



COAL MINING RISK ASSESSMENT

**VARLEY STREET
MANCHESTER
M40 8EF**

Prepared for:

Mace Group

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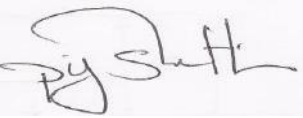
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Date:

15th March 2022



EnviroSolution Ltd Document Verification

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1 Introduction

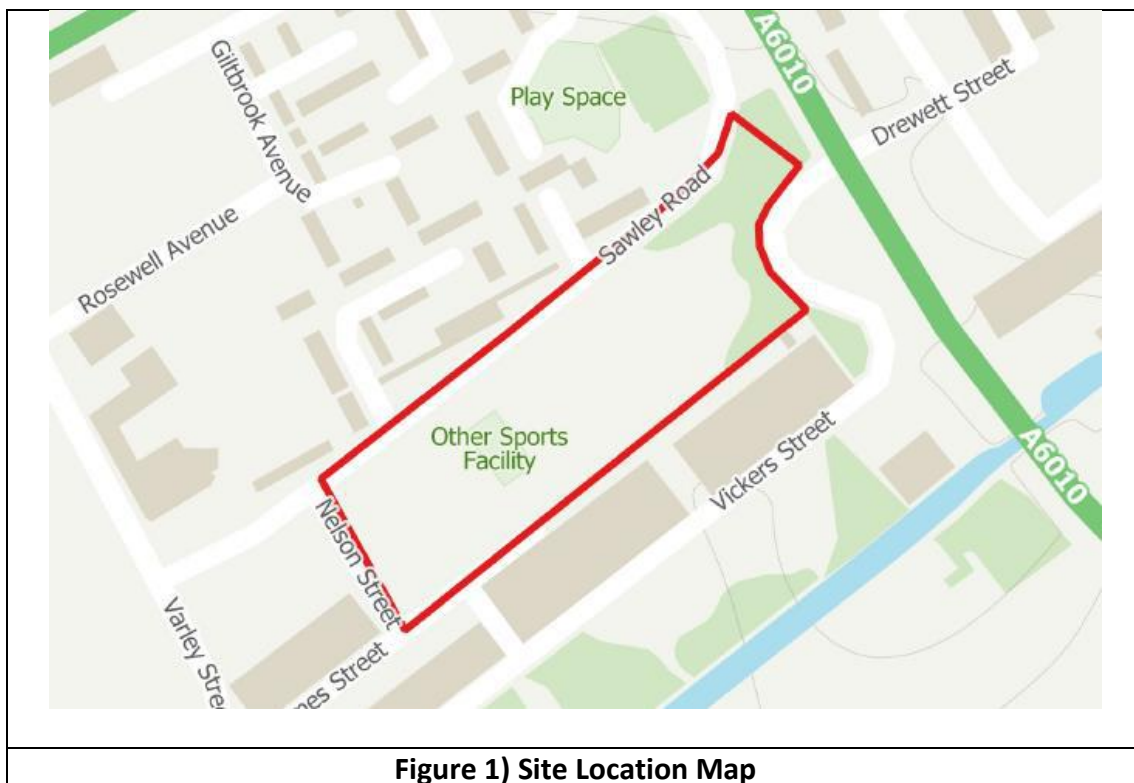
1.1 Site Location and Description

The site is located at Varley Street, Miles Platting, Manchester, M40 8EF. The British National Grid Reference for the approximate site centre is GR: 386125 399605.

The site is irregular in shape and covers an approximate area of 22,200 square metres. The site is currently a vacant plot of waste land formerly used as a school playing field. A tarmac games court is located in the central area of the site. The land to the northeast of this is rough grassland. The land to the southwest of this is tarmacadam hardstanding.

The proposed development area is generally flat with little change in topographic level. Vehicle access is gained from Sawley Road to the north-eastern section or via a double gate along Nelson Street to the south-western section.

A plan showing the location of the site is shown in **Figure 1** and **Appendix A**.



1.2 Development Proposal

It is understood that the development proposal includes the construction of up to two schools with parking, playing fields and ancillary development.

No formal development layouts have been provided.

1.3 Scope of Coal Mining Risk Assessment

EnviroSolution Ltd has been commissioned to prepare a Coal Mining Risk Assessment Report (CMRA) for the proposed development site, in order to provide the Local Planning Authority with information on the coal mining legacy risk(s), an assessment of their potential impact on land stability, and provide recommendations for the need to carry out any further investigations (including intrusive boreholes) to address these risk(s).

The CMRA has been undertaken in accordance with the principles of best practice including the Coal Authority's guidance document "Risk Based Approach to Development Management - Resources for Developers Version 3" (2014) (Ref. 1), CIRIA "SP32 Construction over Abandoned Mine Workings" (2002) (Ref. 2) and CIRIA "C758D Abandoned Mine Workings Manual" (2019) (Ref. 3).

The purpose of the CMRA Report is to:

- present a desk-based review of available information on the coal mining issues that are relevant to the application site;
- use that information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact issues;
- set out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development; and
- demonstrate to the Local Planning Authority that the application site is, or can be made, safe and stable to meet the requirements of National Planning Policy with regard to development on unstable land.

1.4 Sources of Information

This report is based on current information of past mining activities relevant to the site. The following information sources have been used:

- Consultants Mining Report dated 7th January 2022 (Ref: 51002883792001 **Appendix B**);
- Consultants Mining Report dated 3rd March 2022 (Ref: 51002948577001 **Appendix B**);
- BGS Geoindex geological map;
- BGS geological 1:50,000 England and Wales Sheet 85 Manchester;
- Coal Authority Interactive Website;
- Historical Ordnance Survey maps.

2 Environmental Setting

2.1 Historic Coal Mining Activity

The development site and surrounding area has been reviewed with reference to historical Ordnance Survey (OS) maps. The history of the site and immediate surrounding area are summarised in Table 1. Copies of the historical OS maps are included in **Appendix C**.

Table 1 - Historic Mapping Review

Date	Scale	Historic Mining Activity
1848	1:10,560	- Site is largely undeveloped. - Coal pit located within the south-western area of the site boundary. - Coal pits 140m south, 250m southeast and 450m east of the site. - Colliery 650m west of the site.
1893	1:2,500	- Coal pit no longer marked on map. - Site is developed with residential dwellings in north-eastern corner of the site. - Surrounding land largely developed with residential and industrial land use.
1922	1:2,500	- Timber yard in north-eastern corner of the site. - School built on site.

2.2 Geological Context

The BGS geological mapping (Geoindex and BGS Sheet 85 Manchester) show that the site is directly underlain by diamicton which is of Quaternary age. Diamicton generally consists of unsorted clays, silts, sands and gravels.

The underlying bedrock consists of the Pennine Upper Coal Measures Formation which is of Carboniferous age. The Pennine Upper Coal Measures Formation generally consists of interbedded grey mudstones and siltstones with pale grey sandstones and numerous coal seams but no mudstones containing marine fossils. According to the BGS geological sheet, the bedrock has a regional dip of about 18° towards the southwest – **See Appendix D**.

The nearest geological fault is located 670m northwest of the site.

Two BGS borehole records (ref: SJ89NE195 and SJ89NE194) have been obtained from BGS online records, relating to locations within the site boundary – see **Appendix E**. The boreholes show about 2m of Made Ground overlying thick deposits of diamicton consisting of generally stiff clays with occasional lenses of sand. A 4m thick layer of sand is recorded at a depth of 12m bgl. Bedrock was recorded at depths of 25.0m and 27.5m bgl. The locations of the boreholes are shown in **Figure 2**.

Two coal subcrops are shown to intersect the site, which strike from northwest to southeast (see **Figure 2**). These include the Bradford 4 Foot, which passes through the north-eastern section of the site and the overlying Bradford Threequarters, which cuts the south-western section.

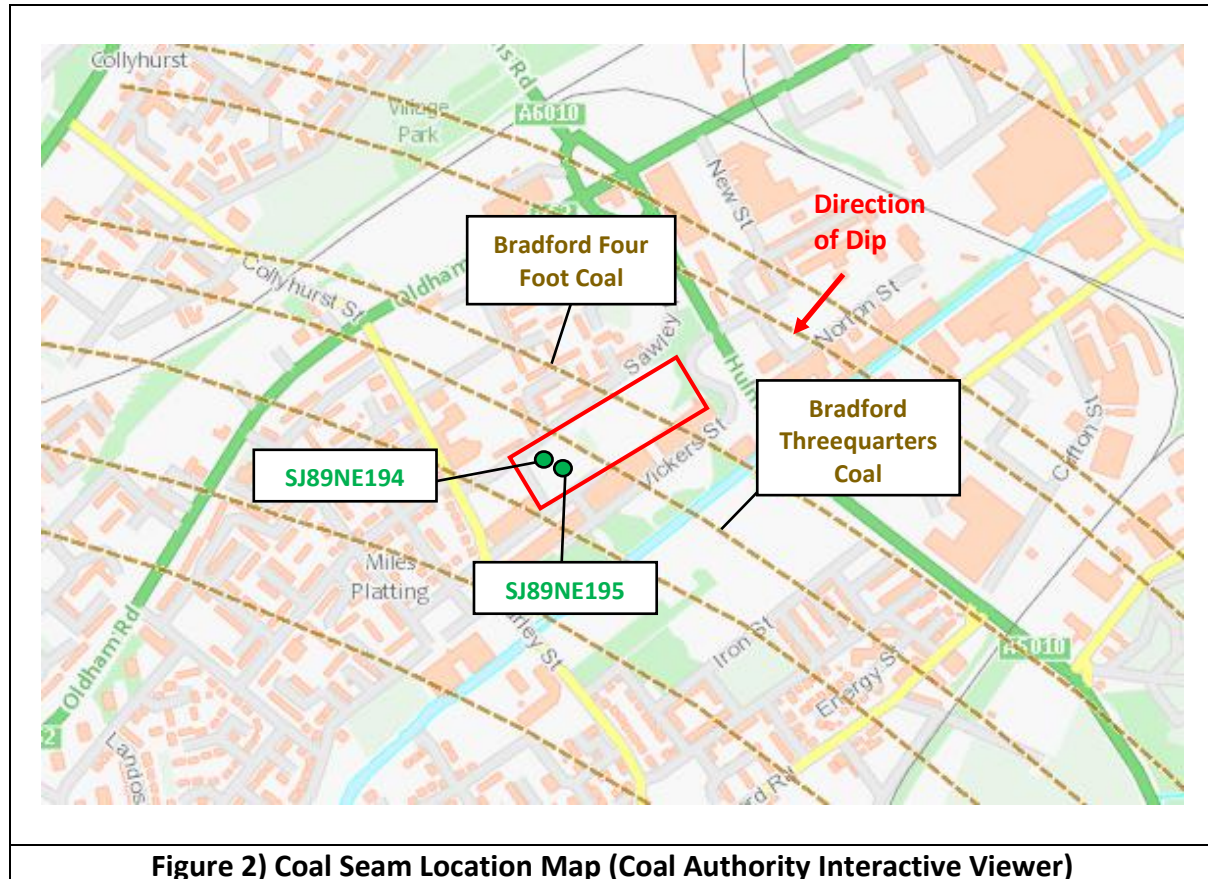


Figure 2) Coal Seam Location Map (Coal Authority Interactive Viewer)

The site is situated within a Secondary Opencast Coal Resource Area (**Appendix F**). The Secondary Opencast Coal Resource Area is defined by the BGS as “A zone in which opencast coal resources are present at surface but the coals are generally thinner and less concentrated in vertical and areal distribution”. Notwithstanding this, it is considered to be very unlikely that there will be any interest in developing open cast coal mining operations at this location in the short or medium-term.

3 Identification and Assessment of Site-Specific Coal Mining Risks

Table 2 below summarises the potential risks associated with coal mining legacy for the proposed development site, which have been identified from list sources of information.

Table 2 - Coal Mining Hazards Summary

Coal Mining Issues	Yes	No
Coal outcrops	X	
Underground coal mining (recorded at shallow depths)	X	
Underground coal mining (probable at shallow depths)	X	
Recorded mine entries (shafts and adits)	X	
Unrecorded mine entries (shafts and adits)	X	
Coal mining geology (fissures)		X
Record of past gas emissions		X
Recorded coal mining surface hazard		X
Surface mining (opencast workings)		X

The Coal Authority Interactive Map Viewer (**Appendix G**) has identified that the south-western half of the site lies within a Development High Risk Area. This is associated with a number of coal mining related issues including:

- recorded mine workings (in the Bradford Four Foot Coal which is 1.2m thick (although the Coal Authority interactive viewer map indicates that it could alternatively be the Bradford Threequarters Coal);
- unrecorded workings at shallow depth that might also include the Bradford Threequarters Coal;
- the presence of recorded mine shafts (Ref: 386399-001 and 386399-016) within the site boundary;
- the presence of a third recorded mine shaft (Ref: 386399-002) shown to be in close proximity to the south-western site boundary.

The reports obtained from the Coal Authority (Consultants Coal Mining Report, reference 51002883792001, dated 7th January 2022 and 51002948577001, dated 3rd March 2022) has revealed that the property is in a surface area that is affected by recorded underground mining in 4 no. seams of coal at depths of between 23m and 842m bgl.

Using the generally accepted 'rule-of-thumb' guidance that a competent rock strata thickness equivalent to at least ten times the extraction thickness provides adequate protection against crown-hole development and surface instability (Refs 2 and 3), it can be concluded that the recorded workings in the Bradford Four Foot Coal could result in surface subsidence or crown-hole development. EnviroSolution note a discrepancy in the labelling of the Bradford Threequarters (or Yard) as the Bradford 4 Foot Coal within the Coal Authority report which contradicts the Coal Authority Interactive Viewer.

