GEOENVIRONMENTAL DESK STUDY REPORT

Ferrand Lane
Gomersal
BD19 4SB

Reference	**MT/DS/4730.v3**
Date	**December 2015**
Version	**3**

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CONTENTS

APPENDICES

CONFIDENTIALITY STATEMENT

This report is addressed to and may be relied upon by the following party:

KCS Development Ltd
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Goodbard House
15 Infirmary Street
Leeds, LS1 2JS

This report has been prepared for the sole use and reliance of the above named party. This report shall not be relied upon or transferred to any other parties without the express written authorisation of JPG (Leeds) Limited. No responsibility will be accepted where this report is used, either in its entirety or in part, by any other party.

DOCUMENT HISTORY

VERSION	PURPOSE/DESCRIPTION	DATE
1	Final – For issue to Client	November 2015
2	Final – For issue to Client	November 2015
3	Final – For issue to Client	December 2015

1.0 INTRODUCTION

1.1 Instruction

JPG (Leeds) Limited (JPG) has been instructed by KCS Development Ltd to carry out a geoenvironmental desk study for a proposed residential development at Ferrand Lane, Gomersal.

1.2 Objectives

The objective of the geoenvironmental desk study is to identify potential geotechnical and environmental issues that may represent constraints to the proposed redevelopment of the site.

1.3 Scope of Works

The scope of works for the desk study included the following:

- Site inspection and description.
- Review of any previous reports provided.
- Review of contemporary and historical Ordnance Survey publications.
- Consultations with regulatory authorities where appropriate.
- Review of geological publications.
- Review of the radon status of the site.
- An environmental database search.
- Outline qualitative environmental risk assessment.
- Preliminary recommendations with respect to foundations, ground floor and pavement design.
- Recommendations for further work where appropriate.
- Presentation of the findings in a tabular non-technical summary.

1.4 Location

The site is a large parcel of land comprising agricultural fields adjacent to Ferrand Lane, Gomersal. The approximate centre of the site is located at NGR 420315,426328. A site location plan is given as Figure 1 in Appendix A.

1.5 Site Description and Topography

A site inspection has been carried out by staff from JPG during November 2015.

The site was irregular in shape and covers an area of approximately 3.8ha.

Access to the site can be made from several points on Ferrand Lane.

The site is currently grazing land for horses comprising four separate fields and bounded by residential properties to the south and east and agricultural fields to the north and west. In the north eastern field includes stables for the horses.

The site had an undulating and locally hummocked profile, which was most prominent in the south and east and generally sloped down to the north west. The site was at a higher elevation to Ferrand Lane at several points and a shallow ditch ran along much of the northern boundary.

Most of the site has a cover of short grass with mature trees and bushes along the field boundaries. Throstle Nest Farm was present at the north west corner of the site which was utilised by commercial plant vehicles. An above ground fuel tank was noted in the field at the north western boundary, along with some agricultural equipment.

An aerial photograph of the site is presented as Figure 2 and selected photographs of the site are presented in Appendix B.

1.6 Previous Reports

There were no previous reports available.

1.7 Development Proposals

It is proposed to redevelop the site for a residential end use.

A proposed site layout plan has been provided. This is referenced below and a copy is presented in Appendix A.

- Ellis Healey Architecture. May 2014. Proposed Development Land at Ferrand Lane Gomersal. Proposed Site Plan. Drawing no. 1332 SK 02 A.

1.8 Limitations

The general limitations to the nature of the investigation are outlined in Appendix E.

2.0 SITE HISTORY

Historical plans for the site were obtained from GroundSure (GS). These have been reviewed in order to establish any former uses of the site and identify any potentially contaminative historical uses or potential geotechnical constraints to development.

A summary of the relevant map information is presented in Table 2 and copies of relevant plans are contained in Appendix C.

Table 2 – Summary of Relevant Historical Map Information

Date(s) & Scale	Feature
1854 1:10,560	**The site was undeveloped fields.** The surrounding land was largely agricultural land. Cliffe Lane forms much of the southern site boundary and Ferrand Lane to the north.
1892 1:10,560 1894 1:2,500	**West Lane Colliery is marked at the eastern site boundary with excavations marked at the site.** West Lane Colliery buildings are marked at the eastern site boundary. A Methodist chapel and burial ground is marked approximately 20m north east of the site. Bawson Cliffe and its landscaped gardens is marked at the south west corner of the site.
1905 1:10,560 1908 1:2,500	**An old shaft is marked at the north east of the site.** West Lane Colliery and its buildings are no longer shown. Several separate excavations are shown approximately 120m north of the site. Gomersal Tunnel is shown approximately 150m north of the site.
1922 1:2,500	**No significant changes are shown on or beyond the site.**
1932 1:10,560 1938 1:2,500	**No significant changes are shown on the site.** Residential type properties at Cliffe Mount are marked immediately south east of the site. Gomersal Mills, a large building, is marked approximately 200m south of the site.
1938 1:10,560	**No significant changes are shown on or beyond the site.**
1948 1:10,560	**No significant changes are shown on or beyond the site.**
1955 1:10,560 1956 1:2,500	**No significant changes are shown on the site.** Residential type properties are marked along the southern boundary of the site.
1967 1:2,500 1967 1:10,560	**No significant changes are shown on or beyond the site.**
1974 1:10,000 1974 1:1,250	**No significant changes are shown on or beyond the site.**
1985 1:10,000	**No significant changes are shown on or beyond the site.**
1993 1:1,250 1994 1:10,000	**No significant changes are shown on the site.** Latham Farm is marked approximately 100m north of the site.
2002 1:10,000	**No significant changes are shown on or beyond the site.**
2010 1:10,000	**No significant changes are shown on or beyond the site.**
2014 1:10,000	**No significant changes are shown on or beyond the site.**

3.0 SITE SETTING

3.1 Geology

The GS report and the following geological publications have been consulted:

- British Geological Survey, Geological mapping, Sheet No: 77. Huddersfield. 1:50,000 Scale.
- British Geological Survey. 1:10,000 Series. Sheet SE22NW. Birstall. Solid and Drift Edition.

The geological map shows most of the site to be underlain by bedrock strata of the Pennine Lower Coal Measures Formation which comprise a sequence of interbedded sandstone, mudstone and siltstone. The Lepton Edge Rock, which is sandstone, outcrops over the east and part of the south west of the site.

The Middleton Little coal seam is inferred to cross the north west of site trending from south west to the north east and will underlie the site at shallow depth. Further coal seams underlie the site at greater depths. The sequence and the range of thickness for each seam is recorded as follows:

- Middleton Little Coal – 0.3 to 0.9m.
- Un-named coal – 0.0 to 0.1m.
- Un-named coal – 0.0 to 0.2m.
- Middleton Main Coal – 0.7 to 1.4m.
- Wheatley Line Coal – 0.6 to 0.7m.
- Middleton Eleven Yard Coal – 0.2 to 0.5m.
- Blocking Rider Coal – 0.0 to 0.2m.
- Blocking Coal – 0.2 to 0.6m.

Areas of ground along the central northern boundary and at the north west boundary are recorded as "possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to the ground, such as drainage or excavations, take place". However the hazard rating is described as "low" and no evidence of instability has been observed at this time.

There were no historical boreholes records available in the vicinity and setting of the site.

3.2 Mining

The Coal Authority interactive map viewer has confirmed that the site is located within a Coal Mining Reporting Area.

A Coal Mining Report has been obtained from the Coal Authority, which states the following:

- According to the available records the property is in the likely zone of influence from workings of coal at shallow depth and in 2 seams of and from 70m to 140m depth, and last worked in 1957. Any ground movement from these coal workings should have stopped by now. In addition the property is in an area where the Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past.
- The property is not in an area for which the Coal Authority has granted or is determining whether to grant a licence to remove coal using underground methods.
- The property is not in the likely zone of influence of any present underground coal workings.
- The property is not in an area that is likely to be affected at the surface from any planned future workings. However, reserves of coal exist in the local area which could be worked at some time in the future.
- There are three known coal mine entries within, or within 20m of, the boundary of the property. They have no records of any treatment details.
- The Authority is not aware of any evidence of damage arising due to geological faults or other lines of weakness that have been affected by coal mining.
- The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.
- The property is not within 800m of the boundary of an opencast site from which coal has been removed by opencast methods.
- The property does not lie within 200m of the boundary of an opencast site from which coal is being removed by opencast methods.
- The property is not within 800m of the boundary of an opencast site for which the Coal Authority is determining whether to grant or has granted a licence to remove coal by opencast methods.
- There is no record of a mine gas emission requiring action by the Coal Authority.
- There are 2 claim(s) within 50 metres of the property boundary that do not match the property address.

A copy of the Coal Mining report is presented in Appendix D.

A shaft plans with data sheets have been obtained from the Coal Authority. These provide the following information on shaft depths:

SHAFT REF	DEPTH	EASTING	NORTHING
420426-006	Unknown.	420279	426308
420426-005	27.9 m	420270	426320
420426-003	91.4 m.	420475	426389

The shaft reference 420426-003 was probably the former West Lane Colliery. The Coal Authority report states that this was searched for by drilling in 1983, but was not found and they have no record of any treatment.

The GS report contains a "Ground Workings Map" which records that part of the eastern area of the site is underlain by historic underground workings. The area is shown to extend from the eastern boundary, where the old colliery was located, towards the west and the central area of the site. These records do not give an indication of the depth of the workings.

3.3 Hydrogeology

The underlying bedrock is identified as a Secondary A Aquifer. These are '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'.

There are two recorded groundwater abstractions within 1km of the site. These both relate to two boreholes located 207m south of the site for Gomersal Mills Ltd recovering water for general use.

There are no recorded potable water abstraction licence within 1km of the site.

The site does not lie within 500m of an Environment Agency Groundwater Source Protection Zone.

3.4 Hydrology

The nearest watercourse is an unnamed tertiary river located approximately 175m to the north west of the site.

There were no active licensed discharge consents to controlled waters within 500m of the site and there are no surface water abstractions within 500m.

Information on the EA website and presented in the GS report indicates that the site is not within an Environment Agency Zone 2 and Zone 3 floodplain.

There are BGS groundwater flooding susceptibility areas within 50m of the site. This classification is based on the limited geological information available to the BGS for the site at the present time. The susceptibility and the risk of groundwater flooding occurring at the site should be reassessed based on site specific information.

A flood risk assessment may be required by the Local Authority as part of any planning application for the site.

3.5 Pollution Incidents

There are no List 1 or List 2 recorded pollution incidents within 500m of the site.

3.6 Landfills and Waste

The GS report includes information on active and former landfill sites supplied by the Environment Agency, Landmark, Local Authority and the BGS.

There was one record of historic landfill sites within 500m of the site. The first was located 173m north west of the site and described as Land to the North of Cliffe Lane Gomersal, Dismantled Railway, Cleckheaton. The license was issued in 1997 and revoked in 1994 recording the waste received as inert and commercial. The second was located at Nibshaw Lane, 464m south of the site and the waste received was recorded as inert and commercial.

There is one record of waste treatment, transfer or disposal sites within 500m of the site. The record relates to a waste recycling centre at 100, Cliffe Lane, Gomersal, Cleckheaton, West Yorkshire, BD19 4EX, with a permit issued in October 1998.

3.7 Environmental Permits, Incidents and Registers

There are no records of any historic Integrated Pollution Control (IPC) Authorisations within 500m of the site.

There are no records of any Integrated Pollution Prevention and Control (IPPC) Authorised Activities within 500m of the site.

There are no records of Part A(1) authorised activities within 500m of the site.

There are no active or historic Part A(2) permitted activities (potential to cause air pollution) within 500m of the site.

There are no Part B Permitted Activities (potential to cause air pollution) within 500m of the site.

There are no records of Water Industry Referrals (potentially harmful discharges to the public sewer) or Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the site.

There are no records of any Category 3 or 4 Radioactive Substances Authorisations within 500m of the site.

There are no active recorded Control of Major Accidents Hazard (COMAH) or Notification of Installations Handling Hazardous Substances (NIHHS) sites within 500m of the site.

There are no sites determined as Contaminated Land under Part IIA EPA 1990 within 500m of the site.

3.8 Radon Risks

The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level. On this basis, no radon protective measures would be required in the construction of new dwellings or extensions to buildings.

3.9 Current Land Use

Current land uses identified within 100m of the site included Pest and Vermin Control at the site (Sykes Pest Control); Industrial Features, and Infrastructure and Facilities.

3.10 Petrol and Fuel Sites

There are no active petrol filling station or fuel sites within 500m of the site.

4.0 ENVIRONMENTAL RISK ASSESSMENT

4.1 Introduction

The statutory definition of contaminated land is given in the Environmental Protection Act, Part IIA, Section 78, 1990 which was introduced by the Environment Act, Section 57, Department of Environment, 1995 and is defined as:

Land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, or under the land that:

- Significant harm is being caused, or there is a significant possibility of such harm being caused, (where harm is defined as harm to health of living organisms or other interference with the ecological systems of which they form a part and, in the case of man, includes harm to his property); and/or
- Significant pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused (by the land).

The presence of contaminated materials on a site is generally only of concern if an actual or potentially unacceptable risk of harm exists. The potential for harm to occur requires three conditions to be satisfied:

- Presence of substances (potential contaminants/pollutants) at concentrations that may cause harm (Sources).
- The presence of a receptor which may be harmed, e.g. the water environment or humans, buildings, fauna and flora (Receptors).
- The existence of a linkage between the Source and the Receptor (Pathway).

In order to assess the contamination risk at the site, the above rationale has been applied and is discussed in the context of Contamination Sources and Potential Pollutant Linkages.

4.2 Potential Sources

Based on a review of the desk study information, the following potentially contaminative sources may be present on or adjacent to the site:

- Made ground associated with the colliery (on-site and off-site).
- Hazardous gases associated with the made ground (on-site and off-site).

Potential contaminants which could be present on and beneath the site are listed below:

- Metals, metalloids and their compounds.
- Inorganic compounds.
- Organic compounds, e.g. hydrocarbons (fuels, oils) including PCB's.

- Polycyclic Aromatic Hydrocarbons (PAH).
- Hazardous Gases/Soil Vapours.
- Asbestos.

4.3 Potential Pathways

Based on the site in its current condition, the following potential exposure pathways require consideration:

- Ingestion and dermal contact with contaminated soil and groundwater.
- Inhalation of hazardous gases/soil vapours.
- Leaching/migration of contaminants into surface water and groundwater via surface and groundwater flow.
- Permeation of water supply pipes and other services by organic and aggressive contaminants; and
- Uptake of contaminants by planting.

