2.15 There is however, two adits (also known as a spine roadways) shown that traverse the site N-S and E-W. The E-W trending adit appears to originate from the west of site, where an adit and drift shaft are located. Details on the plan suggest this adit extended from Grove House in the West to Woodroyd Colliery in the east. The N-S adit appears to start at 'Gynn Day Hole' located in the northeast of site, and extends off site to the south to an area of recorded workings.

4.2.16 Whilst no workings are recorded beneath the site, it is possible that coal was extracted from shallow depths beneath the site, using the adit systems as roadways, or alternatively via bell pits, as discussed below.

4.2.17 Upon overlaying the current site boundary on the plan, it appears there are some scaling issues. This is a common issue, given the age of the plan, and lack of surrounding surface features. Consequently, the site has been mapped on the abandonment plan using the location of the southern field boundary and the railway to the east of site. Given the difficulty scaling the map to fit the site boundary, the true location of the adits/roadways and mine entry may vary from what is shown on Drawing 4749/8 and 4749/9.

4.3 Unrecorded mineworkings

4.3.1 Coal has been mined in Yorkshire for centuries, and there are also likely to be unrecorded mineworkings which pre-date the requirement for abandonment plans (Coal Mines Regulation Act of 1872). Early mining methods included drifts or adits from outcrop. Where mining extended further from the crop, bell pits were often sunk, and as the coal got deeper still, shafts were used to access gallery workings (pillar & stall).

4.3.2 The shafts associated with bell pits are typically only about 1.2m in diameter, and the bell pit itself was typically 5m to 10m in diameter (bell pit size would have been constrained by roof stability). Consequently, bell pits are often closely spaced; the most intensive concentration of shafts recorded to date (66 per acre) was at the Middleton Broom Opencast site.

4.3.3 As coal was removed during bell pitting, the unsupported strata above assumed an inverted slope of stability, generating a bee-hive shape around the base of the shaft which forms the characteristic vertical section. The depth limit of bell pit mining is almost certainly 15m, and this is considered a deep bell pit; the vast majority were probably less than half this depth.

4.3.4 At greater depths, pillar and stall workings appear to have been the preferred method, and such workings were often accessed via a single shaft. Consequently, shafts associated with such workings are more widely spaced; but rarely exceeded one quarter of a mile (400m) shaft to shaft, due to problems with ventilation and underground haulage. It was customary to view the life expectancy of an individual pit as about three to five years and at any one time several new pits would be sinking to replace those currently operating.

4.3.5 Up until the last decades of the eighteenth century, coal mining almost always represented a short-term interruption to ongoing use of land for agricultural. The right to sink shafts and extract coal was usually conditional upon restoration of the surface after coal extraction was complete. This not only involved filling the shaft, but also required that any subsequent settlement of shaft fill material did not result in depressions in the field surface. Consequently, it was usual to fill the shaft and heap excess arisings into a dome over the shaft eye. Over subsequent years, the dome supplied material to compensate for settlement of the shaft fill. In the normal course of events, at the conclusion of the recovery period, any remaining spoil accumulations above ground level would have been planed-off to leave a relatively stable, level surface where the shaft had been.

4.3.6 Bell pits may be present across the whole of the site near coal outcrops.

4.4 Mineral safeguarded areas

4.4.1 The site is underlain by **sandstone** and **coal** and might therefore be considered by the Local Authority to lie within a Mineral Safeguarding Area (MSA).

4.4.2 Indeed, review of Kirklees Council Mineral Safeguarding Plan suggests that due to the presence of Sandstone and/or Clay and Shale, the site lies within a 'safeguarding area'. Further advice should be sought from a Minerals Surveyor.

4.4.3 MSAs are areas of known mineral resources that are of sufficient economic or conservation value to warrant protection for generations to come. The purpose of MSAs is not to preclude automatically other forms of development, but to make sure that mineral resources are adequately and effectively considered in land-use planning decisions.

4.4.4 Specialist guidance on Mineral Safeguarding "A Guide to Mineral Safeguarding in England" has been produced by The Coal Authority and the British Geological Survey.

4.4.5 Chapter 17 of the National Planning Policy Framework (NPPF) requires Local Authorities to facilitate the sustainable use of minerals, and planning policies should:

- Safeguard mineral resources by defining Mineral Safeguarding Areas and Mineral Consultation Areas; and adopt appropriate policies so that known locations of specific minerals resources of local and national importance are not sterilised by non-mineral development where this should be avoided (whilst not creating a presumption that the resources defined will be worked.
- Set out policies to encourage the prior extraction of minerals, where practicable and environmentally feasible, if it is necessary for non-mineral development to take place.

4.4.6 NPPF Chapter 17 notes that when determining planning applications, local planning authorities should give great weight to the benefits of the mineral extraction.

4.4.7 As a consequence of the NPPF, and the presence of mineral reserves beneath the site, the Local Authority may require Yorkshire Country Properties to consider the opportunity to recover (extract) the sandstone and/or shale.

4.4.8 Surface extraction of sandstone and/or shale here is considered **unlikely** to be viable based on the site's proximity to adjacent residential properties. Prior extraction of minerals would have the potential to cause unacceptable impacts on neighbouring properties and infrastructure, including noise, air quality, traffic impacts and land stability. However, it would be prudent to seek further advice from a Minerals Surveyor.

4.5 Landfills

4.5.1 Whilst there are no landfills recorded in the Landmark report and QGIS, a 'refuse tip' is shown c.115m northeast on historical maps between 1963 and 1975.

4.5.2 The contents and nature of the refuse tip are therefore unknown, however, the land now appears to be the gardens of the 'Wood Royd' housing complex.

4.6 Hazardous gas

Methane & carbon dioxide

4.6.1 Given the presence of two adits and the likely presence of shallow mineworkings, the site may be affected by sources of hazardous gas generation. Furthermore, there is a possible unrecorded landfill c.115m northeast, which may also be a potential source of migrating hazardous ground gas.

4.6.2 Consequently, gas monitoring is recommended in order to determine appropriate gas protection measures for the proposed dwellings.

Radon

4.6.3 Requirements with respect to radon measures are set out in Building Regulations Approved Document C. Probability bandings (based on the proportion of properties in a given area that exceed the Action Level; currently 200 $Bq.m^{-3}$) are used to determine whether a property requires no, basic or full measures.

4.6.4 At present Approved Document C advocates basic measures for the probability banding 3% to 10% (full measures if >10%). However, the UK Health Security Agency (HSA) would like to see all new build include basic measures.

4.6.5 In December 2022, the British Geological Survey (BGS), deployed a revised dataset which increased accuracy and also the number of properties falling within radon affected areas. This revised dataset is now referenced by maps on the HSA website.

4.6.6 The HSA website radon map indicates that the site is in an area where **5% to 10%** of homes are estimated to be above the action level, and **basic** radon protection measures are required in new dwellings.

4.6.7 Basic radon measures comprise a radon resistant barrier* (membrane) laid within the floor construction and across the wall cavity in accordance with BR211:2023[2]. The joints between the sheets that form the membrane and cross the cavity **must** be sealed, along with all service penetrations, to make the construction as airtight as possible. A separate cavity tray should be installed in the cavity one brick course above the radon membrane. In order to withstand the installation and follow on construction process membranes should be no less than 400 microns thick.[3]

4.6.8 BRE211:2023 highlights the importance of good practice and a high standard of workmanship to ensure radon membranes are installed to a high standard.

4.6.9 A building site is a harsh environment and barriers can easily become damaged during construction by operatives or equipment moving across or working over a completed section of barrier. As a consequence, where there is a risk of puncturing the membrane, it should be ensured that the membrane is well protected with sand or lean mix concrete before advancing construction.

4.6.10 The radon protection system should be subject to inspection and verification by a third party inspector that has a full understanding of all elements of the radon protection system.

4.6.11 Verification should be carried out at a minimum frequency of 1 in 10 plots where groundworkers carry out installation, and 1 in 20 plots where accredited installers are used. Plots selected for inspection should be located across the development and not clustered.

4.7 Agriculture

4.7.1 Historical plans show that the site has been occupied by farmland. Generally farming is not considered likely to have caused significant ground contamination. However, activities such as slurry spreading, the discharge of chemicals to ground, and unregulated burial are known to have occurred on farmland. Potential contaminants associated with farming activity could include any of the following.

Agricultural activity	Potential contaminant
Slurry pits, manure heaps, septic tanks	Methane, metals, nitrates, oxygen depletion
Sewage farming, slurry spreading	Methane, metals, nitrates, oxygen depletion
Tracks (if built up with crushed demolition rubble etc)	Metals, asbestos, hydrocarbons
Carcase burial	Anthrax & other biohazards
Plant & animal protection	Pesticides & herbicides
Soil conditioners	Metals, sulphates, PAH
Fuel storage	Hydrocarbons, methane, oxygen depletion
Waste burial, land levelling, backfilling ponds/quarries	Methane, metals, PAH etc
Wartime military use	Metals, asbestos, hydrocarbons, explosives
Naturally occurring contaminants	Arsenic, metals

[2] *BRE Report BR211, 2023: "Radon: guidance on protective measures for new buildings (including supplementary advice for extensions, conversions and refurbishment projects"*

* *Confirmation of resistance to radon must be obtained from the manufacturer.*

[3] *BS8485:2015+A1:2019. Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings. January 2019.*

5 PRELIMINARY CONCEPTUAL SITE MODEL

5.1 Potential contaminants

5.1.1 The site is essentially greenfield, although farming activities may have given rise to some (likely minor) contamination; see Section 4.7.

5.1.2 A preliminary conceptual site model, presented as Drawing 4749/5 in Appendix B, has been prepared after consideration of all the data presented in Sections 2 to 4 inclusive of this report.

5.1.3 Potential contaminant linkages are shown on the preliminary conceptual site model.

5.1.4 The most significant potential contaminant **pathways** include:

- Ingestion
- Dermal contact
- Inhalation of contaminated particulates
- Surface water run-off, including existing drainage infrastructure
- Downward infiltration of leachable/mobile contaminants to groundwater

5.1.5 The most significant potential contaminant **receptors** include:

- The environment – Secondary A aquifer and/or Ludhill Dyke
- End users of the site (residents)

5.1.6 Clearly, the conceptual model will be subject to modification in light of data arising from the proposed intrusive ground investigation.

5.2 Anticipated ground conditions & potential issues

5.2.1 Based on the data reviewed in Section 4 (Environmental Setting), anticipated ground conditions are expected to comprise:

Anticipated condition	Remarks
Made ground	Possible made ground adjacent to the embankment. Localised made ground in the vicinity of mine entries/adits & within the footprint of the house on-site.
Natural soils	Residual soils (gravelly Clay) beneath topsoil.
Bedrock	Anticipated at shallow depth.
Mineworkings	Two adits and a mine entry recorded on site. In addition, there may be unrecorded shallow workings (including bell pits) across the majority of the site.
Groundwater	Possible shallow groundwater in bedrock, may be in hydraulic continuity with adjacent watercourse in the north of site.

5.2.2 Based on the data above and that in Sections 2 (Site Description) and 3 (History), potential ground-related issues associated with this site are likely to include:

Type of issue	Specific issue	Remarks
Potential on-site contamination sources	1. Reworked topsoil (inorganics, organics) 2. Buildings (houses on site) 3. Shallow mine workings	1. Associated with farming 2. Asbestos &\or ACMs 3. Hazardous gas
Potential off-site contamination sources	1. Railway line	1. Heavy metals/wind blow contaminants

Type of issue	Specific issue	Remarks
Potential geotechnical hazards	1. Steep slopes 2. Retaining walls 3. Shallow workings 4. Shafts	1. Slope of 1 in 9 in to the west, becoming 1 in 5 in two areas (east and west) 2. Retaining wall along the eastern and southwestern boundary 3. Unrecorded shallow workings in the Halifax Soft and Middle Band coal 4. 4 recorded adits and 1 mine entry within 100m of the site
Other potential constraints	1. Culverted watercourse 2. Woodland	1. Ludhill Dyke flows west in the north of site, and is culverted beneath the access road 2. Woodland in the north is likely to be retained

6 LAND CONTAMINATION – PART IIA & PLANNING

6.1 Local Authorities have responsibilities with respect to land contamination in the context both of Part IIA of the Environmental Protection Act 1990, and Planning.

6.2 The contaminated land regime in Part IIA was introduced specifically to address the historical legacy of land contamination. It applies where there is unacceptable risk, assessed on the basis of the **current** use and the relevant circumstances of the land. It is not directed to assessing risks in relation to a future use of the land that would require a specific grant of planning permission. This is primarily a task for the planning system, which aims to control development and land use in the **future**.

Planning

6.3 As of March 2012, Planning Policy Statement (PPS23) was replaced by the National Planning Policy Framework (NPPF), supported by web-based planning practice guidance. The NPPF (updated in September 2023) includes the following with respect to contamination and site investigation:

"*Where a site is affected by contamination or land stability issues, responsibility for securing safe development rests with the developer and/or landowner*".

6.4 Planning policies and decisions should ensure that:

- The site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining, pollution arising from previous uses, and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation
- After remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the environmental protection act 1990
- Adequate site investigation information, prepared by a competent person, is presented'

6.5 Annex 2 of the NPPF states that 'all investigations of land potentially affected by contamination should be carried out in accordance with established procedures (such as BS10175[4])'.

[4] *BS10175 (2011) - Code of practice for the investigation of potentially contaminated sites*

This site

6.6 The underlying sandstone and coal measures bedrock is classified as a Secondary A aquifer. The nearest surface watercourse is Ludhill Dyke, which flows in a westerly direction in the north of site. Therefore, the site's environmental setting is considered to be of high sensitivity.

6.7 With respect to human health, the proposed end use (residential) is also sensitive.

6.8 Whilst current use of the site is considered unlikely to have given rise to any significant ground and groundwater contamination, former association with the coal mining industry and the adjacent railway line may well have.

6.9 However, it is considered that the site should be suitable for the proposed use subject to implementation of appropriate preparatory works.

7 GROUND INVESTIGATION DESIGN

7.1.1 The preliminary conceptual site model has been used as a basis for design of an appropriate ground investigation, the scope of which is summarised below.

Exploratory holes	Purpose
3 days trial pitting (c.30 TPs)	To determine the nature, distribution and thickness of shallow natural soils, including suitability of the ground for founding structures and highways and to determine the general nature of localised areas of made ground soils, including the: • Nature, distribution and thickness • Nature, degree and extent of any contamination proportion of undesirable elements e.g. biodegradable matter, foundations etc
1 day trial trenching	To locate the recorded adits/mine entries on site
topsoil strip	Stripping of topsoil in 10m x 20m panels down dip of the two coal seams to determine the presence of bell pits.
18 probeholes	To check for the presence of voids or broken ground associated with possible unrecorded shallow mine workings. This includes an allowance for the following: • 8 x PHs to determine the presence of shallow workings in the Halifax Soft Bed coal • 4 x PHs to determine the presence of shallow workings in the Middle Band coal • 3 x PHs along the line of each adit/roadway (6 in total)

7.1.2 Proposed exploratory hole locations should be selected to provide a representative view of the strata beneath the site A nominal 35m grid spacing should be appropriate, with additional exploratory locations scheduled as necessary in light of the ground conditions actually encountered.

7.1.3 Representative soil samples of natural and any man-made ground should be taken during the works. The number of soil samples taken should be reflective of the geological complexity actually encountered, but in general about 3 samples should be taken from most exploratory holes.

7.1.4 The investigation should be undertaken in general accordance with:

- BS5930:2015 "Code of practice for site investigation"
- BS10175:2017 "Code of practice for the investigation of potentially contaminated sites"
- "Technical Aspects of Site Investigation" – EA R&D Technical Report P5-065/TR (2000)
- "Development of appropriate soil sampling strategies for land contamination" – EA R&D Technical Report P5-066/TR (2001)

7.1.5 **Trial pitting** will enable determination of:

- Nature, distribution and thickness of shallow soils
- Nature of made ground (uppermost 3m to 4m), including:
  - visual/olfactory evidence of potential contamination and the proportion of undesirable elements e.g. biodegradable matter, relict foundations etc
  - the proportion of "oversize", boulder-sized material
- Suitability of the ground for soakaways
- Suitability of the ground for founding structures and highways

7.1.6 The mechanical excavator should be equipped with a breaker to enable excavation through surface hardstand in the north of site and, where necessary, in bedrock for soakaway tests.

7.1.7 The in-situ shear strengths of any cohesive soils encountered should be determined by use of a hand-held shear vane.

7.1.8 **Trial trenching** should be undertaken in the locations provided by the Coal Authority, in an attempt to locate the on-site recorded mine entry and two adits.

7.1.9 A **topsoil strip** should be undertaken in 10m x 20m panels parallel to the coal seam outcrops (down dip of the coal seam) to determine the presence of bell pits across the site. This should be undertaken after trial pitting, once the location of the outcrops has been identified

7.1.10 Routine **geotechnical soils analysis** (moisture content, Atterberg limits, pH, water soluble sulphate) should be scheduled on about 10 samples, with some compaction testing and gradings on samples of natural ground to assess suitability for use in earthworks.

7.1.11 The site has not been the subject of a past potentially contaminative industrial land use. However, historical mapping suggests arable farming has been carried out on the site. Sampling of the **topsoil** should be undertaken to confirm its suitability for re-use. At least 10 samples should be taken with analysis to include pH, metals, TOC, speciated PAH and asbestos ID.

7.1.12 Appropriate chemical analyses of **made ground** samples recovered from the vicinity of 34 Gynn Lane in the north should be allowed for. This is likely to comprise 6 samples for a suite including heavy metals, asbestos ID, TOC, banded TPH (with supplementary speciation where appropriate), and speciated PAH.