The Coal Authority report states that the property is in an area where they believe there is coal at or close to the surface that may have been worked in the past (Bradford 4 Foot Coal and Bradford Threequarters Coal). The Coal Authority has drawn attention to this and has stated that the presence of unrecorded shallow coal should be considered. It is also concluded that if the shallow coal seams have been worked in the past, they could present a risk of surface subsidence.

The Coal Authority report states that they are aware of 5 no. recorded mine entries within 100m of the development site boundary. The mine shaft information is summarised in Table 3 below.

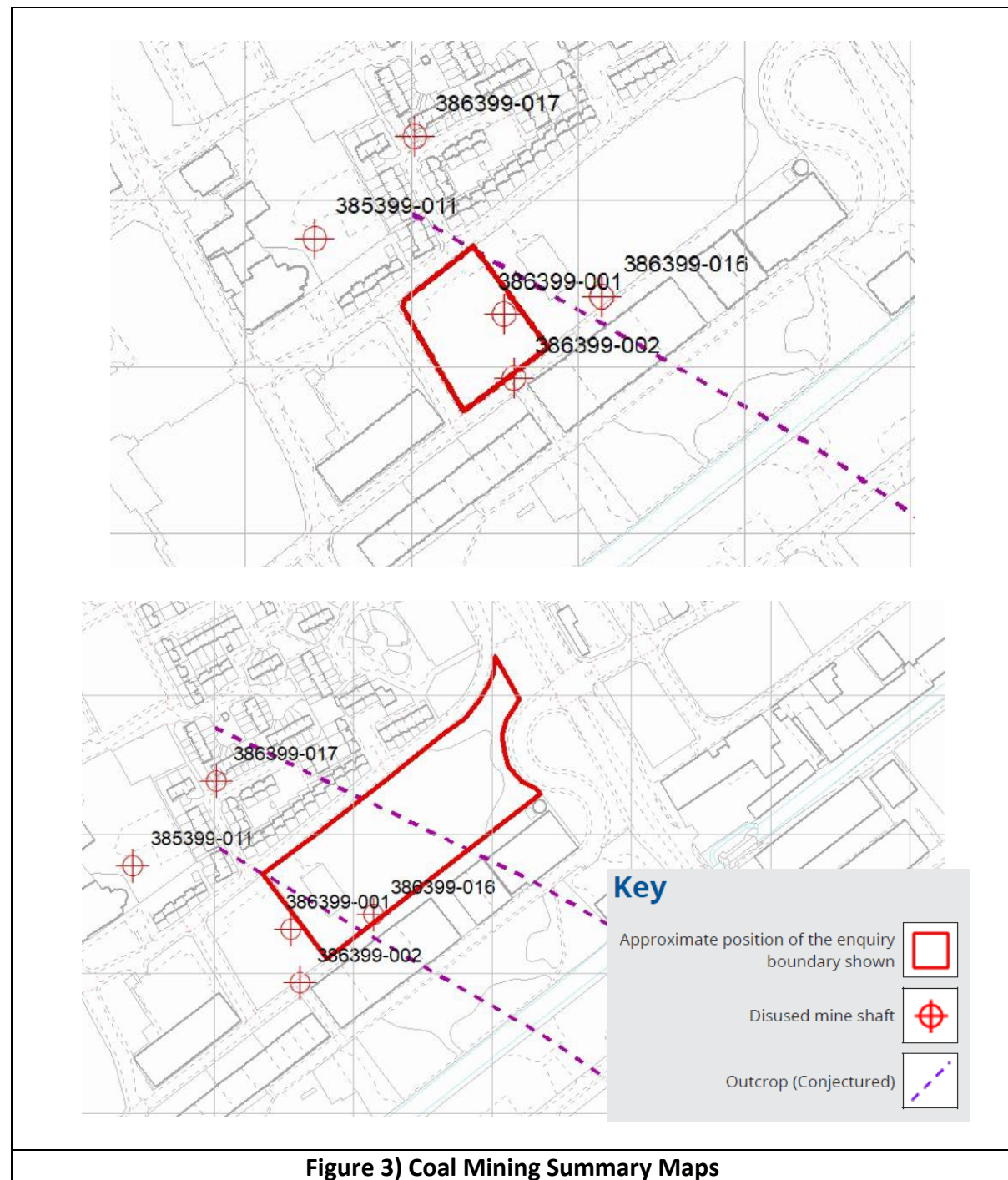
Table 3 - Mine Shaft Summary

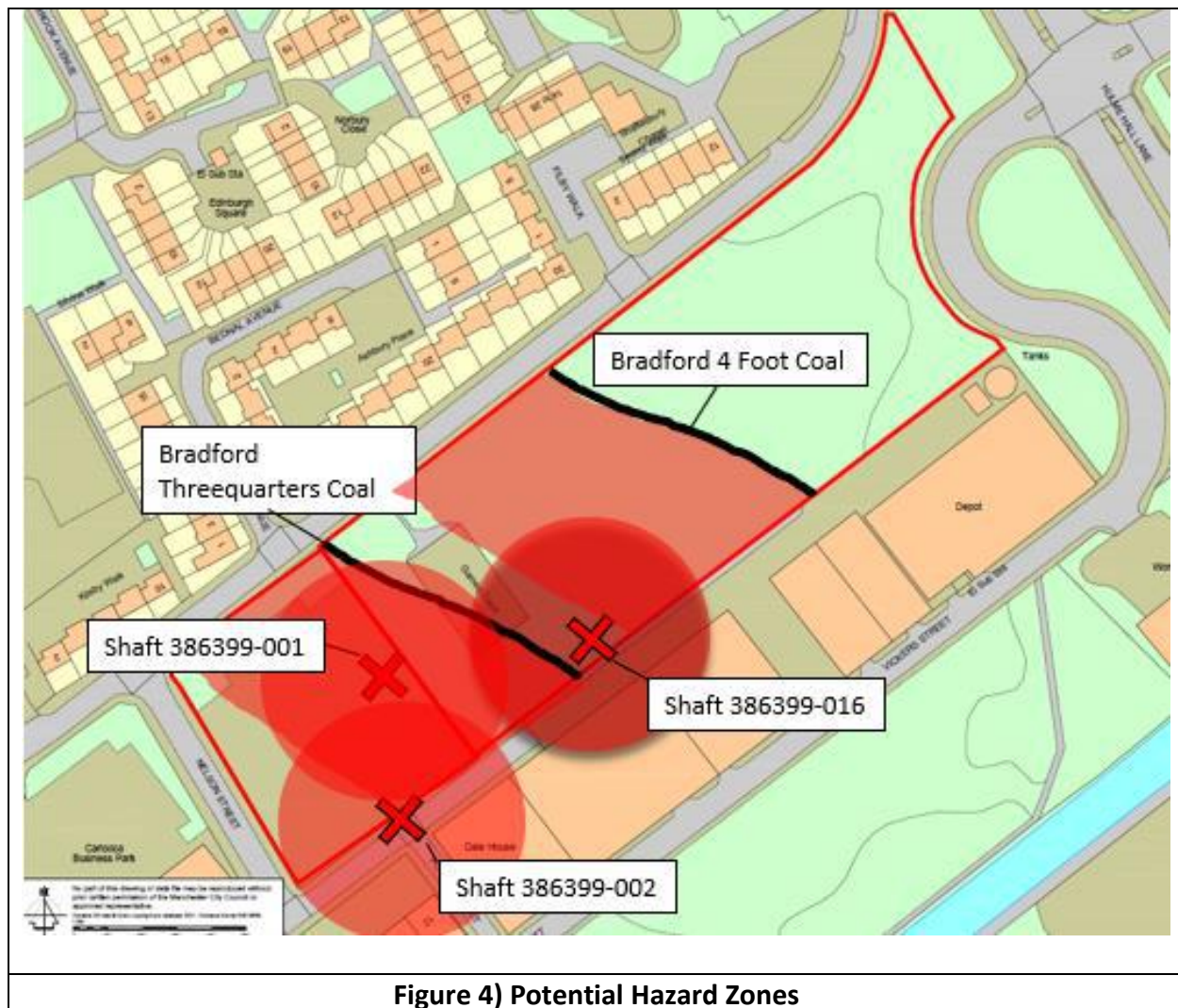
Reference	Treatment Details	Mineral	Distance from Site
385311-011		Coal	72m NW
386399-001	The shaft was located in 1974 and was found to be filled. The shaft was then drilled and pressure grouted.	Coal	On Site
386399-002		Coal	1m SW
386399-016		Coal	On Site
386399-017		Coal	73m N

The location of the shafts is shown in **Figure 3**. Records from 2 no. historic boreholes located within the site (see **Appendix E**) shows that the drift thickness at the shaft location is between 25m and 27m. It is therefore considered that the zones of influence around shaft 386399-002 intersects the site and therefore pose a risk of surface subsidence. This is in addition to shaft 386399-001, which lies within the site boundary. See **Figure 4**.

The Coal Authority mining report states the property is not within the boundary of a historic or current opencast site, and there are no license requests outstanding to remove coal via this method in the future. The risk posed to the site from opencast mining methods is therefore considered to be negligible.

A full mining hazard plan is shown in **Appendix H**.





4 Proposed Mitigation Strategy

- The site layout could be produced where no built development lies within the hazard zones around the shafts or down dip of the coal workings/ seams.
- No above-ground built development should take place within the hazard zones around the shafts or down dip of the coal workings/ seams without undertaking physical investigation and/or mitigation measures if required.
- A programme of trial trenching should be undertaken around the location of Shaft 386399-001 and along the site boundary in proximity to Shaft 386399-002 to look for evidence of the shafts and/ or evidence of historic treatment works.
- Shaft 386399-016 should be located and treated via a programme of probe drilling and capping. This should also be undertaken if built development is proposed above Shaft 386399-001. During drilling works, it will be necessary to continuously monitor for ground gases. In order to undertake these works it will be necessary to obtain a drilling permit from The Coal Authority.
- No construction works should take place over, or within 25m of the of the abandoned mine shaft (Shaft 386399-016) unless treated.
- In any proposed areas of soft landscaping, play areas or car parking where they intersect the hazard zones, then a durable geotextile/ geogrid could be used to provide immediate protection against surface instability. This could be placed in conjunction with the formation of the surfacing.
- It is recommended that a minimum of 6 no. rotary boreholes are advanced to a minimum depth of 35m below ground level in the hazard areas. Water flush should be used to safeguard against oxidation and potential spontaneous combustion of shallow coal. In order to undertake these works it will be necessary to obtain a drilling permit from The Coal Authority.
- The possibility of unrecorded mine shafts has been highlighted in the Coal Authority report. Historical maps do not show evidence of shafts within the site boundary. The potential risk can be dealt with through vigilance during the earthworks stage of construction.

5 Conclusions

The Coal Mining Risk Assessment for the site at Varley Street in Manchester has concluded that the risk associated with coal mining related issues is significant. Information obtained from the Coal Authority and the assessment made by EnviroSolution has concluded that risks remain, including potential recorded shallow abandoned coal mine workings, unrecorded workings and recorded and unrecorded coal mine shafts.

The principal risks to the development arise from:

- the presence of recorded shallow mine workings;
- the potential presence of unrecorded shallow mine workings associated with coal seams of workable thickness that are expected to be present beneath the site area;
- recorded mine entries;
- unrecorded mine entries;
- mine gas.

It is therefore recommended that further intrusive ground investigations are undertaken. These might include the drilling of up to 6 no. rotary probe boreholes across the site to determine the proximate coal seam positions along with obtaining evidence of unrecorded and recorded coal mine workings and a programme of probe drilling to locate mine shaft 396399-016. A trial trenching programme should be undertaken to find evidence of Shafts 386399-001 and 386399-002. Additional mitigation measures would be required for the area that lies within the zone(s) of influence around the mineshaft(s). This may include utilising a geotextile layer for soft play areas or relocating buildings from this area.