4.4 Potential Receptors

The potential receptors considered are:

- Development workers and future maintenance workers involved in excavations, e.g. foundations or where services are being installed or repaired following development:
- Future end users of the site, e.g. residents, employees.
- The underlying groundwater and surface water.
- Buildings and services; and
- Planting in residential gardens and landscape areas.

4.5 Pollutant Linkage Assessment

A potential pollutant linkage assessment has been completed and is summarised in the Conceptual Site Model which is presented as Figure 3 in Appendix A. This is based on the proposed redevelopment of the site for a residential end use.

On the basis of the proposed end use and known history of the site, the following potential pollutant linkages may be present:

- Development and maintenance workers and site end users, e.g. residents and employees, could come into contact with soils containing elevated concentrations of potential contaminants and hazardous gases.

- Any underlying groundwater or surface water could become contaminated due to the leaching and migration of mobile contaminants from within the made ground.
- Buildings and services could be affected by potential contaminants in the made ground; and
- Planting in residential gardens and plants in landscape areas could be affected by phytotoxic elements within the made ground.

These are based on current site conditions and do not consider exposure pathways following any remediation of the site.

If the site can be shown to pose no "significant harm" or pollution to controlled waters or other receptors, then the site can be considered to be uncontaminated.

4.6 Risk Classification

Based on the potential pollutant linkages present, the site should be considered to be a moderate risk with respect to contamination. This designation will be largely dependent on the nature of any made ground present on or adjacent to the site.

In order to fully assess and classify the risks to human health, any underlying perched groundwater, surface water and buildings/services, a Phase 2 intrusive investigation, including chemical testing of soils and groundwater and gas monitoring would be required.

5.0 PRELIMINARY ENGINEERING ASSESSMENT

5.1 Development Proposals

It is proposed to redevelop the site for a residential end use.

A proposed site layout plan has been provided. This is referenced below and a copy is presented in Appendix A.

- Ellis Healey Architecture. May 2014. Proposed Development Land at Ferrand Lane Gomersal. Proposed Site Plan. Drawing no. 1332 SK 02 A.

5.2 Foundations

Any made ground is likely to be unsuitable for the support of structural loads due to variations in material properties. If shallow spread foundations were to be used, the made ground would become over-stressed, leading to significant settlements. Foundation loads will require transferring to natural strata of suitable bearing capacity.

The selection of foundation type for the proposed development would be governed by the thickness of the made ground and the strength and settlement characteristics of the underlying natural strata, which will need to be confirmed.

If the shallow natural strata proves unsuitable, i.e. too weak or compressible, then consideration could be given to the adoption of deeper foundations, such as piles.

The Coal Authority suggest that the known worked coal seams at depth should not affect the stability of the site. Part of the site is also shown to be underlain by historic underground workings. If at shallow depth, these seams may require stabilisation by grouting.

There are records of three former shafts located on site which will require investigation. Final remedial works may require grouting of the shaft and sealing with a concrete cap.

5.3 Ground Floor Construction

The nature and thickness of any made ground and the properties of the natural soils will need to be investigated to determine if ground bearing floor slabs can be used.

5.4 Excavations

Excavations through any made ground and drift deposits may be unstable in the long term and temporary side support is likely to be required.

5.5 Groundwater

It may be expected that shallow perched groundwater will be encountered within the made ground and any drift deposits. The presence of groundwater would need to be assessed as part of any ground investigation.

5.6 Obstructions

Obstructions within the made ground deposits are considered unlikely.

5.7 Roads, Pavements and Hardstanding Surfaces

It is recommended that at this stage, a conservative bearing value for the subgrade is used, until the nature of the subgrade can be physically assessed.

5.8 Chemical Attack on Buried Concrete

Samples of any made and natural ground should be obtained and submitted to the laboratory for testing in order to assess the sulphate content and acidity and hence the concrete class required for buried concrete.

6.0 FURTHER INVESTIGATIONS

In order to assess the potential environmental and geotechnical constraints to the proposed development. It is recommended that the following investigative works should be carried out:

- Trial pitting in order to assess the shallow ground conditions at the site and confirm the composition, extent, depth and nature of the drift deposits and any made ground.
- Soakaway tests where required for drainage design.
- Cable percussion or window sampling formed boreholes with in situ tests to provide geotechnical information in order to assess the nature of the sub-surface and confirm the depth and distribution of any made ground. These boreholes will also facilitate the installation of gas and groundwater monitoring wells.
- Rotary open hole boreholes to investigate potential instability from past shallow mining.
- Chemical analysis of soil and water samples in order to determine the concentrations of potential contamination on the site.
- Geotechnical testing to classify materials and inform foundation design and chemical testing to determine the Aggressive Chemical Environment for Concrete classification.
- Monitoring of gas and groundwater wells for hazardous gases, methane, carbon dioxide, and oxygen and flow rate to the requirements of the Local Authority.

7.0 CONCLUSION

The site is an area of land comprising agricultural fields which have remained largely undeveloped.

The land is underlain by bedrock strata of the Pennine Lower Coal Measures Formation which comprise a sequence of interbedded sandstone, mudstone and siltstone. Records indicate that former mine shafts are located on or close to the site which will require investigation and treatment works. The site may have been subject to shallow mining of coal, which will also require investigation and may require stabilisation works.

The property is not in a Radon Affected Area and no protective measures would be required.

Based on the past history, made ground may be present on site. Based potential pollutant linkages present on the site, the site should be considered to be a moderate risk with respect to contamination. In order to fully assess and classify the risks to human health, any underlying perched groundwater, surface water and buildings/services, a Phase II intrusive investigation, including chemical testing of soils and groundwater and gas monitoring would be required.

Based on the information obtained as part of this desk study, it is concluded that there are no significant constraints to development.

It is recommended that a ground investigation is carried out to confirm and assess the potential environmental and geotechnical constraints to development.

M Townend
BSc MSc FGS CGeol
For and on behalf of JPG (Leeds) Limited

December 2015

Appendix A Figures/Drawings

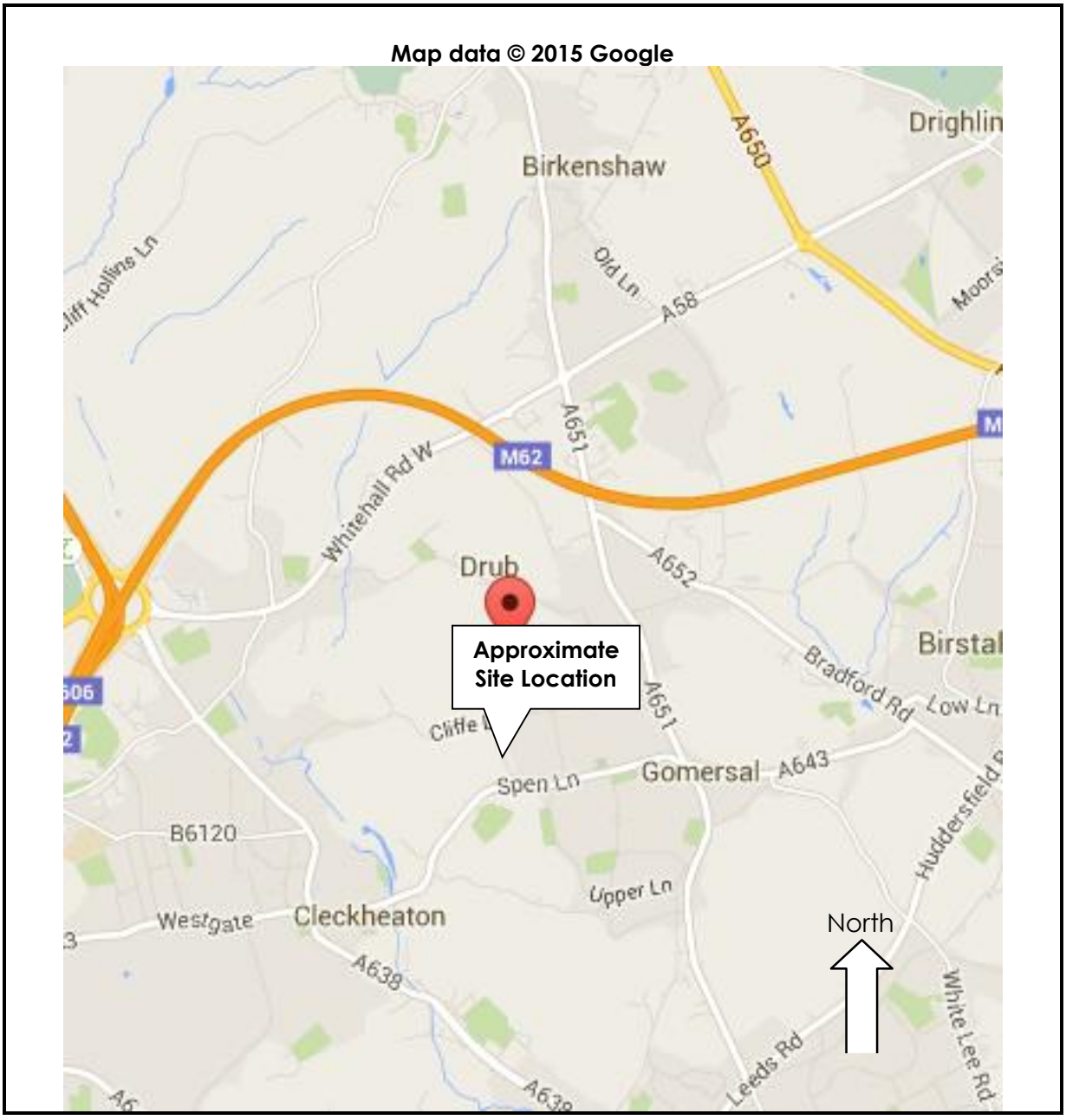


Figure 1 – Site Location Plan	
Site	**Ferrand Lane, Gomersal**
Client	**KCS Development Ltd**
Job Number	**4730**
Scale	**NTS**

Figure 2 – Aerial Photograph	
Site	**Ferrand Lane, Gomersal**
Client	**KCS Development Ltd**
Job Number	**4730**
Scale	**NTS**

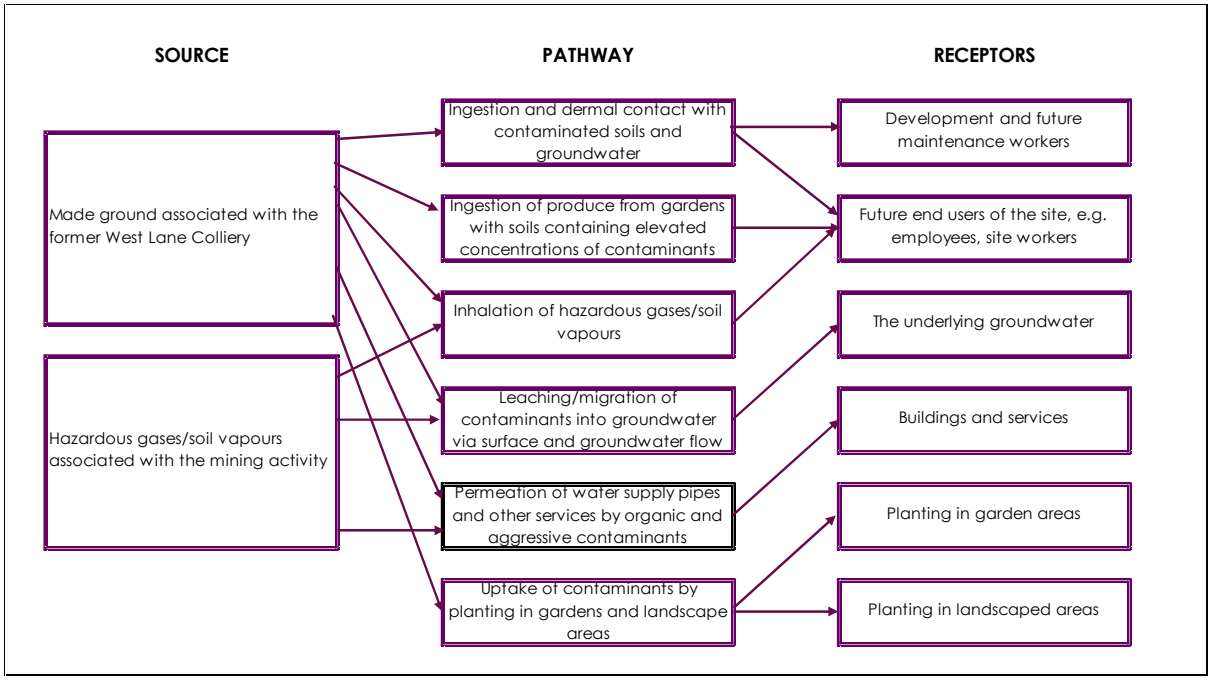


Figure 3 – Conceptual Site Model	
Site	**Ferrand Lane, Gomersal**
Client	**KCS Development Ltd**
Job Number	**4730**
Scale	**NTS**

All site dimensions shall be verified by the contractor on site prior to work commencing

Do not scale from this drawing
Only work to written dimensions

NOTES

Site layout subject to detailed level and topographical review

SCHEDULE OF ACCOMODATION

TYPE 2A - 2 BED SEMI-DETACHED- 646 SQ FT (60 SQ M) 1no. OFF STREET PARKING SPACES	18
TYPE 3A - 3 BED DETACHED - 912 SQ FT (84.7 SQ M) DETACHED GARAGE/OFF STREET PARKING	7
TYPE 3B - 3 BED SEMI-DETACHED - 785 SQ FT (73 SQ M) OFF STREET PARKING	36
TYPE 3C - 3 BED DETACHED - 904 SQ FT (84 SQ M) 2no. OFF STREET PARKING SPACES	7
TYPE 4A - 4 BED DETACHED - 1,237 SQ FT (115 SQ M) DETACHED GARAGE	13
TYPE 4B - 4 BED DETACHED - 1,170 SQ FT (108.7 SQ M) INTEGRAL GARAGE	14
TYPE 4C - 4 BED DETACHED - 1,157 SQ FT (107.5 SQ M) INTEGRAL GARAGE	5
TOTAL NOTE: G.I.A. SHOWN EXCLUDING GARAGE SPACE	100

Rev	Designation	Details of Revision	Date	By/Chk/Sign
A		MINOR AMENDMENTS FOLLOWING COMMENTS.	16.11.15	(DPE)

DRAFT

ellis healey architecture

SKETCH

PROJECT:	PROPOSED DEVELOPMENT LAND AT FERRAND LANE GOMERSAL
TITLE:	PROPOSED SITE PLAN
DRAWING NO:	1332 SK 04 A
BY/CHECKED:	DPE
DATE:	NOV 2015
SCALE @A3:	1:1000

Round Foundry Media Centre, Foundry Street, Leeds, LS11 5QP
Tel: 0113 3944355 E-mail: info@ellishealey.com

Appendix B Site Photographs

Photograph 1: View looking south at the north eastern end of the site.