7.1.13 It would also be prudent to analyse about 3 topsoil samples to check compliance with BS3882[5] requirements, via testing for visible contaminants, sharps and clay/sand/silt content.

7.1.14 Eighteen **probeholes** should be sufficient to determine whether or not old mineworkings are present in the Halifax Soft and Middle Band coal seams. However, if a potential risk is perceived to exist, further probeholes may be required to delineate the extent of workings in order to obtain fixed price quotations for the necessary consolidation works.

7.1.15 It will be necessary to submit an application (with the associated fee) to the Coal Authority (CA) for '*Permission to enter CA mining interests*'.

7.1.16 Given the proximity of surrounding housing (within 50m of much of the general site area), and in accordance with CA requirements it should be assumed that around half of the probeholes will need to be advanced using water as the flushing medium.

[5] *BS3882:2015. Specification for topsoil. Published by BSI Standards Limited.*

7.1.17 Monitoring wells should be installed in about 6 shallower probeholes. The generation potential of potential **gas** sources (unrecorded mineworkings) is considered likely to be Moderate. Therefore, in accordance with CIRIA Report C665[6], it would be prudent to initially allow for 12 visits over a 6 month period. A hazardous gas risk assessment should be issued on completion of monitoring.

7.1.18 On completion of the fieldwork and laboratory testing a comprehensive bound, factual and interpretative report should be issued. This should contain detailed engineering records, laboratory test results, copies of all relevant correspondence and drawings of the site. The report should also include qualitative risk assessment with respect to both controlled waters and human health.

8 CONCLUSIONS & RECOMMENDATIONS

8.1 General

8.1.1 The site comprises c. 2.7 hectares of land located off Gynn Lane, approximately 4.7km south of Huddersfield town centre. Currently the site comprises a single parcel of grassed land used for grazing cattle. In the centre-north of site is a 2 storey stone built detached house with associated gardens and parking. Areas of woodland are present along the northern boundary.

8.1.2 The site has remained essentially undeveloped throughout its history, however, the surrounding area was associated with the coal mining industry, with records of 4 adits and 1 mine entry within 100m of the site.

8.1.3 It is understood that Yorkshire Country Properties are considering acquisition of the site with a view to redevelopment with housing.

8.1.4 The main issues considered in this report, and in particular in Sections 3 & 4 are based on a review of historical maps and available geological/environmental data. This report provides an assessment of geoenvironmental issues and implications associated with the proposed residential redevelopment of the site, together with any implications for current use of the site.

8.2 Mining and quarrying

8.2.1 This site is located within a Coal Mining Development High Risk Area (an area with specific mining legacy risks to the surface, including mine entries; shallow coal workings etc) due to the presence of two coal outcrops and the likelihood of unrecorded shallow workings. Four adits and 1 mine entry are also recorded within 100m of the site.

8.2.2 It is possible that unrecorded "shallow" shafts (possibly bell pits) may be present at this site, and consideration should be given to a **geophysical survey**, although success would be dependent on the "contrast" between shaft backfill and the surrounding ground (i.e. the survey is likely to be more successful if shaft backfill is significantly different material or less dense than the surrounding ground). Follow-up intrusive investigation (pitting) would be recommended to determine the cause of any anomalies identified by the geophysics.

[6] *CIRIA C665: Assessing risks posed by hazardous ground gases to buildings (2007).*

8.2.3 Whilst the Coal Authority (and NHBC) discourage development over or adjacent to all mine entries, Lithos consider such features to pose a low risk to surface stability where they only extend to relatively shallow workings that require treatment (grouting). Consequently, we would not expect any (previously unrecorded) shallow shafts, encountered during site preparatory works and/or the subsequent construction phase, to result in the need for "no-build" zones and/or revision of the planning-approved layout although Yorkshire Country Properties may choose to do this.

8.2.4 However, where build over a shaft(s) is proposed, Yorkshire Country Properties will need to discuss proposed treatment (which is likely to include both grouting of the shaft backfill, and a cap at rockhead) and bespoke foundation design, by a suitably qualified structural engineer, with the Coal Authority. A Permit to Enter or Disturb Coal Authority Mining Interests will be required prior to construction of any shaft cap.

8.2.5 Until such time as the known shaft and adits have been located, the CA will expect Yorkshire Country Properties' layout to assume potential no-build "zones of influence" around each shaft; see Section 4.2.10.

8.2.6 Any shafts encountered during the development of this site should be made safe by treatment in accordance with an appropriate Specification (Lithos can prepare this) and a Coal Authority Permit to Enter or Disturb Coal Authority Mining Interests.

8.2.7 If old mineworkings are present in the Halifax Soft and Middle Band coal seams, and are considered to pose a significant risk to surface stability, mitigation of the risks posed will be required; this could be achieved in one of two ways:

- Extraction of the remaining coal
- Consolidation, via drilling & grouting

8.3 Hazardous gas

8.3.1 The site is in an area where between 5% and 10% of homes are estimated to be above the radon action level, therefore basic radon protection measures are required.

8.3.2 Given the presence of two adit systems, the likely presence of shallow mineworkings and a possible historical landfill c.115m northeast, the site may be affected by sources of hazardous gas generation.

8.3.3 Consequently, monitoring is recommended in order to determine appropriate gas protection measures for the proposed dwellings.

8.4 Foundations

8.4.1 At present, no geotechnical ground investigation data is available and consequently it is only possible to estimate the ground conditions. Before firm foundation recommendations can be given, it will be necessary to undertake an appropriate ground investigation. However, tentative recommendations are provided below.

8.4.2 Made ground is not generally considered a suitable founding material and foundations should be taken through it, into underlying natural in-situ strata of adequate bearing capacity.

8.4.3 All concrete slabs and service ducts will require breaking out during the demolition of existing buildings. Foundations of plots that conflict with relict foundations should be taken to greater depth than the relict foundations and into natural ground of adequate bearing capacity.

8.4.4 The published geological data suggests that the site is underlain by bedrock at shallow depth.

8.4.5 Weathered Coal Measures or drift deposits of medium strength should provide sufficient bearing capacity to enable the adoption of strip footings for two storey housing. Reinforcement, as a precaution against differential settlement, is recommended only where foundation excavations encounter significant lateral and vertical variations in strata.

8.4.6 If shallow mineworkings underlie the site, and require treatment, NHBC typically require foundations to be at least 300mm thick and reinforced. If the workings are at a depth of less than 5 times the seam thickness, then raft foundations may be required.

8.4.7 If rock is encountered at shallow depth, foundations should be placed entirely on rock and not partially on rock and partially on residual soil. This may, depending on surface gradient, necessitate significant over deepening of foundations.

8.5 Highways and external works

8.5.1 The site has an overall slope of 1 in 9 to the west, with two steep slopes of 1 in 5 in the east and west of site. Furthermore, there is a gabion retaining wall c.1.7m – 1.9m high along the eastern boundary, and a stone retaining wall c.5m in the southwest corner of site. A stone retaining wall c.1.5m high is also present along the southern boundary of the on-site house.

8.5.2 Given the above, there will likely be a requirement for retaining walls, underbuild and tanking etc.

8.5.3 Chapter 3.46 of Kirklees Council Highway Design Guide Supplementary Planning Document suggests the following maximum gradients:

- The desirable maximum road gradient on all adoptable street types in 1 in 20. If this is not achievable then discussion with Kirklees Council Highways department will need to be undertaken, however, a gradient no steeper of 1 in 10 is preferred.
- Gradients of approaches to junctions should be a gradient of 1 in 40 for the initial 10m with an absolute maximum of 1 in 25.
- The maximum gradient of drives to individual garages is normally 1 in 10.

8.5.4 Consequently, earthworks regrade will be required across the site to allow for suitable road and driveway gradients. Further discussions with Kirklees Council should be undertaken to determine what the acceptable road and driveway gradients will be at this site.

8.5.5 Restrictions regarding the gradients of gardens provided in NHBC Standards, Chapter 10.2 should also be taken into consideration.

8.5.6 Any retaining structures more than 600mm high should be designed by an engineer in accordance with Technical Requirement R5.

8.5.7 Natural soils should yield a CBR of at least 3%. This value should be verified prior to or during construction.

8.6 Soakaways & drainage

8.6.1 Given the presence of sloping ground and the presence of retaining walls, soakaways should be discounted as a solution for the disposal of surface water at the site.

8.6.2 Alternative SuDS options (see CIRIA C753[7] for further details) include:

- Pervious Pavements – provide a surface suitable for pedestrian and/or vehicular traffic, while allowing rainwater to infiltrate into subsurface storage, with subsequent infiltration or controlled discharge. Pavement could be porous (water able to infiltrate across

[7] *CIRIA C753 (2015) – The SuDS Manual.*

entire surface material; e.g. reinforced grass), or permeable (water infiltrates via joints between concrete blocks).

- Swales – linear grassed features in which surface water can be stored or conveyed. Where suitable, swales can be designed to allow infiltration.
- Basins - a ground depression designed to store surface water that is normally dry, except during and immediately following a rainfall event. There are two types:
  - Infiltration – basin designed to store runoff and infiltrate it gradually into the ground.
  - Detention – an outlet restricts flows, so that the basin fills and provides attenuation.
- Ponds – designed to have permanent pool of water, but with capacity to provide temporary storage-controlled discharge.

8.6.3 Yorkshire Water have published a guide[8] for developers and designers outlining their design requirements for surface water attenuation assets. However, further to changes in drainage policy over recent years, independent water authorities (including IWNL, ICOSA, LEEF etc) now adopt more housing schemes than the traditional authorities such as Yorkshire Water. Consequently, the CIRIA C753 has become the more commonly used guidance for the design of SuDS features (including attenuation assets).

8.6.4 With respect to detention basins, which should normally be dry, water table levels should be taken from borehole monitoring wells over 4 consecutive seasons, for at least 3 points in the basin area. The detention basin should be designed to ensure that there is a minimum of 1m of unsaturated soil between the maximum groundwater level and the lowest part of the structure.

8.7 Contamination

8.7.1 The site's environmental setting is considered to be of high sensitivity. With respect to human health, the proposed end use (residential) is also sensitive.

8.7.2 Based on observations made during the site walkover, and given site's former and recent uses, a veneer of made ground is anticipated in the north of site, and it is considered likely that some (probably minor) ground contamination will be present in shallow soils.

8.7.3 No potentially contaminative industrial land uses have been identified. However, arable farming has historically been carried out. The farming activities and made ground associated with 34 Gynn Lane (house) in the north may have given rise to some (likely minor) contamination.

8.7.4 Consequently, a ground investigation is required in order to assess the degree and extent of any ground contamination.

8.8 Potential development constraints

8.8.1 One mine shaft (drift shaft) and two adits are recorded by the CA on site. Any shafts encountered during the development of this site should be made safe by treatment in accordance with an appropriate Specification and a Coal Authority Permit to Enter or Disturb Coal Authority Mining Interests.

8.8.2 Unrecorded shallow mineworkings may be present beneath the majority of site, associated with the outcrops of the Halifax Soft and Middle Band coal seams. If shallow workings are encountered (including the possibility of bell pits), these will require treatment via drilling and grouting.

[8] *Design Requirements for Surface Water Attenuation Assets, February 2017.*

Appendix A

General Notes

01 - Environmental setting
Generic notes – geoenvironmental investigations

General

Third party information obtained from the British Geological Survey (BGS), the Coal Authority, the Local Authority etc is presented in the "Search Responses" Appendix of this Geoenvironmental Report.

Geology, mining & quarrying

In order to establish the geological setting of a site, Lithos refer to BGS maps for the area, and the relevant geological memoir. Further information is sourced by reference to current and historical OS plans.

In July 2011, the Coal Authority (CA) formalised their requirements in relation to planning applications and introduced some new terminology. The CA, using its extensive records has prepared plans for all coalfield Local Planning Authorities, which effectively refines the defined coalfield areas into High Risk and Low Risk areas. **High Risk** areas are likely to be affected by a range of legacy issues that pose a risk to surface stability, including: mine entries; shallow coal workings; workable coal seam outcrops; mines gas; and previous surface mining sites. **Low Risk** areas comprise the remainder of the defined coalfield, and are areas where no known defined risks have been recorded; although there may still be unrecorded issues. Where a site lies within either a High or Low Risk area, a mining report is obtained from the CA.

Landfills

Reference is made to publicly available Government held digital data via **QGIS** (an Open Source Geographic Information System), data from Landmark or Groundsure, and sometimes the Environment Agency and the Local Authority with respect to known areas of landfilling within 250m of the proposed development site.

Historical OS plans are also inspected for evidence of backfilled quarries, railway cuttings, colliery spoil tips etc.

Radon

Radon is a colourless, odourless gas, which is radioactive. It is formed in strata that contain uranium and radium (most notably granite), and can move though fissures eventually discharging to atmosphere, or the spaces under and within buildings. Where radon occurs in high concentrations, it can pose a risk to health.

In order to assess potential risks associated with radon gas, Lithos refer to BRE Report BR211[1], and the UK Health Protection Agency (HPA) website. In December 2022, the British Geological Survey (BGS), deployed a revised dataset which increased accuracy and also the number of properties falling within radon affected areas. This revised dataset is now referenced by maps on the HSA website.

Advice on the limitation of exposure of the population to radon in buildings was originally published in 1990 by the National Radiological Protection Board (NRPB), which joined the HPA in 2005; the HPA updated NRPB advice in July 2010[2].

The HPA recommended that the NRPB radon Action Level for homes be retained, and a new Target Level for radon in homes be introduced. The values of the Action Level and Target Level, expressed as the annual average radon concentration in the home, are 200 Bqm^{-3} and 100 Bqm^{-3} respectively. The Target Level was to provide an objective for remedial action in existing homes and preventive action in new homes.

The term 'radon Affected Area' is defined as those parts of the country with >1% of homes estimated to be above the Action Levels. The level of protection needed is site-specific and can be determined by reference to this mapping on the Public Health England website, which indicates the highest radon potential within each 1km grid square. Each 1km grid square is classified on the basis of the percentage of existing homes within that grid square estimated to have radon concentrations above the Action Level. There are 6 'bands': <1%; 1 to 3%; 3 to 5%; 5 to 10%; 10 to 30%; and >30%.

The NRPB advised that action should be taken to reduce radon concentrations in existing homes if the radon concentration exceeded the Action Level of 200 Bqm^{-3} in room air averaged over a year; ten times the average UK domestic radon concentration. NRPB advice informed changes in the requirements for radon protection in new buildings.

- **Basic** preventive measures are required in new buildings, extensions, conversions and refurbishments if the probability of exceeding the Action Level is **>3%** in England and Wales, and >1% in Scotland and Northern Ireland.
- Provision for further preventive (**Full**) measures is required in new buildings if the probability of exceeding the Action Level is **>10%**.

At present Building Regulations Approved Document C advocates basic measures for the probability banding 3% to 10%, and full measures if >10%. However, HPA would like to see all new build include basic measures.

Action & Target Levels should also be applied to non-domestic buildings with public occupancy exceeding 2,000 hrs/yr and to all schools.

Hydrogeology

Reference is made to publicly available Government held digital data via QGIS, and Landmark or Groundsure with respect to:

- Groundwater quality
- Recorded pollution incidents
- Licensed groundwater abstractions

From April 2010 the EA's Groundwater Protection Policy uses aquifer designations that are consistent with the Water Framework Directive. These designations reflect the importance of aquifers in terms of groundwater as a resource (drinking water supply), but also their role in supporting surface water flows and wetland ecosystems. The aquifer designation data is based on geological mapping provided by the British Geological Survey. The maps are split into two different types of aquifer designation:

- Superficial (Drift) - permeable unconsolidated (loose) deposits. For example, sands and gravels
- Bedrock - solid permeable formations e.g. sandstone, chalk and limestone

The maps display the following aquifer designations:

Principal aquifers: These are layers of rock or superficial deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.

Secondary aquifers: These include a wide range of rock layers or superficial deposits with an equally wide range of water permeability and storage. Secondary aquifers are subdivided into three types:

- **Secondary A** - permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
- **Secondary B** - predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers
- Secondary undifferentiated - In most cases, this is because the rock type in question has previously been designated as both a minor and non-aquifer in different locations due to the variable characteristics.

---

1 BRE Report BR211, 2023: "Radon: guidance on protective measures for new buildings (including supplementary advice for extensions, conversions and refurbishment projects".

2 Limitation of Human Exposure to Radon, Documents of the Health Protection Agency - Radiation, Chemical and Environmental Hazards, RCE-15. July 2010.

Unproductive strata: These are rock layers or superficial deposits with low permeability that have negligible significance for water supply or river base flow.

The EA maps only display the principal and secondary aquifers as coloured areas. All uncoloured areas on the map will be unproductive strata. However, for uncoloured areas on the superficial (drift) designation map it is not possible to distinguish between areas of unproductive strata and areas where no superficial deposits are present; to do this, it is necessary to consult the published geological survey maps.

For the purposes of the EA's Groundwater Protection Policy the following default position applies, unless there is site specific information to the contrary:

- If no superficial (drift) aquifers are shown, the bedrock designation is adopted
- In areas where the bedrock designation shows unproductive strata (the uncoloured areas) the superficial designation is adopted
- In all other areas, the more sensitive of the two designations is used (e.g. If secondary superficial overlies principal bedrock, an overall designation of principal is assumed)

The EA have also designated groundwater Source Protection Zones, which are based on proximity to a groundwater source (springs, wells and abstraction boreholes). The size of a Source Protection Zone is a function of the aquifer, volume of groundwater abstracted and the effective rainfall, and may vary from tens to several thousand hectares.