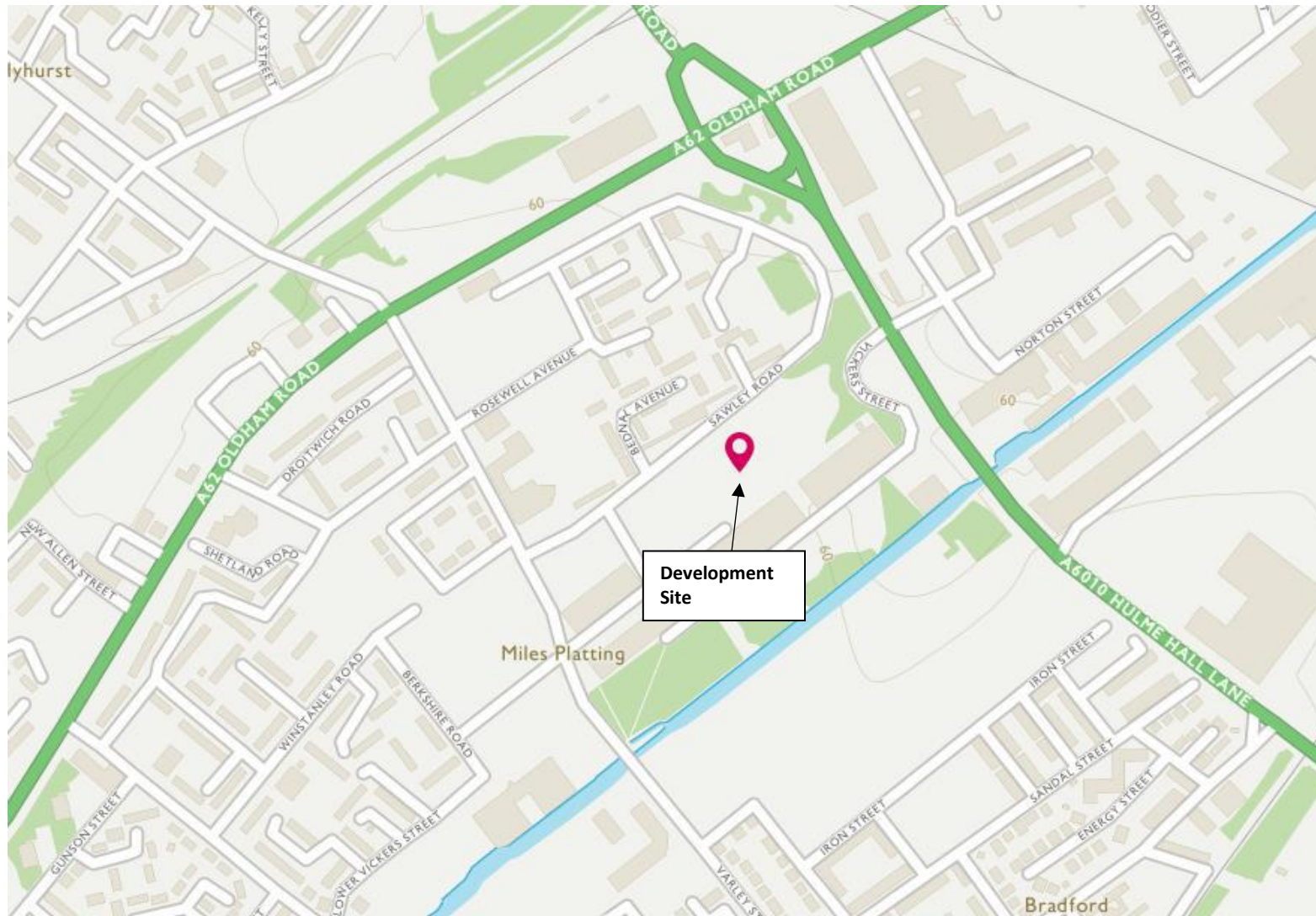
Prior to the commencement of intrusive works, a Coal Authority Permit will be required for intrusive activities, that will disturb or enter any coal seams, coal mine workings or coal mine entries (shafts and adits). The scope of works for the investigation will need to be submitted and approved by the local authority prior to the commencement of the intrusive works.

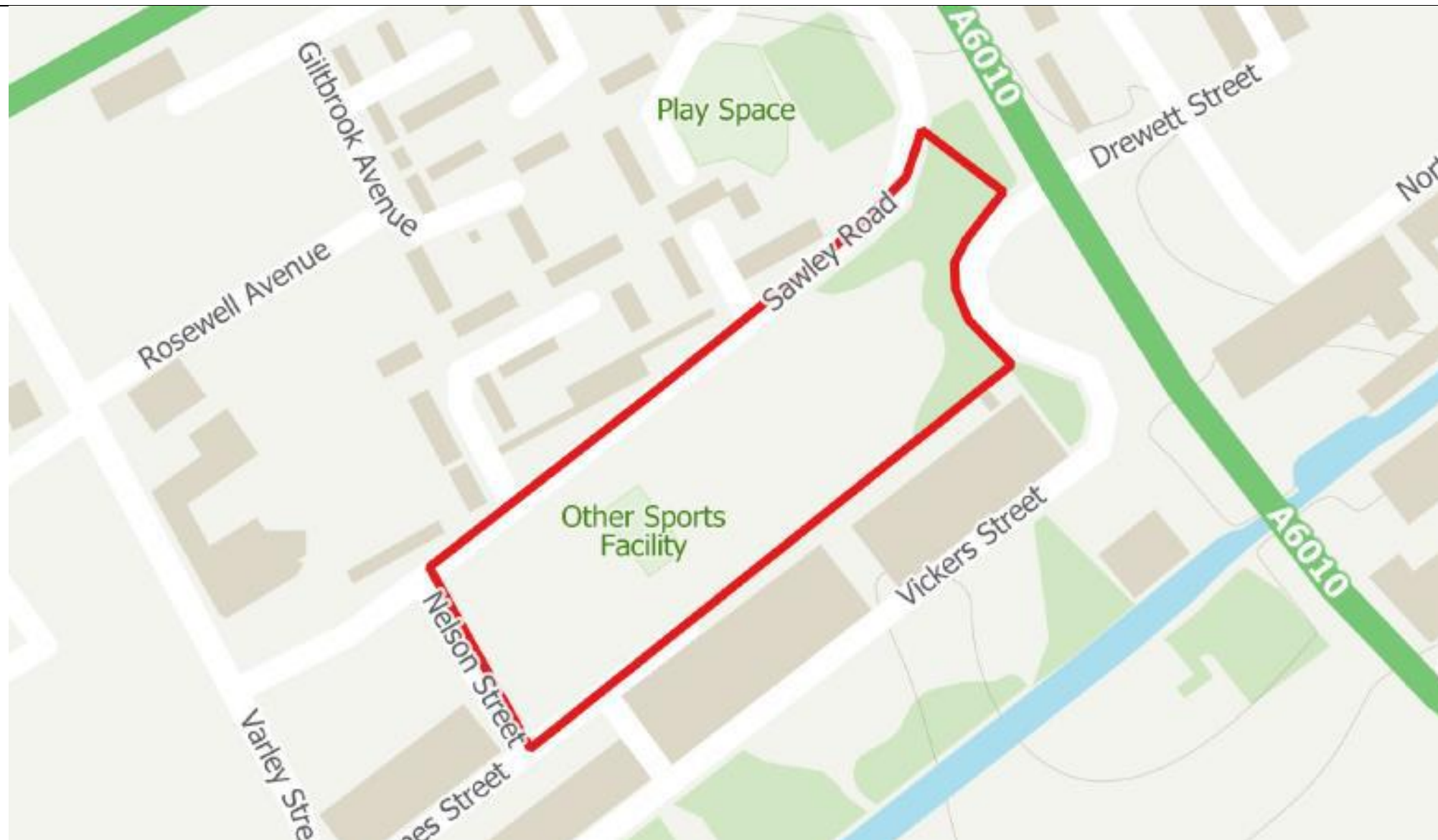
It is also recommended that consultations are made with the Coal Authority in order to confirm agreement on the constraints to various types of site development above recorded shafts and their zones of influence.

6 References

1. Coal Authority, 2014, Risk Based Approach to Development Management Resources for Developers, Version 3.
2. CIRIA, 2002, SP32 Construction over Abandoned Mine Workings.
3. CIRIA, 2019, C758D Abandoned Mine Workings Manual.
4. CIRIA, Publication C665, Assessing risks posed by hazardous ground gases to buildings.

Appendix A – Site Location





Appendix B – Coal Authority Report



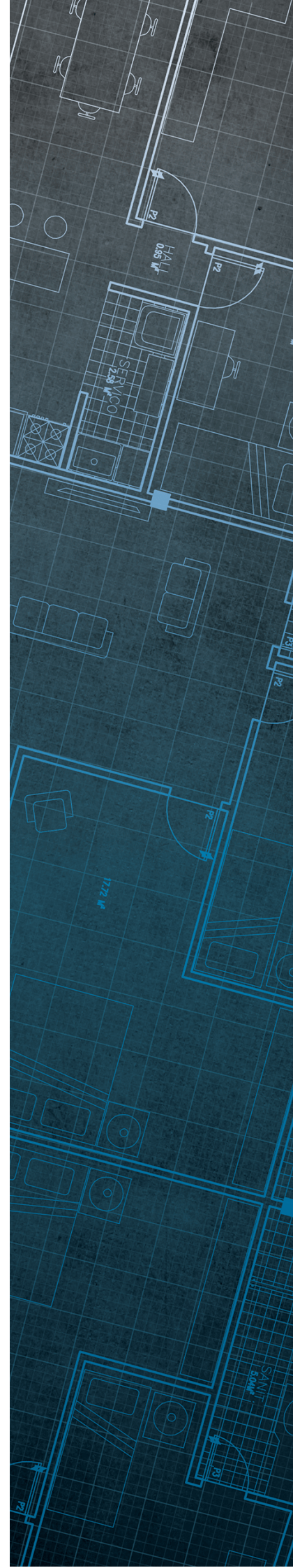
The Coal
Authority

Consultants Coal Mining Report

Varley Street
Manchester
M40 8EE

Date of enquiry:	7 January 2022
Date enquiry received:	7 January 2022
Issue date:	7 January 2022

Our reference:	51002883792001
Your reference:	ES070122



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

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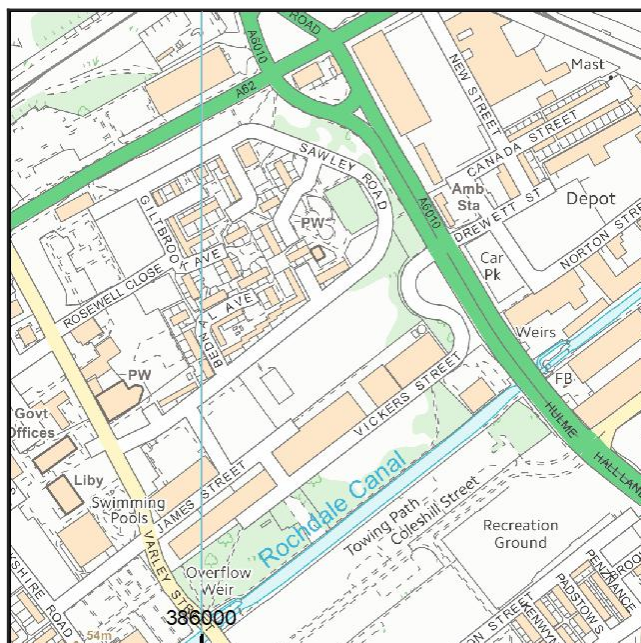
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Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	BRADFORD FOUR FEET	Coal	35CU	24	Beneath Property	18.4	South-West	120	1900
unnamed	PARKER	Coal	35BJ	253	North	17.9	South-West	80	1935
unnamed	PARKER	Coal	35BL	303	Beneath Property	18.0	South-West	80	1935
unnamed	PARKER	Coal	35BQ	369	Beneath Property	22.5	South	80	1935
unnamed	PARKER	Coal	35BR	371	North-West	7.8	South-West	80	1935
unnamed	CROMBOUK E	Coal	3597	607	North	16.9	South-West	120	1936
unnamed	ROGER	Coal	35AN	613	North	17.2	South-West	180	1964
unnamed	ROGER	Coal	35AM	626	North-West	16.2	South	180	1964
unnamed	ROGER	Coal	35AY	637	North-East	16.1	South-West	180	1961
unnamed	ROGER	Coal	35AL	642	North-West	17.4	South	180	1967
unnamed	CROMBOUK E	Coal	359F	643	Beneath Property	21.0	South-West	120	1924
unnamed	ROGER	Coal	35AZ	648	Beneath Property	20.8	South-West	180	1963
unnamed	ROGER	Coal	35B2	789	West	21.6	South	180	1965
unnamed	CROMBOUK E	Coal	359E	842	South	16.5	South-West	120	1932

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	385399-011	385942 399577		Coal	
Shaft	386399-001	386056 399531	This shaft was located in 1974 and was found to be filled The shaft was then drilled and pressure grouted.	Coal	
Shaft	386399-002	386062 399493		Coal	
Shaft	386399-016	386115 399542		Coal	
Shaft	386399-017	386002 399638		Coal	

Abandoned mine plan catalogue numbers

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

11471	NW1171	NW1172
0	NW645	PO0
2655	NW644	

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
BRADFORD FOUR FEET	Coal	Yes	Within	N/A	120
YARD	Coal	Yes	Within	N/A	115

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.

Section 2 – Investigative or remedial activity

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

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

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

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

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

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

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

Withdrawal of support notices

The property is in an area where a notice to withdraw support was given in 1955.