Photograph 2: View east showing outbuilding at north eastern site boundary

Photograph 3: View looking south from Ferrand Lane

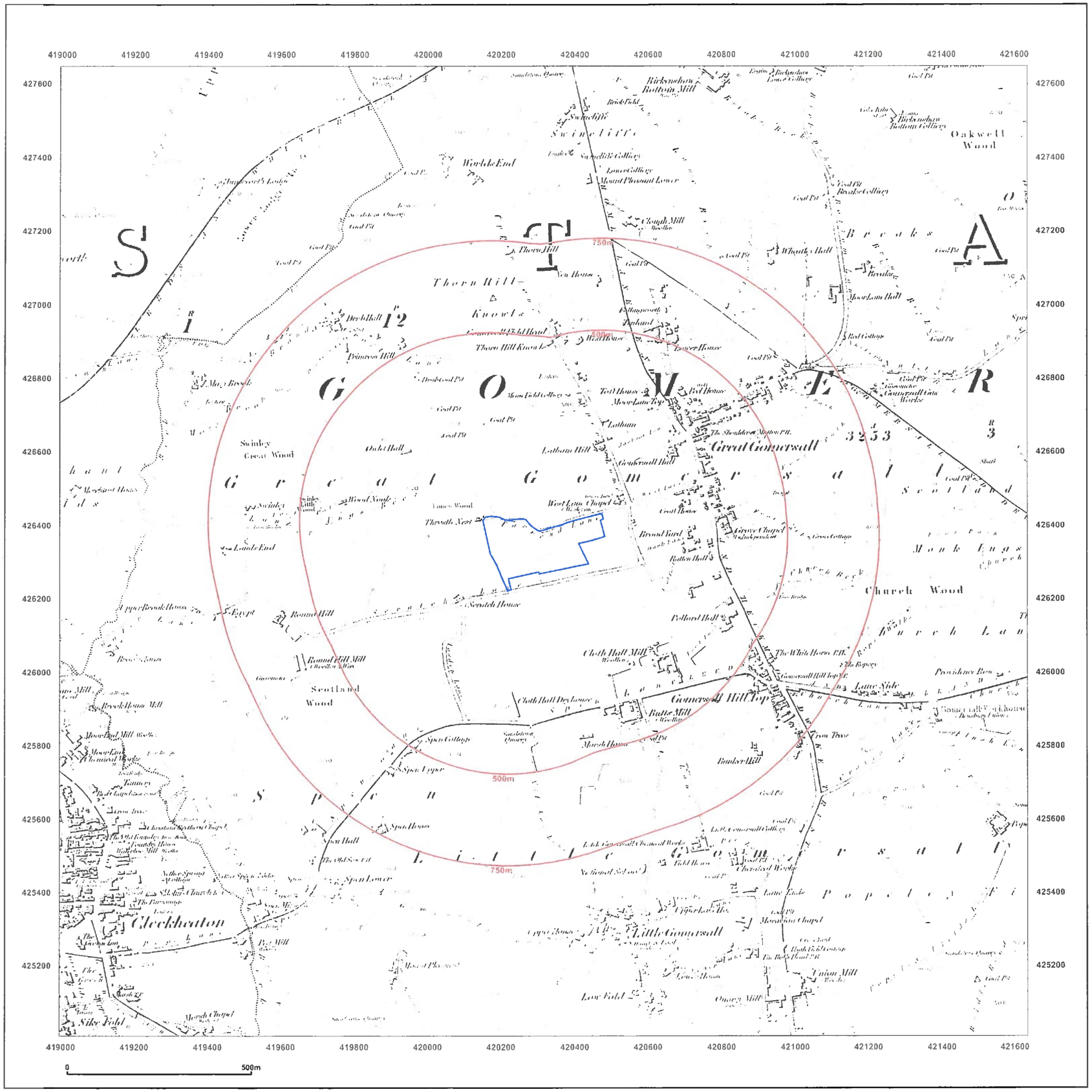
Photograph 4: View looking towards entrance to field north of the site

Photograph 5: View towards Throstle Nest Farm

Photograph 6: View west along Ferrand Lane

Photograph 7: View of Burial Ground to the north east of the site

Appendix C Historical Plans



CENTRE MAPS LIVE.
FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: County Series
Map date: **1854**
Scale: 1:10,560
Printed at: 1:10,560

N
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S

Surveyed 1847
Revised N/A
Edition 1854
Copyright N/A
Levelled N/A

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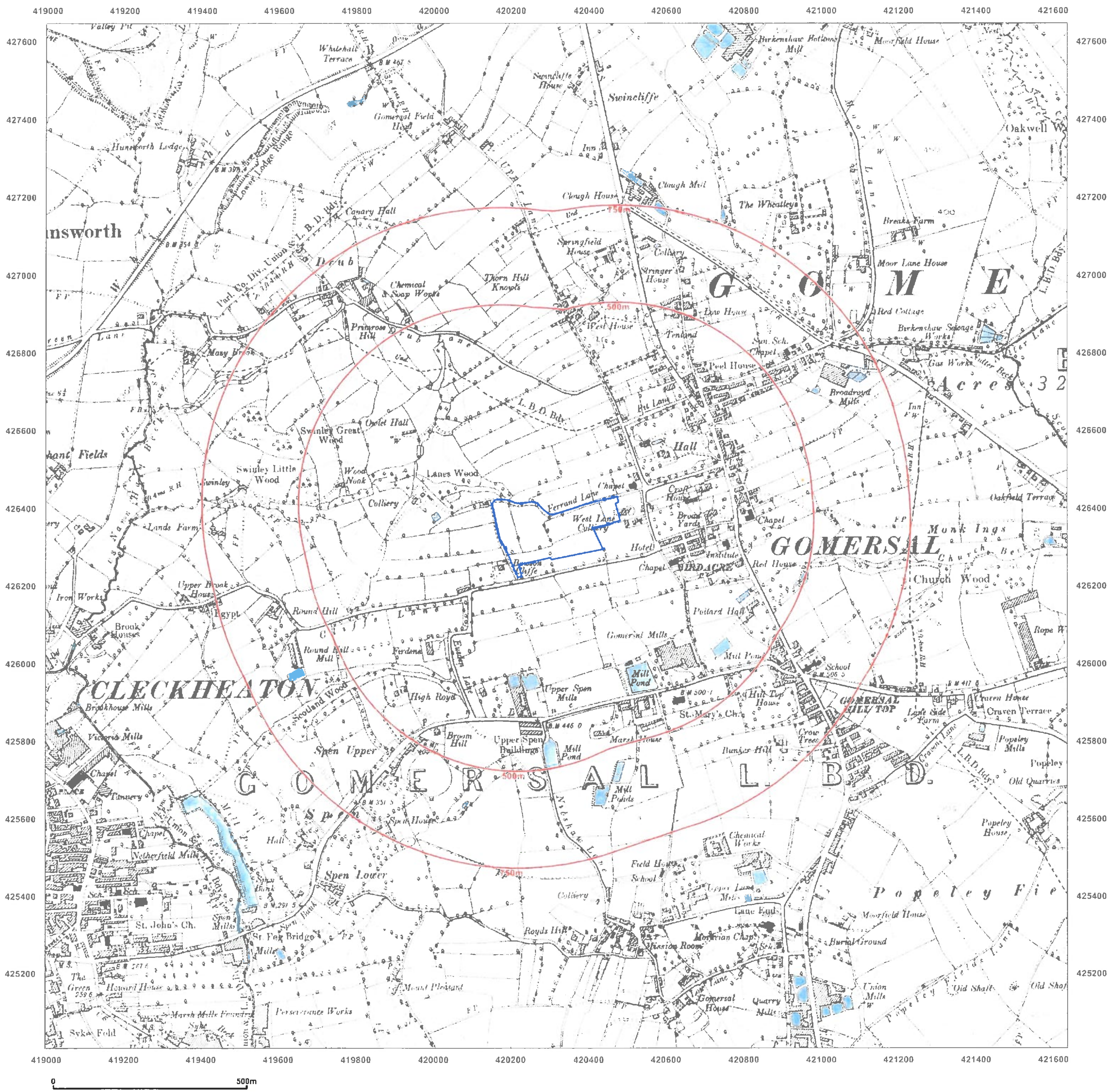
groundsure@centremaps.com

Production date: 03 November 2015

To view map legend click here *Legend*



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Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: County Series

Map date: **1892**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1892
Revised 1892
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1892
Revised 1892
Edition N/A
Copyright N/A
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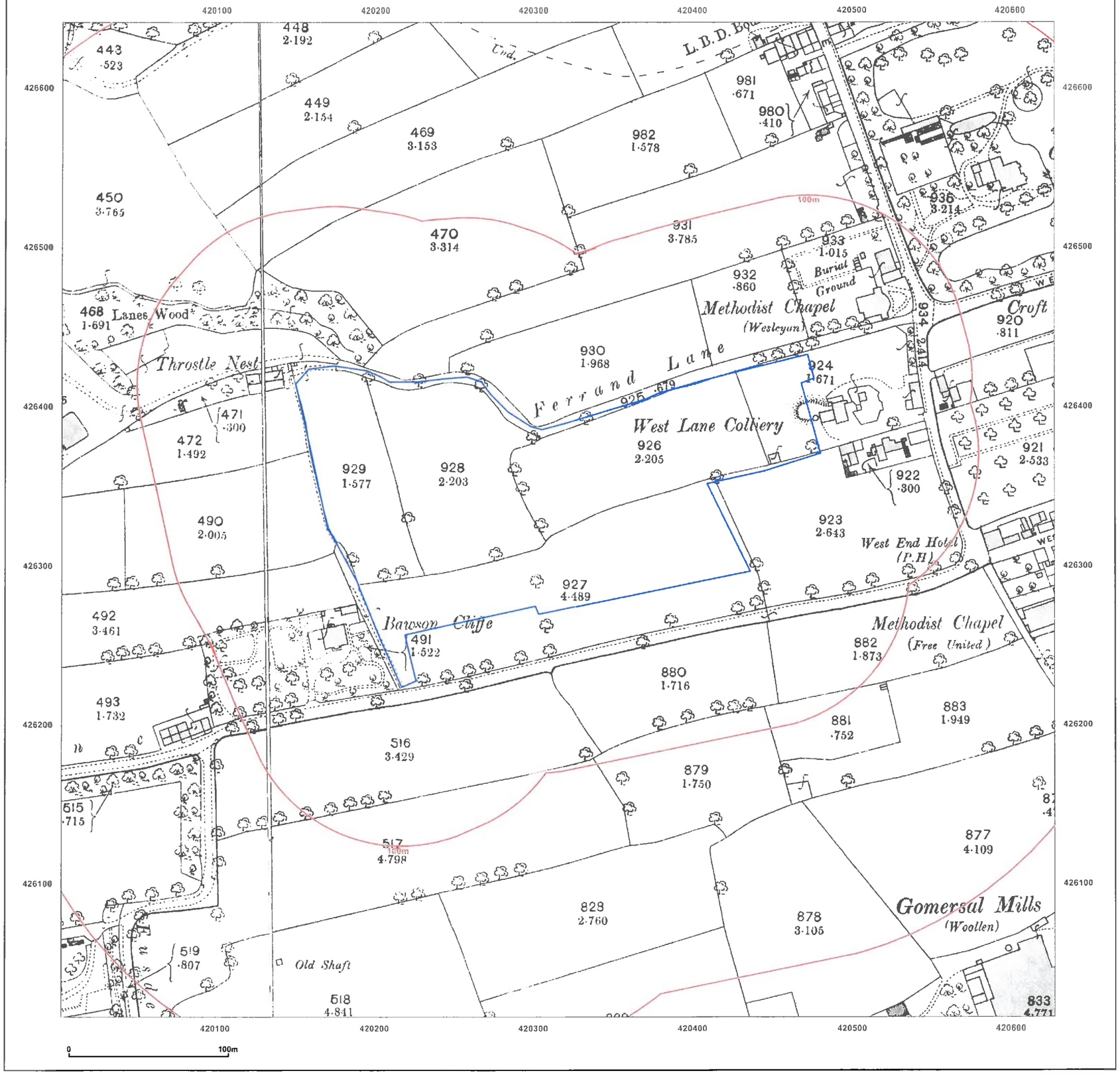
groundsure@centremaps.com

Production date: 03 November 2015

To view map legend click here *Legend*



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FOR A BETTER POINT OF VIEW

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Grid Ref: 420315, 426329

Map Name: County Series
Map date: 1894
Scale: 1:2,500
Printed at: 1:2,500

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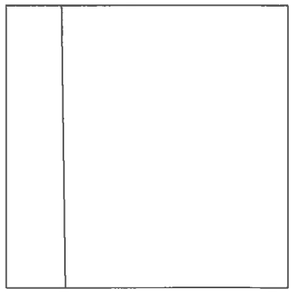