Hydrology

Reference is made to publicly available Government held digital data via QGIS, and Landmark or Groundsure with respect to:

- Surface water quality
- Recorded pollution incidents
- Licensed abstractions (groundwater & surface waters)
- Licensed discharge consents
- Site susceptibility to flooding

The EA have set **water quality** targets for all rivers. These targets are known as River Quality Objectives (RQOs). The water quality classification scheme used to set RQO planning targets is known as the River Ecosystem scheme. The scheme comprises five classes (RE1 to RE5) which reflect the chemical quality requirements of communities of plants and animals occurring in our rivers.

General Quality Assessment (GQA) grades reflect actual water quality. They are based on the most recent analytical testing undertaken by the EA. There are 6 GQA grades (denoted A to F) defined by the concentrations of biochemical oxygen demand, total ammonia and dissolved oxygen.

The susceptibility of a site to **flooding** is assessed by reference to a Flood Map on the Environment Agency's website. These maps show natural floodplains - areas potentially at risk of flooding if a river rises above its banks, or high tides and stormy seas cause flooding in coastal areas. There are two different kinds of area shown on the Flood Map:

1. Dark blue areas (Flood Zone 3) could be flooded by the sea by a flood that has a 0.5% (1 in 200) or greater chance of happening each year, or by a river by a flood that has a 1% (1 in 100) or greater chance of happening each year
2. Light blue areas (Flood Zone 2) show the additional extent of an extreme flood from rivers or the sea. These outlying areas are likely to be affected by a major flood, with up to a 0.1% (1 in 1000) chance of occurring each year

These two colours show the extent of the natural floodplain if there were no flood defences or certain other manmade structures and channel improvements. Where there is no blue shading (Flood Zone 1), there is less than a 0.1% (1 in 1000) chance of flooding occurring each year.

The maps also show all flood defences built in the last five years to protect against river floods with a 1% (1 in 100) chance of happening each year, or floods from the sea with a 0.5% (1 in 200) chance of happening each year, together with some, but not all, older defences and defences which protect against smaller floods.

The Agency's assessment of the likelihood of flooding from rivers and the sea at any location is based on the presence and effect of all flood defences, predicted flood levels, and ground levels.

It should also be noted that as the floodplain shown is the 1 in 100 year, areas outside this may be flooded by more extreme floods (e.g. the 1 in 1000 year flood). Also, parts of the areas shown at risk of flooding will be flooded by lesser floods (e.g. the 1 in 5 year flood). In some places due to the shape of the river valley, the smaller floods will flood a very similar extent to larger floods but to a lesser depth.

If a site falls within a floodplain, it is recommended that a flood survey be undertaken by a specialist who can advise on appropriate mitigating measures; i.e. raising slab levels, provision of storage etc. In accordance with Chapter 10 of the National Planning Policy Framework, a site-specific flood risk assessment is required for: proposals of 1 hectare or greater in Flood Zone 1, or in an area within Flood Zone 1 which has critical drainage problems (as notified to the local planning authority by the Environment Agency); and any new development in Flood Zones 2 and 3.

COMAH & explosive sites

Lithos obtain information from Landmark or Groundsure with respect to Control of Major Accident Hazards (COMAH) or explosive sites within 1km of the proposed development site. Lithos' report refers to any that are present, and recommends that the Client seeks further advice from the HSE.

Areas around COMAH sites (chemical plants etc) are zoned with respect to the implementation of emergency plans. The HSE are a statutory consultee to the local planning authority for all COMAH sites. The COMAH site may have to revise its emergency action plan if development occurs. This might be quite straightforward or could entail significant expenditure. Consequently, the COMAH site may object to a proposed development (although it is the Local Authority who have final say, and they are likely to place more weight on advice from the HSE).

Preliminary conceptual site model

The site's environmental setting (and proposed end use) is used by Lithos to assess the significance of any contamination encountered during the subsequent ground investigation.

Assessment of contaminated land is based on an evaluation of pollutant linkages (source-pathway-receptor). Contaminants within the near surface strata represent a potential source of pollution. The environment (most notably groundwater), site workers and end users are potential receptors.

Potential pollutant linkages are shown on a preliminary conceptual site model (pCSM). A CSM is essentially a cross-section through a site that reflects both the surface topography and underlying geology, and shows surface features of interest. The most significant sources of contamination are then superimposed onto this cross-section together with potential receptors (human health & controlled waters), and plausible pathways between the two. In addition to environmental issues, the CSM should also highlight geotechnical issues.

A pCSM is prepared after consideration of all available "desk study" data, and before design of the ground investigation. Data reviewed should include historical plans (with superimposition on a current-day plan), previous SI reports, geological maps etc. The pCSM, in conjunction with knowledge of site constraints (buildings, services, slopes etc) is used to design the ground investigation.

The revised CSM takes account of data obtained during the ground investigation, including the distribution of made ground, the nature and distribution of contamination etc.

Appendix B

Drawings



Reproduced from OS Explorer map 1:25,000 scale by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. Crown copyright. All rights reserved. Licence number 100049696.

LITHOS CONSULTING

info@lithos.co.uk
www.lithos.co.uk

Tel 01937 545330

CLIENT	YORKSHIRE COUNTRY PROPERTIES
JOB TITLE	GYNN LANE, HONLEY
DRAWING TITLE	SITE LOCATION PLAN
DRAWN	CC
DATE	23 05 2024
CHECKED	AG
DATE	23 05 2024
STATUS	FOR COMMENT ☐ DRAFT ☐ FOR APPROVAL ☐ FINAL ☑
SCALE	1:25,000
SHEET	A4
DRAWING NO.	4749/1
REVISION	



NOTES

- WOODLAND/DENSE OVERGROWTH
- GRASS AREAS
- BUILDING
- UN-MADE GROUND
- WALL
- CONCRETE HARDSTAND
- GABION RETAINING WALL
- SURFACE WATER
- APPROXIMATE SITE BOUNDARY
- SLOPE

REV.	DESCRIPTION	DATE

LITHOS CONSULTING

info@lithos.co.uk
www.lithos.co.uk

Tel 01937 545330

CLIENT

YORKSHIRE COUNTRY PROPERTIES

JOB TITLE

GYNN LANE, HONLEY

DRAWING TITLE

SITE FEATURES

DRAWN	DATE	STATUS
CC	23 05 2024	FOR COMMENT ☐
		FOR APPROVAL ☐
CHECKED	DATE	DRAFT ☐
AG	23 05 2024	FINAL ☑

SCALE	SHEET	DRAWING NO.	REVISION
1:1,000	A3	4749/3	



















N

W E

S

NOTES

- WOODLAND/DENSE OVERGROWTH
- GRASS AREAS
- BUILDING
- UN-MADE GROUND
- WALL
- CONCRETE HARDSTAND
- GABION RETAINING WALL
- SURFACE WATER
- APPROXIMATE SITE BOUNDARY
- LOCATION & ORIENTATION OF PHOTOGRAPH
- SLOPE

REV.	DESCRIPTION	DATE

LITHOS CONSULTING

info@lithos.co.uk
www.lithos.co.uk

Tel 01937 545330

CLIENT

YORKSHIRE COUNTRY PROPERTIES

JOB TITLE

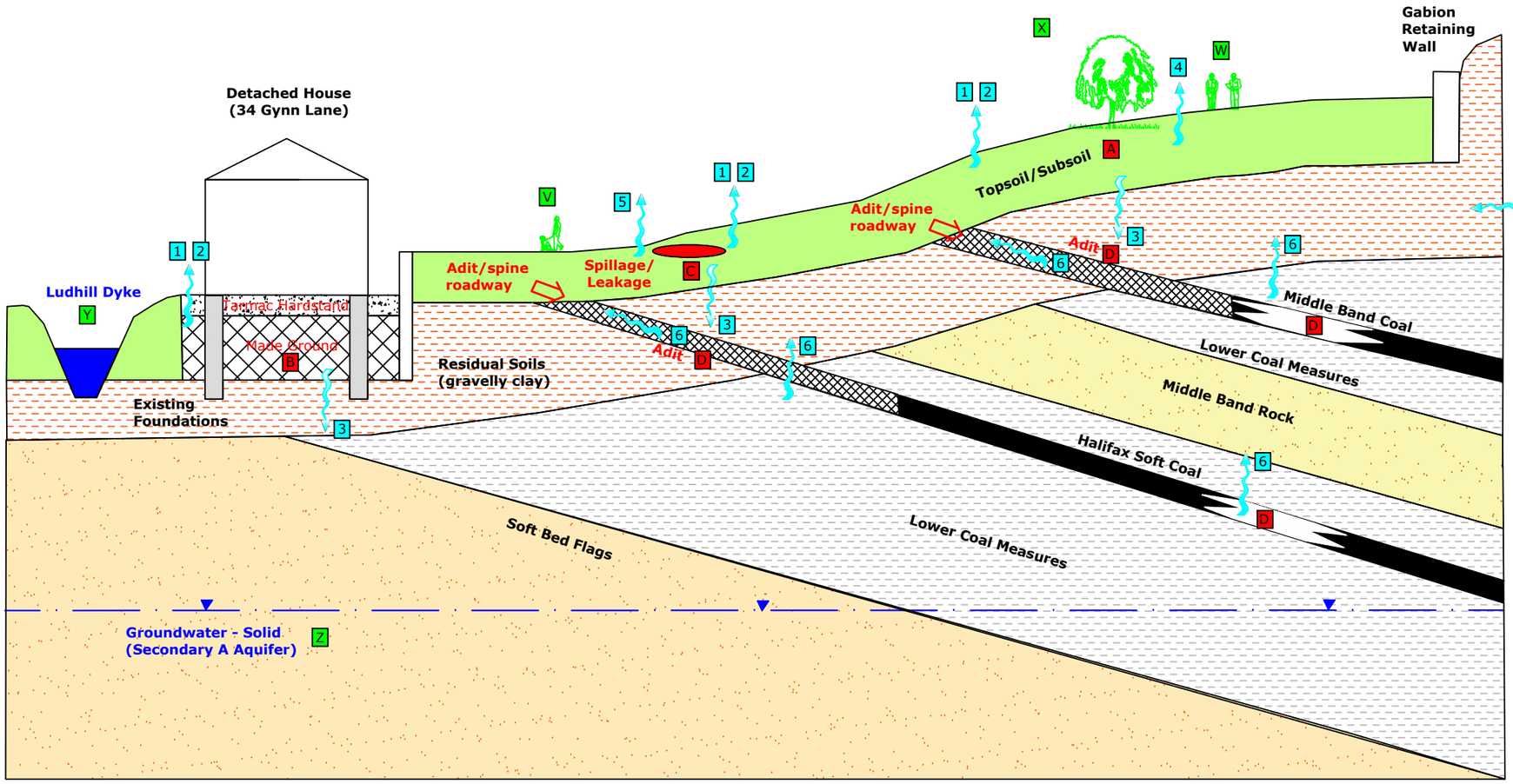
GYNN LANE, HONLEY

DRAWING TITLE

SITE PHOTOGRAPHS

DRAWN	DATE	STATUS
CC	24 05 2024	FOR COMMENT ☐
CHECKED	DATE	FOR APPROVAL ☐
AG	24 05 2024	DRAFT ☐
		FINAL ☑

SCALE	SHEET	DRAWING NO.	REVISION
NOT TO SCALE	A3	4749/4	



SOURCES	PATHWAYS	RECEPTORS
A REWORKED TOPSOIL (INORGANICS)	1 DERMAL CONTACT	V END USERS (RESIDENTS)
B MADE GROUND (INORGANICS)	2 INGESTION/INHALATION	W SITE WORKERS
C LEAKAGE/SPILLAGE (ORGANICS)	3 LEACHING OF CONTAMINANTS	X VEGETATION
D MINEWORKINGS/ADITS (HAZARDOUS GAS)	4 UPTAKE BY PLANTS	Y SURFACE WATERS
	5 VOLATILISATION	Z GROUNDWATER
	6 MIGRATION OF GAS	