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

Payments to owners of former copyhold land

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

Section 4 – Further information

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

Development advice

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

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

Section 5 – Data definitions

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

Past underground coal mining

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

Probable unrecorded shallow workings

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

Spine roadways at shallow depth

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

Mine entries

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

Abandoned mine plan catalogue numbers

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

Outcrops

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

Geological faults, fissures and breaklines

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

Opencast mines

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

Coal Authority managed tips

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

Site investigations

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

Remediated sites

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

Coal mining subsidence

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

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

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

Mine gas

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

Mine water treatment schemes

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

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

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

Future underground mining

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

Coal mining licensing

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

Court orders

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

Section 46 notices

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

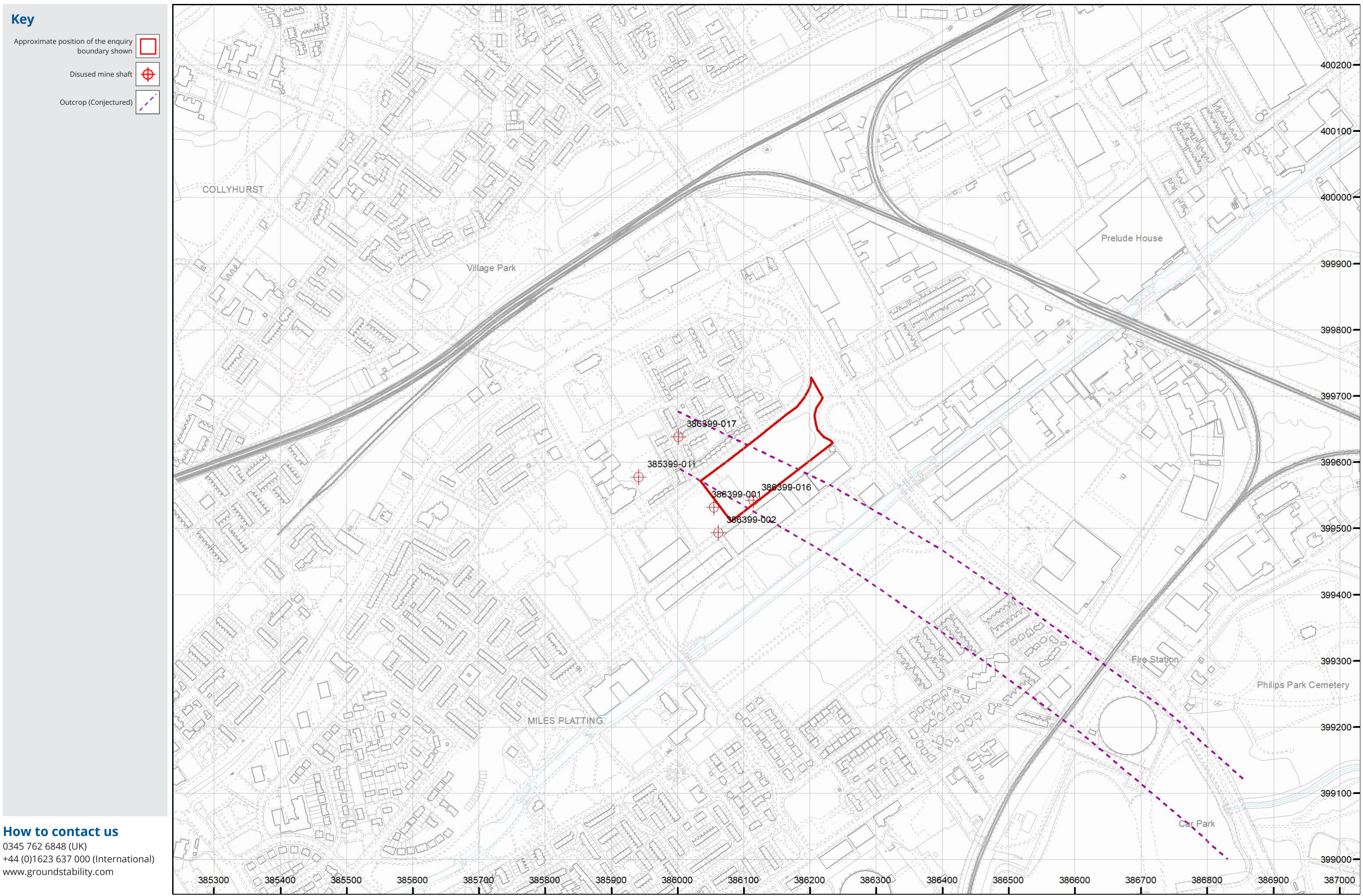
Withdrawal of support notices

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

Payment to owners of former copyhold land

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

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





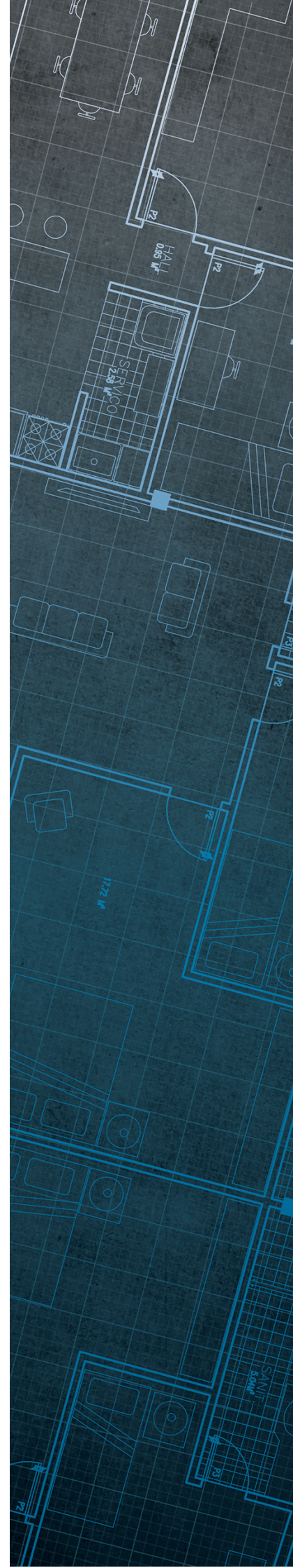
The Coal
Authority

Consultants Coal Mining Report

Land At Varley Street/ Nelson Street
Manchester
M40 8EF

Date of enquiry:	3 March 2022
Date enquiry received:	3 March 2022
Issue date:	3 March 2022

Our reference:	51002948577001
Your reference:	ES030322



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

EnviroSolution Limited

Enquiry address

Land At Varley Street/ Nelson Street
Manchester
M40 8EF

How to contact us

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

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

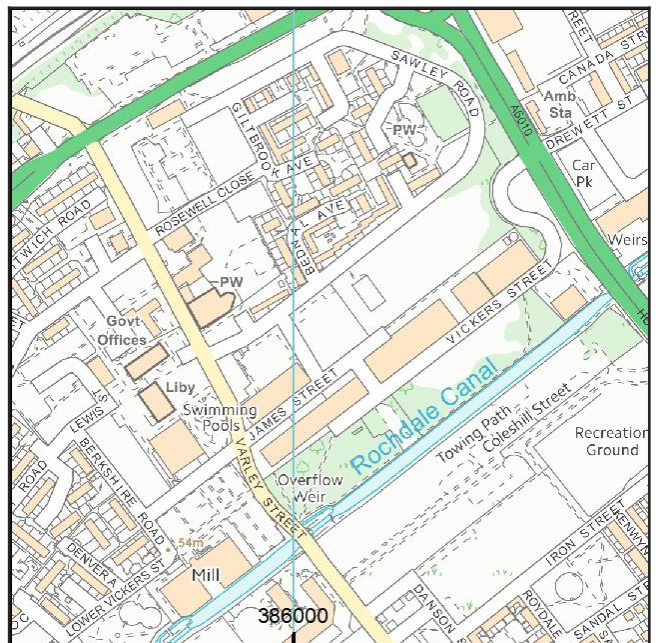
www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	BRADFORD FOUR FEET	Coal	35CU	23	Beneath Property	18.4	South-West	120	1900
unnamed	PARKER	Coal	35BL	342	North-East	18.0	South-West	80	1935
unnamed	PARKER	Coal	35BR	373	North	7.8	South-West	80	1935
unnamed	PARKER	Coal	35BQ	401	Beneath Property	22.5	South	80	1935
unnamed	ROGER	Coal	35AM	626	North	16.2	South	180	1964
unnamed	CROMBOUK E	Coal	3597	628	North	16.9	South-West	120	1936
unnamed	ROGER	Coal	35AN	634	North	17.2	South-West	180	1964
unnamed	ROGER	Coal	35AY	636	North-East	16.1	South-West	180	1961
unnamed	ROGER	Coal	35AL	642	North	17.4	South	180	1967
unnamed	CROMBOUK E	Coal	359F	713	Beneath Property	21.0	South-West	120	1924
unnamed	ROGER	Coal	35AZ	723	Beneath Property	20.8	South-West	180	1963
unnamed	ROGER	Coal	35B2	788	West	21.6	South	180	1965
unnamed	CROMBOUK E	Coal	359E	842	South	16.5	South-West	120	1932

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	385399-011	385942 399577		Coal	
Shaft	386399-001	386056 399531	This shaft was located in 1974 and was found to be filled The shaft was then drilled and pressure grouted.	Coal	
Shaft	386399-002	386062 399493		Coal	
Shaft	386399-016	386115 399542		Coal	
Shaft	386399-017	386002 399638		Coal	

Abandoned mine plan catalogue numbers

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

11471	NW1171	NW1172
0	NW645	PO0
NW1167	2655	NW644

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
BRADFORD FOUR FEET	Coal	Yes	Within	N/A	120

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.

Section 2 – Investigative or remedial activity

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

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

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

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

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

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

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

Withdrawal of support notices

The property is in an area where a notice to withdraw support was given in 1955.

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

Payments to owners of former copyhold land

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

Section 4 – Further information

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

Development advice

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

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

Section 5 – Data definitions

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

Past underground coal mining

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

Probable unrecorded shallow workings

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

Spine roadways at shallow depth

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

Mine entries

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

Abandoned mine plan catalogue numbers

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

Outcrops

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

Geological faults, fissures and breaklines

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

Opencast mines

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

Coal Authority managed tips

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

Site investigations

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

Remediated sites

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

Coal mining subsidence

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

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

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

Mine gas

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

Mine water treatment schemes

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

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

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

Future underground mining

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

Coal mining licensing

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

Court orders

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

Section 46 notices

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

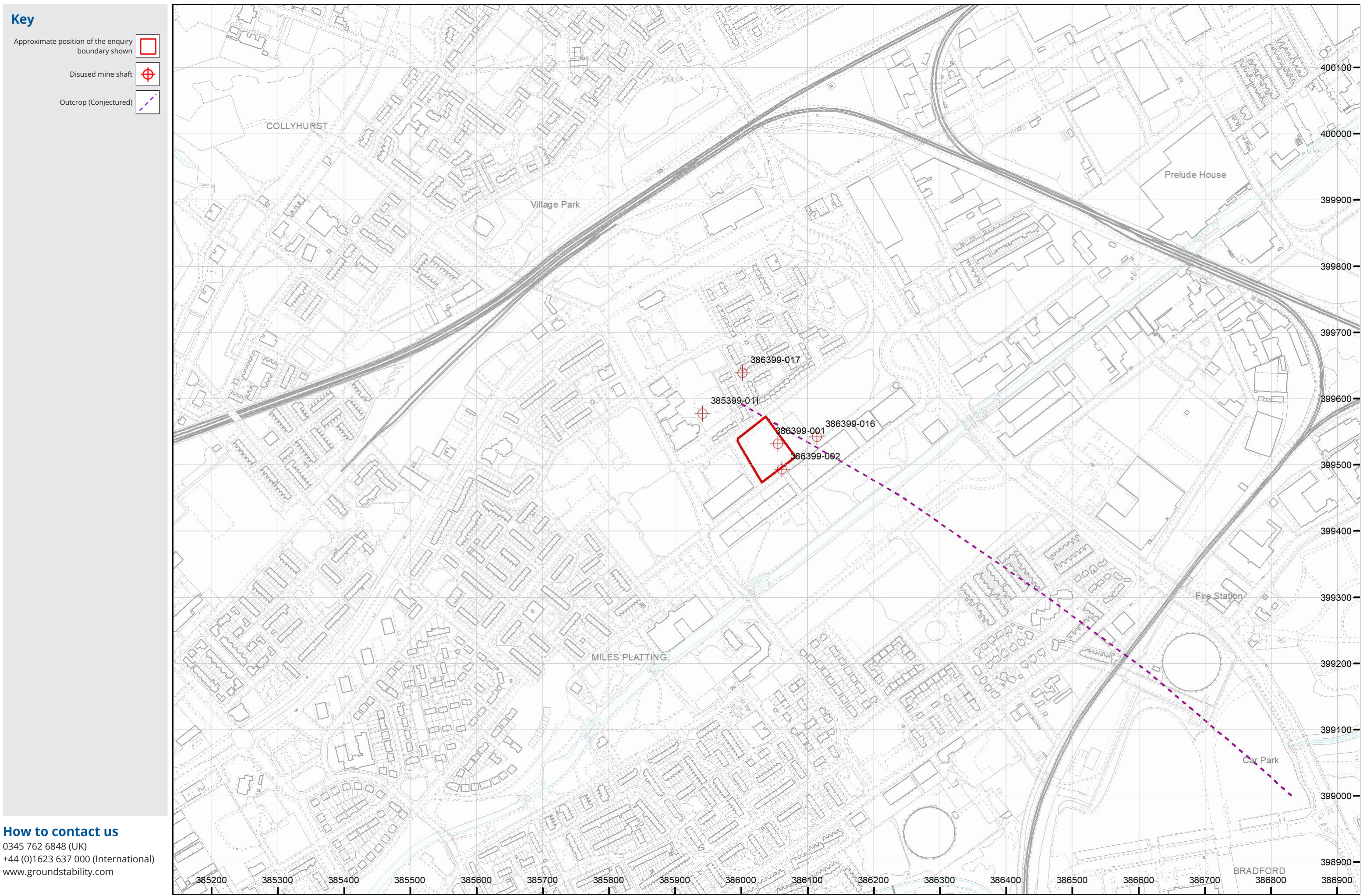
Withdrawal of support notices

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

Payment to owners of former copyhold land

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

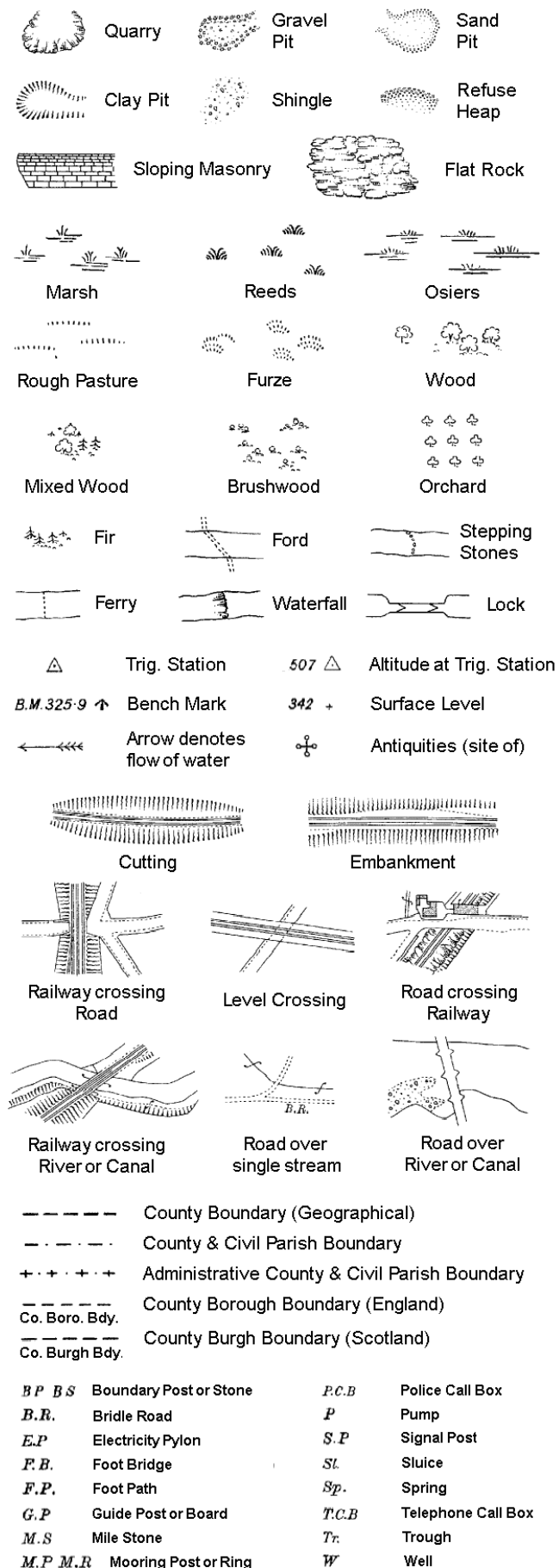
The map highlights any specific surface or subsurface features within or near to the boundary of the site.