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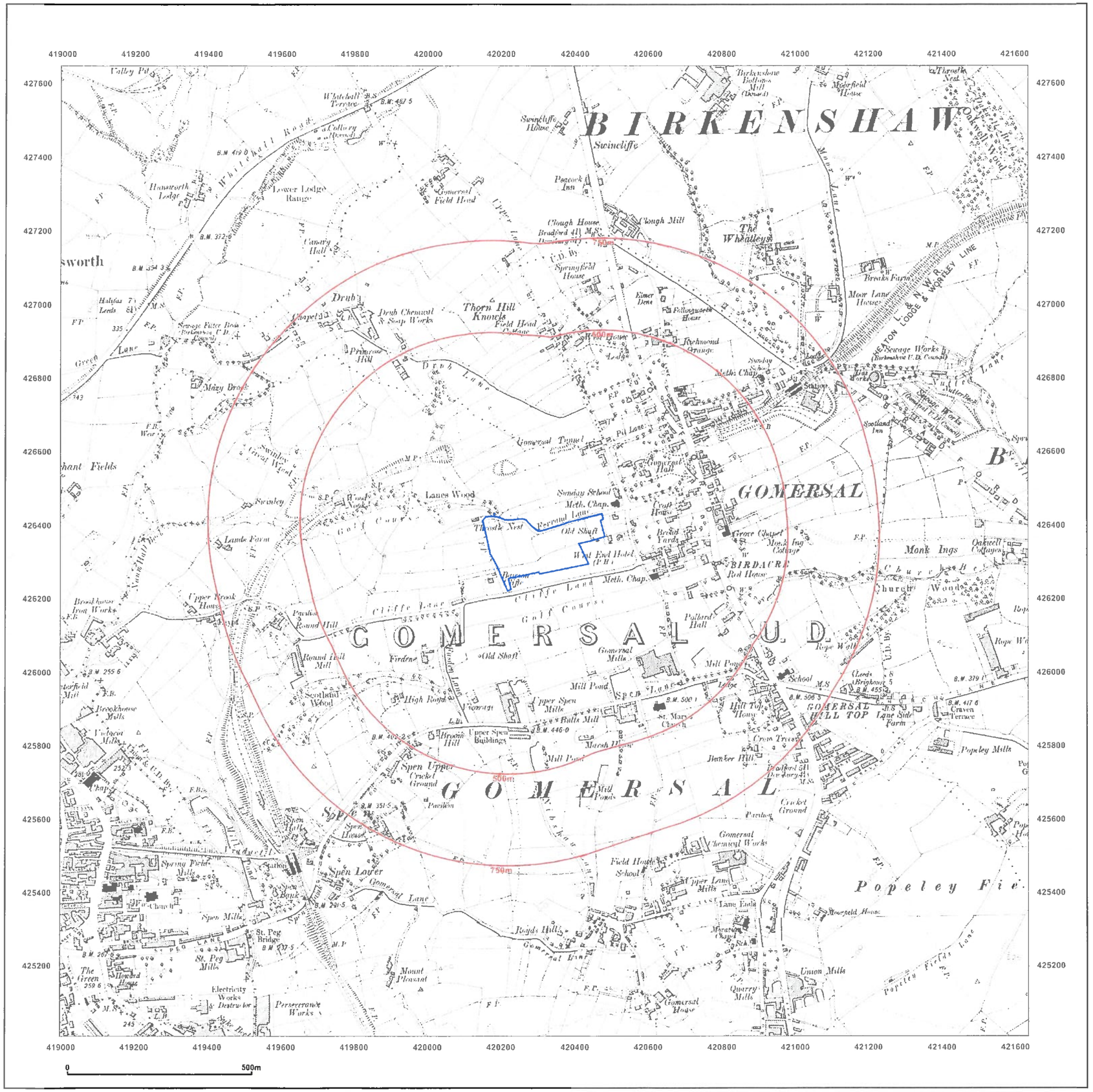
Production date: 03 November 2015

To view map legend click here *Legend*



CENTRE MAPS LIVE.
FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: County Series
Map date: **1905**
Scale: 1:10,560
Printed at: 1:10,560

N
W E
S

Surveyed 1889
Revised 1905
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1889
Revised 1905
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 03 November 2015

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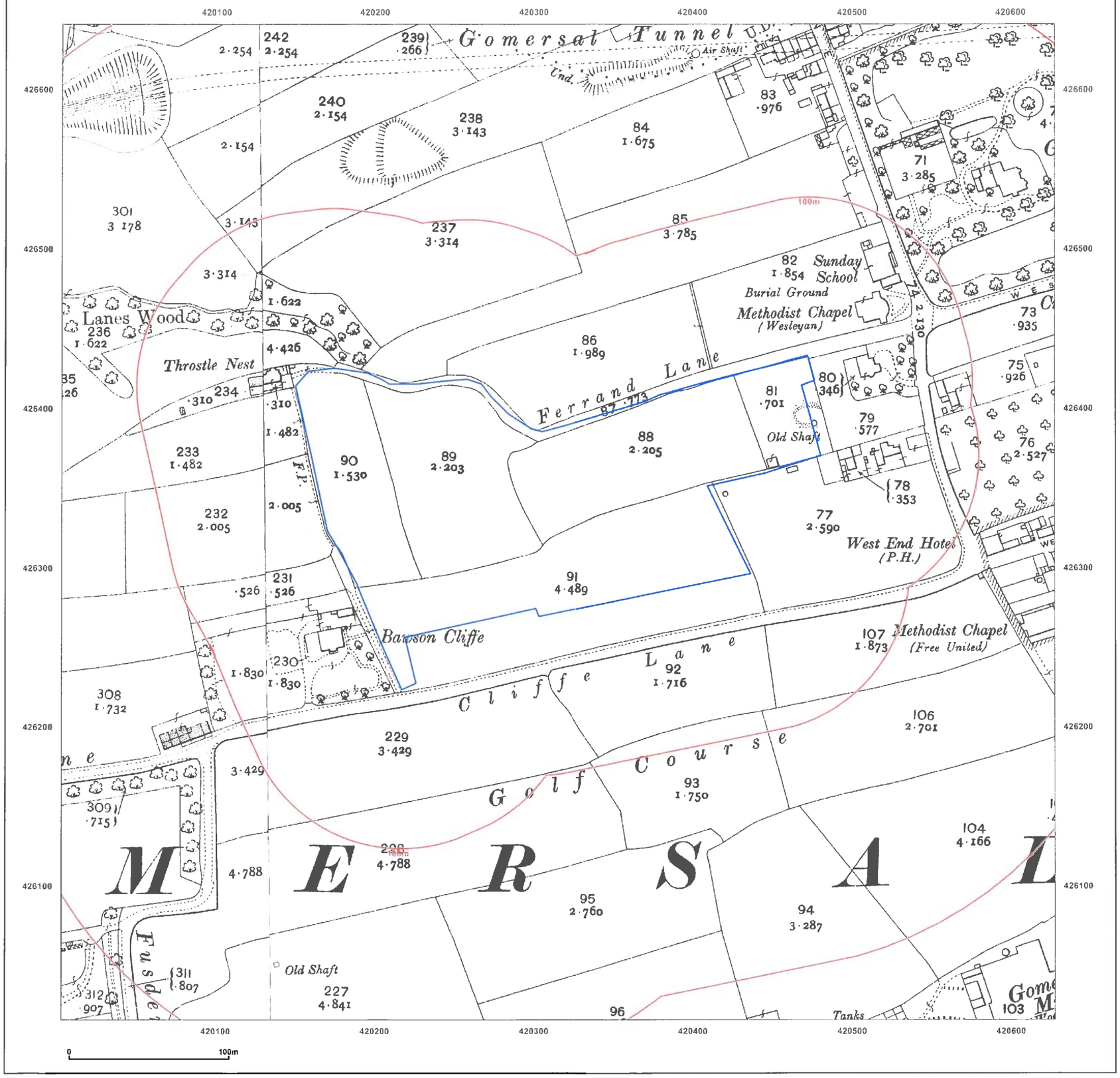

CENTRE MAPS LIVE.
FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: County Series
Map date: 1907-1908
Scale: 1:2,500
Printed at: 1:2,500

N
W E
S

Surveyed 1907
Revised 1907
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1908
Revised 1908
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 03 November 2015

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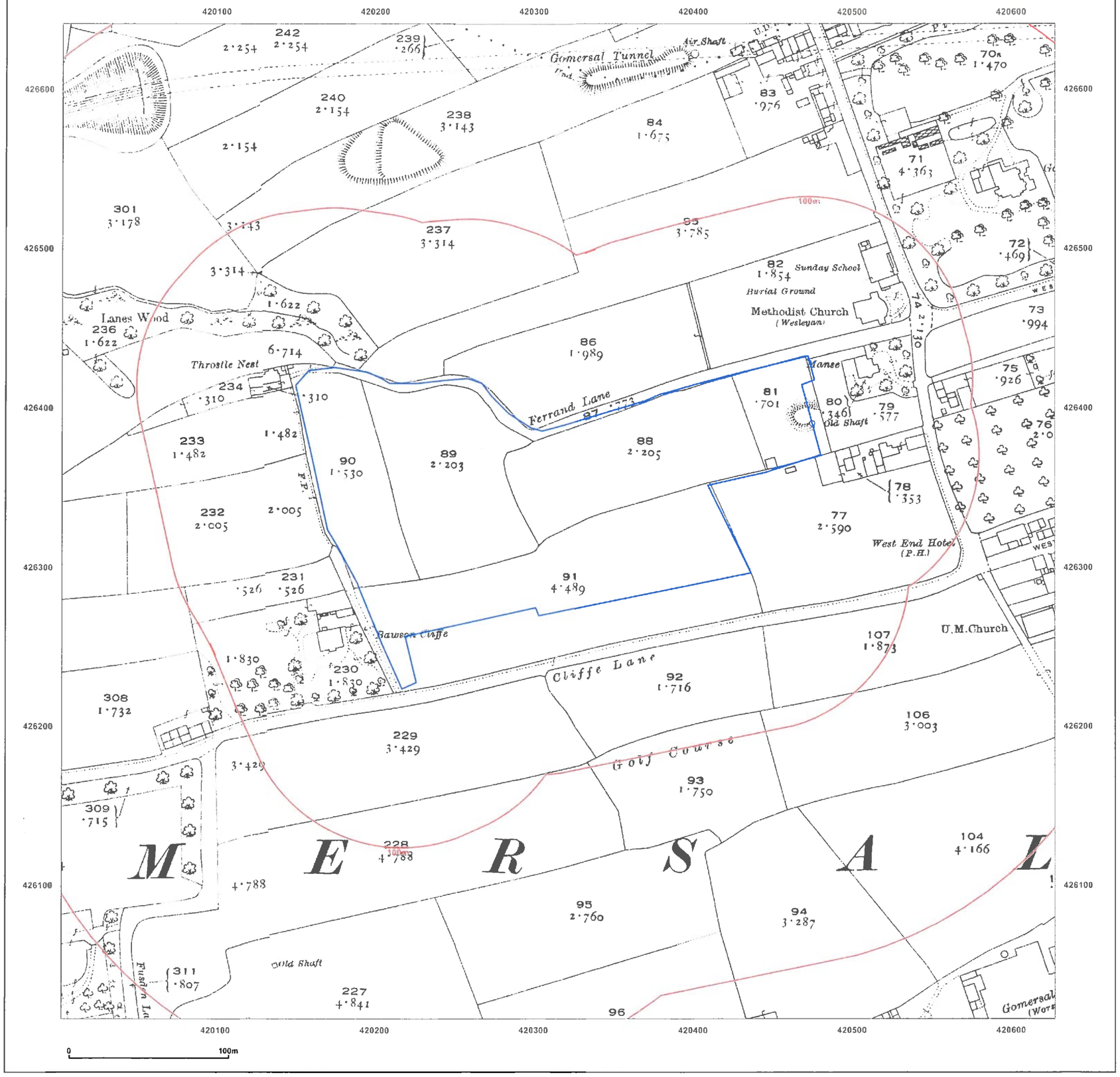


CENTRE MAPS LIVE.
FOR A BETTER POINT OF VIEW

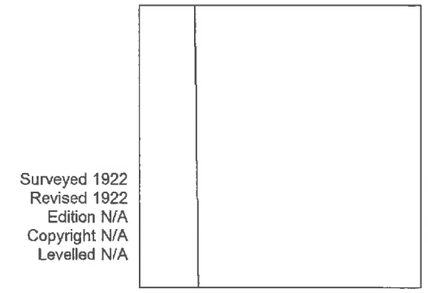
Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: County Series
Map date: 1922
Scale: 1:2,500
Printed at: 1:2,500

N
W E
S



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Production date: 03 November 2015

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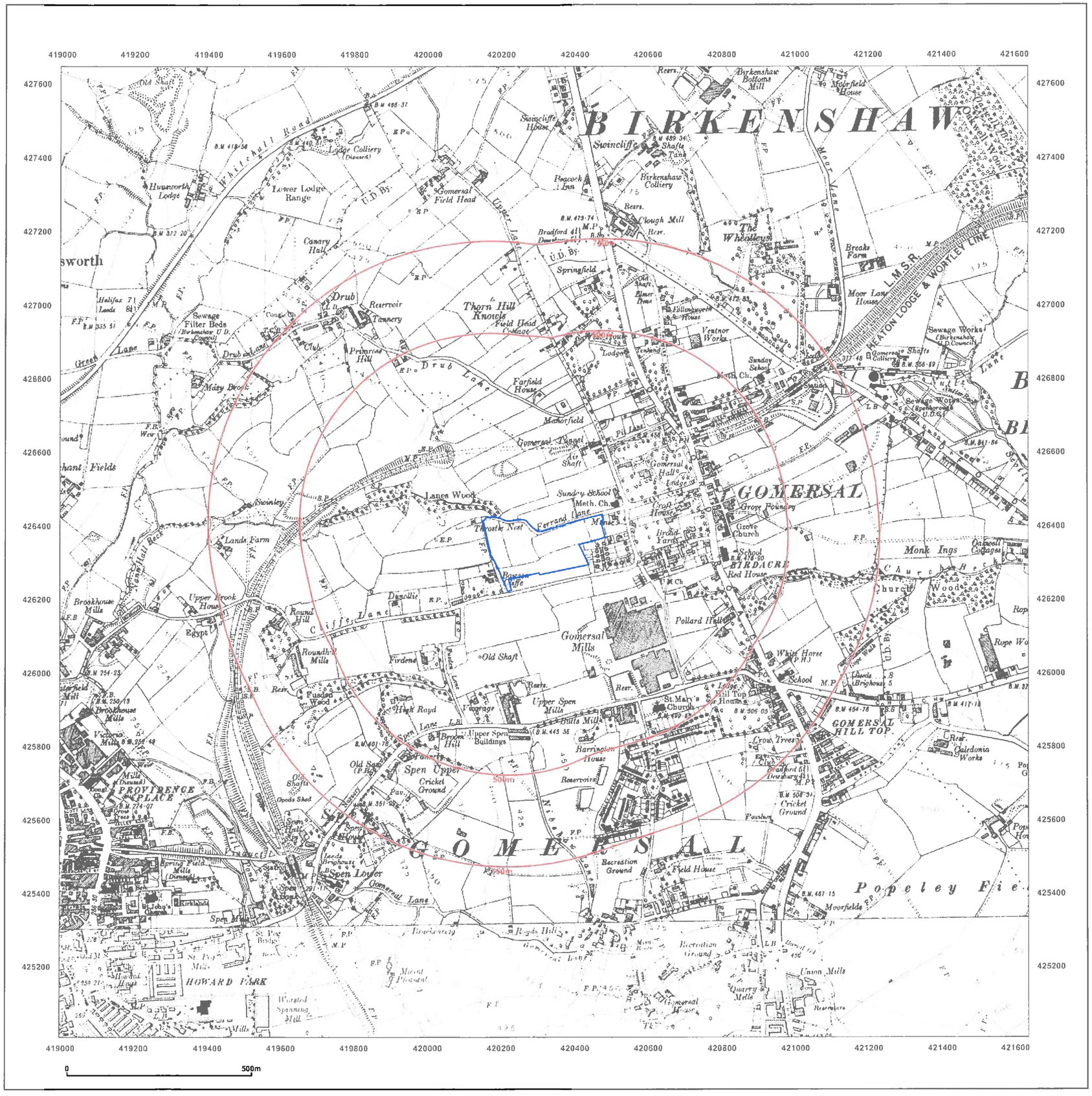