NOTES

REV.	DESCRIPTION	DATE

LITHOS CONSULTING

info@lithos.co.uk
www.lithos.co.uk

Tel 01937 545330

CLIENT

YORKSHIRE COUNTRY PROPERTIES

JOB TITLE

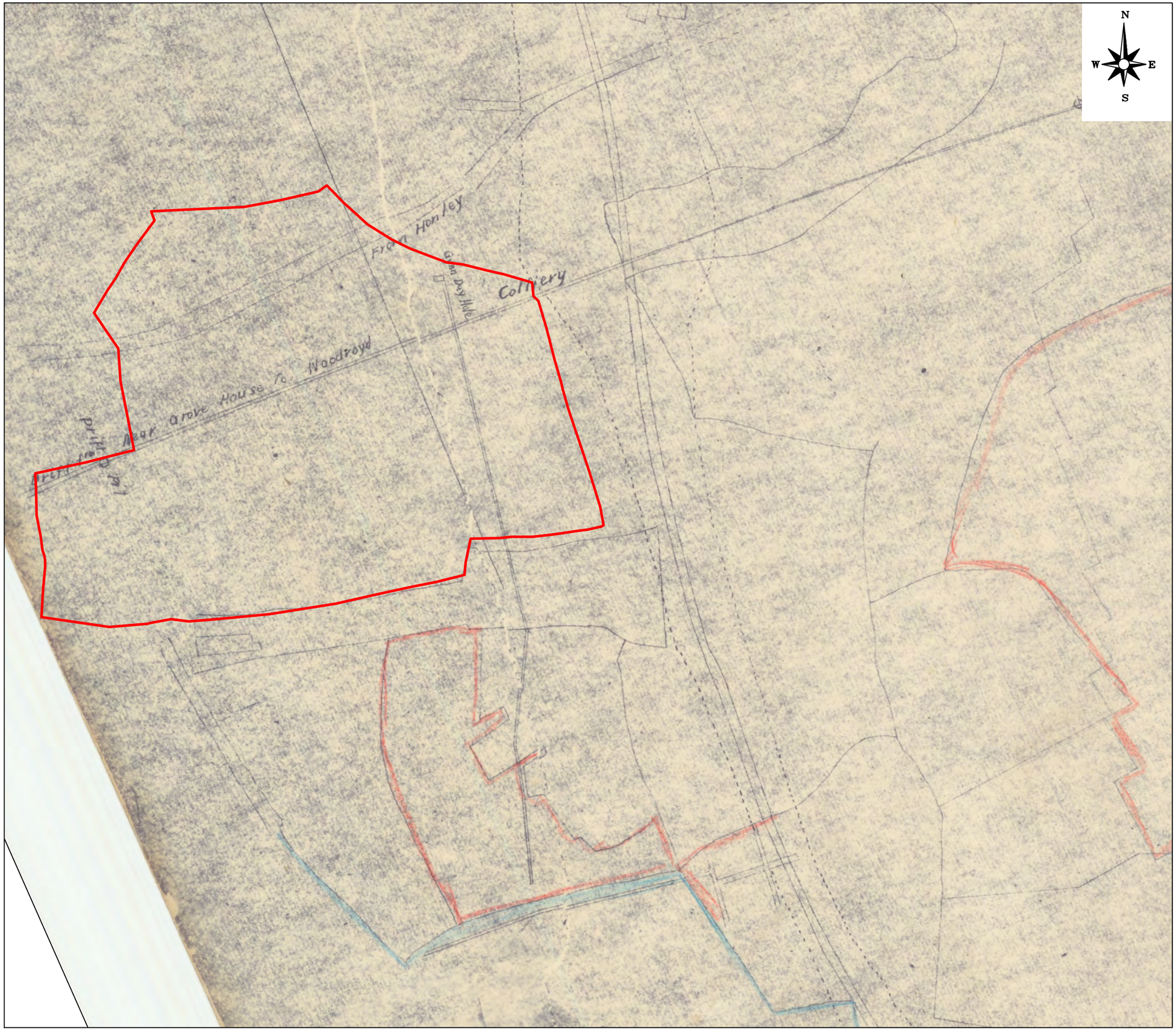
GYNN LANE, HONLEY

DRAWING TITLE

PRELIMINARY CONCEPTUAL SITE MODEL

DRAWN	DATE	STATUS
CC	29 05 2024	FOR COMMENT ☐
CHECKED	DATE	FOR APPROVAL ☐
AG	29 05 2024	DRAFT ☐
		FINAL ☑

SCALE	SHEET	DRAWING NO.	REVISION
Not to scale	A3	4749/5	



NOTES

REV.	DESCRIPTION	DATE

LITHOS CONSULTING

info@lithos.co.uk
www.lithos.co.uk

Tel 01937 545330

CLIENT

YORKSHIRE COUNTRY PROPERTIES

JOB TITLE

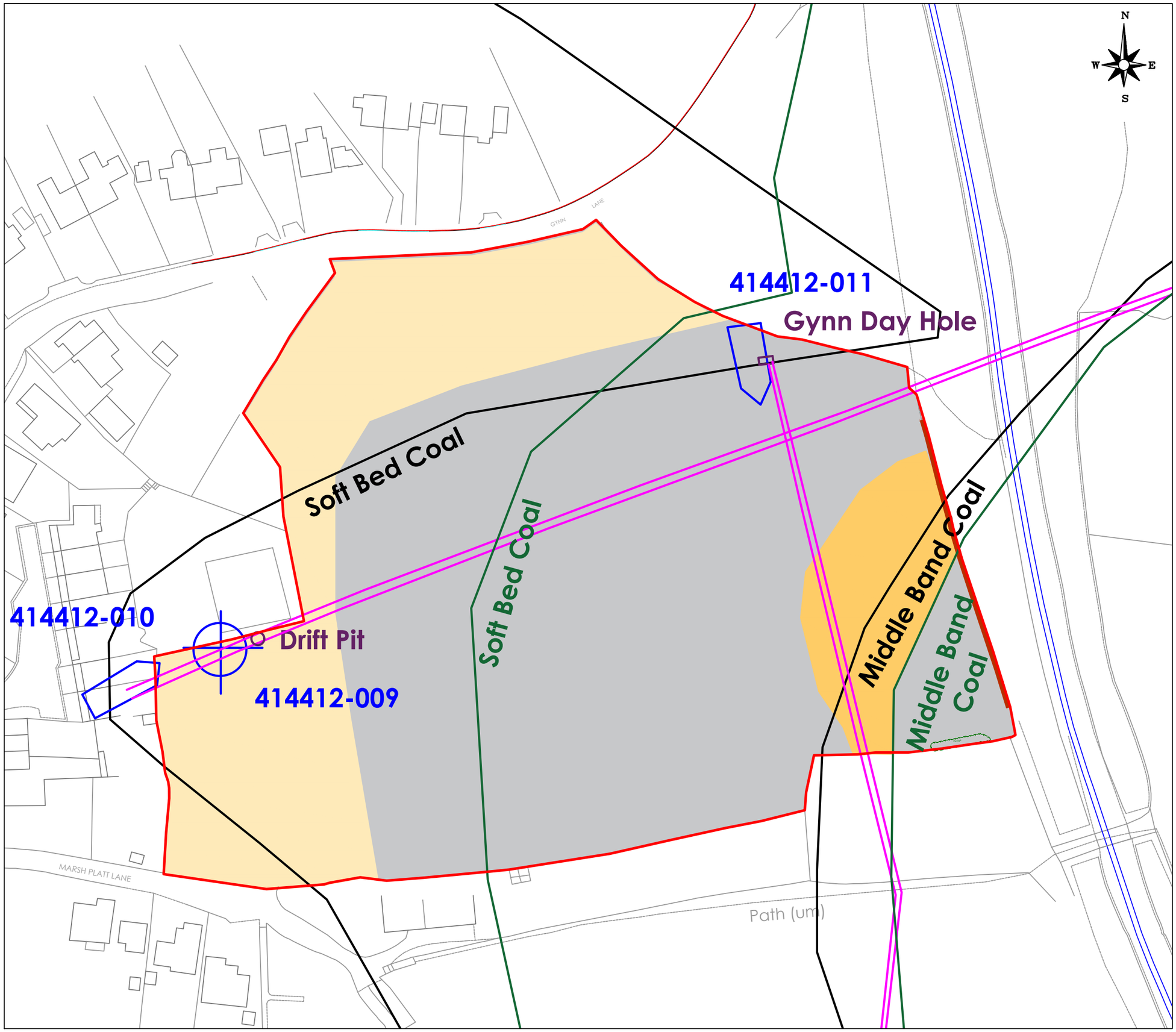
GYNN LANE, HONLEY

DRAWING TITLE

CA ABANDONMENT PLAN M185
1 OF 2

DRAWN	DATE	STATUS
CC	05 06 2024	FOR COMMENT ☐
CHECKED	DATE	FOR APPROVAL ☐
AG	05 06 2024	DRAFT ☐
		FINAL ☑

SCALE	SHEET	DRAWING NO.	REVISION
1:1500	A3	4749/6	



NOTES

- LOWER COAL MEASURES
- SOFT BED FLAGS (SANDSTONE)
- MIDDLE BAND ROCK (SANDSTONE)
- ADIT (TAKEN FROM ABANDONMENT PLAN)
- ADIT (TAKEN FROM CA MINING REPORT)
- ROADWAY (TAKEN FROM ABANDONMENT PLAN)
- COAL OUTCROP (TAKEN FROM CA REPORT)
- COAL OUTCROP (TAKEN FROM BGS MAP)
- APPROXIMATE SITE BOUNDARY

REV.	DESCRIPTION	DATE

LITHOS CONSULTING

info@lithos.co.uk
www.lithos.co.uk

Tel 01937 545330

CLIENT

YORKSHIRE COUNTRY PROPERTIES

JOB TITLE

GYNN LANE, HONLEY

DRAWING TITLE

GEOLOGY &COAL MINING FEATURES

DRAWN	DATE	STATUS
CC	05 06 2024	FOR COMMENT ☐
CHECKED	DATE	FOR APPROVAL ☐
AG	05 06 2024	DRAFT ☐
		FINAL ☑

SCALE	SHEET	DRAWING NO.	REVISION
1:1500	A3	4749/9	

Appendix C

Commission

005/4749/AG

09th May 2024

Mr O Bottomley
Yorkshire Countryside Properties
Tandem Industrial Estate
Wakefield Road
Huddersfield
HD5 0AL

LITHOS CONSULTING

Registered in England 07068066

Parkhill
Wetherby
West Yorkshire
LS22 5DZ

T 01937 545 330

www.lithos.co.uk

Dear Oliver

Gynn Lane, Honley

Further to your recent invitation, please find below our proposal for preparing a geotechnical and environmental desk study appraisal for the above land. It is understood that the site consists of a single parcel of land of approximately 3.2 hectares off Gynn Lane and currently comprises a grassed field with areas of woodland and overgrown vegetation around the peripheries.

We understand that you are considering acquisition of the site with a view to development with housing, although to date a proposed development layout has not been made available.

Brief examination of geological mapping suggests that the site is underlain by the Lower Coal Measures, with sandstone units in the east and west, likely beneath a veneer of Residual Soils.

This site is located within a Coal Mining Development High Risk Area (an area with specific mining legacy risks to the surface, including mine entries; shallow coal workings etc), and therefore a mining report will be obtained. The Coal Authority holds records of known shallow workings to the south and abandonment plans, we have allowed for obtaining copies of any plans which are of relevance. Recorded mine entries are known in the immediate area and we will also obtain CA data relating to these where relevant.

Environmental search data and historical maps, obtained from Landmark or Groundsure, will be reviewed in order to determine whether any past land uses have had any effect on the proposed development. In addition, we will visit site to undertake a walkover survey.

The report will include preliminary recommendations with respect to mining, foundations, contamination and hazardous gas. Our report will be in a format familiar to Kirklees Council, and therefore suitable for submission in support of an outline planning application.

It is anticipated that a final bound report will be available within 3 weeks of receiving your written instruction to proceed.

We will need a Promap or topo survey in CAD format, to provide a base plan for technical drawings etc. If do not have one, we could obtain at cost plus £ .

This work will be undertaken in accordance with our Standard Terms and Conditions, a copy of which are enclosed.

It is hoped the above is sufficient for your present needs. However, should you require any further information, please contact the undersigned.

Yours sincerely

REDACTED

Adam Gombocz
Director
for and on behalf of
LITHOS CONSULTING LIMITED

APPROACHABLE REGISTERED ac UKAS MANAGEMENT SYSTEMS 8320
CHAS Accredited Contractor CHAS.co.uk
CQMS Safety Scheme
Constructionline A UK GOVERNMENT CERTIFICATION SERVICE
MEMBER OF THE AGS WWW.AGS.ORG.UK

1 DEFINITIONS AND INTERPRETATION

1.1 In this Agreement, unless the context otherwise requires, the following words and expressions have the following meanings:

"Agreement" means these Terms (entitled "Terms and Conditions for the Appointment of Lithos Consulting"), the Proposal, any document recording your unequivocal acceptance of the Proposal and any other documents or parts of other documents expressly referred to in any of the foregoing;

"Documents" means all documents of any kind and includes plans, drawings, reports, programmes, specifications, Bills of Quantities, calculations, letters, e-mails, faxes, memoranda, films and photographs (including negatives), or any other form of record prepared or provided or received by, or on behalf of us, and whether in paper form or stored electronically or on disk, or otherwise;

"Intellectual Property" includes all rights to, and any interests in, any patents, designs, trade marks, copyright, know-how, trade secrets and any other proprietary rights or forms of intellectual property (protectable by registration or not) in respect of any technology, concept, idea, data, programme or other software (including source and object codes), specification, plan, drawing, schedule, minutes, correspondence, scheme, programme, design, system, process logo, mark, style, or other matter or thing, existing or conceived, used, developed or produced by any person;

"Project" means the project described in the Proposal and any enquiry from you on which we have based our Proposal;

"Proposal" means the offer document prepared by us in response to an enquiry or otherwise, in connection with the proposed provision of the Services;

"Services" means the work and services relating to the Project to be provided by us pursuant to the Agreement and as set out in the Proposal and includes any additions or amendments thereto made in accordance with these Terms;

"Terms" means these terms entitled "Lithos Consulting Terms of Appointment" as amended from time to time.

1.2 Words importing the singular only shall also include the plural and vice versa, where the context requires.

1.3 Words importing persons or parties shall include firms, corporations and any organisation having legal capacity and vice versa, where the context requires; and words importing a particular gender include all genders.

1.4 The sub-headings to the clauses of these Terms are for convenience only and shall not affect the construction of the Agreement.

1.5 A reference to legislation includes that legislation as from time to time amended, re-enacted or substituted and any Orders in Council, orders, rules, regulations, schemes, warrants, by-laws, directives or codes of practice issued under any such legislation.

1.6 In the event of conflict between the documents forming part of the Agreement, the Proposal shall prevail, followed by the Terms.

2 APPOINTMENT

2.1 You agree to engage us and we agree to provide the Services in accordance with the provisions of this Agreement.

3 OUR OBLIGATIONS

3.1 We shall perform the Services using the reasonable standard of skill and care normally exercised by qualified members of our profession, performing similar services under similar conditions.

3.2 We shall use all reasonable endeavours to perform the Services in accordance with relevant environmental and safety legislation.

4 YOUR OBLIGATIONS

4.1 Throughout the period of this Agreement you shall afford to us, or procure for our benefit, access to any site where access is required for the performance of the Services.

4.2 You accept responsibility for ensuring that we are notified in writing of all special site and/or plant conditions, including without prejudice to the generality of the foregoing, the existence and precise location of all underground services, cables, pipes, drains or underground buildings, constructions or any hazards, which you shall clearly mark on the ground or identify on accurate location plans supplied to us prior to the commencement of the Services. You shall also inform us in writing of any relevant operating procedures including any site safe operating procedures and any other regulations relevant to the carrying out of the Services. You shall indemnify us against all costs, losses, claims, demands and expenses arising as a result of any non-disclosure in this respect, including but not limited to indemnification against any action brought by the owner of the land or otherwise.

4.3 If you discover any conflict, defect or other fault in the information or designs provided by us pursuant to the Agreement, you will advise us in writing of such defect, conflict or other fault and we shall have the right to rectify the same or where necessary, to design the solution for rectification of any works carried out by others pursuant the conflicting, defective or in any other way faulty information or designs.

5 COPYRIGHT

5.1 The copyright in all Intellectual Property prepared by or on behalf of us in connection with the Project for delivery to you shall remain vested in us.

5.2 You shall have a non-exclusive licence to copy and use such Intellectual Property for purposes directly related to the Project. Such licence shall enable you to copy and use the Intellectual Property but solely for your own purposes in connection with the Project and such use shall not include any licence to reproduce any conceptual designs or professional opinions contained therein nor shall it include any license to amend any drawing, design or other Intellectual Property produced by us.

5.3 Should you wish to use such Intellectual Property in connection with any other works or for any other purpose not directly related to the Project or wish to pass any Intellectual Property to any third party, you must obtain our prior written consent. The giving of such consent shall be at our absolute discretion and shall be upon such terms as we may require. We shall not be liable to you for the use by any person of such Intellectual Property for any purpose other than that for which the same were prepared by or on our behalf.

5.4 Ownership of any proposals submitted to you that are not subsequently confirmed as part of the Services to be provided for you remain with us and such proposals must not be used as the basis for any future work undertaken by you or a third party and no liability can be accepted howsoever arising from such proposals.

5.5 In the event of you being in default of payment of any fees or other amounts due, we may suspend further use of the licence on giving no less than 2 calendar days' notice of the intention to do so. Use of the licence may be resumed on receipt of the outstanding amounts.

6 CONFIDENTIALITY

6.1 Neither you nor we shall at any time disclose to any person any confidential information concerning the business, affairs, customers, clients or suppliers of the other party or of any member of the group of companies to which the other party belongs, except as permitted by clauses 6.2 and 6.4.

6.2 Each party may disclose the other party's confidential information:

(a) to its employees, officers, representatives, contractors, sub-contractors or advisers who need to know such information for the purposes of exercising the party's rights or carrying out its obligations under or in connection with this Agreement. Each party shall ensure that its employees, officers, representatives, contractors, sub-contractors or advisers to whom it discloses the other party's confidential information comply with this paragraph 6; and

(b) as may be required by law, to a court of competent jurisdiction or any governmental or regulatory authority.

6.3 Neither you nor we shall use any other party's confidential information for any purpose other than to exercise our rights or perform our respective obligations under or in connection with this Agreement.

6.4 Subject to the above and our privacy policy which can be found on www.lithos.co.uk, we shall be permitted to use information related to the Services we provide in connection with the Project for the purposes of marketing its services and in proposals for work of a similar type.

7 ASSIGNMENT

7.1 You may assign the benefit of this Agreement on two occasions with our prior written consent (not to be unreasonably withheld) and any additional assignments shall be with our prior consent.

7.2 We may at any time assign, mortgage, charge, subcontract, delegate, declare a trust over or deal in any other manner with any or all of our rights and obligations under this Agreement.

8 INSURANCE

8.1 We shall maintain a professional indemnity insurance policy covering our liabilities for negligence under this Agreement, with a limit of indemnity of £5,000,000 (FIVE MILLION POUNDS) any one claim, save for pollution and contamination claims and asbestos claims both of which carry £2,000,000 (TWO MILLION POUNDS) in the aggregate cover. This policy is annually renewable and whilst renewal is not automatic, We shall maintain such insurance at all times until six years from the date of the completion (or termination) of the Services under this Agreement, provided such insurance is available at commercially reasonable rates and terms.

8.2 If for any period such insurance is not available at commercially reasonable rates and terms, we shall inform you and shall obtain in respect of such period such reduced level of professional indemnity insurance as is available and as would be fair and reasonable in the circumstances for us to obtain.

9 PAYMENT

9.1 Invoices for services rendered will be submitted for payment in accordance with the Proposal.

9.2 You shall pay you any VAT properly chargeable on the Services and any amount expressed as payable to us under this Agreement is exclusive of VAT unless stated otherwise.

9.3 The due date for payment is the date of the invoice and the final date for payment is 28 days from the date of the invoice.

9.4 If you dispute the amount included for payment in an invoice then you must serve a written notice on us no later than 14 calendar days before the final date for payment. If no notice is given within the required timeframe the amount due shall be the amount stated in the invoice.

9.5 If you fail to pay any monies in accordance with the foregoing payment provisions, we shall be entitled to charge interest on any monies owed to us, such interest to be at a rate of 4% above the base rate of a clearing bank from time to time calculated from the final date for payment to the date of actual payment on a compound basis. The parties acknowledge that our liability under this clause 10.5 is a substantial remedy for the purposes of section 9(1) of the Late Payment of Commercial Debts (Interest) Act 1998.

10 LIMITATIONS ON LIABILITY

10.1 Unless otherwise agreed in writing, our total liability under or in connection with this Agreement whether in contract, tort, negligence, breach of statutory duty or otherwise (other than in respect of personal injury or death) shall be limited to and shall not exceed the lesser of either the level of insurance cover referred to within clause 8.1 above, or 20 times the total value of invoices issued to you for the Services.

10.2 No action or proceedings under or in respect of the Agreement whether in contract, tort, negligence, under statute or otherwise shall be commenced against us after the expiry of a period of six years from the date of the completion (or termination) of the Services under this Agreement.

10.3 Whilst we usually scan for potential exploratory locations with a Cable Avoidance Tool, we shall not be liable for any damage to underground services, cables, pipes, drains or underground buildings, constructions and the like which were either not marked on site or for which accurate plans were not provided.

10.4 We shall not be liable for the cost of rectifying any defect, conflict or other fault in the information or designs provided by us or for the cost of designing a solution for and rectifying any subsequent works carried out by others pursuant to the conflicting, defective or in any other way faulty information or designs, unless we have been advised in writing of the same by you and have been given the opportunity to rectify the same or where necessary, to design the solution for rectification of any subsequent works carried out by others pursuant to the same.

11 DELAY

We shall comply with any timescale agreed for completion of the Services unless delayed or prevented by circumstances beyond our reasonable control and in the event of any such circumstances arising we undertake to complete the Services within a reasonable period, but will not be liable to you for any delay as a result.

12 TERMINATION

12.1 The Agreement may be terminated by either of us in the event of the other making a composition or arrangement with its creditors, becoming bankrupt, or being a company, making a proposal for a voluntary arrangement for a composition of debts, or has a provisional liquidator appointed, or has a winding-up order made, or passes a resolution for voluntary winding-up (except for the purposes of a bona fide scheme of amalgamation or reconstruction), or has an administrator or an administrative receiver appointed to the whole or any part of its assets. Notice of termination must be given to the party which is insolvent by the other party.

12.2 If for any reason our Services are suspended for a period in excess of three calendar months then we shall be entitled to terminate our appointment under this Agreement in respect of the Services by no less than seven days written notice to you.

12.3 If you fail to pay in full any sum due under the terms of this Agreement by the final date for payment for that sum and no effective pay less notice is issued, we may serve written notice to you demanding payment within 14 days of such notice. If you fail to comply with such notice, we shall be entitled to terminate our employment under this Agreement forthwith.