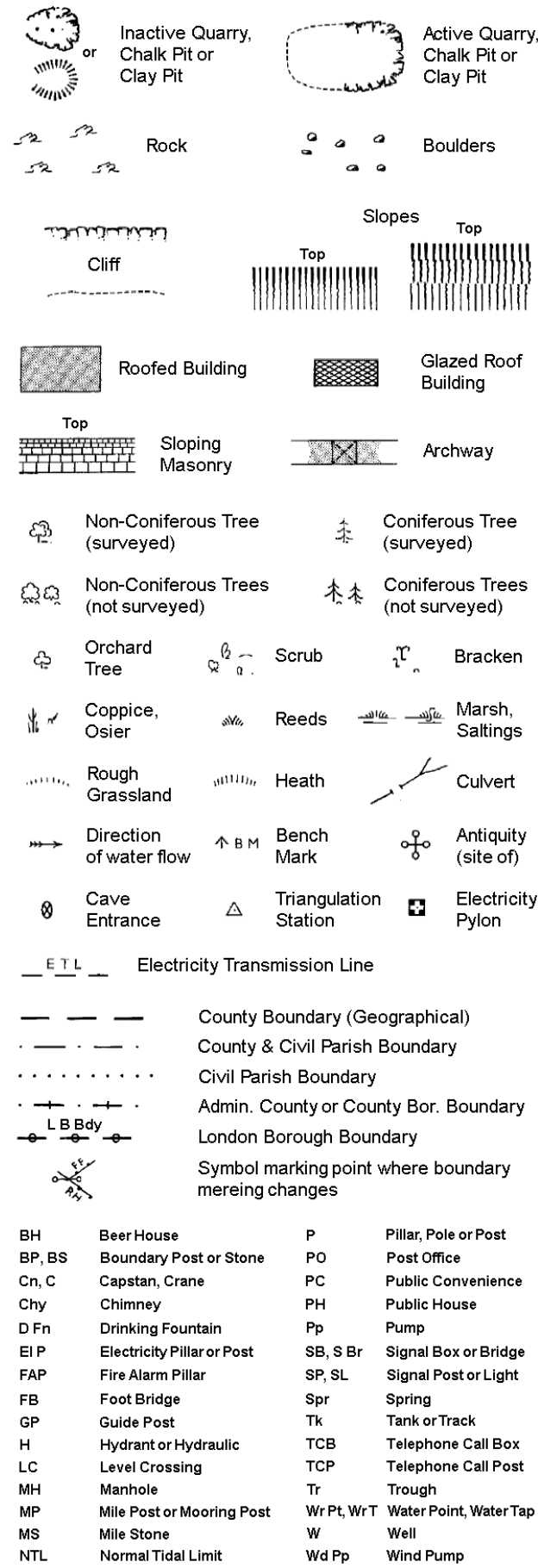
Appendix C – Historic Maps

Historical Mapping Legends

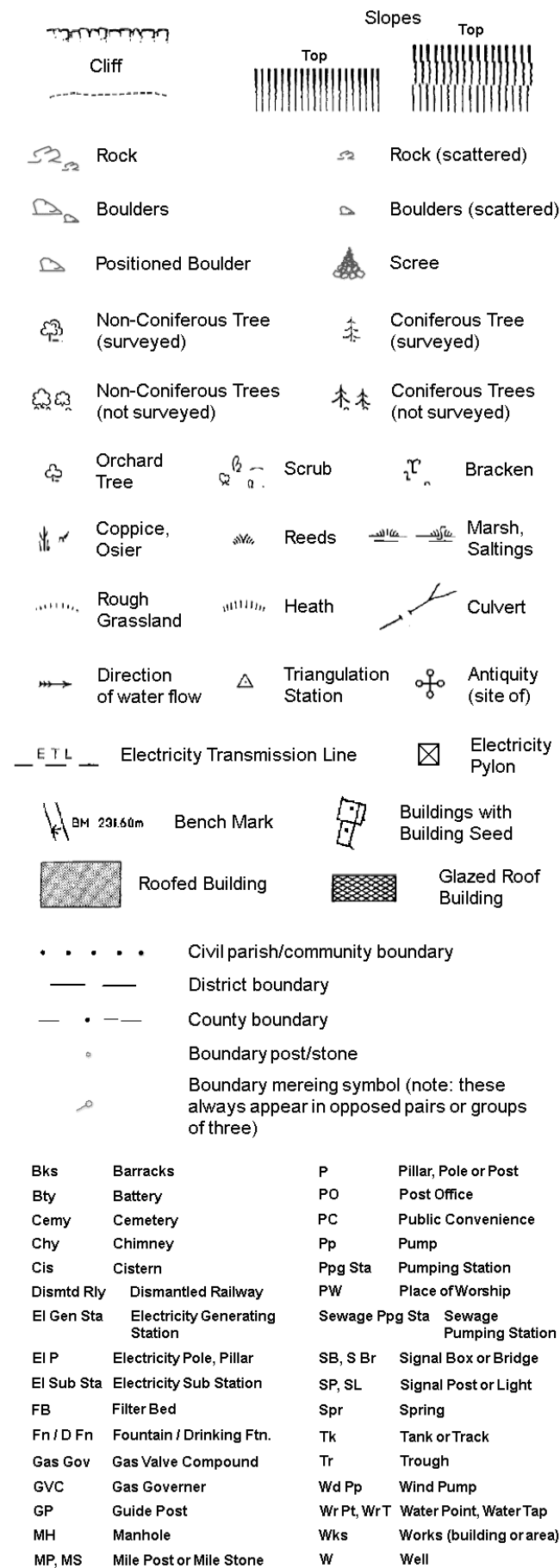
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



Large-Scale National Grid Data 1:2,500 and 1:1,250



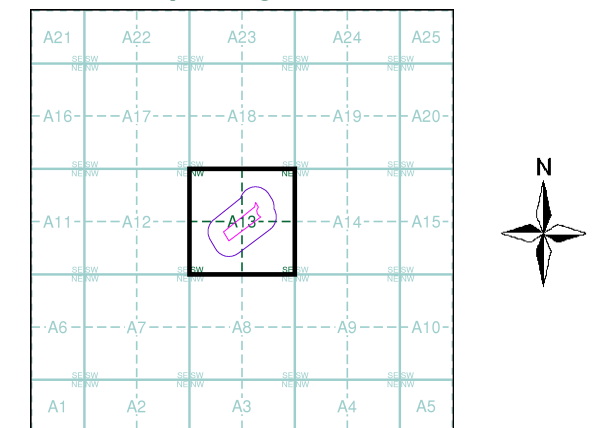
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:2,500	1893	2
Lancashire And Furness	1:2,500	1908	3
Lancashire And Furness	1:2,500	1922 - 1931	4
Ordnance Survey Plan	1:1,250	1948 - 1949	5
Ordnance Survey Plan	1:2,500	1951	6
Ordnance Survey Plan	1:1,250	1952 - 1955	7
Ordnance Survey Plan	1:2,500	1954 - 1970	8
Ordnance Survey Plan	1:1,250	1965 - 1971	9
Ordnance Survey Plan	1:2,500	1966	10
Ordnance Survey Plan	1:1,250	1970 - 1981	11
Additional SIMs	1:1,250	1978 - 1984	12
Additional SIMs	1:1,250	1981 - 1991	13
Additional SIMs	1:1,250	1986 - 1991	14
Ordnance Survey Plan	1:1,250	1988 - 1990	15
Additional SIMs	1:1,250	1991	16
Large-Scale National Grid Data	1:1,250	1992	17
Large-Scale National Grid Data	1:1,250	1994 - 1995	18
Large-Scale National Grid Data	1:1,250	1995	19

Historical Map - Segment A13



Order Details

Order Number: 291982299_1_1
Customer Ref: ES020322
National Grid Reference: 386120, 399600
Slice: A
Site Area (Ha): 1.83
Search Buffer (m): 100

Site Details

Saville Whittle, Vickers Street, MANCHESTER, M40 8EF

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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Osiers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furze		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		
	Site of Antiquities		Bench Mark		
	Pump, Guide Post, Signal Post		Well, Spring, Boundary Post		
	285 Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		Minor Roads		
	Sunken Road		Raised Road		
	Road over Railway		Railway over River		
	Railway over Road		Level Crossing		
	Road over River or Canal		Road over Stream		
	Road over Stream				
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	Rural District Boundary				
	Civil Parish Boundary				

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Bracken		Heath
	Marsh		Reeds
	Building		Glasshouse
	Sloping Masonry		Pylon
	Cutting		Embankment
	Road Under		Road Over
	Level Crossing		Foot Bridge
	Standard Gauge Multiple Track		Standard Gauge Single Track
	Siding, Tramway or Mineral Line		Narrow Gauge
	Geographical County		Administrative County, County Borough or County of City
	Municipal Borough, Urban or Rural District, Burgh or District Council		Borough, Burgh or County Constituency
	Civil Parish		
	BP, BS		Pol Sta
	Ch		PO
	CH		PC
	F E Sta		PH
	FB		SB
	Fn		Spr
	GP		TCB
	MP		TCP
	MS		W

1:10,000 Raster Mapping

	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, parish or community boundary
	District, Unitary, Metropolitan, London Borough boundary		Constituency boundary
	Area of wooded vegetation		Non-coniferous trees
	Non-coniferous trees (scattered)		Coniferous trees
	Coniferous trees (scattered)		Positioned tree
	Orchard		Coppice or Osiers
	Rough Grassland		Heath
	Scrub		Marsh, Salt Marsh or Reeds
	Water feature		Flow arrows
	Mean high water (springs)		Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	Bench mark (where shown)		Triangulation station
	Point feature (e.g. Guide Post or Mile Stone)		Pylon, flare stack or lighting tower
	Site of (antiquity)		Glasshouse
	General Building		Important Building

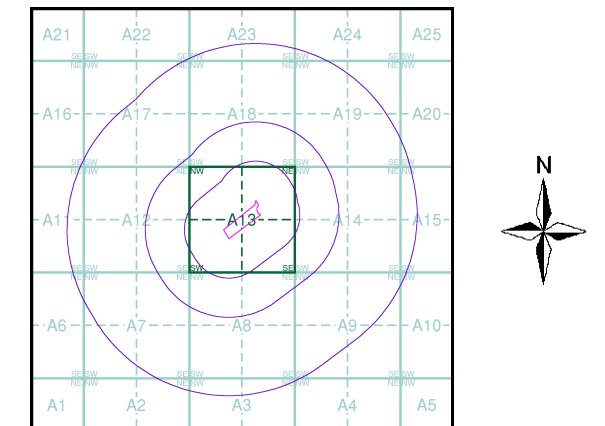
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
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Cheshire	1:10,560	1882	3
Lancashire And Furness	1:10,560	1894	4
Lancashire And Furness	1:10,560	1909	5
Lancashire And Furness	1:10,560	1923	6
Lancashire And Furness	1:10,560	1932 - 1933	7
Lancashire And Furness	1:10,560	1938	8
Ordnance Survey Plan	1:10,000	1956	9
Ordnance Survey Plan	1:10,000	1966 - 1968	10
Ordnance Survey Plan	1:10,000	1972 - 1979	11
Ordnance Survey Plan	1:10,000	1980 - 1986	12
Ordnance Survey Plan	1:10,000	1985 - 1987	13
Ordnance Survey Plan	1:10,000	1989	14
Ordnance Survey Plan	1:10,000	1990 - 1994	15
10K Raster Mapping	1:10,000	1999	16
Street View	Variable		17

Historical Map - Slice A



Order Details

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National Grid Reference: 386120, 399600
Slice: A
Site Area (Ha): 1.83
Search Buffer (m): 1000