CENTRE MAPS LIVE.
FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: County Series
Map date: **1931-1932**
Scale: 1:10,560
Printed at: 1:10,560

N
W E
S

Surveyed 1850
Revised 1932
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1851
Revised 1931
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 03 November 2015

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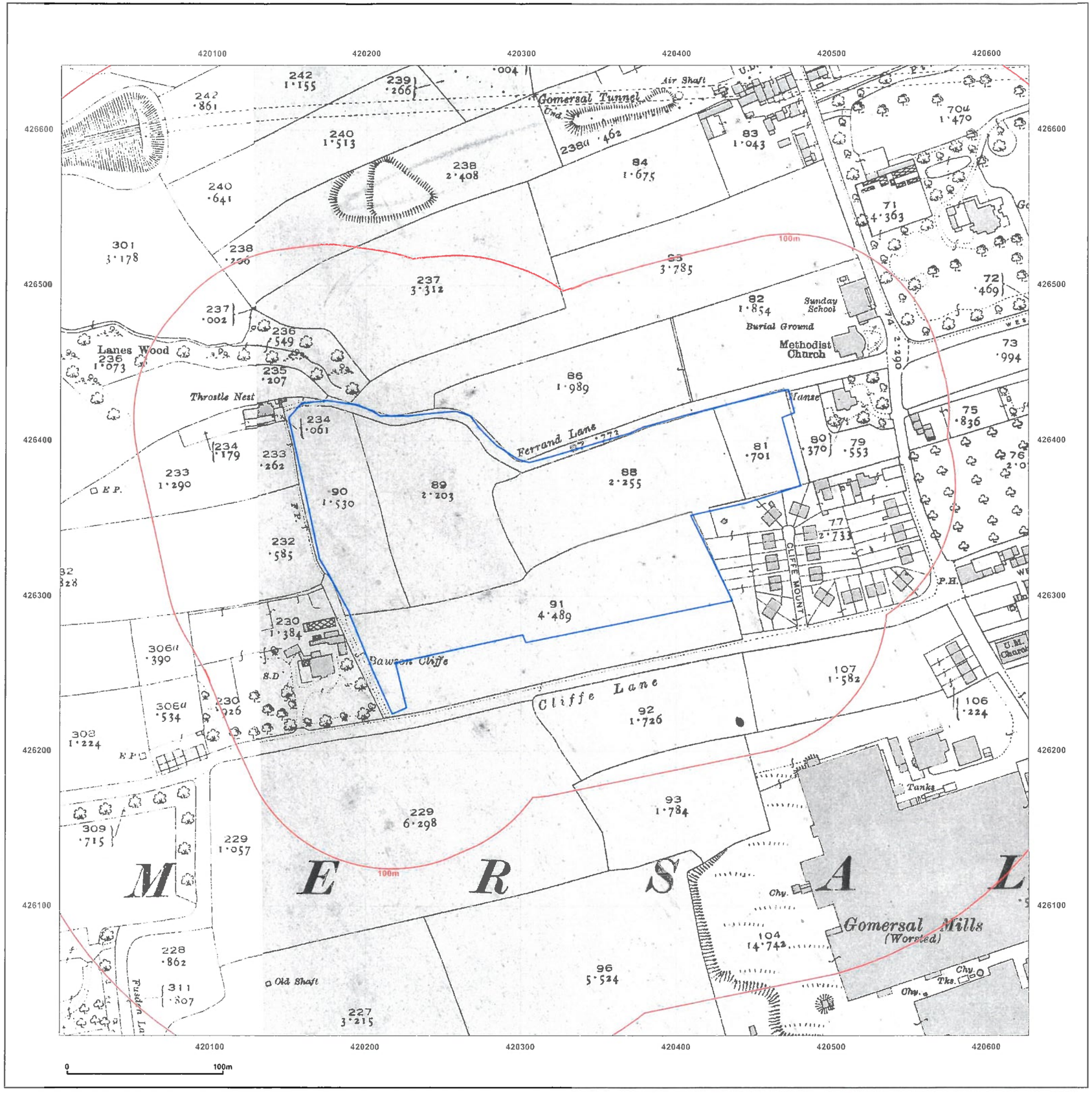

CENTRE MAPS LIVE.
FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: County Series
Map date: 1933-1938
Scale: 1:2,500
Printed at: 1:2,500

N
W E
S

Surveyed 1933
Revised 1933
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1938
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

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FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: County Series
Map date: **1938**
Scale: 1:10,560
Printed at: 1:10,560

N
W E
S

Surveyed 1850
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1851
Revised 1938
Edition N/A
Copyright N/A
Levelled 1931

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Production date: 03 November 2015

To view map legend click here *Legend*

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: County Series

Map date: 1948

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1850
Revised 1948
Edition N/A
Copyright N/A
Levelled 1931

Surveyed 1851
Revised 1948
Edition N/A
Copyright N/A
Levelled N/A

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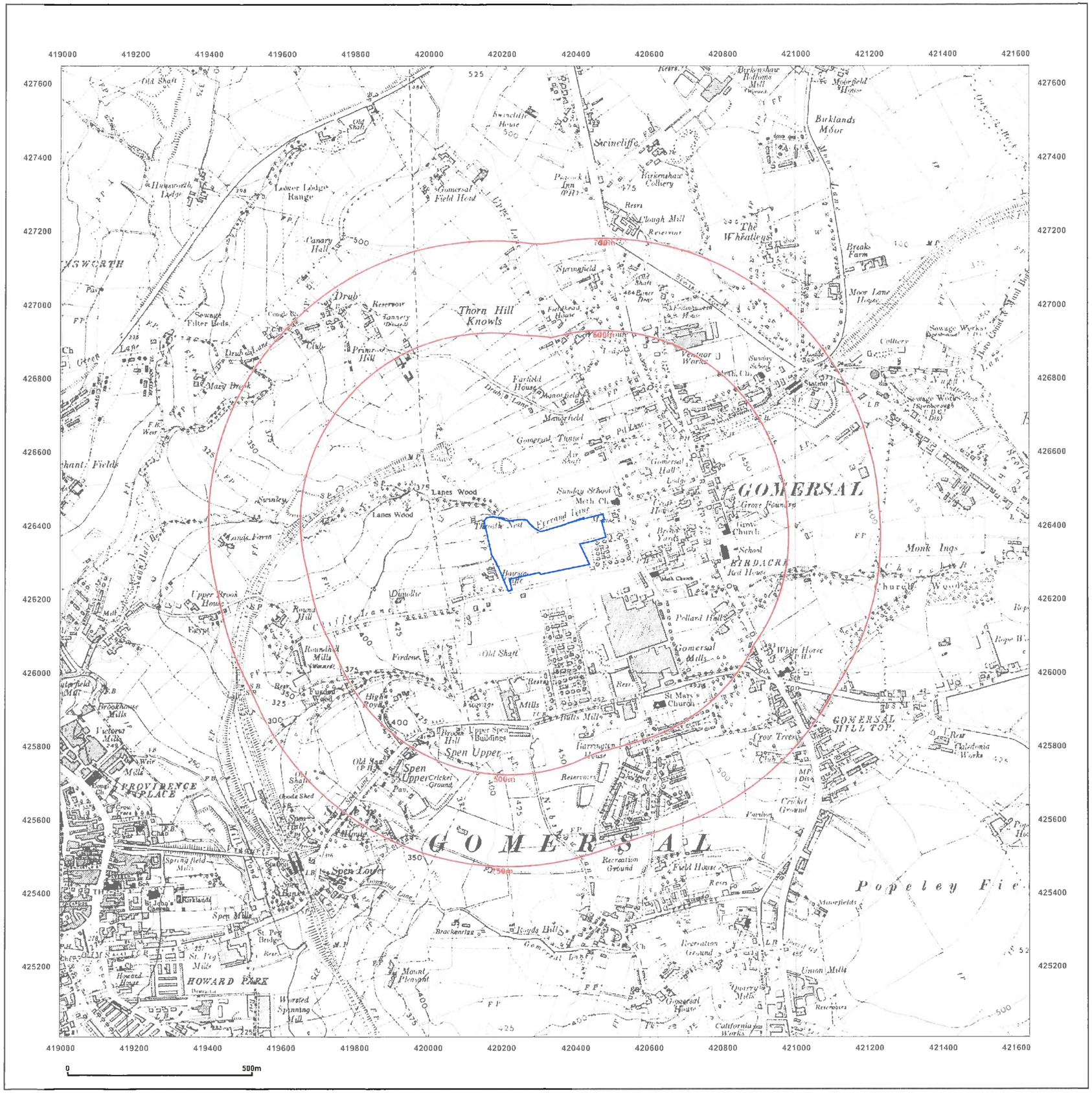
Production date: 03 November 2015

To view map legend click here *Legend*



CENTRE MAPS LIVE.
FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: Provisional
Map date: **1955**
Scale: 1:10,560
Printed at: 1:10,560

N
W E
S

Surveyed N/A
Revised 1955
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1951
Revised 1951
Edition N/A
Copyright 1955
Levelled N/A

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Production date: 03 November 2015

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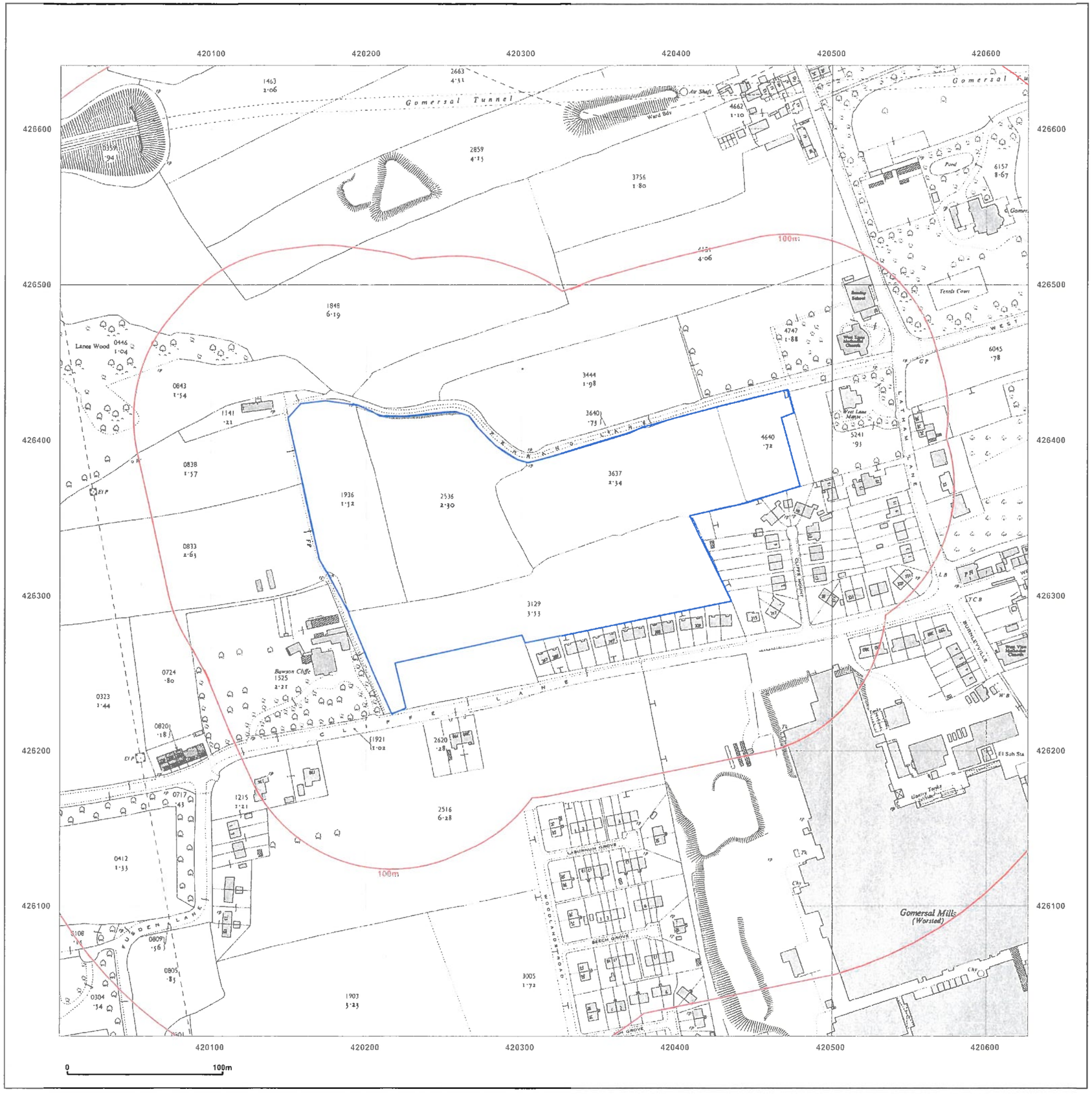

CENTRE MAPS LIVE.
FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: National Grid
Map date: **1956**
Scale: 1:2,500
Printed at: 1:2,500

N
W E
S

~~Surveyed 1956~~
Revised 1956
Edition 1957
Copyright N/A
Levelled 1931

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Production date: 03 November 2015

