

MRH GEOTECHNICAL (MIDLANDS) LIMITED

**CONSULTANCY, SITE INVESTIGATION,
DESK STUDY & PHASE I RISK ASSESSMENTS,
PHASE II CONTAMINATED LAND SURVEYS.**



Desk Study & Phase I Risk Assessment.

Proposed Development at
South View House, Nutbank Lane, Manchester M9 6BH.



Date: May 2021
Report No: 2122-0001-DS

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EXECUTIVE SUMMARY

Site History

The desk study has identified that the client site has been a field/paddock probably originally related to the residential property of Nut Bank, but later associated with the newer residential properties directly to the north-west. This includes the establishment of the Menage to the north of the proposed development area.

Geology & Hydrogeology

The British Geological Survey map of the area shows the client site to be located on Superficial Strata of Till, Devensian – Diamicton overlying Bedrock Deposits of the Pennine Lower Coal Measures Formation – Mudstone, Siltstone and Sandstone.

The Superficial Glacial Till Deposits, in the area of the site, are classified by the Environment Agency 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.

Artificial Ground comprising Made Ground, Worked Ground and Infilled Ground has been identified within 500m of the study site. The closest areas identified can be seen to be related to the construction of the M60 Motorway 66m to the south-west of the site, along with sections of the A664 Manchester New Road. Additional features include an area of Made Ground associated with the former Alkrington Colliery site 289m to the east.

According to Environment Agency data, the client site does not lie within the Catchment of a Groundwater Protection Zone.

The site lies within an area where the Groundwater Vulnerability is classified as 'Secondary Superficial Aquifer / Low Vulnerability' area.

The potential permeability of the underlying strata could allow the migration of contamination onto or away from the site through the natural strata.

Potential Contamination

Within 100m of the site the following potentially contaminative operations have been identified; Unspecified Heaps and Ground Workings.

Within 500m of the site, potentially contaminative operations identified from the historic sources have included; Colliery, Brick Yard, Refuse Heap, Garages, Filling Station and Electricity Sub-Stations.

Although no significant areas of Household Landfill have been identified in the vicinity of the site, due to records relating to "Land to the Rear of Symond Road" and Mine Gas Emissions recorded at Alkrington Colliery site, Ground Gas Monitoring is recommended as part of the Ground Investigation of the site.

According to BR211 'RADON: Guidance on Protective Measures for New Buildings' the site lies in an area where the Level of Protection Required is assessed as 'None'.

The site is overall considered to be at Moderate/Low Risk of significant contamination affecting the site, predominantly due to the possible presence of Ground Gases associated with either Historic Landfill or Mine Emissions. Both are considered unlikely due to the age of any Landfill in the area and the distance to the recorded Mine Emissions but due to the severe consequences of such risk, some Ground Gas Monitoring is deemed necessary.

Further to this, there is some potential for Made Ground associated with possible terracing of the site in the area of the Menage.

Further Recommendations:

As the development of the site is residential in nature it is considered prudent to carry out a screen of the surface materials in the proposed soft landscaped areas of the site and should any unexpected areas of suspicious or Made Ground be identified during the geotechnical investigation of the site, then additional sampling and analysis should be carried out.

Analysis would generally be limited to a Wide Range Suite including; Metals, Speciated Polycyclic Aromatic Hydrocarbons, Soluble Sulphates, pH, Asbestos Screen and Organic Matter.

If any visual or olfactory evidence of Hydrocarbon contamination is suspected, then a Total Petroleum Hydrocarbon Suite with Aliphatic/Aromatic Split and Equivalent Carbon Banding should be added.

Three visits to monitor the Ground Gas regime on site should prove sufficient to establish whether further work or mitigation is required.

Uncertainties always exist as to the *actual* presence of contamination in the vicinity of the site. This report highlights only the *potential* for contamination to be present, based on the data available at the time of research.

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1. INTRODUCTION.

1.1 Client Site Details.

The study site is located on the north-eastern side of Nutbank Lane, approximately 50m to the west of the A664 Manchester New Road.

The site is approximately trapezoidal in shape and covers an area of around 0.62ha.

The site currently comprises a field/paddock and menage area.

1.2 Site Location.

The site is situated at an elevation of approximately 91m above Ordnance Datum at;

Landranger Reference: SJ 86430446.

National Grid Reference: 386427 E, 404461 N.

1.3 Proposed Development.

The proposed works for the site includes the construction of a new residential dwelling with associated gardens.

1.4 Client Commission.

This report was commissioned by: Murray Rix (Northern) Ltd

On behalf of; R & M Developments Ltd
55 Clifton Street
Miles Platting
Manchester
M40 8HF.

Report produced by:



Steven Brooks BEng.(Hons)
MRH Geotechnical (Midlands) Limited
Date: May 2021.

Figure 1 Site Location Plan.



Figure 2. Aerial Photograph.