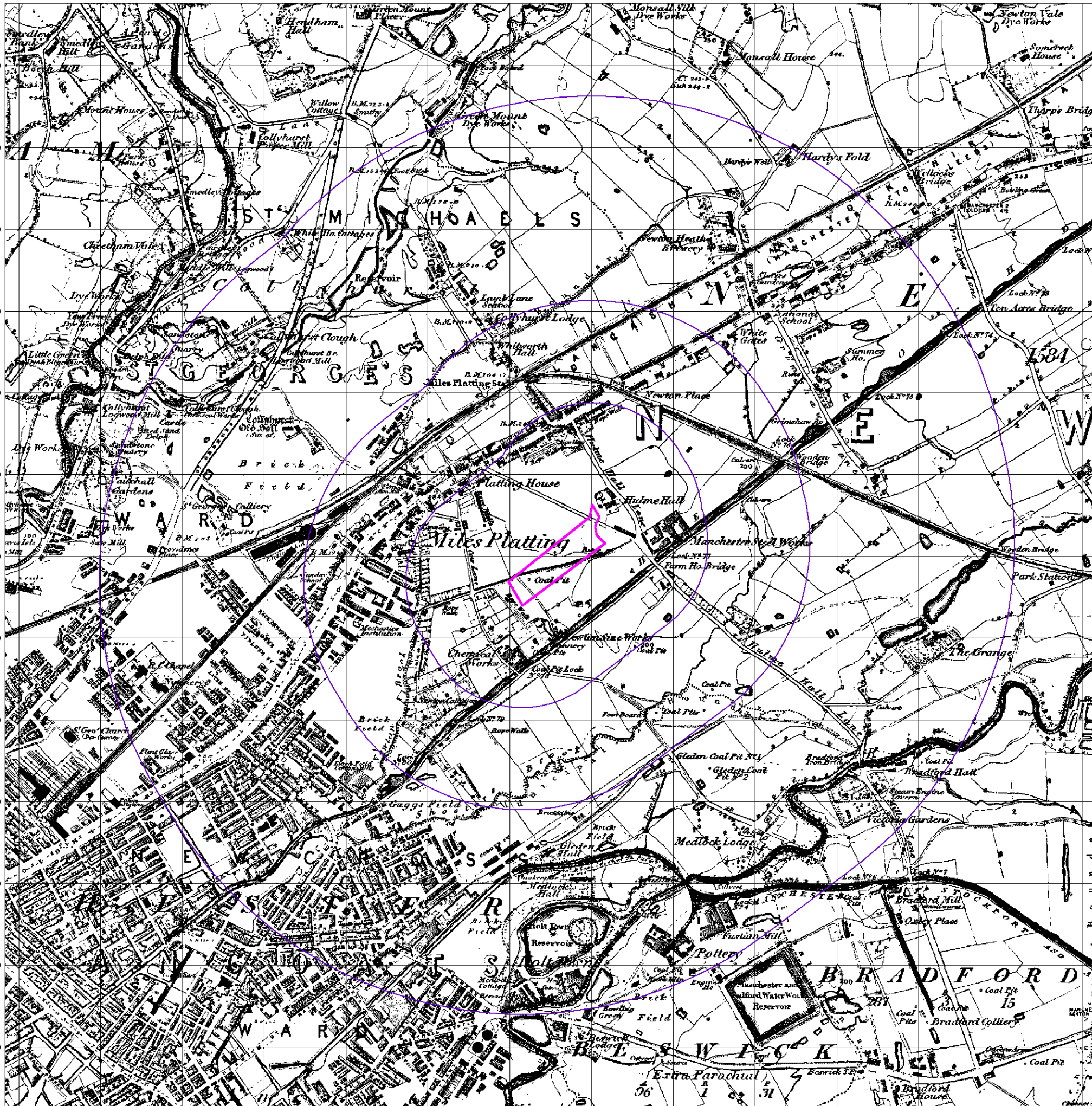
Site Details

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384800 385000 385200 385400 385600 385800 386000 386200 386400 386600 386800 387000 387200 387400



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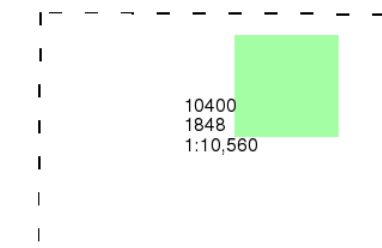
Lancashire And Furness

Published 1848

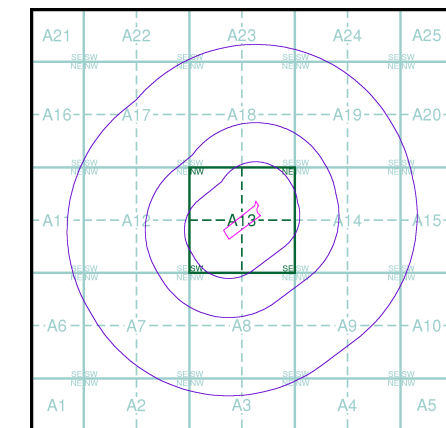
Source map scale - 1:10,560

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; these maps were used to update the 1:10,560 maps. The published date given therefore 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. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

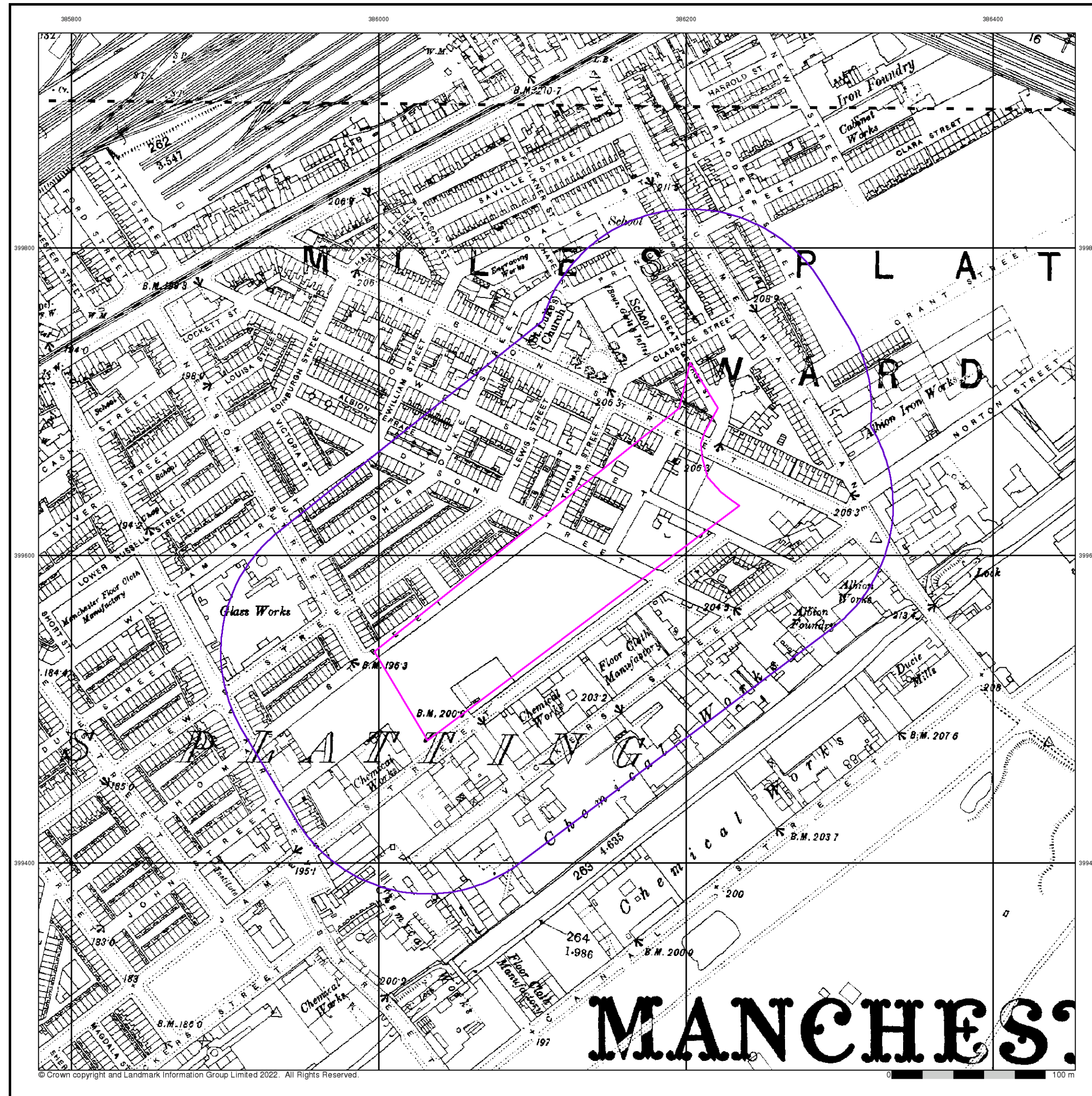
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Customer Ref: ES020322
National Grid Reference: 386120, 399600
Slice: A
Site Area (Ha): 1.83
Search Buffer (m): 1000

Site Details

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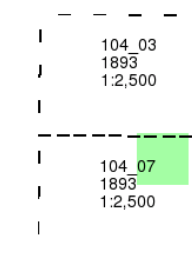
Lancashire And Furness

Published 1893

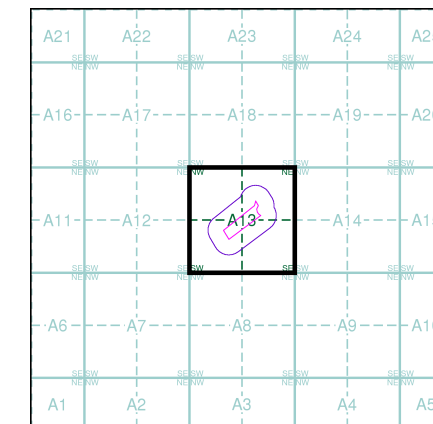
Source map scale - 1:2,500

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

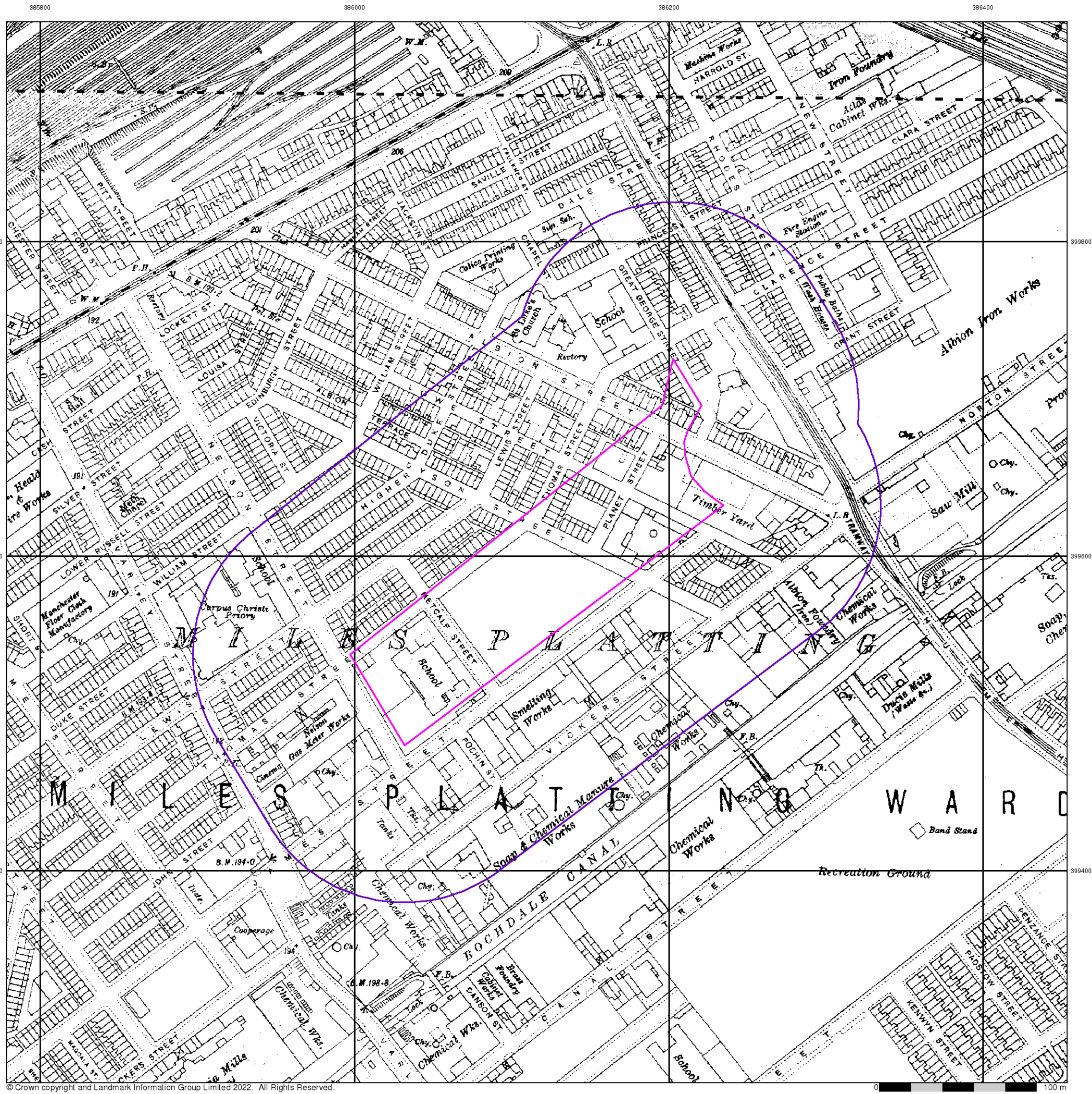
Order Number: 291982299_1_1
Customer Ref: ES020322
National Grid Reference: 386120, 399600
Slice: A
Site Area (Ha): 1.83
Search Buffer (m): 100

Site Details

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Lancashire And Furness

Published 1922 - 1931

Source map scale - 1:2,500

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Map Name(s) and Date(s)