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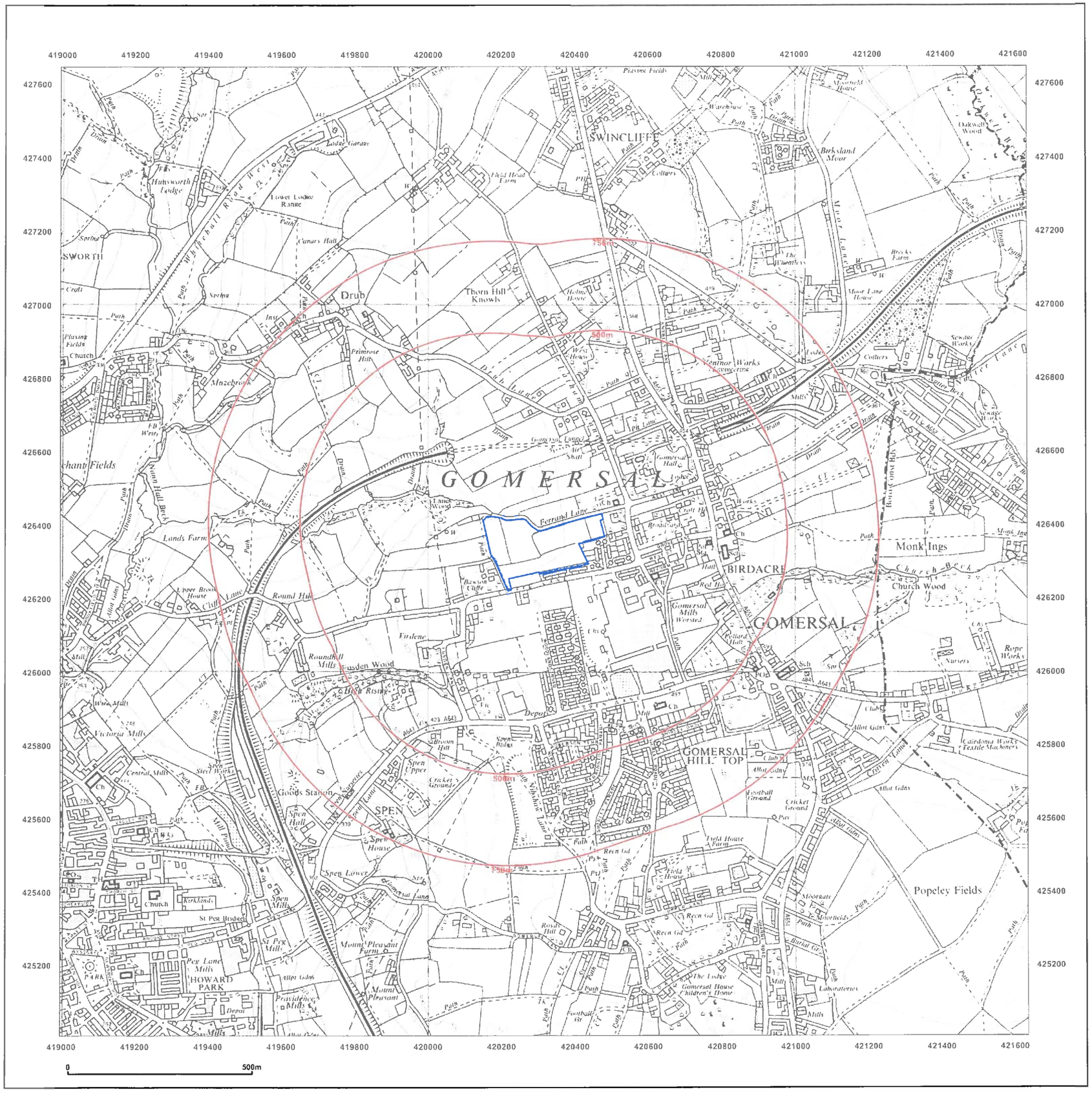

CENTRE MAPS LIVE.
FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: Provisional
Map date: **1966-1967**
Scale: 1:10,560
Printed at: 1:10,560

N
W E
S

Surveyed 1967
Revised 1967
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1966
Revised 1966
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 03 November 2015

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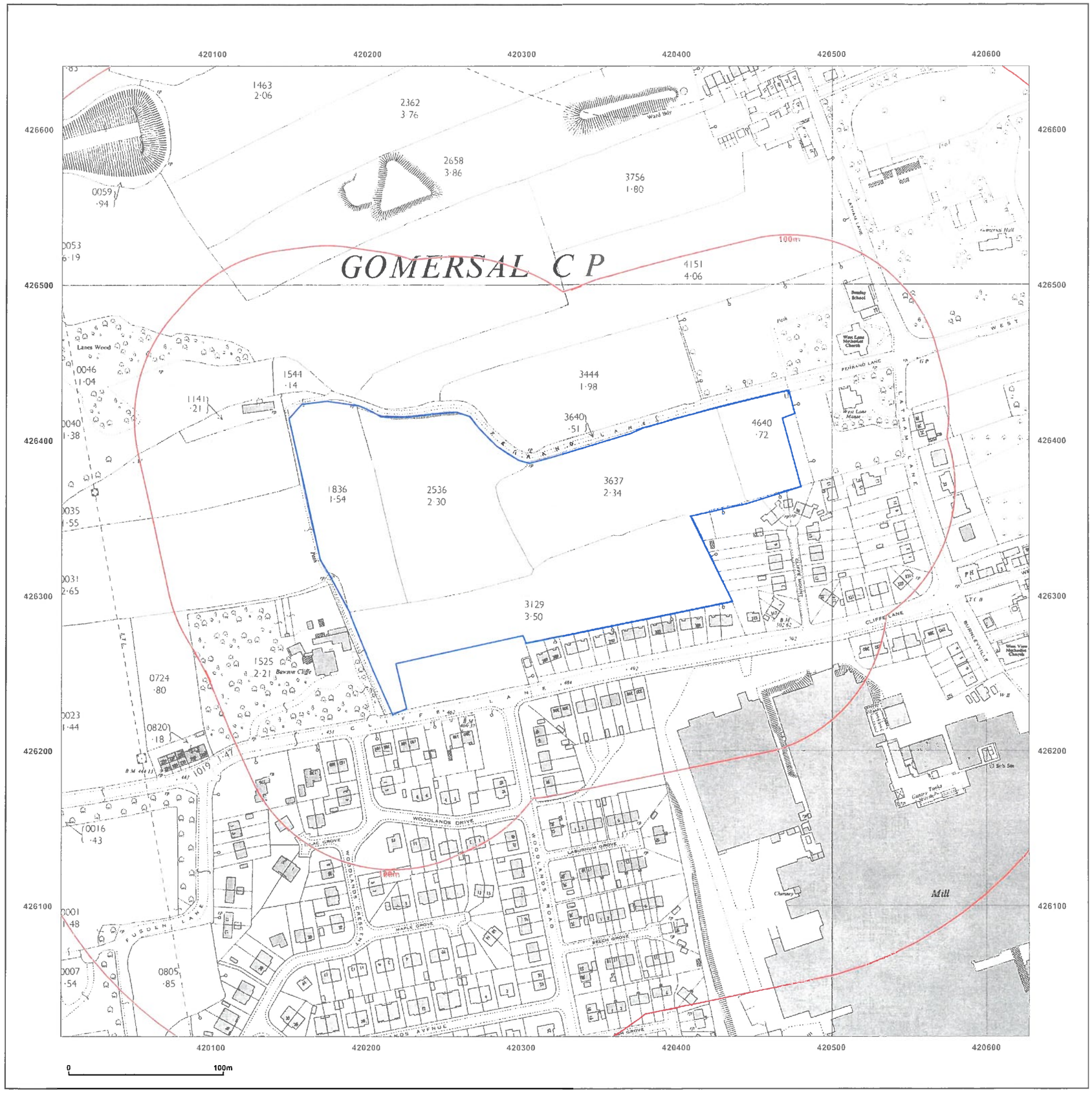

CENTRE MAPS LIVE.
FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: National Grid
Map date: **1967**
Scale: 1:2,500
Printed at: 1:2,500

N
W E
S

Surveyed 1956
Revised 1967
Edition N/A
Copyright 1968
Levelled 1962

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Production date: 03 November 2015

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FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: National Grid
Map date: **1971-1974**
Scale: 1:1,250
Printed at: 1:2,000

N
W E
S

Surveyed 1956
Revised 1971
Edition N/A
Copyright 1972
Levelled 1962

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1956
Revised 1971
Edition N/A
Copyright 1972
Levelled 1962

Surveyed 1956
Revised 1970
Edition N/A
Copyright 1971
Levelled 1962

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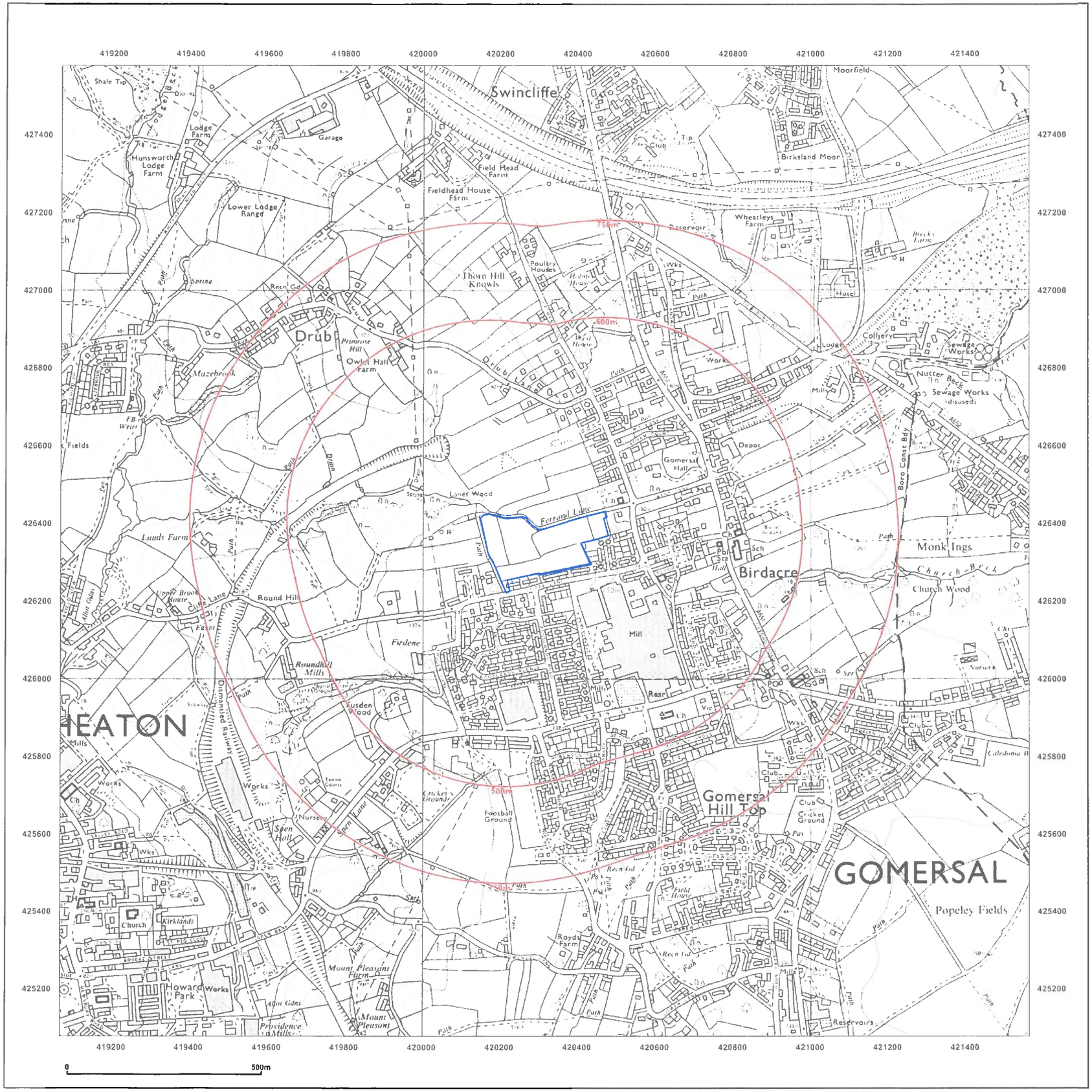
Production date: 03 November 2015

To view map legend click here *Legend*



CENTRE MAPS LIVE.
FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: National Grid
Map date: **1974**
Scale: 1:10,000
Printed at: 1:10,000

N
W E
S

Surveyed 1973
Revised 1974
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1973
Revised 1974
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 03 November 2015

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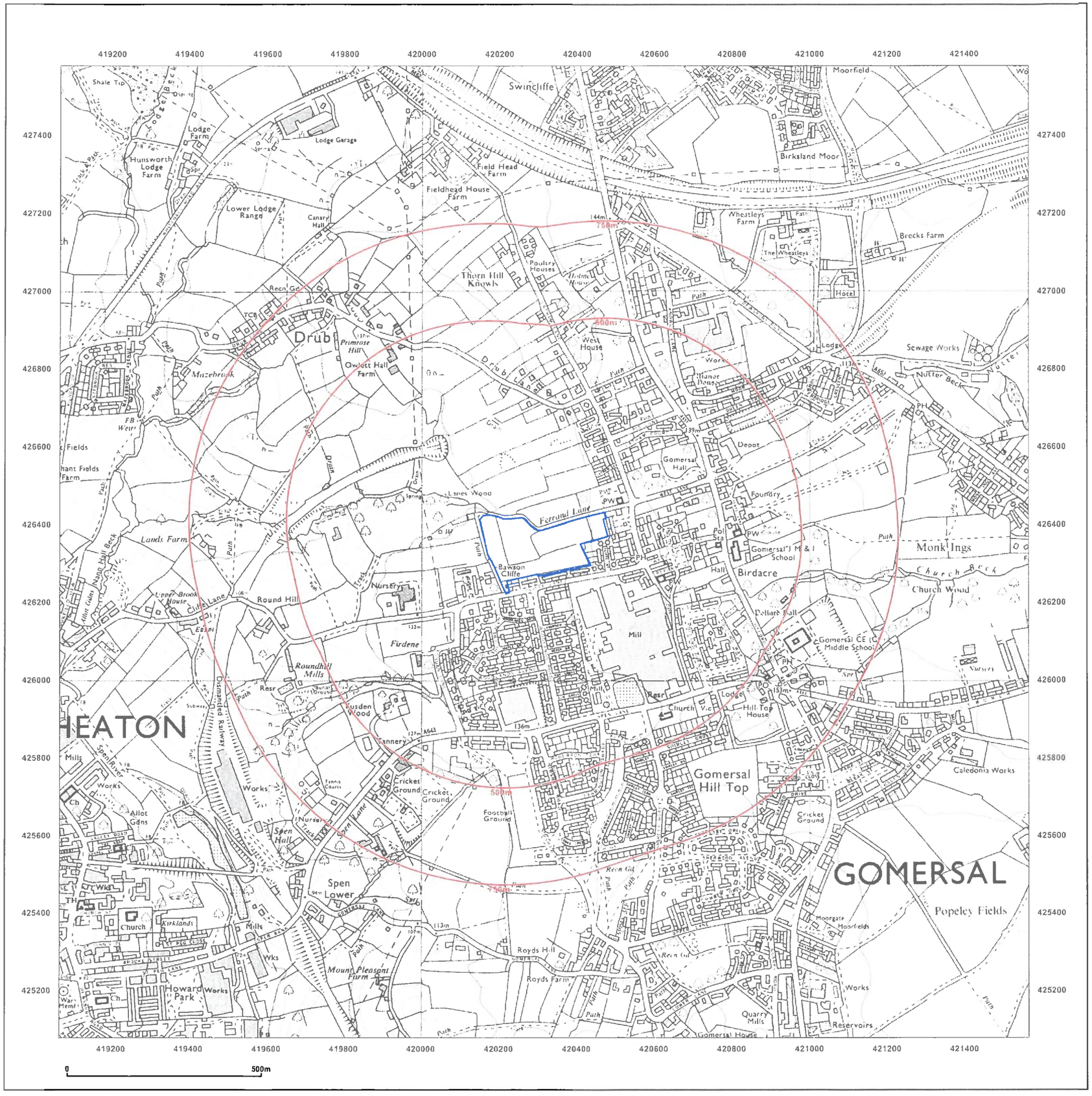