12.4 Any termination of our appointment howsoever caused shall be without prejudice to our rights to require payment for all Services performed up to the date of such termination including but not limited to payment of a fair and reasonable proportion of any figure identified in the Proposal or otherwise for fees in respect of a particular service which Lithos has started, but not completed.

13 THIRD PARTY RIGHTS

The Agreement shall not confer and shall not purport to confer on any third party any benefit or any right to enforce any term of this Agreement for the purposes of the Contracts (Rights of Third Parties) Act 1999 or otherwise.

14 COLLATERAL WARRANTIES & LETTERS OF RELIANCE

We shall consider and may consent to a request from you for us to enter into a collateral warranty or letter of reliance with a third party with regard to the Services provided under this Agreement. The giving of such consent shall be at our absolute discretion and providing we agree to our standard form of collateral warranty or letter of reliance (subject to any reasonable changes to be approved by us at our absolute discretion) and in return for payment of a fee (to be notified at the time of the request).

15 NOTICES

15.1 Any notice provided for in the Agreement shall be in writing and shall be deemed to be properly given if delivered by hand or sent by pre-paid first class post to the address of the relevant party as may have been notified by each party to the other or, in the absence of notification, to our respective registered office addresses.

15.2 Such notice shall be deemed to have been received on the day of delivery if delivered by hand or on the second working day after the day of posting if sent by pre-paid first class post.

16 ENTIRE AGREEMENT

16.1 The Agreement constitutes the complete and entire agreement between us with respect to the Services and supersedes any prior oral and/or written warranties, terms, conditions, communications and representations, whether express or implied and any claim against us in respect of the Services can only be made in contract under the provisions of this Agreement and not otherwise under the law or tort or otherwise.

16.2 No amendments, modifications or variation of this Agreement shall be valid unless made in writing and agreed to by us; such agreement must be recorded in writing by at least one of us.

16.3 We shall not be bound by any standard or printed terms or conditions furnished by you in any of your documents unless we specifically state in writing separately from such documents that we intend such terms and conditions to apply.

17 DISPUTES, JURISDICTION AND GOVERNING LAW

17.1 This Agreement shall be governed by and construed in accordance with English law and we irrevocably and unconditionally submit to the jurisdiction of the English Courts.

17.2 Where the Housing Grants, Construction and Regeneration Act 1996 applies, any dispute between us may be referred to adjudication in accordance with The Scheme for Construction Contracts Regulations 1998 or any amendment or modification thereof being in force at the time of the dispute, as applicable to England, Wales, Scotland and Northern Ireland.

From:	reports-noreply@constructionmanager.net on behalf of Chris Sharp
To:	Adam Gombocz
Cc:	oliver@yorkshirecountryproperties.co.uk; chris@yorkshirecountryproperties.co.uk; steven.hainsworth@yorkshirecountryproperties.co.uk; joanne@yorkshirecountryproperties.co.uk
Subject:	P/Order - P1008_1263 - Geo & Enviro Study
Date:	10 May 2024 15:29:37
Attachments:	ycp___construction__ltd_purchase_order_1263.pdf

To Whom It May Concern:

Please find attached our Purchase Order.

Please liaise with site with regards to delivery dates / instructions

---

Kind regards
for and on behalf of Yorkshire Country Properties Ltd.

Chris Sharp
Senior Buyer

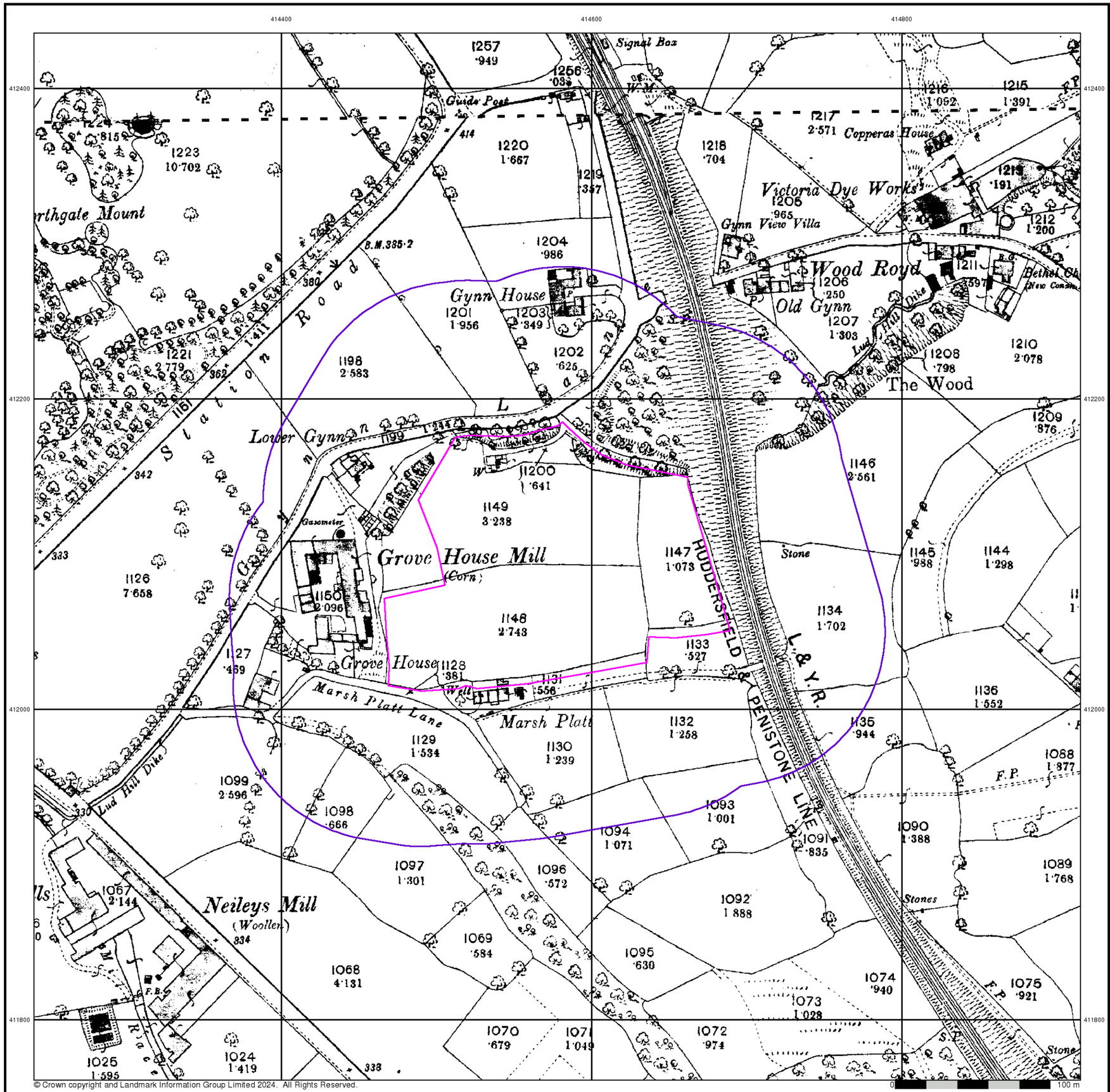
Office | 01484 441315
Mobile | 07593 454275
Email | chris@yorkshirecountryproperties.co.uk

Yorkshire Country Properties | Tandem Industrial Estate | Wakefield Road | Huddersfield | HD5 0AL

This message has been scanned by Mailsafe

Appendix D

Historical OS Plans



LITHOS CONSULTING

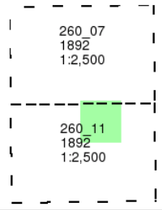
Yorkshire

Published 1892

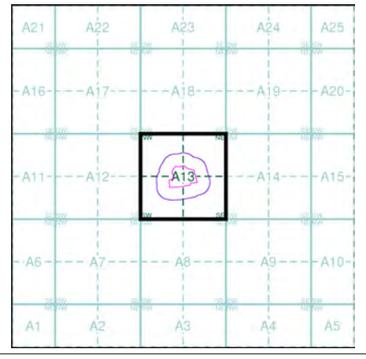
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



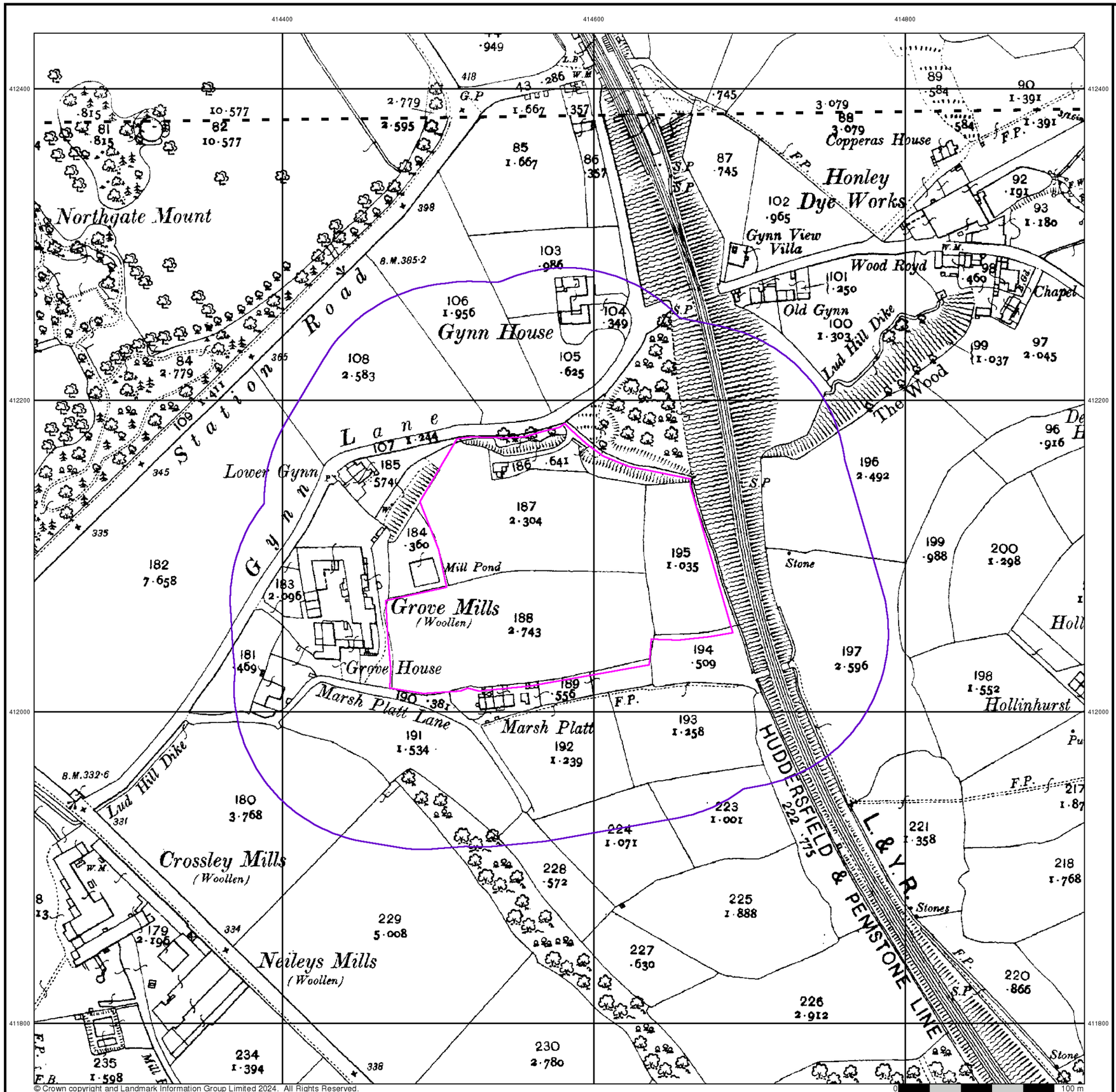
Order Details

Order Number:	347024450_1_1
Customer Ref:	4749
National Grid Reference:	414570, 412090
Slice:	A
Site Area (Ha):	2.71
Search Buffer (m):	100

Site Details

Gyn Lane, Honley, HD9 6LF

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



LITHOS CONSULTING

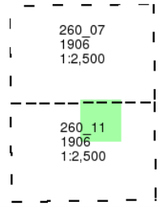
Yorkshire

Published 1906

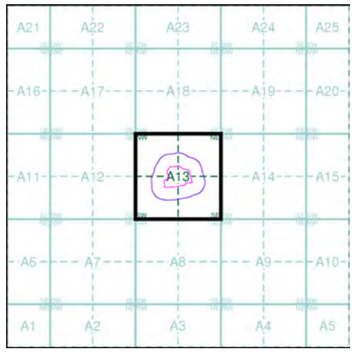
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



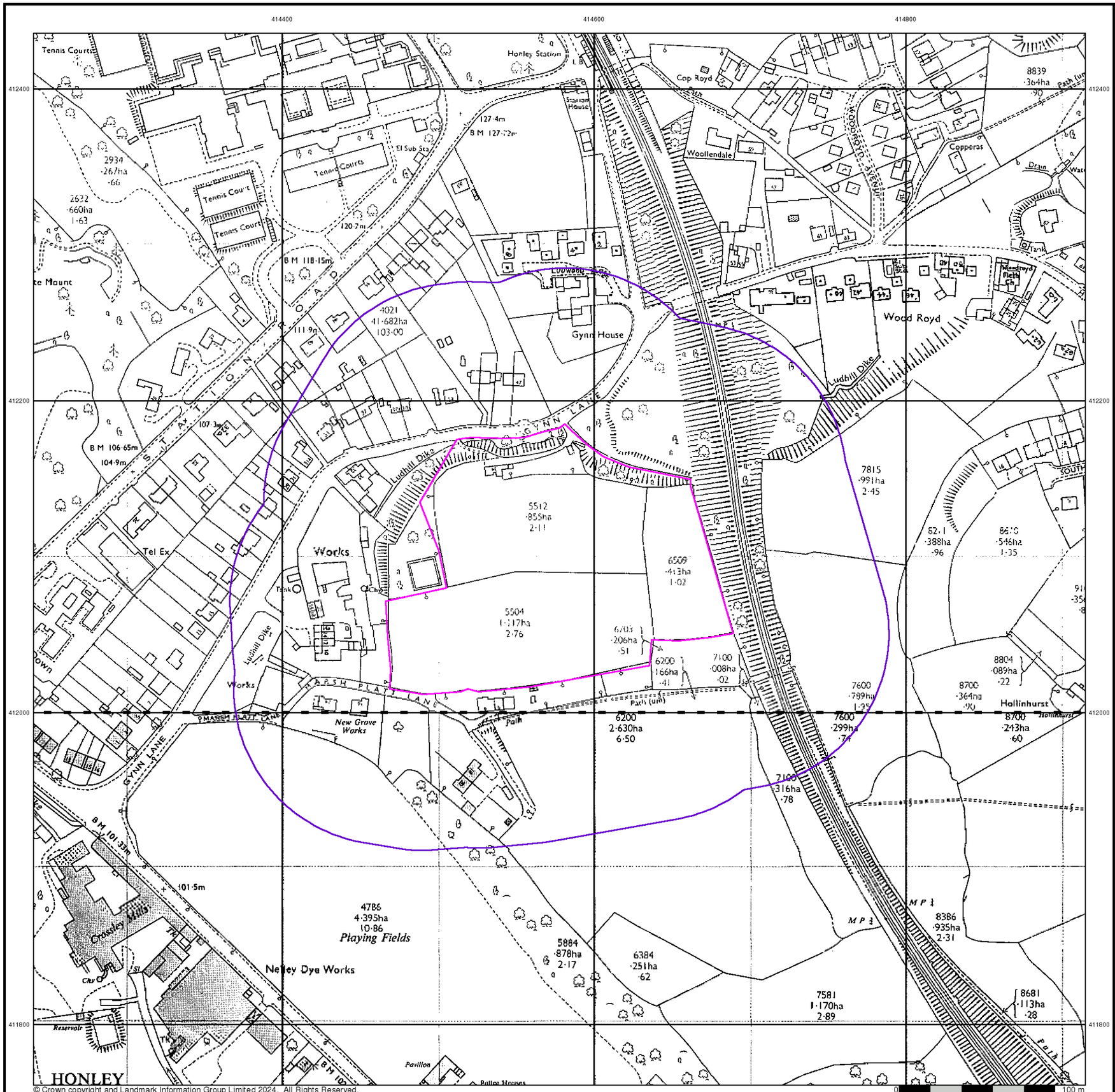
Order Details

Order Number:	347024450_1_1
Customer Ref:	4749
National Grid Reference:	414570, 412090
Slice:	A
Site Area (Ha):	2.71
Search Buffer (m):	100

Site Details

Gyn Lane, Honley, HD9 6LF

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



© Crown copyright and Landmark Information Group Limited 2024. All Rights Reserved.