104_03	1931	1:2,500
104_07	1922	1:2,500

Historical Map - Segment A13

Order Details

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Customer Ref:	ES020322
National Grid Reference:	386120, 399600
Slice:	A
Site Area (Ha):	1.83
Search Buffer (m):	100

Site Details

Saville Whittle, Vickers Street, MANCHESTER, M40 8EF

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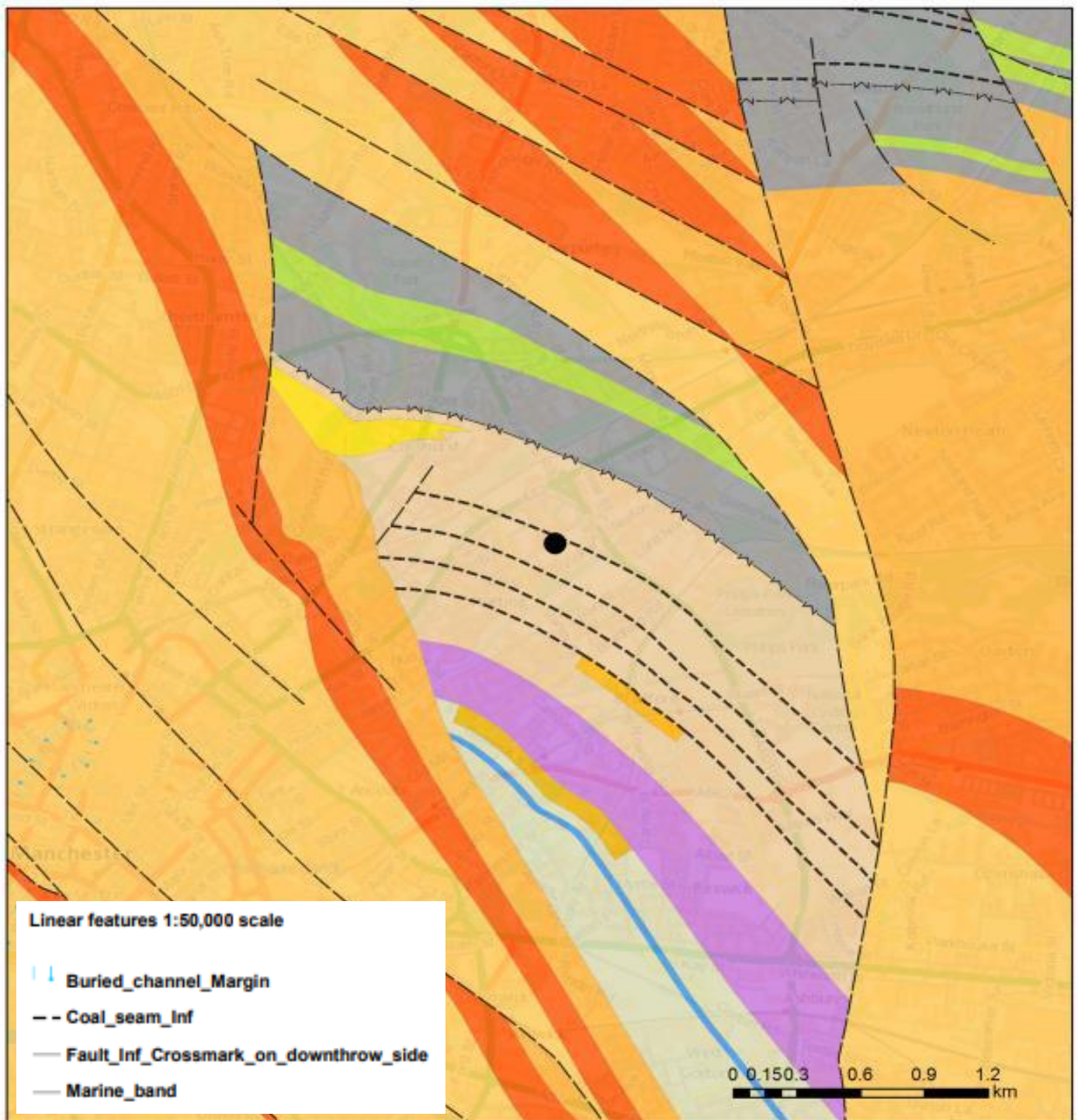
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A Landmark Information Group Service v50.0 02-Mar-2022 Page 4 of 19

Appendix D – Geological Maps

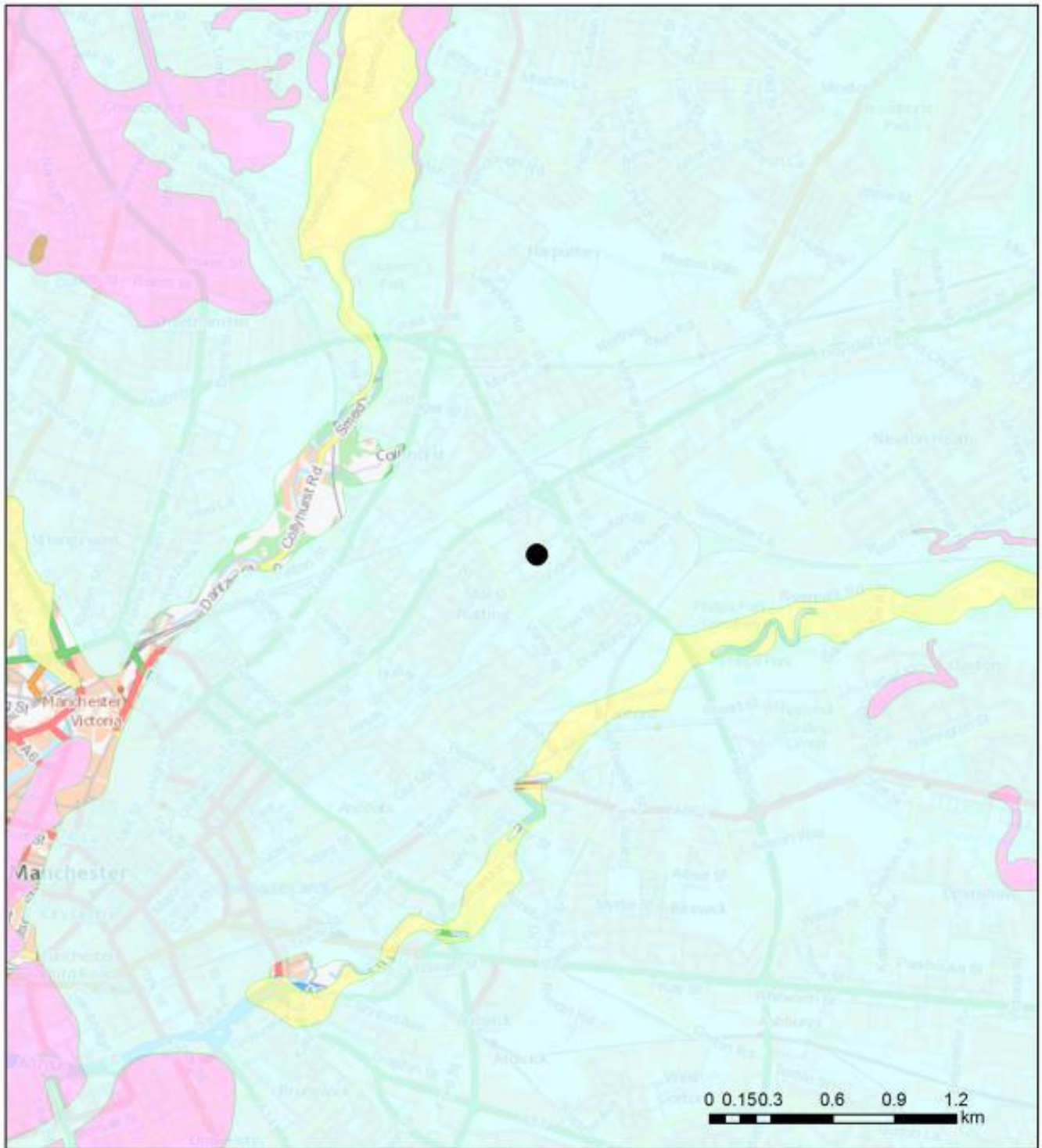
Bedrock Geology



Bedrock geology 1:50,000 scale

- [GREAT MINE LIMESTONE - LIMESTONE](#)
- [ETRURIA FORMATION - SANDSTONE AND MUDSTONE](#)
- [HALESOWEN FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE](#)
- [PENNINE UPPER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE](#)
- [PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE](#)
- [CHESTER FORMATION - SANDSTONE](#)
- [COLLYHURST SANDSTONE FORMATION - SANDSTONE](#)
- [NEWTON HEATH SANDSTONE - SANDSTONE](#)
- [WORSLEY DELF ROCK - SANDSTONE](#)
- [OPENSHAW SANDSTONE - SANDSTONE](#)
- [MANCHESTER MARLS FORMATION - MUDSTONE](#)
- [HOLT TOWN SANDSTONE BED - SANDSTONE](#)

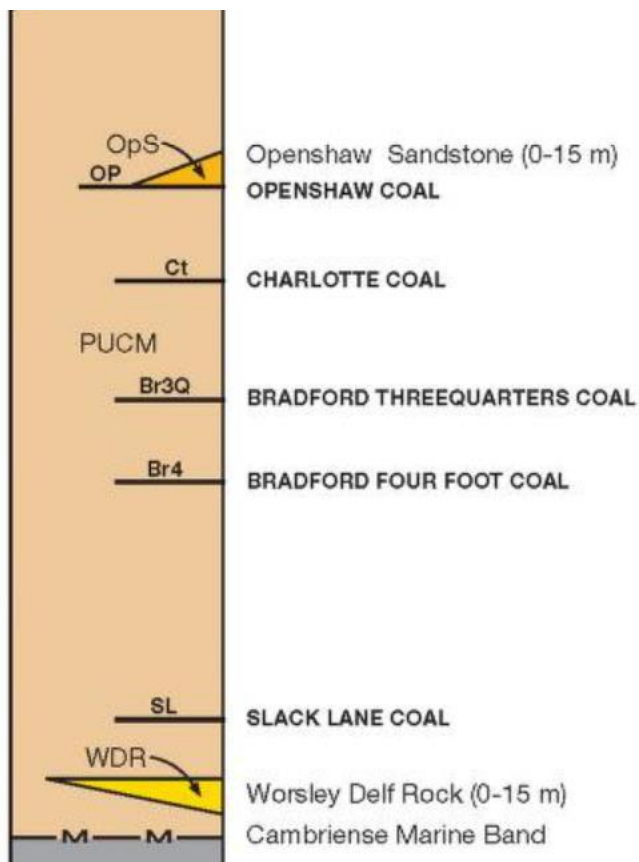
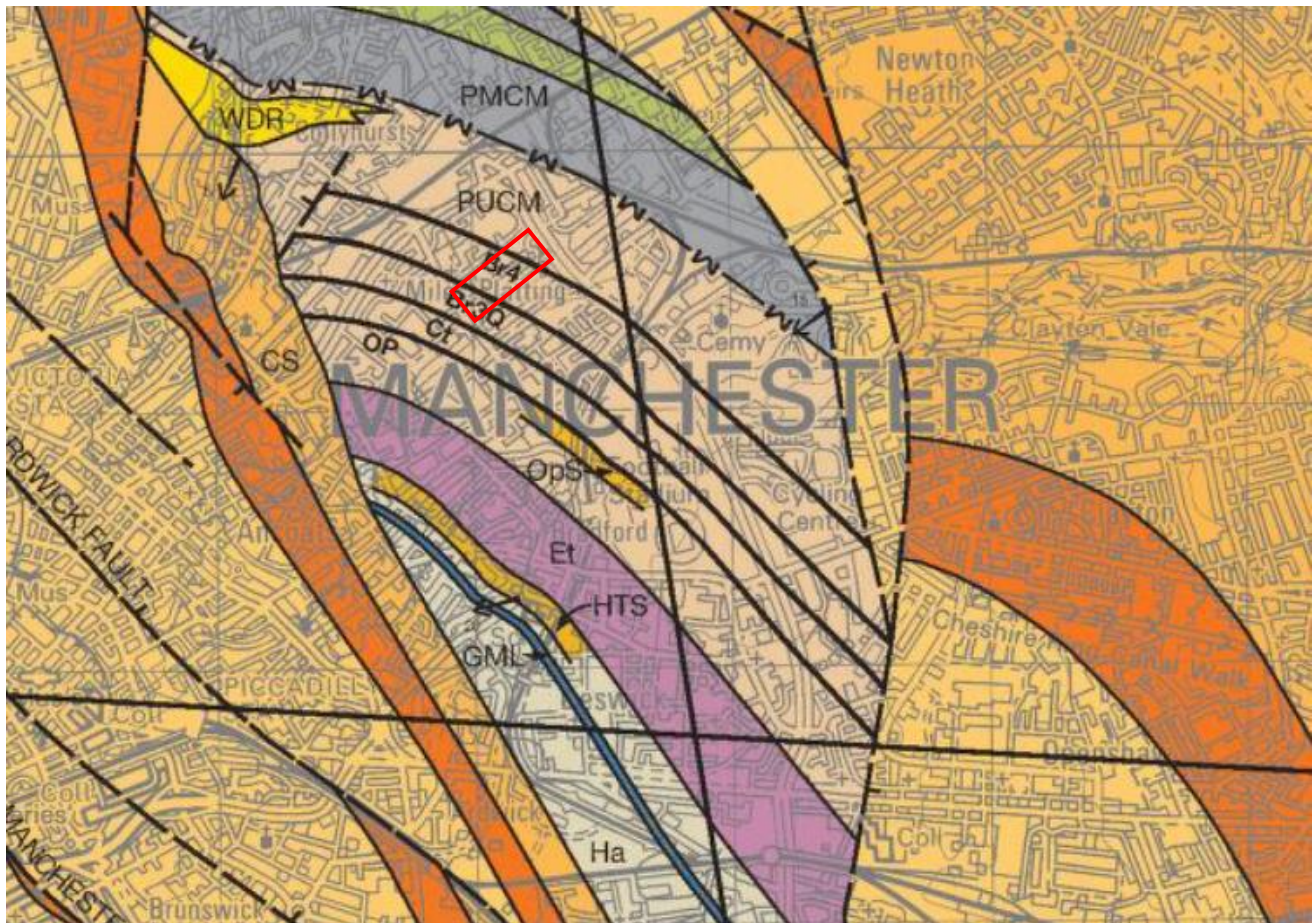
Superficial Geology



Superficial deposits 1:50,000 scale

- GLACIOFLUVIAL DEPOSITS, DEVENSIAN - SAND AND GRAVEL
- TILL, DEVENSIAN - DIAMICTON
- HUMMOCKY (MOUNDY) GLACIAL DEPOSITS, DEVENSIAN - SAND AND GRAVEL
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS, 1 - SAND AND GRAVEL
- PEAT - PEAT

BGS Geological Survey 1:50,000 Series England and Wales Sheet 85, Manchester



Appendix E – BGS Borehole Logs

SJ89NE195

BOREHOLE LOG

SJ 89 NE / 195

Site: NELSON STREET PRIMARY SCHOOL.