CENTRE MAPS LIVE.
FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: National Grid
Map date: **1983-1985**
Scale: 1:10,000
Printed at: 1:10,000

N
W E
S

Surveyed 1982
Revised 1983
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1985
Revised 1985
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 03 November 2015

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FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: National Grid
Map date: **1988-1993**
Scale: 1:1,250
Printed at: 1:2,000

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed 1962
Revised 1988
Edition N/A
Copyright 1988
Levelled 1962

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed 1962
Revised 1988
Edition N/A
Copyright 1988
Levelled 1962

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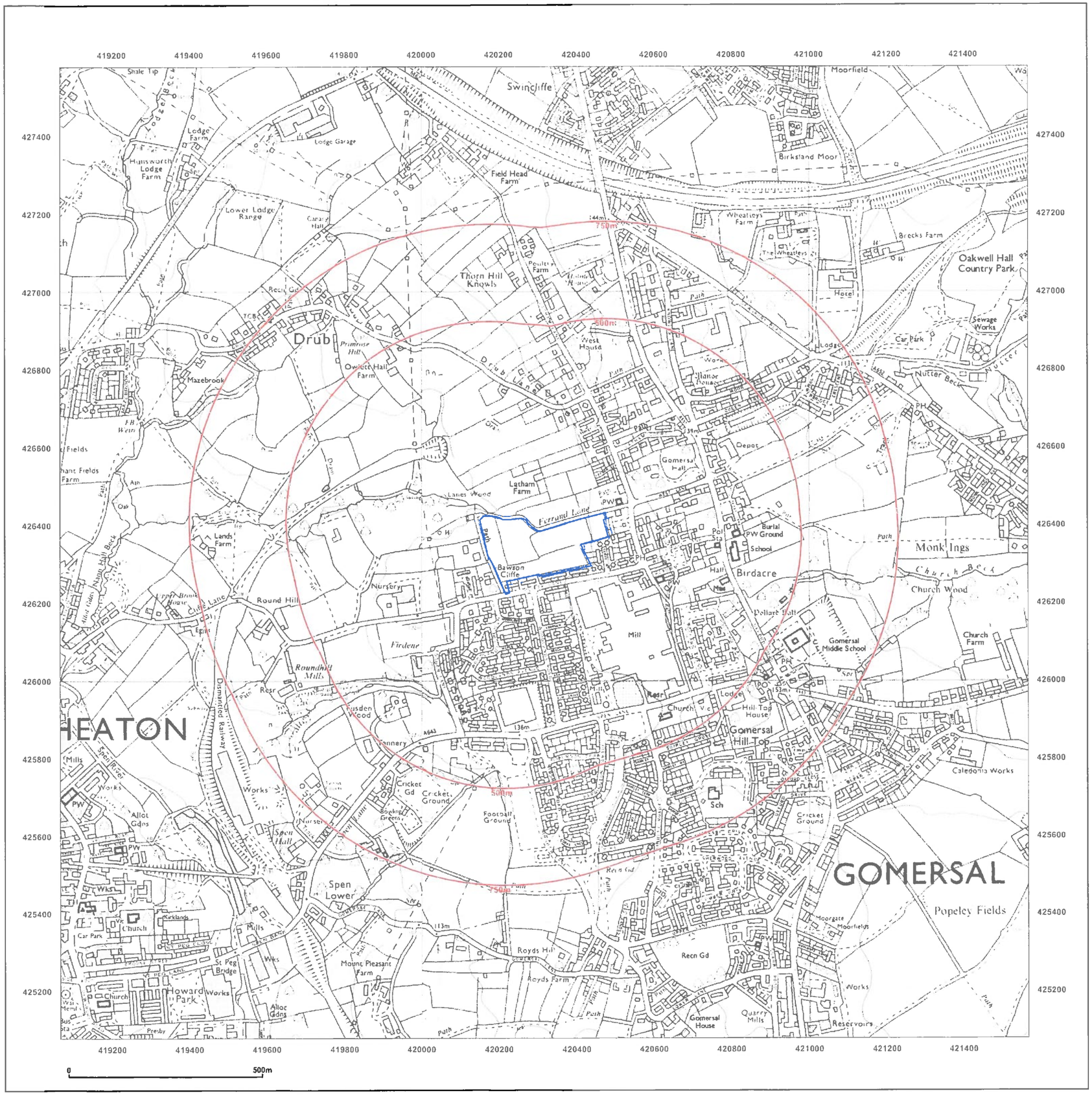

CENTRE MAPS LIVE.
FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: National Grid
Map date: **1990-1994**
Scale: 1:10,000
Printed at: 1:10,000

N
W E
S

Surveyed 1987
Revised 1990
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1985
Revised 1994
Edition N/A
Copyright N/A
Levelled N/A

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FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: National Grid
Map date: **1993-1995**
Scale: 1:1,250
Printed at: 1:2,000

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed 1995
Revised 1995
Edition N/A
Copyright 1995
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

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Production date: 03 November 2015

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Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: 1:10,000 Raster

Map date: **2002**

Scale: 1:10,000

Printed at: 1:10,000

N W E S

2002

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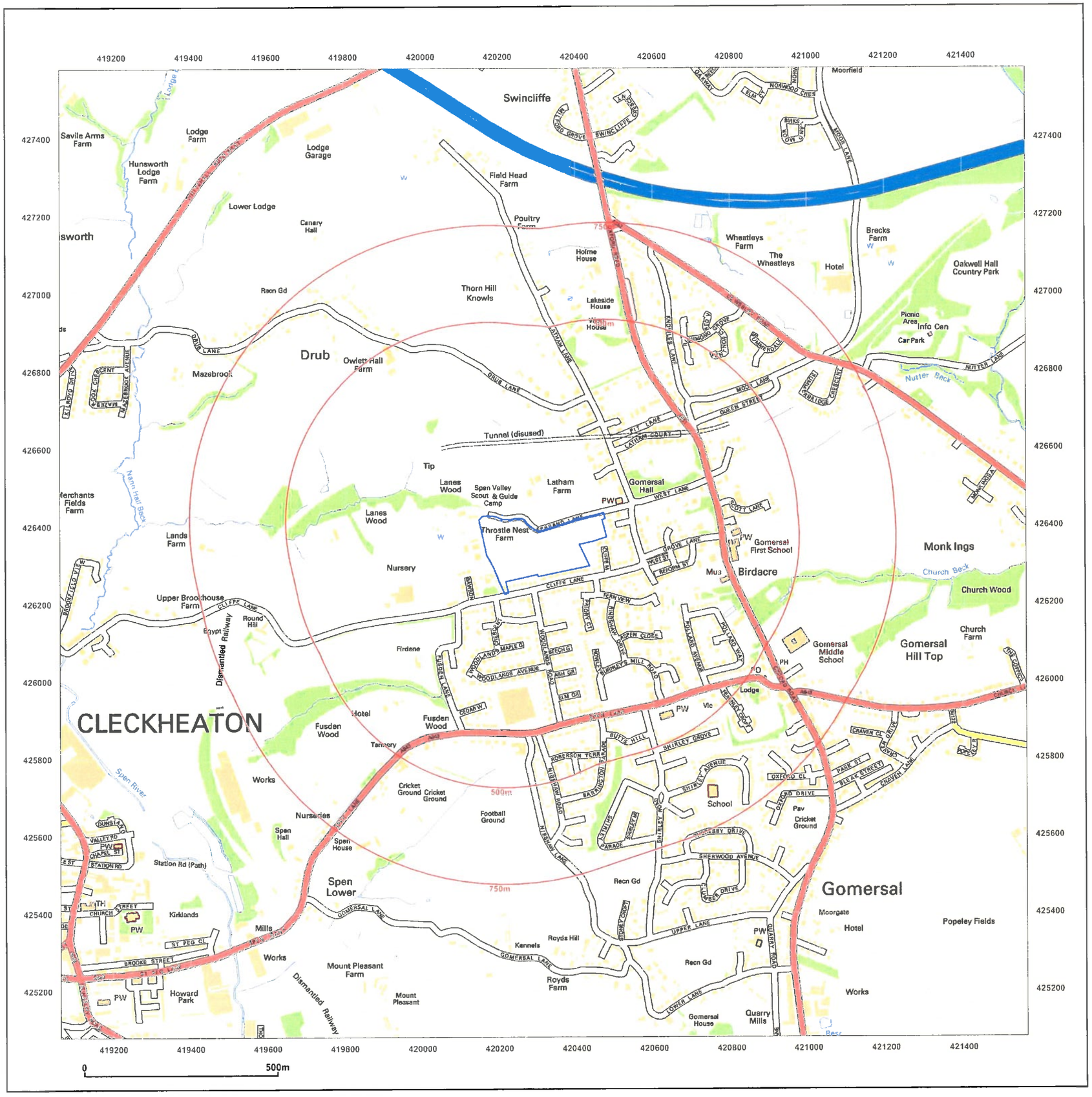

CENTRE MAPS LIVE.
FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: National Grid
Map date: **2010**
Scale: 1:10,000
Printed at: 1:10,000

N
W E
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2010

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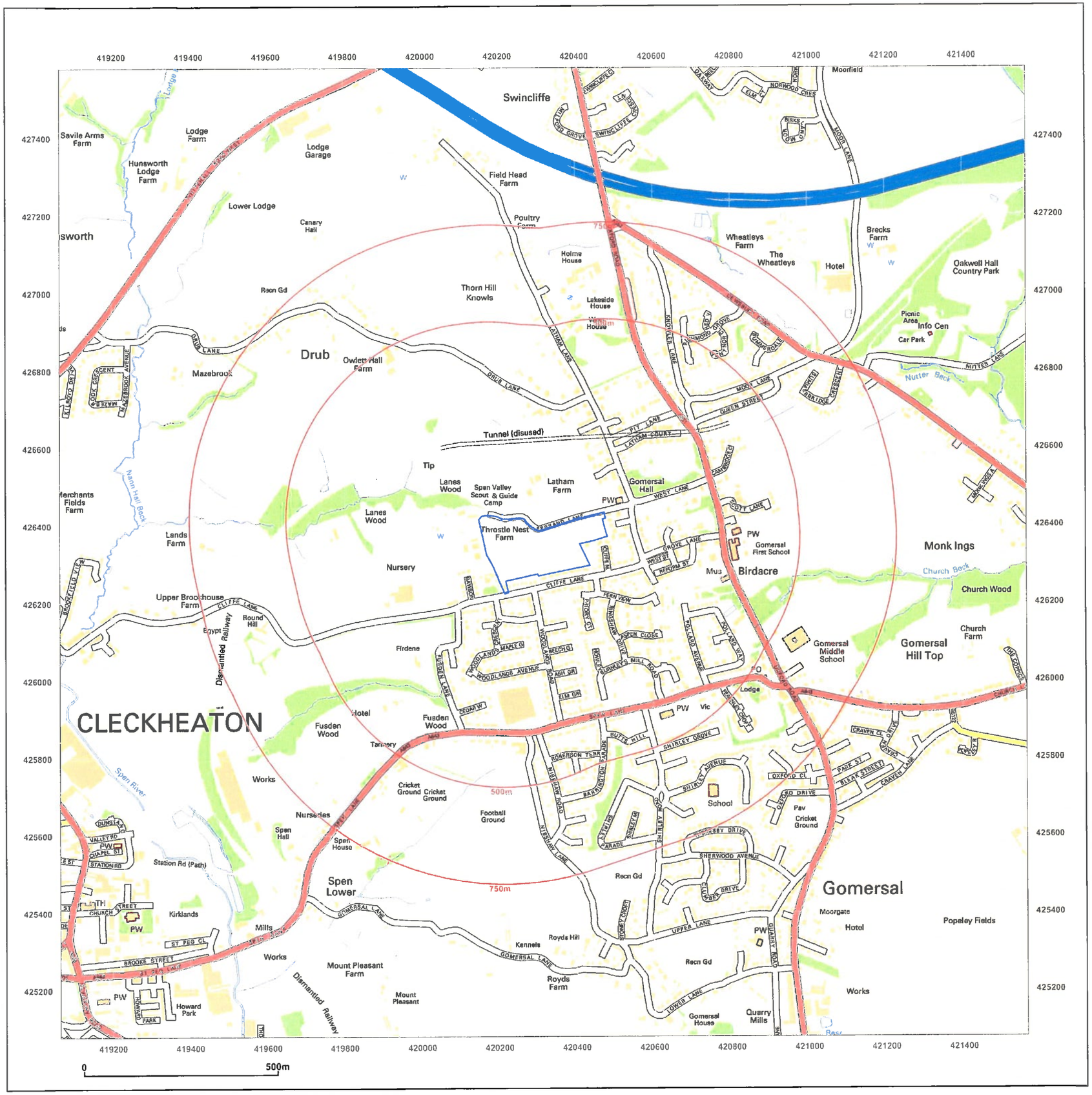

CENTRE MAPS LIVE.
FOR A BETTER POINT OF VIEW

Site Details:

Ferrand Lane, Gomersal, BD19 4SB

Client Ref: 8521
Report Ref: CMAPS-CM-476278-8521-031115HIS
Grid Ref: 420315, 426329

Map Name: National Grid
Map date: **2014**
Scale: 1:10,000
Printed at: 1:10,000

N
W E
S

2014

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Production date: 03 November 2015

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Appendix D Historical Borehole Records

The Coal Authority

Issued by:
The Coal Authority, Property Search Services, 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, NG18 4RG
Website: www.groundstability.com Phone: 0345 762 6848 DX 716176 MANSFIELD 5

JPG (LEEDS) LIMITED
BREMNER HOUSE
5 JOHN CHARLES WAY
LEEDS
WEST YORKSHIRE
LS12 6QA

Our reference:	**51001042753001**
Your reference:	**4730**
Date of your enquiry:	**11 November 2015**
Date we received your enquiry:	**11 November 2015**
Date of issue:	**11 November 2015**

This report is for the property described in the address below and the attached plan.