LITHOS CONSULTING

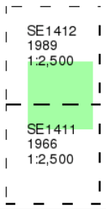
Additional SIMs

Published 1966 - 1989

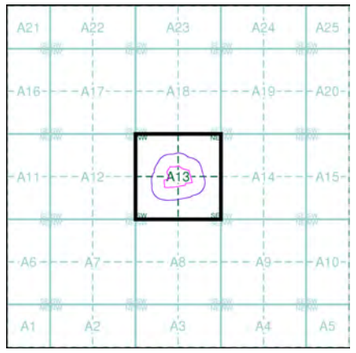
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	347024450_1_1
Customer Ref:	4749
National Grid Reference:	414570, 412090
Slice:	A
Site Area (Ha):	2.71
Search Buffer (m):	100

Site Details

Gyn Lane, Honley, HD9 6LF

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



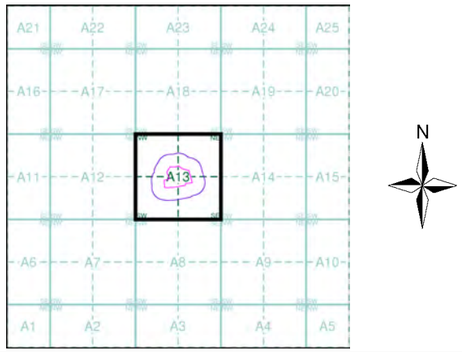
LITHOS CONSULTING

Historical Aerial Photography

Published 2000

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13



Order Details

Order Number:	347024450_1_1
Customer Ref:	4749
National Grid Reference:	414570, 412090
Slice:	A
Site Area (Ha):	2.71
Search Buffer (m):	100

Site Details

Gyn Lane, Honley, HD9 6LF

Landmark INFORMATION GROUP

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

Appendix E

Search Responses & other Correspondence

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
347024450_1_1

Customer Reference:
4749

National Grid Reference:
414570, 412090

Slice:
A

Site Area (Ha):
2.71

Search Buffer (m):
1000

Site Details:

Gyn Lane
Honley
HD9 6LF

Client Details:

Mr M Perrin
Lithos Consulting Ltd
Parkhill
Walton Road
Wetherby
LS22 5DZ

Contents

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	50
Hazardous Substances	-
Geological	53
Industrial Land Use	62
Sensitive Land Use	87
Data Currency	88
Data Suppliers	93
Useful Contacts	94

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.
In this datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

Copyright Notice

© Landmark Information Group Limited 2024. The Copyright on the information and data and its format as contained in this Envirocheck® Report ("Report") is the property of Landmark Information Group Limited ("Landmark") and several other Data Providers, including (but not limited to) Ordnance Survey, British Geological Survey, the Environment Agency/Natural Resources Wales and Natural England, and must not be reproduced in whole or in part by photocopying or any other method. The Report is supplied under Landmark's Terms and Conditions accepted by the Customer.
A copy of Landmark's Terms and Conditions can be found with the Index Map for this report. Additional copies of the Report may be obtained from Landmark, subject to Landmark's charges in force from time to time. The Copyright, design rights and any other intellectual rights shall remain the exclusive property of Landmark and /or other Data providers, whose Copyright material has been included in this Report.
© Environment Agency & United Kingdom Research and Innovation 2024. © Natural Resources Wales & United Kingdom Research and Innovation 2024.

Natural England Copyright Notice

Site of Special Scientific Interest, National Nature Reserve, Ramsar, Special Protection Area, Special Conservation Area, Marine Nature Reserve data (derived from Ordnance Survey 1:10000 raster) is provided by, and used with the permission of, Natural England who retain the copyright and Intellectual Property Rights for the data.

Scottish Natural Heritage Copyright

Contains SNH information licensed under the Open Government Licence v3.0.

Ove Arup Copyright Notice

The Mining Instability data was obtained on licence from Ove Arup & Partners Limited (for further information, contact mining.review@arup.com). No reproduction or further use of such Data is to be made without the prior written consent of Ove Arup & Partners Limited. The supplied Mining Instability data is derived from publicly available records and other third party sources and neither Ove Arup & Partners nor Landmark warrant the accuracy or completeness of such information or data.

Stantec Copyright Notice

The cavity data presented has been extracted from the PBA (now Stantec UK Ltd) enhanced version of the original DEFRA national cavity databases. Stantec UK Ltd retain the copyright & intellectual property rights in the data. Whilst all reasonable efforts are made to check that the information contained in the cavity databases is accurate we do not warrant that the data is complete or error free. The information is based upon our own researches and those collated from a number of external sources and is continually being augmented and updated by Stantec UK Ltd. In no event shall Stantec UK Ltd or Landmark be liable for any loss or damage including, without limitation, indirect or consequential loss or damage arising from the use of this data.

Radon Potential dataset Copyright Notice

Information supplied from a joint dataset compiled by The British Geological Survey and Public Health England.

Natural Resources Wales Copyright Notice

Contains Natural Resources Wales information © Natural Resources Wales and Database Right. All rights Reserved. Contains Ordnance Survey Data. Ordnance Survey Licence number 100019741. Crown Copyright and Database Right. Contains Natural Resources Wales information © Natural Resources Wales and Database Right. All rights Reserved. Some features of this information are based on digital spatial data licensed from the Centre for Ecology & Hydrology © NERC (CEH). Defra, Met Office and DARD Rivers Agency © Crown copyright. © Cranfield University. © James Hutton Institute. Contains OS data © Crown copyright and database right 2024. Land & Property Services © Crown copyright and database right.

Report Version v53.0

LITHOS CONSULTING

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 3	1	2	42	19
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control	pg 19			3	
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 20		1	4	7
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 21	Yes			
Pollution Incidents to Controlled Waters	pg 22		3	25	33
Prosecutions Relating to Authorised Processes	pg 32			1	
Registered Radioactive Substances					
River Quality	pg 32			2	3
River Quality Biology Sampling Points	pg 33			1	2
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register	pg 34			4	5
Water Abstractions	pg 35		1	5	11 (*6)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 40	Yes	n/a	n/a	n/a
Groundwater Vulnerability - Soluble Rock Risk			n/a	n/a	n/a
Groundwater Vulnerability - Local Information			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 40	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences	pg 41		Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 41		Yes	n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 41	5	7	9	57

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 50				1
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 50			1	1
Local Authority Landfill Coverage	pg 50	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)	pg 50		2	4	10
Potentially Infilled Land (Water)	pg 51		1	7	6
Registered Landfill Sites	pg 52				1
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

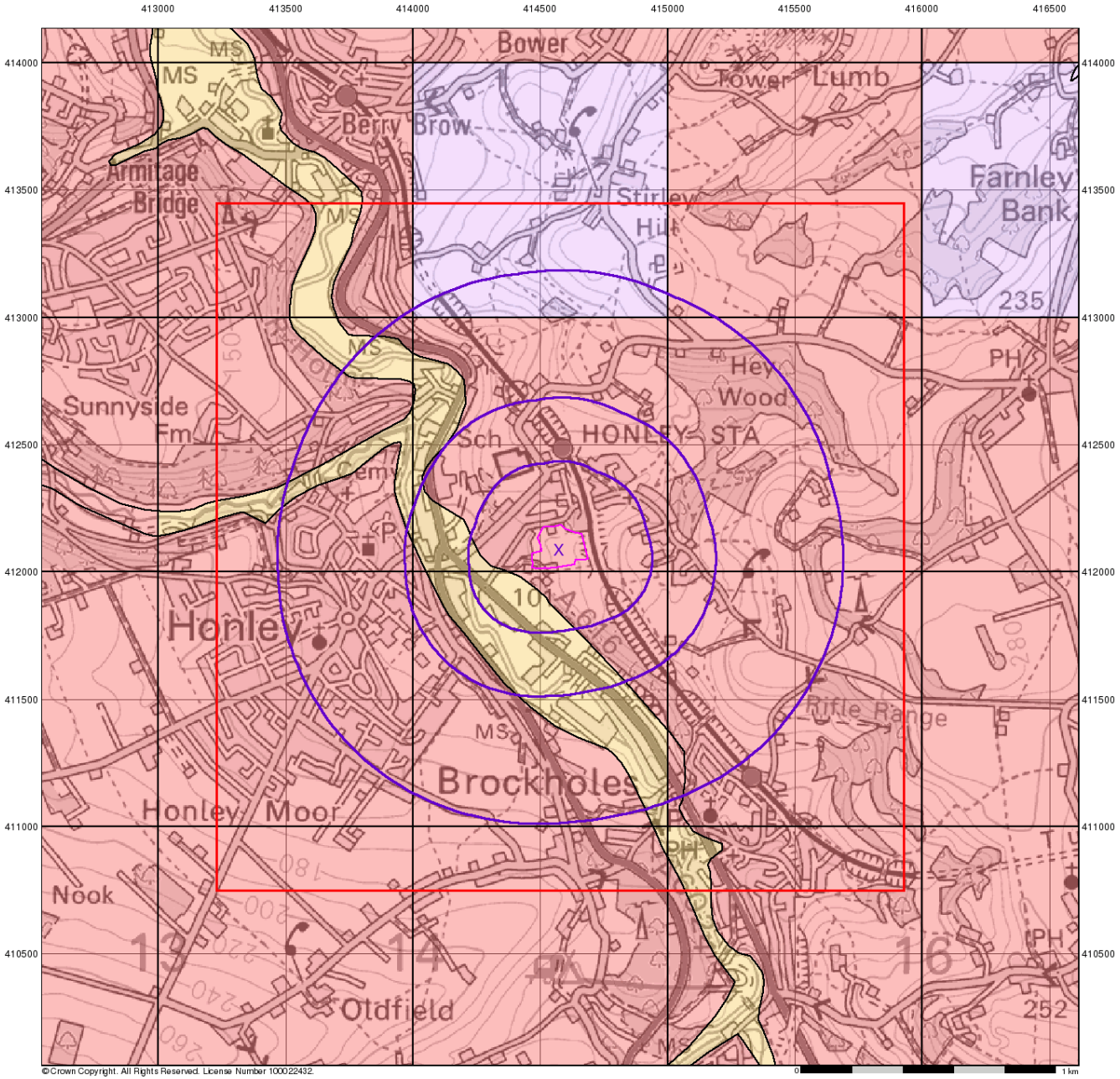
LITHOS CONSULTING

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 53	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 53	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 57		1	5	9
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas	pg 59	Yes	n/a	n/a	n/a
Mining Instability	pg 60	Yes	n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 60		Yes	n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 60	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 60	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 60	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 61	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 61	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 62		24	32	75
Fuel Station Entries	pg 73			3	1
Points of Interest - Commercial Services	pg 74		10	8	21
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 77		4	18	30
Points of Interest - Public Infrastructure	pg 81		3	19	25
Points of Interest - Recreational and Environmental	pg 85				6
Gas Pipelines					
Underground Electrical Cables					

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland	pg 87			2	3
Areas of Adopted Green Belt	pg 87	1			
Areas of Unadopted Green Belt	pg 87	1			
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves	pg 87				1
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest	pg 87			1	
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					



LITHOS CONSULTING

Groundwater Vulnerability

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

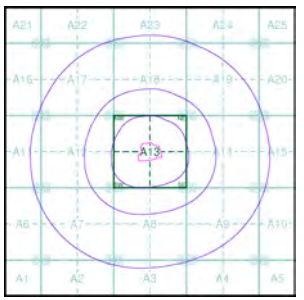
Agency and Hydrological

Bedrock Aquifers	Superficial Aquifers
High Vulnerability, Principal Aquifer	High Vulnerability, Principal Aquifer
High Vulnerability, Secondary Aquifer	High Vulnerability, Secondary Aquifer
Medium Vulnerability, Principal Aquifer	Medium Vulnerability, Principal Aquifer
Medium Vulnerability, Secondary Aquifer	Medium Vulnerability, Secondary Aquifer
Low Vulnerability, Principal Aquifer	Low Vulnerability, Principal Aquifer
Low Vulnerability, Secondary Aquifer	Low Vulnerability, Secondary Aquifer

Unproductive Aquifer

Soluble Rock

Site Sensitivity Context Map - Slice A



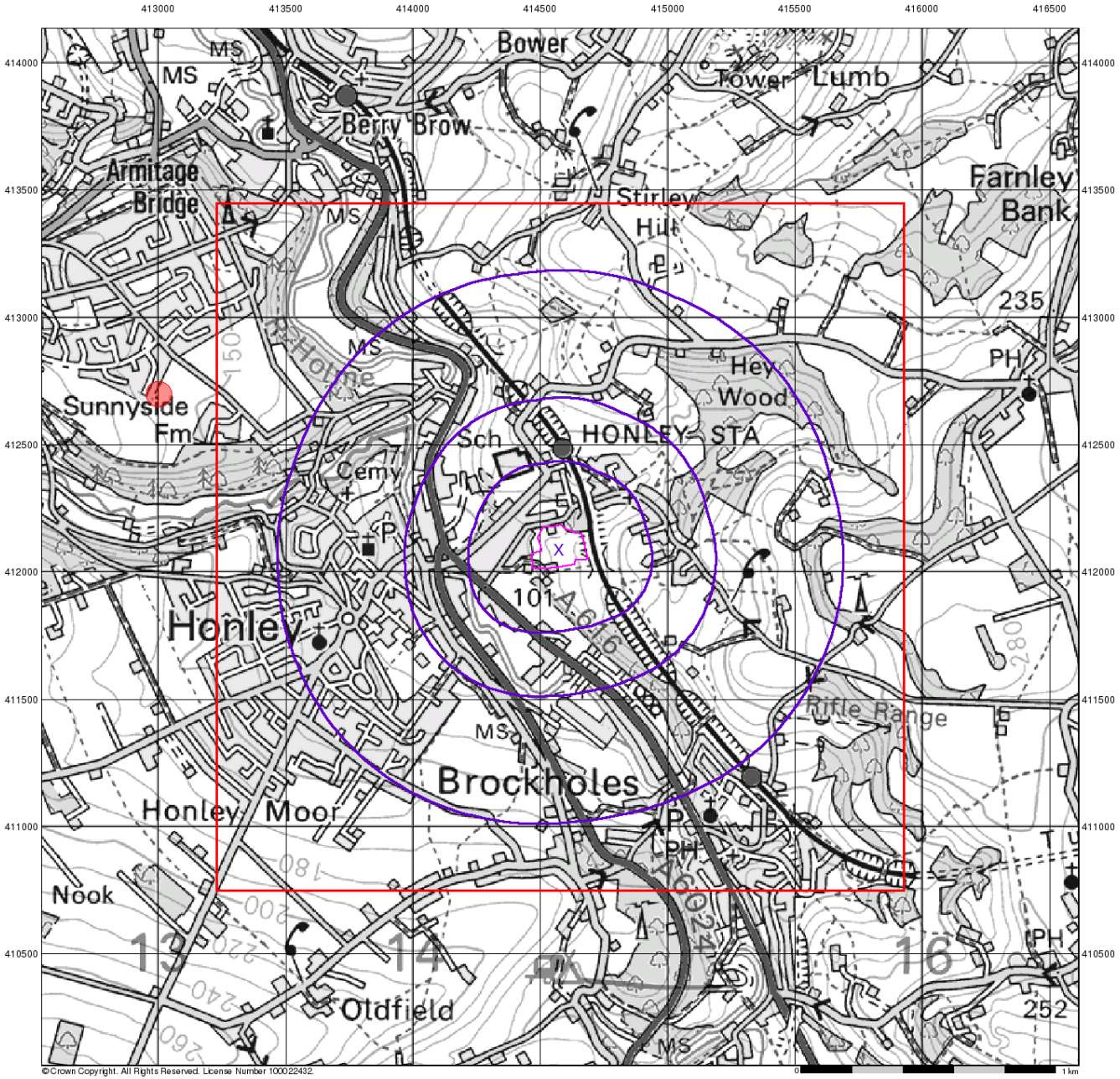
Order Details

Order Number:	347024450_1_1
Customer Ref:	4749
National Grid Reference:	414570, 412090
Slice:	A
Site Area (Ha):	2.71
Search Buffer (m):	1000

Site Details

Gyn Lane, Honley, HD9 6LF

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



LITHOS CONSULTING

Source Protection Zones

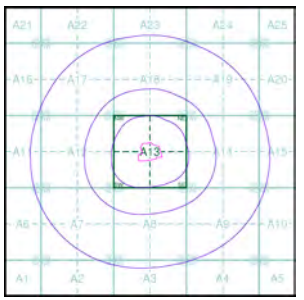
General

Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)

Site Sensitivity Context Map - Slice A



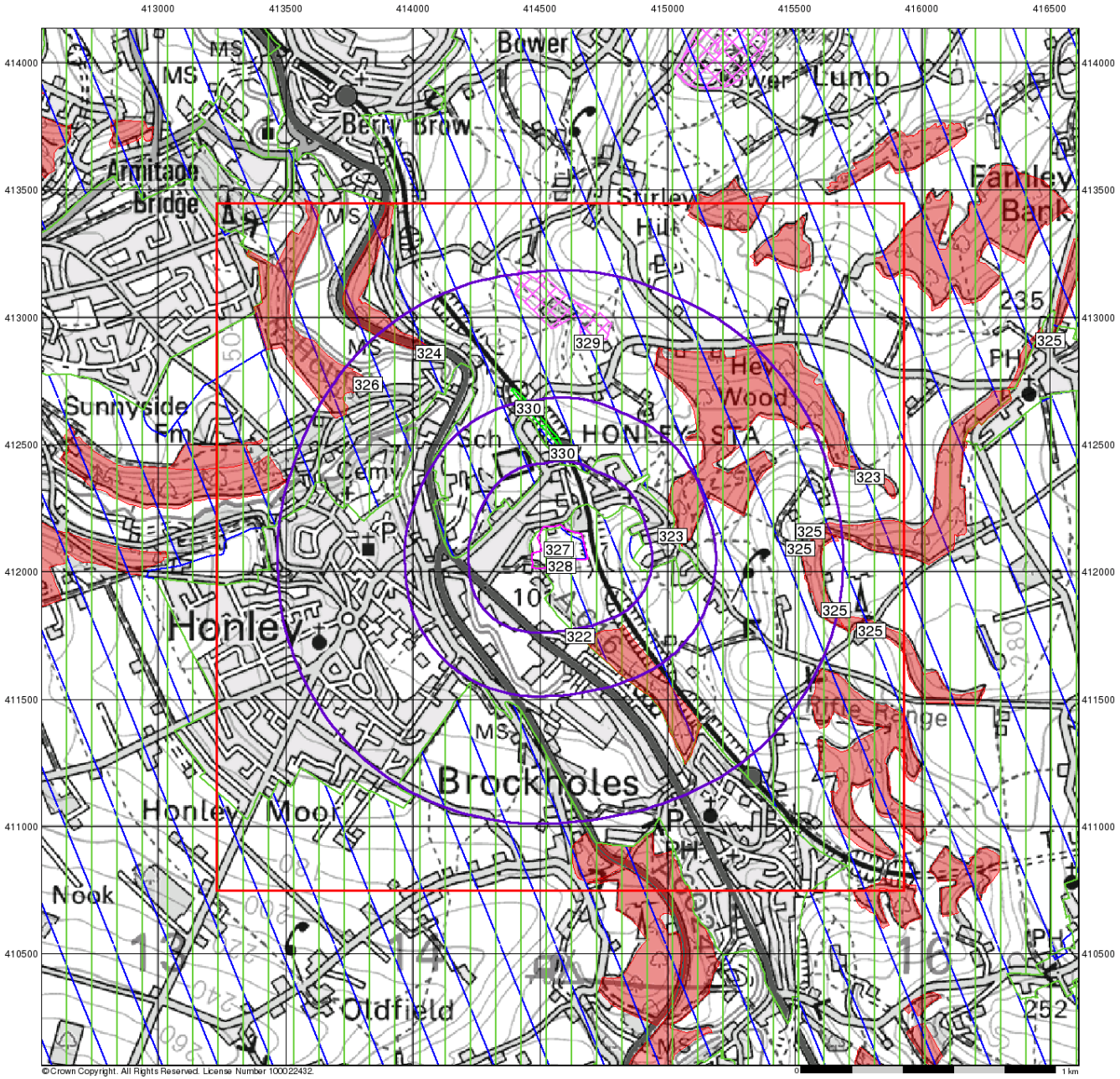
Order Details

Order Number:	347024450_1_1
Customer Ref:	4749
National Grid Reference:	414570, 412090
Slice:	A
Site Area (Ha):	2.71
Search Buffer (m):	1000