Job No.: S.I. 569.

Client: City Architect - Manchester.

Date: Aug/Sept. 1974.

Borehole No.: 3. (sheet 1.)

Diameter: 8" & 3"

Ground Level: Existing

Scale: 1/8th" = 1'-0"

Description	Depth	Legend	Sample	'N' Value	Shear Strength	Water Levels
			depth (m)			
Tarmac & concrete	0'-6"		0.15			
Fill - compact brick & ash.	6'-0"		1.83			
Stiff boulder clay with sandstone pieces.	9'-0"		2.74			
Stiff boulder clay with occasional pockets of silty sand.	38'-0"		11.58			
Compact coarse brown sand.	53'-0"		16.15			
Continued on sheet 2.						

BOREHOLE LOG

SJ 89 NE / 195

Site NELSON STREET PRIMARY SCHOOL

Job No. S.I. 569

Client City Architect - Manchester

Date

Borehole No. 3 (Sheet 2)

Diameter

Ground Level

Scale 1/8" = 1'-0"

Description	Depth	Legend	Sample	'N' Value	Shear Strength	Water Levels
			depth (m)			
	53'-0"		16.15			
Compact dry clayey silt.	58'-0"		17.68			
Stiff brown boulder clay.	65'-0"		19.81			
Compact clayey silt with stiff silty clay lenses.	72'-0"		21.95			
Very stiff boulder clay.	77'-0"		23.47			
Hard dry sandy clay.	82'-0"		24.99			
Very compact broken shattered coal. (no cavities)	87'-0"		26.52			
Hard clay shale with compact sand seams.	90'-0"		27.43			
Hard clay shale with occasional bands of gritstone	100'-0"		30.48			
Continued on sheet 3.						

BOREHOLE LOG

SJ 89 NE/195

Site NELSON STREET PRIMARY SCHOOL

Job No.

British Geological Survey

British Geological Survey

British Geological Survey

Cont.

Date

Borehole No. 3 (Sheet 3)

Diameter

Ground Level

Scale

Description	Depth	Legend	Sample	'N' Value	Shear Strength	Water Level
			depth (m)			
	100'-0"		30.48			
Very compact dry silt.	108'-0"	XXXXXX	32.92			
Hard gritstone with coal traces.	112'-0"	XXXXXX	34.14			
Coal seam.	113'-6"	XXXXXX	34.59			
Hard gritstone.	119'-0"	XXXXXX	36.27			
Hard sandstone.	120'-0"	XXXXXX	36.58			

NORTHERN FOUNDATIONS LIMITED

SJ89NE194

SJ 89 NE/194

BOREHOLE LOG

Site NELSON STREET PRIMARY SCHOOL Job No. S.I. 569.Client City Architect - ManchesterDate Aug. 1974:Borehole No. 1 (sheet 1)Diameter 6"Ground Level ExistingScale 1/8" = 1'-0"

Site plan - see 1218/74/225 enquiry

Description	Depth	Legend	Sample	'N' Value	Shear Strength	Water Levels
			depth (m)			
Fill: tarmac overlying ash & brick rubble	8'-0"		2.44			
Firm plastic boulder clay	9'-0"		2.74			
Boulder clay varying stiff to very stiff.	38'-0"		11.58			
Compact dry sand.	52'-6"		16.00			
Boulder clay varying stiff to very stiff.	56'-0"		17.07			

Continued on sheet 2.

NORTHERN FOUNDATIONS LIMITED

BOREHOLE LOG

5589 NE/194

Site NELSON STREET PRIMARY SCHOOL

Job No.

Client

Date

Borehole No. 1 (Sheet 2)

Diameter

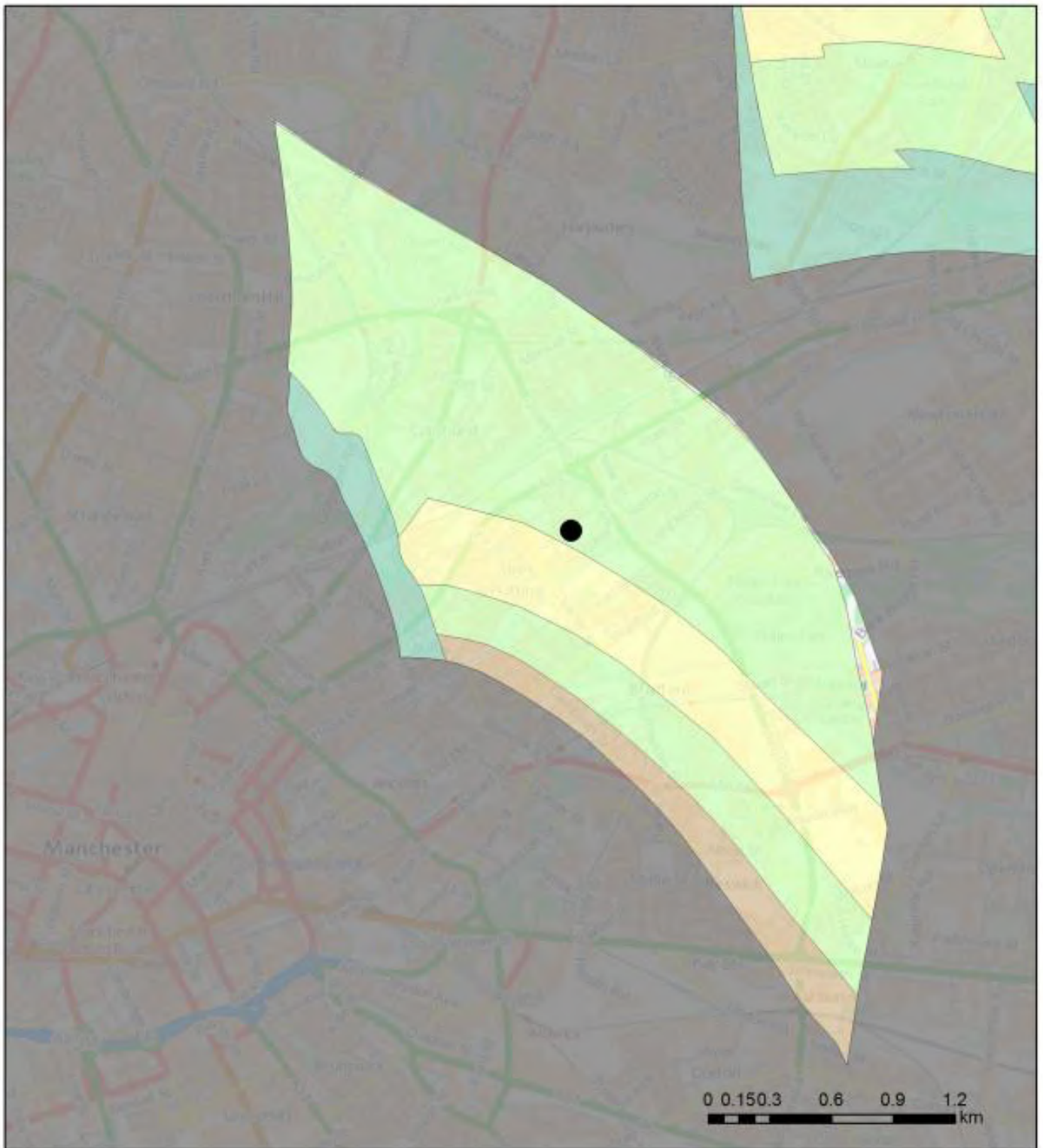
Ground Level

Scale

Description	Depth	Legend	Sample	'N' Value	Shear Strength	Water Levels
			depth (m)			
	56'-0"		17.07			
Very stiff boulder clay.	58'-0"		17.68			
Compact dry clayey sand.	62'-0"		18.90			
Very stiff sandy boulder clay.	71'-0"		21.64			
Very compact dry clayey sand.	90'-0"		27.43			
Hard blue shale.	94'-0"		28.65			
Hard blue shale with coal traces.	97'-0"		29.57			
Coal	100'-0"		30.48			

No ground water.

Appendix F – Coal Resource Map



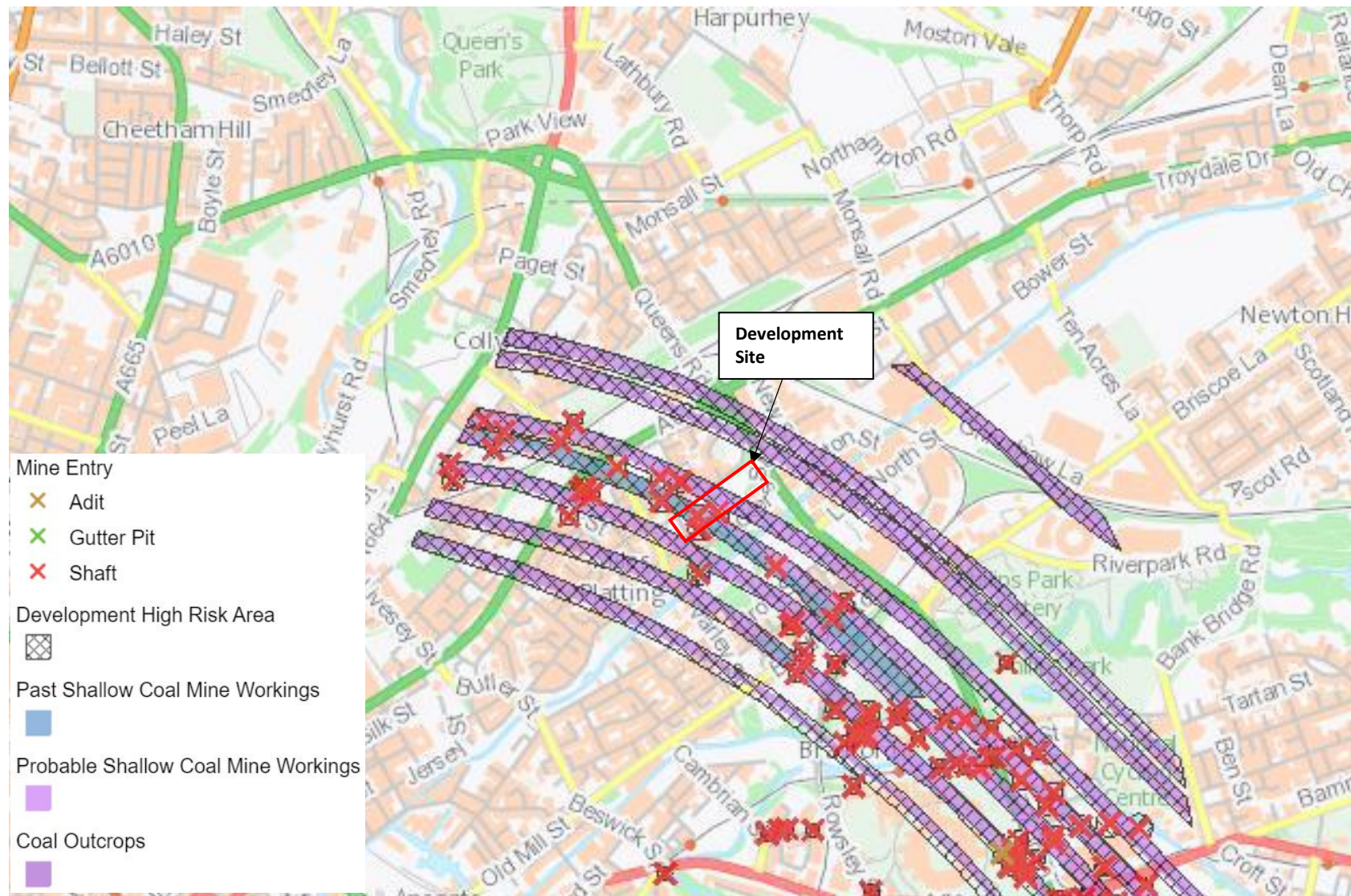
Shallow Coal

-  Buried coal resource overlain by up to 50m overburden
-  Primary opencast coal resource area
-  Secondary opencast coal resource area
-  Tertiary opencast coal resource area

Deep Coal

-  Deep coal at more than 1200m
-  Deep coal between 50m and 1200m

Appendix G – Coal Mining Summary Map



Appendix H – Hazard Zonation Plan