Non-Residential Coal Authority Mining Report

FERRAND LANE, WEST YORKSHIRE,

This report is based on and limited to the records held by, the Coal Authority, and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

Coal mining	See comments below
Brine Compensation District	No

Information from the Coal Authority

Underground coal mining

Past

The property is in the likely zone of influence from workings in 2 seams of coal at 70m to 140m depth, and last worked in 1957.

Any ground movement from these coal workings should have stopped by now.

In addition the property is in an area where the Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered prior to any site works or future development activity. Your attention is drawn to the Comments on Coal Authority Information section of the report.

Present

The property is not in the likely zone of influence of any present underground coal workings.

Future

The property is not in an area for which the Coal Authority is determining whether to grant a licence to remove coal using underground methods.

The property is not in an area for which a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area that is likely to be affected at the surface from any planned future workings.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notice of the risk of the land being affected by subsidence has been given under section 46 of the Coal Mining Subsidence Act 1991.

Mine entries

Within, or within 20 metres of, the boundary of the property there are 3 mine entries, the approximate positions of which are shown on the attached plan.

Our records disclose the following information:

420426-003. was searched for by drilling in 1983 but was not found. We have no record of what steps if any have been taken to treat this shaft.
420426-005. No treatment details.
420426-006. No treatment details.

Records may be incomplete. Consequently, there may exist in the local area mine entries of which the Coal Authority has no knowledge.

For an additional fee, the Coal Authority will provide a supplementary Mine Entry Interpretive Report. The report will provide a separate assessment for the mine entry (entries) referred to in this report. It will give details based on information in the Coal Authority's possession, together with an opinion on the likelihood of mining subsidence damage arising from ground movement as a consequence of the existence of the mine entry/entries. It will also give details of the remedies available for subsidence damage where the mine entry was sunk in connection with coal mining.

Please note that it may not be possible to produce a report if the main building to the property cannot be identified from Coal Authority plans (ie. for development sites and new build).

For further advice on how to order this additional information visit www.groundstability.com or telephone 0345 7626 848.

Coal mining geology

The Authority is not aware of any evidence of damage arising due to geological faults or other lines of weakness that have been affected by coal mining.

Opencast coal mining

Past

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

Present

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

Future

The property is not within 800 metres of the boundary of an opencast site for which the Coal Authority is determining whether to grant a licence to remove coal by opencast methods.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

Coal mining subsidence

There are 2 claim(s) within 50 metres of the property boundary that do not match the property address. These are shown on the attached plan.

The 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.

If further subsidence damage claims information is required in addition to that provided in this report, the Authority need to manually search their records. For further advice on how to order this additional information visit www.groundstability.com or telephone 0345 7626 848.

Mine gas

There is no record of a mine gas emission requiring action by the Coal Authority within the boundary of the property.

Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

Withdrawal of support

The property is in an area for which notices of entitlement to withdraw support were published in 1951, 1954.

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

Working facilities orders

The property is not in an area for which an Order has been made under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

Payments to owners of former copyhold land

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

Comments on Coal Authority information

The attached plan shows the approximate location of the disused mine entry/entries referred to in this report. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

Property owners have the benefit of statutory protection (under the Coal Mining Subsidence act 1991*). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage from disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and the obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by telephoning 0345 762 6848.

If you wish to discuss the relevance of any of the information contained in this report you should seek the advice of a qualified mining engineer or surveyor. If you or your adviser wish to examine the source plans from which the information has been taken these are normally available at our Mansfield office, free of charge, by prior appointment, telephone 01623 637225. Should you or your adviser wish to carry out any physical investigations that may enter, disturb or interfere with any disused mine entry the prior permission of the owner must be sought. For coal mine entries the owner will normally be the Coal Authority.

The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries). Our emergency telephone number at all times is 01623 646333.

*Note, this Act does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

In view of the mining circumstances a prudent developer would seek appropriate technical advice before any works are undertaken.

Therefore 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 good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. Developers should be aware that the investigation of coal seams/former mines of coal may have the potential to

generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.

A site investigation was carried out in January 1999 by Shearwater Surveying Services Woodcroft, Crow Hill Drive, Mansfield, Nottingham, NG19 7AE. On behalf of The Coal Authority.

Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

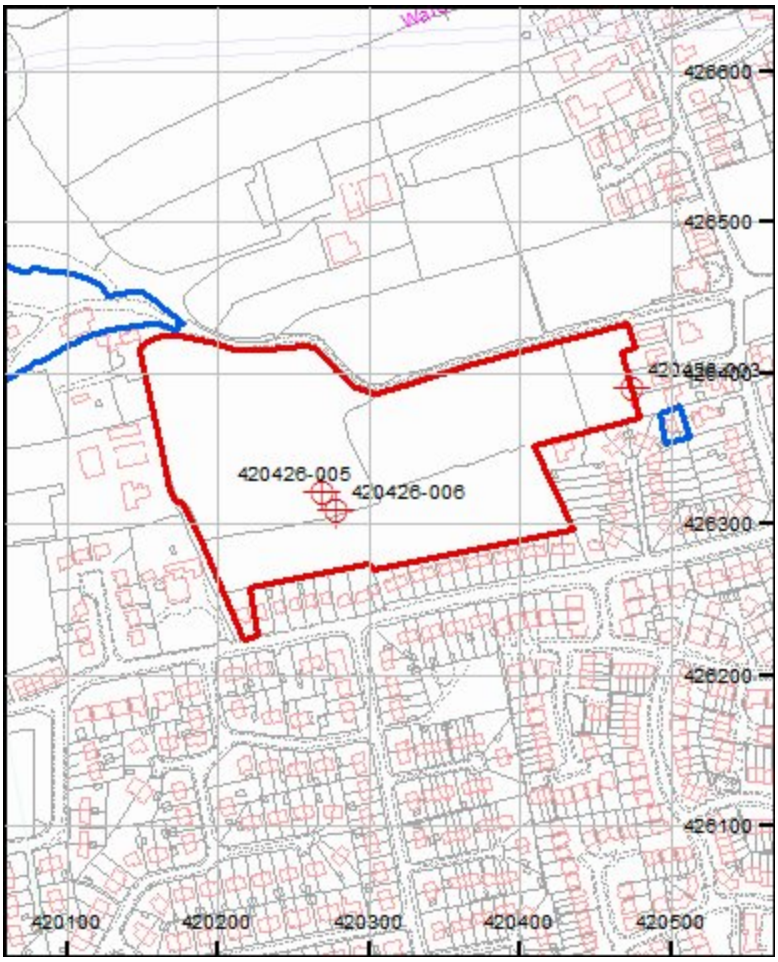
Additional Remarks

Information provided by the Coal Authority in this report is compiled in response to the Law Society's Con29M Coal Mining and Brine Subsidence Claim enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. Please note that Brine Subsidence Claim enquiries are only relevant for England and Wales. This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority and Cheshire Brine Board's Terms and Conditions applicable at the time the report was produced.

Location map

Approximate position of property

Enquiry boundary



Key

Approximate position of enquiry boundary shown

Disused Adit or Mineshaft

Coal Claims

Mapping sourced from Ordnance Survey

The Coal Authority

Issued by:
The Coal Authority, Property Search Services, 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, NG18 4RG
Website: www.groundstability.com Phone: 0345 762 6848 DX 716176 MANSFIELD 5

JPG (LEEDS) LIMITED
BREMNER HOUSE
5 JOHN CHARLES WAY
LEEDS
WEST YORKSHIRE
LS12 6QA

Our reference:	**51001042792001**
Your reference:	**4730a**
Date of your enquiry:	**11 November 2015**
Date we received your enquiry:	**11 November 2015**
Date of issue:	**11 November 2015**

This report is for the property described in the address below and the attached plan.

Shaft Plan and Data Sheets

FERRAND LANE, GOMERSAL, WEST YORKSHIRE,

I refer to the enquiry dated 11 November 2015, received 11 November 2015, in connection with the above.

As requested I enclose the mine entry data sheet(s) held for the mine entry/entries referred to.

Mine Entry Data

Shaft/adit:	Shaft
Reference:	420426-006
Source:	Ab plan 3921. 1st Ed. Geological.
Colliery name:	Unknown
Entry name:	Unknown
Date abandoned:	Unknown
Depth of superficial deposits (m):	Unknown
Depth of shaft (m):	Unknown
Diameter of shaft (m):	Unknown
Probable adit azimuth:	Not Applicable
Treatment details:	Unknown
Conveyance:	Not Applicable
Easting:	420279
Northing:	426308
Other information:	None

Mine Entry Data (continued)

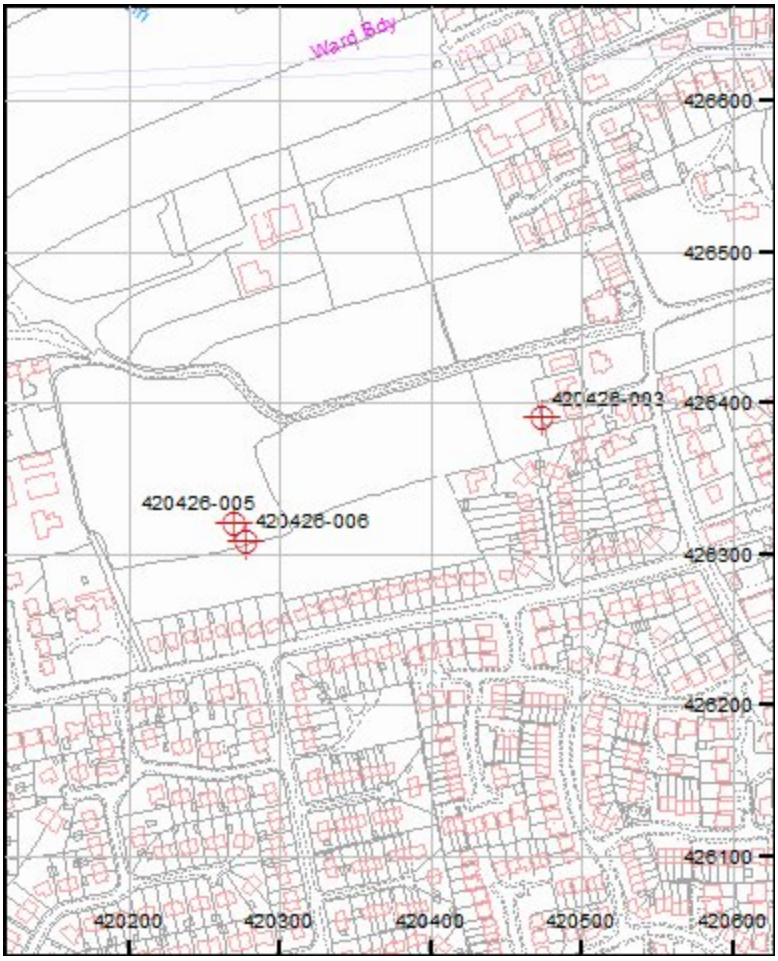
Shaft/adit:	Shaft
Reference:	420426-005
Source:	Ab plan 3921. 1st and 2nd Ed. Geological.
Colliery name:	Unknown
Entry name:	Unknown
Date abandoned:	Unknown
Depth of superficial deposits (m):	Unknown
Depth of shaft (m):	27.9
Diameter of shaft (m):	Unknown
Probable adit azimuth:	Not Applicable
Treatment details:	Unknown
Conveyance:	Not Applicable
Easting:	420270
Northing:	426320
Other information:	None

Mine Entry Data (continued)

Shaft/adit:	Shaft
Reference:	420426-003
Source:	1st and 3rd Ed. 1/2500 O.S. 2nd Ed. Geological. Ab plans 4115 NE793
Colliery name:	Unknown
Entry name:	West Lane
Date abandoned:	Unknown
Depth of superficial deposits (m):	Unknown
Depth of shaft (m):	91.4
Diameter of shaft (m):	Unknown
Probable adit azimuth:	Not Applicable
Treatment details:	was searched for by drilling in 1983 but was not found. We have no record of what steps if any have been taken to treat this shaft
Conveyance:	Not Applicable
Easting:	420475
Northing:	426389
Other information:	None

Location map

Approximate position of enquiry



This plan shows the approximate location of the disused mine entry / entries referred to in the attached mining report. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

Property owners have the benefit of statutory protection (under the Coal Mining Subsidence Act 1991). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage from disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by telephoning 0345 762 6848.

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Our emergency telephone number at all times is 01623 646333.

Key

Disused Adit or Mineshaft

Mapping sourced from Ordnance Survey

Appendix E Notes on Limitations

General

JPG (Leeds) Ltd have prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from JPG (Leeds) Ltd; a charge may be levied against such approval.

JPG (Leeds) Ltd accepts no responsibility or liability for:

a) the consequences of this document being used for any purpose or project other than for which it was commissioned, and
b) this document to any third party with whom an agreement has not been executed.

Phase I Desk Study Reports
The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources (including the Client), together with (where appropriate) a brief walk over inspection of the site and meetings and discussions with relevant authorities and other interested parties. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, JPG (Leeds) Ltd reserves the right to review such information and, if warranted, to modify the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Phase II Geo-Environmental Investigations
The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, geotechnical characteristics and ground and groundwater conditions to allow a reasonable assessment of the environmental risks together with engineering and development implications. The objectives of the investigation have been Ltd to establishing the risks associated with potential human targets, building materials, the environment (including adjacent land), and to surface and groundwater.

The amount of exploratory work and chemical testing undertaken has necessarily been restricted by the short timescale available, and the locations of exploratory holes have been restricted to the areas unoccupied by the building(s) on the site and by buried services. A more comprehensive investigation may be required if the site is to be redeveloped as, in addition to risk assessment, a number of important engineering and environmental issues may need to be resolved.

For these reasons if costs have been included in relation to site remediation these must be considered as tentative only and must, in any event, be confirmed by a qualified quantity surveyor.

The exploratory holes undertaken, which investigate only a small volume of the ground in relation to the size of the site, can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site of each of the exploratory holes. There may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.

The comments made on groundwater conditions are based on observations made at the time that site work was carried out. It should be noted that groundwater levels will vary owing to seasonal, tidal and weather related effects.

The number of sampling points and the methods of sampling and testing do not preclude the existence of localised "hotspots" of contamination where concentrations may be significantly higher than those actually encountered.

The risk assessment and opinions provided, inter alia, take in to consideration currently available guidance values relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.

The scope of the investigation was selected on the basis of the specific development proposed by the Client and may be inappropriate to another form of development or scheme.

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LEEDS
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