Site Details

Gyn Lane, Honley, HD9 6LF

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



LITHOS CONSULTING

Sensitive Land Uses

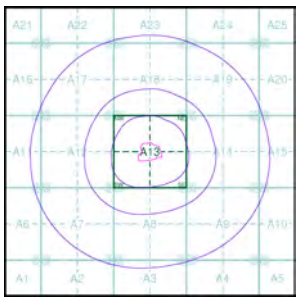
General

Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice A

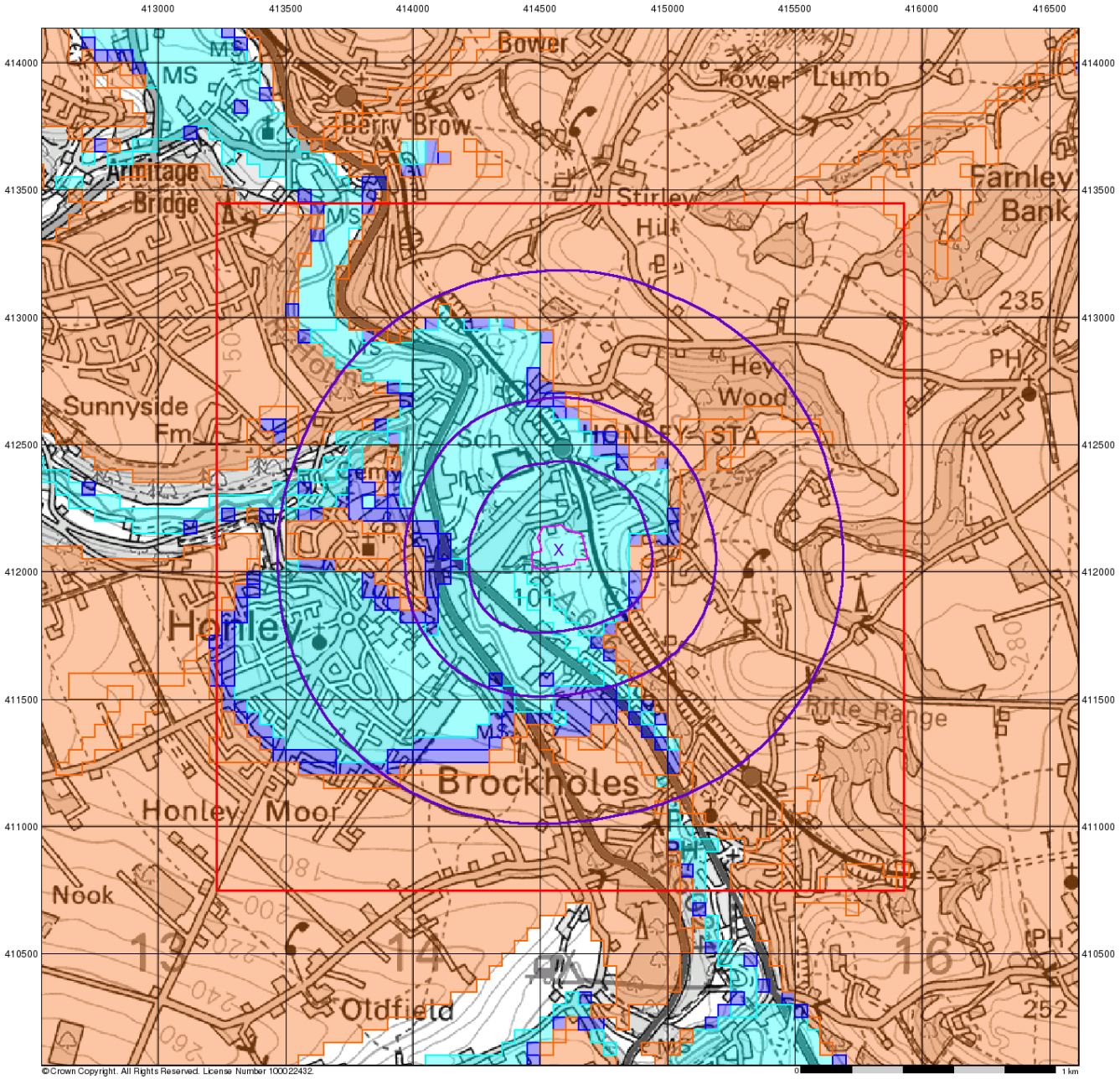


Order Details

Order Number:	347024450_1_1
Customer Ref:	4749
National Grid Reference:	414570, 412090
Slice:	A
Site Area (Ha):	2.71
Search Buffer (m):	1000

Site Details

Gyn Lane, Honley, HD9 6LF



LITHOS CONSULTING

BGS Flood GFS Data

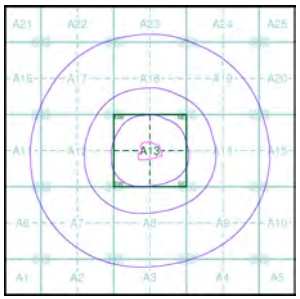
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A

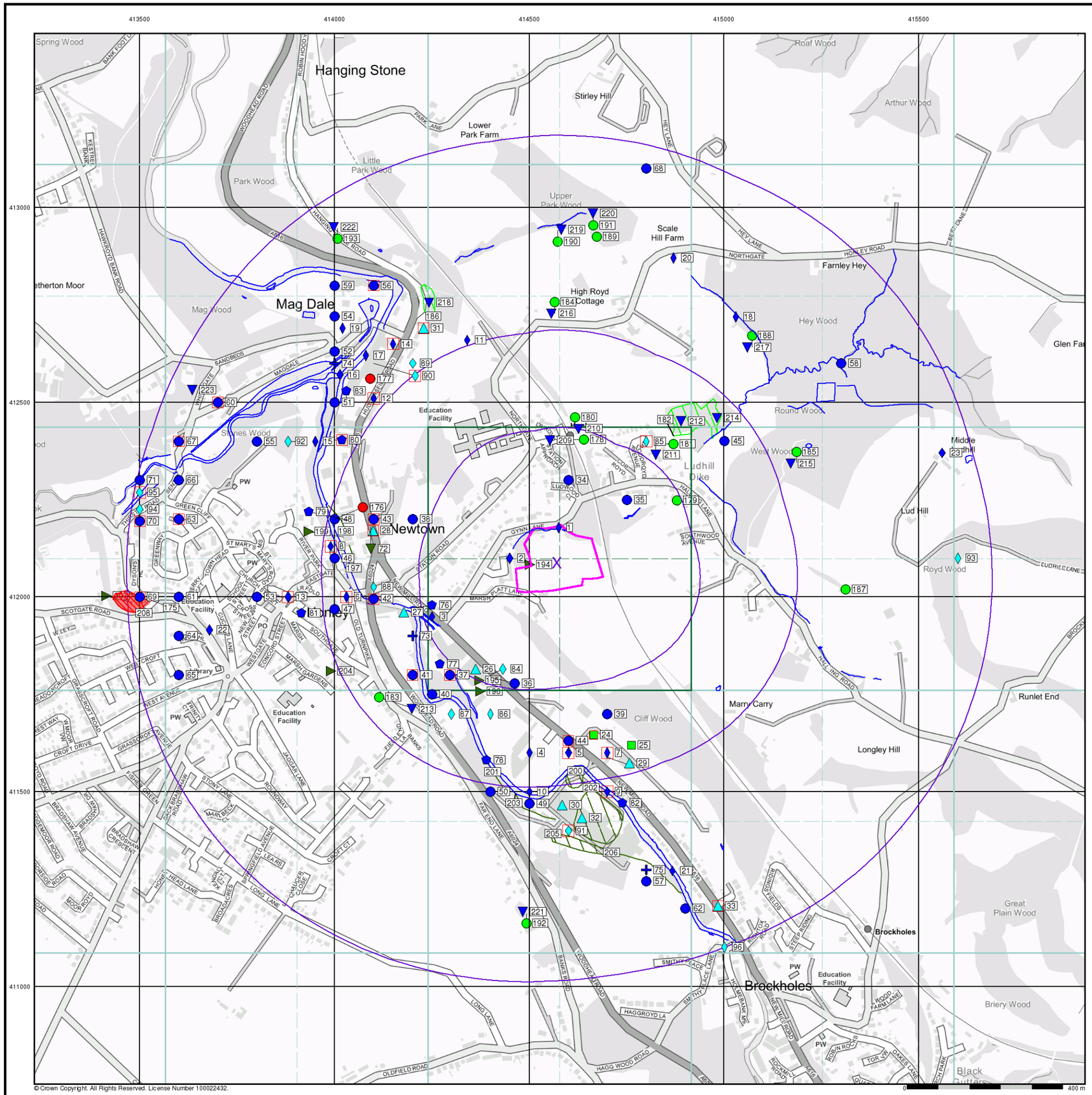


Order Details

Order Number:	347024450_1_1
Customer Ref:	4749
National Grid Reference:	414570, 412090
Slice:	A
Site Area (Ha):	2.71
Search Buffer (m):	1000

Site Details

Gyn Lane, Honley, HD9 6LF



LITHOS CONSULTING

General

Specified Site
Specified Buffer(s)
Bearing Reference Point
Map ID
Several of Type at Location

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

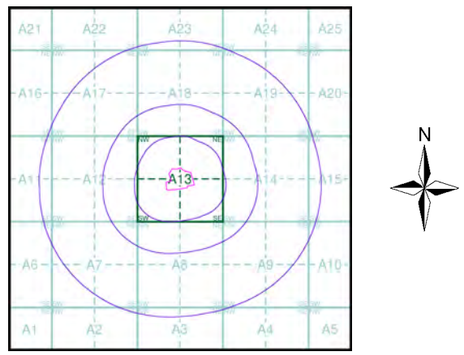
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Slice A



Order Details

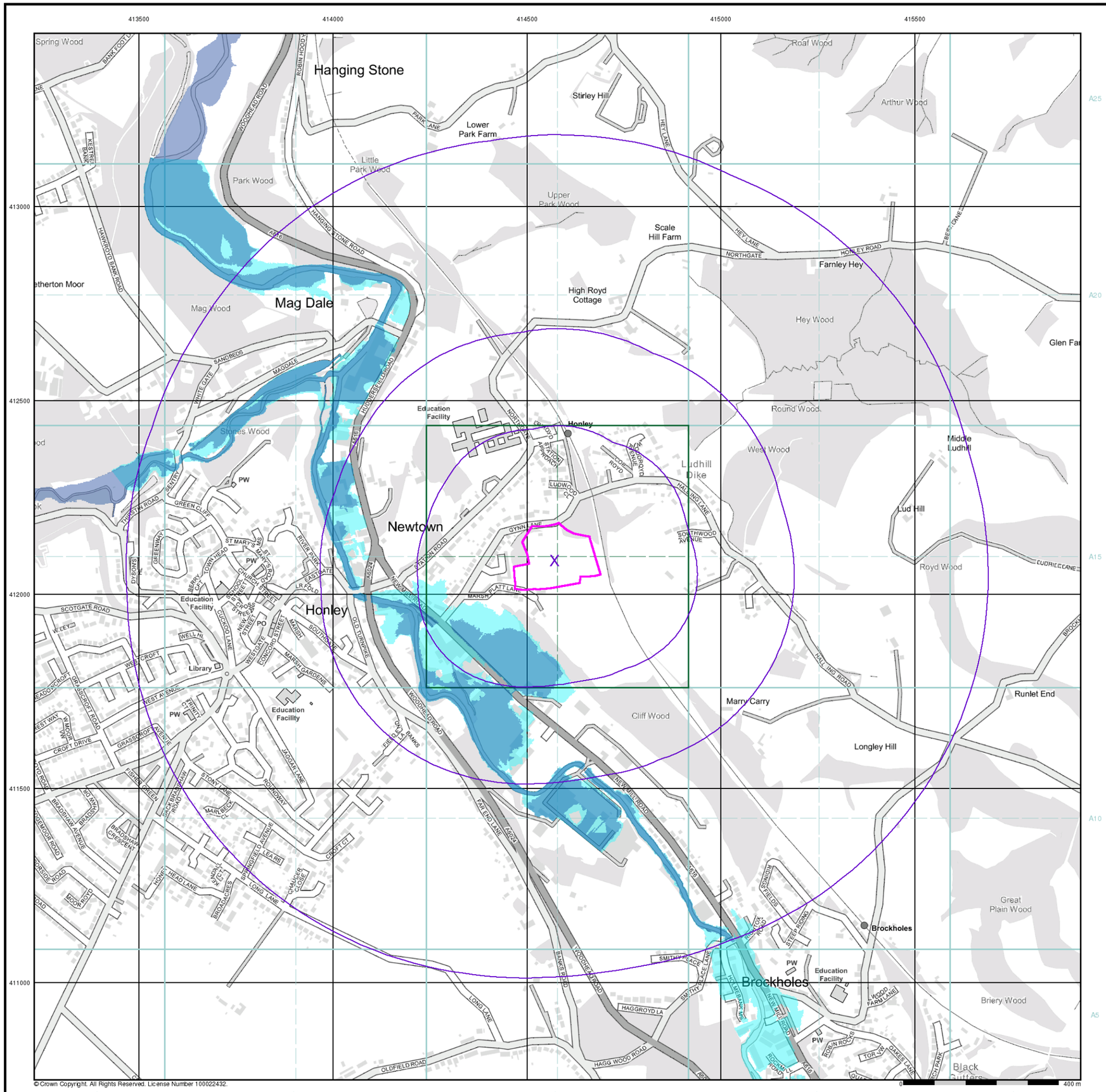
Order Number:	347024450_1_1
Customer Ref:	4749
National Grid Reference:	414570, 412090
Slice:	A
Site Area (Ha):	2.71
Search Buffer (m):	1000

Site Details

Gyn Lane, Honley, HD9 6LF

Landmark INFORMATION GROUP

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



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

LITHOS CONSULTING

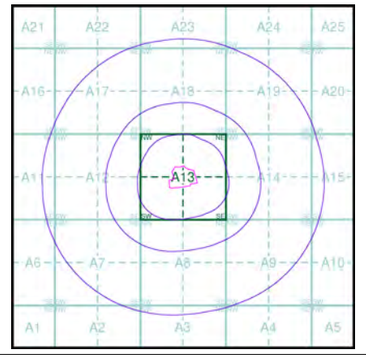
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



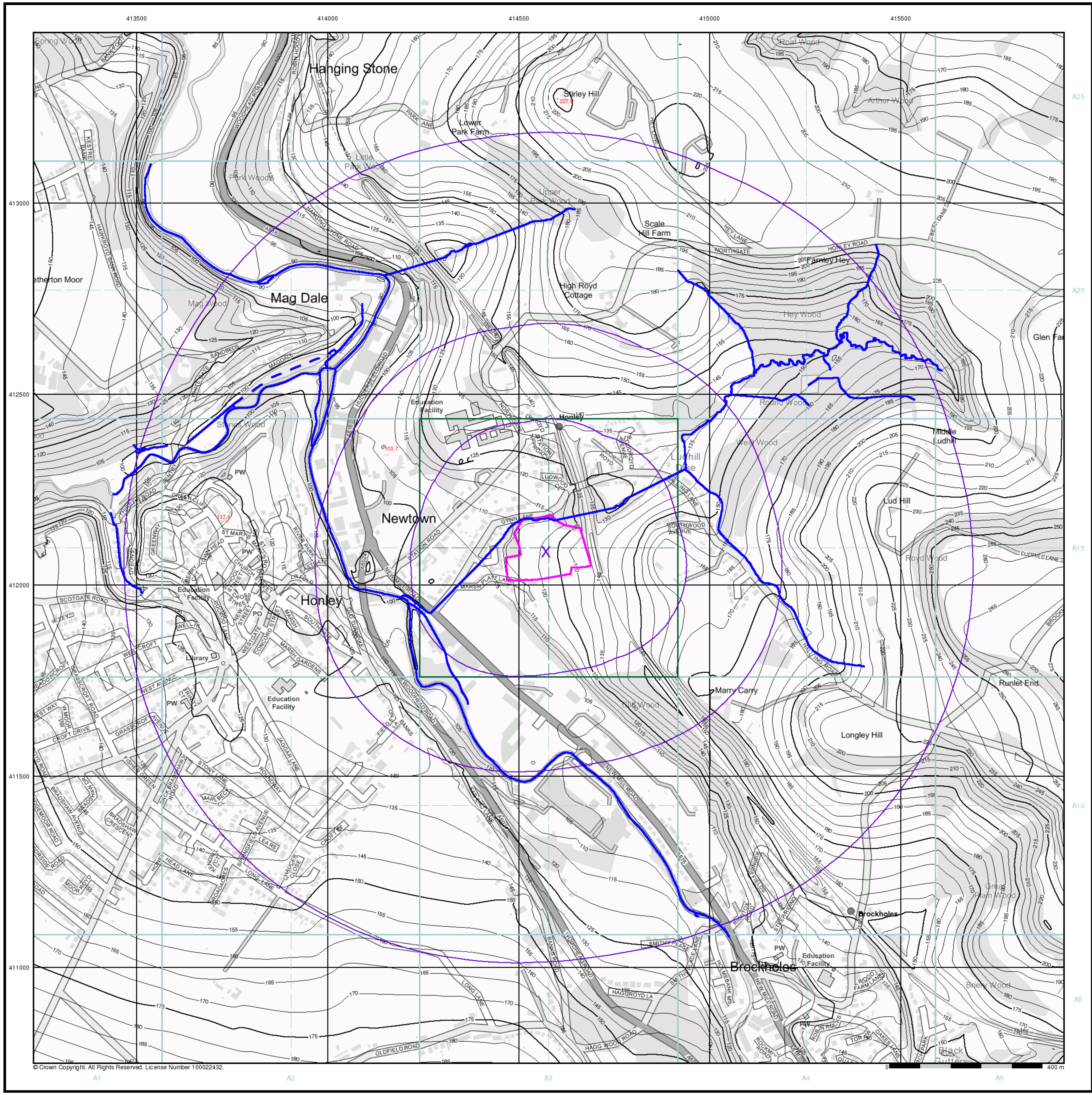
Order Details

Order Number:	347024450_1_1
Customer Ref:	4749
National Grid Reference:	414570, 412090
Slice:	A
Site Area (Ha):	2.71
Search Buffer (m):	1000

Site Details

Gyn Lane, Honley, HD9 6LF

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



General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

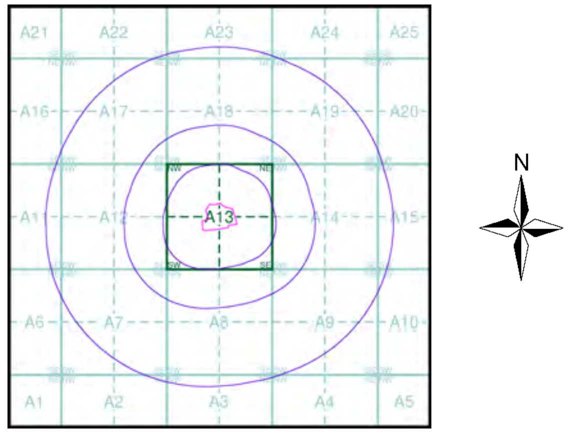
OS Water Network Data

- Canal
- Reservoir
- Foreshore
- Marsh
- Tidal River
- Inland River
- Drain
- Other
- Lake
- Transfer
- Lock Or Flight Of Locks
- Sea

Contours (height in meters)

- Standard Contour
- Master Contour
- Spot Height 167.3
- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



Order Details

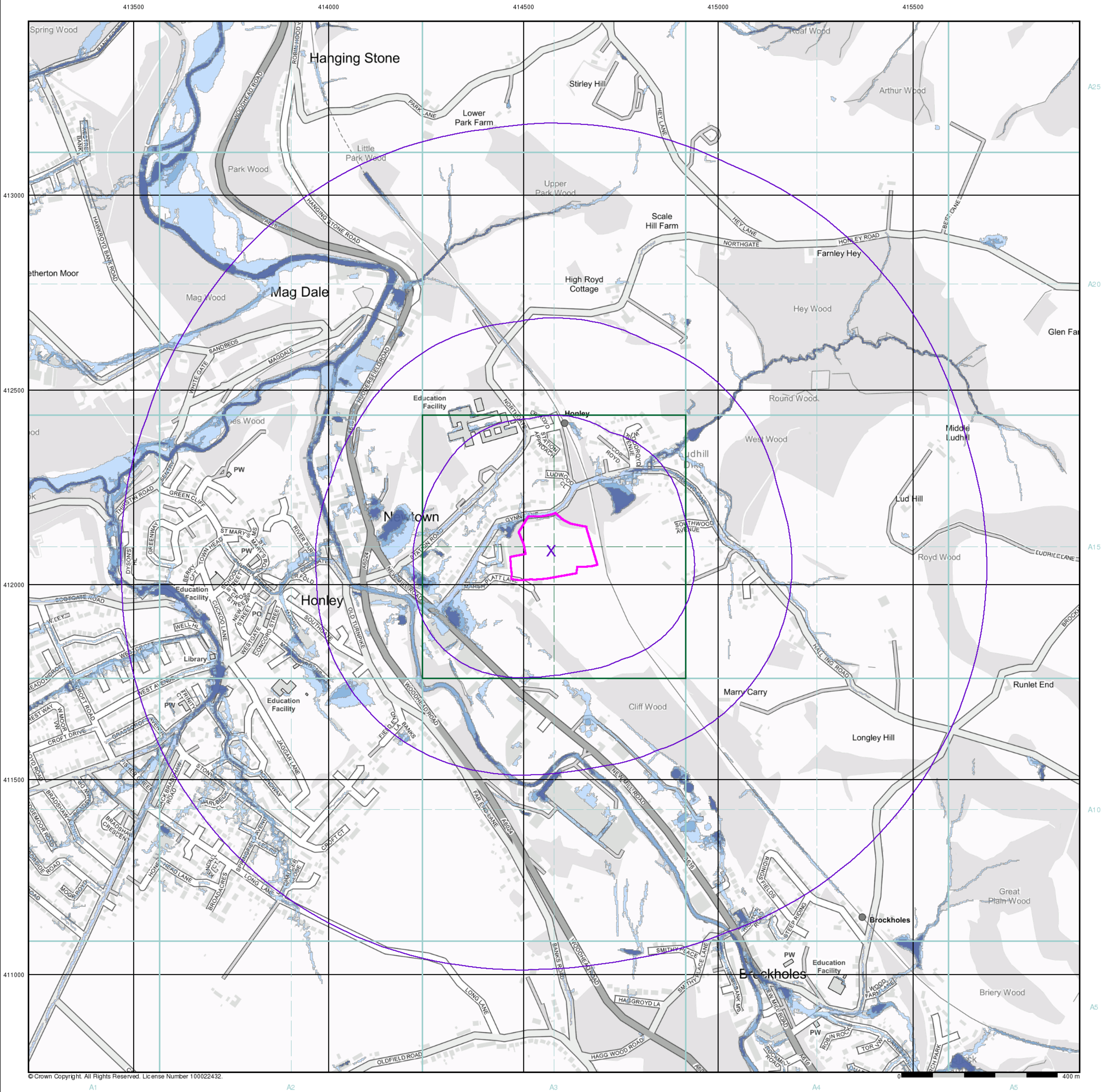
Order Number:	347024450_1_1
Customer Ref:	4749
National Grid Reference:	414570, 412090
Slice:	A
Site Area (Ha):	2.71
Search Buffer (m):	1000

Site Details

Gyn Lane, Honley, HD9 6LF

Landmark INFORMATION GROUP

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



LITHOS CONSULTING

General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

Risk of Flooding from Surface Water

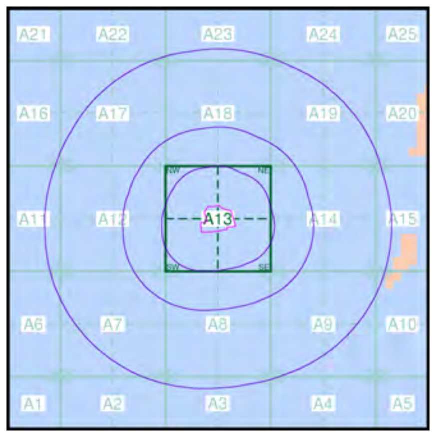
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

EA/NRW Suitability Map - Slice A



N

Order Details

Order Number: 347024450_1_1
Customer Ref: 4749
National Grid Reference: 414570, 412090
Slice: A
Site Area (Ha): 2.71
Search Buffer (m): 1000

Site Details

Gyn Lane, Honley, HD9 6LF

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

Landmark INFORMATION GROUP

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

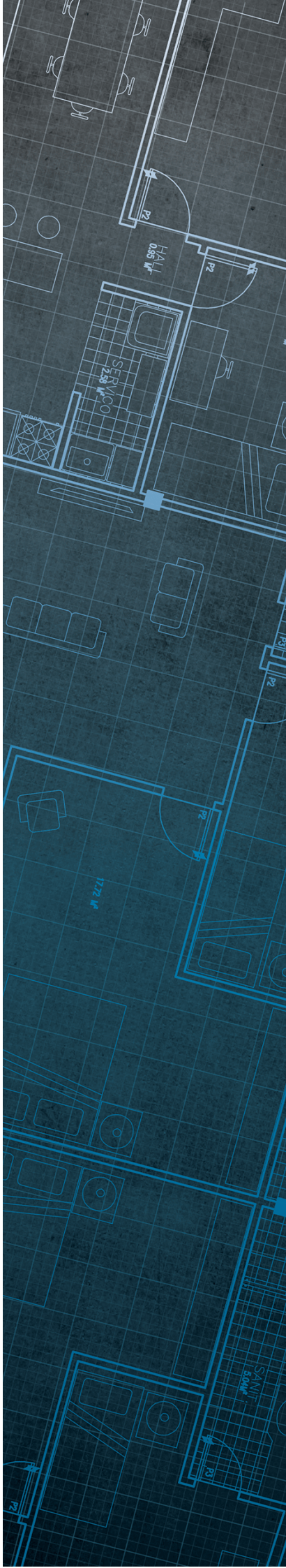
The Coal Authority

Consultants

Coal Mining Report

Gynn Lane
Honley
HD9 6LF

Date of enquiry:	**16 May 2024**
Date enquiry received:	**16 May 2024**
Issue date:	**16 May 2024**
Our reference:	**51003425103001**
Your reference:	**PO22395/4749/CH**



Consultants

Coal Mining Report

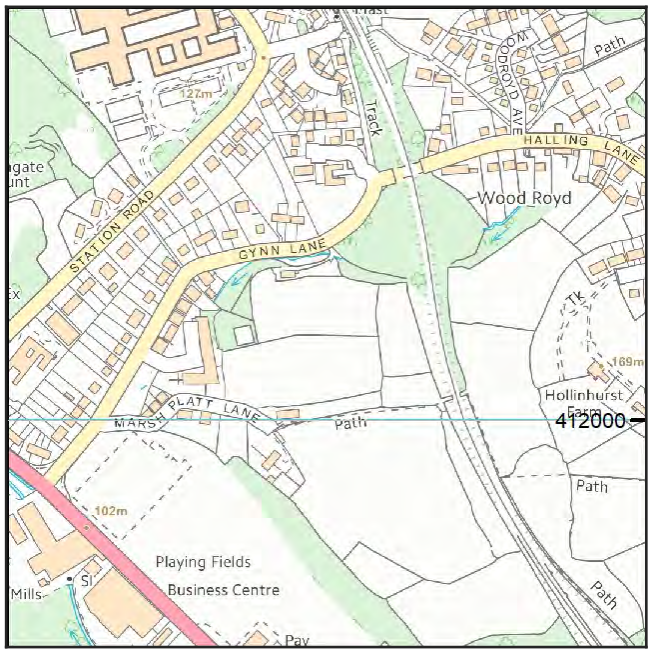
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

LITHOS CONSULTING

Enquiry address

Gynn Lane
Honley
HD9 6LF



Approximate position of property

Map data

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

Ordnance Survey Licence number: 100020315

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

Section 1 – Mining activity and geology

Past underground mining

No past mining recorded.

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

Distance to spine roadway (m)	Direction to spine roadway
Within	N/A
Within	N/A

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Adit	414411-001	414581 411939		Coal	
Shaft	414412-009	414483 412074		Coal	
Adit	414412-010	414450 412060		Coal	
Adit	414412-011	414618 412157		Coal	
Adit	414412-014	414755 412031		Coal	

Abandoned mine plan catalogue numbers

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

PO0	M185	

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
HALIFAX SOFT	Coal	Yes	Within	N/A	309
MIDDLE BAND	Coal	Yes	Within	N/A	180

Copyright © 2024 The Coal Authority

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Copyright © 2024 The Coal Authority

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.

Copyright © 2024 The Coal Authority

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.

Copyright © 2024 The Coal Authority

Section 4 – Further information

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

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.

Copyright © 2024 The Coal Authority

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.

Copyright © 2024 The Coal Authority

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.

Copyright © 2024 The Coal Authority

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.

Copyright © 2024 The Coal Authority

The Coal Authority

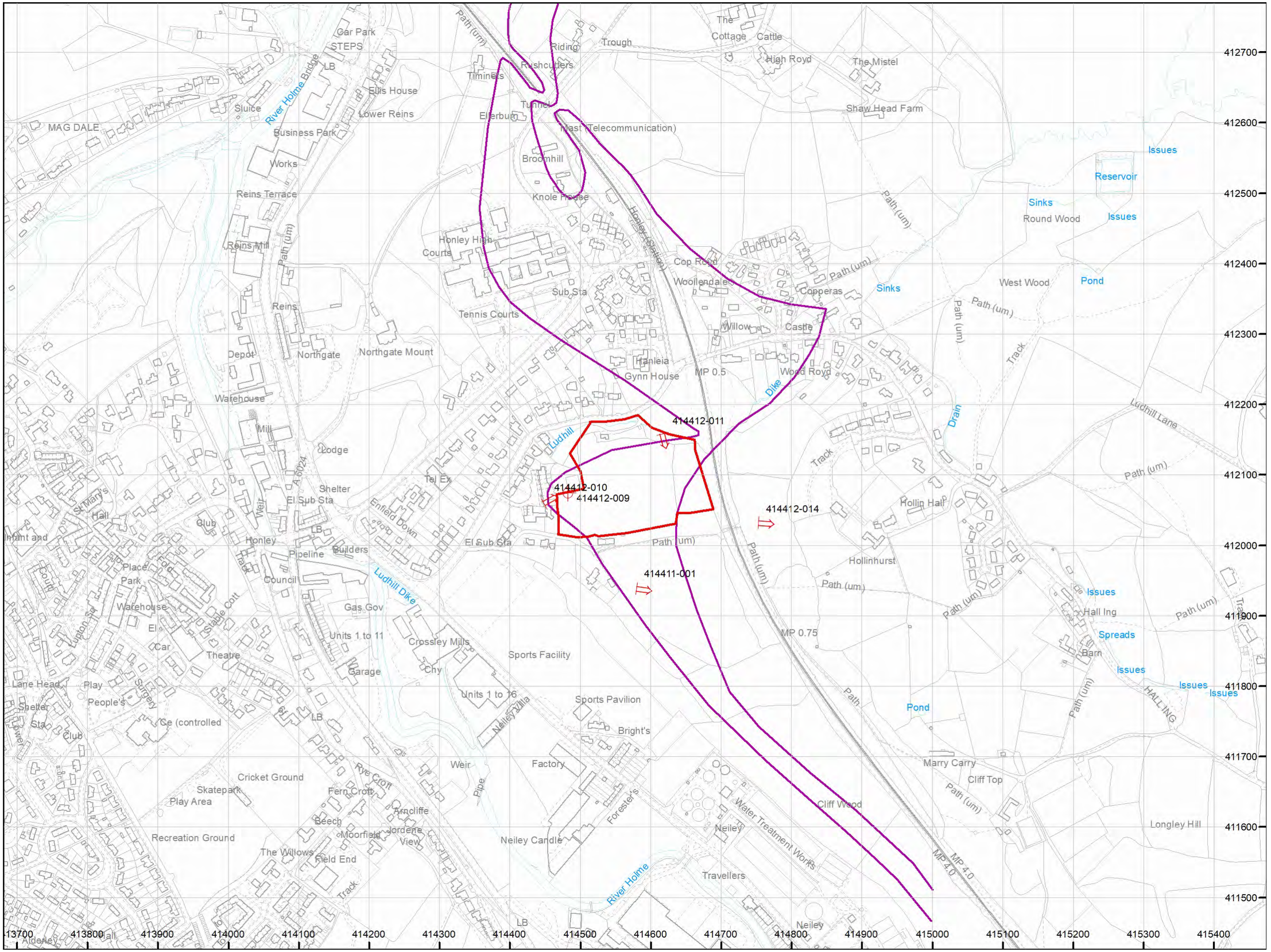
Summary of findings

Reproduced by permission of Ordnance Survey on behalf of HMSO.
© Crown copyright and database right 2018. All rights reserved.
Ordnance Survey Licence number: 100020315

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
- Disused adit
- Outcrop (Proven)



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