1.5 Scope and Objectives.

The objective of the report is to determine whether contaminative uses are/have potentially been present on or near to the client site. It is also to identify potential receptors and pathways and to determine if any significant pollutant linkages exist. This information is then used to prepare a conceptual model for the site which in turn may be used to set the objectives for a physical site investigation.

“Contaminative use” is defined as “any use of land which may cause it to be contaminated with noxious substances.”

“Land” is defined as “any ground, soil or earth, houses or other buildings, or air space above it; but excludes all mines or minerals beneath it. It also includes land used for integral, partial or ancillary processes which form part of the primary use”. (See Annex C of the Department of the Environment (DoE) Consultation Paper - “Public Registers of Land which may be Contaminated”).

The information sources referenced in the compilation of this report are those outlined by the DoE in the consultation paper entitled: “The Public Registers of Land which may be Contaminated”, published in May 1991.

The report outlines potentially contaminative uses which have been registered in publicly available records.

This search covers a period from 1828 to date. The date of this report reflects the date that the research was completed and is therefore as up to date as the records accessed.

The desk study report cannot guarantee to uncover every potentially contaminative use on the client site. There may be contaminative uses that the search has failed to uncover, and it should not therefore be relied upon as indicative of the actual state of the land and a physical investigation of the site is recommended.

2. HISTORICAL RECORD.

2.1 Historical Map Extracts.

The following list of Historical Map extracts are contained within Appendix A of this report;

Map Extract A	–	1848	–	OS Scale 1:10,560	–	County Series.
Map Extract B	–	1891	–	OS Scale 1:10,560	–	County Series.
Map Extract C	–	1893	–	OS Scale 1:2,500	–	County Series.
Map Extract D	–	1906-07	–	OS Scale 1:10,560	–	County Series.
Map Extract E	–	1909	–	OS Scale 1:2,500	–	County Series.
Map Extract F	–	1915	–	OS Scale 1:10,560	–	County Series.
Map Extract G	–	1922	–	OS Scale 1:2,500	–	County Series.
Map Extract H	–	1923	–	OS Scale 1:10,560	–	County Series.
Map Extract I	–	1932-33	–	OS Scale 1:10,560	–	County Series.
Map Extract J	–	1932	–	OS Scale 1:2,500	–	County Series.
Map Extract K	–	1938	–	OS Scale 1:10,560	–	County Series.
Map Extract L	–	1951	–	OS Scale 1:2,500	–	National Grid.
Map Extract M	–	1951-52	–	OS Scale 1:1,250	–	National Grid.
Map Extract N	–	1955-56	–	OS Scale 1:10,560	–	Provisional.
Map Extract O	–	1962	–	OS Scale 1:2,500	–	National Grid.
Map Extract P	–	1965-66	–	OS Scale 1:10,560	–	Provisional.
Map Extract Q	–	1975	–	OS Scale 1:10,000	–	National Grid.
Map Extract R	–	1972-75	–	OS Scale 1:1,250	–	National Grid.
Map Extract S	–	1980-82	–	OS Scale 1:10,000	–	National Grid.
Map Extract T	–	1988	–	OS Scale 1:10,000	–	National Grid.
Map Extract U	–	1992	–	OS Scale 1:1,250	–	National Grid.
Map Extract V	–	2001	–	OS Scale 1:10,000	–	National Grid.
Map Extract W	–	2003	–	OS Scale 1:1,250	–	Landline.
Map Extract X	–	2010	–	OS Scale 1:10,000	–	National Grid.
Map Extract Y	–	2021	–	OS Scale 1:10,000	–	National Grid.

Please note that within the electronic copy of this report the maps of Appendix A are reproduced at A4 size for ease of viewing on a computer screen. The file copy of the report includes pdfs of the maps suitable for printing at A3 should that be required.

2.2 Historical Map Evidence.

The first detailed Ordnance Survey map of the area was published, at 1:500 Scale, in 1848. A search for maps earlier than this date has located earlier less detailed surveys, which are also described in this report.

Various historical maps have been consulted during the examination of the client sites history and extracts of the County Series and later Ordnance Survey sheets are included in Appendix A of this report. Descriptions of the information recovered from each reference are detailed in the following pages;

The First Series Ordnance Surveys (Sheet 88) of 1843 at 1:63,560 Scale shows the property of Nut Bank, which lies to the north-west of the site, and Nutbank Lane can also clearly be seen leading from the Manchester New Road to the property. No buildings are shown in the area of the site.

To the north-east a Colliery is identified in Alkrington, while a Sand Pit lies to the south-east. To the north and north-west of the site runs the River Irk, and a tributary of the Irk crosses the site from the south and flows around the northern boundary to join the main river to the north-west.



Figure 3, Ordnance Survey First Series, Sheet 88, 1843.

The 1848 Ordnance Survey at 1:10,560 Scale shows the site in more detail, which mostly lies within a field enclosure on the north-eastern side of Nutbank Lane, which leads to the property of Nut Bank approximately 100m to the west. The south-eastern portion of the site lies across a small stream and extends into the grounds of a property which fronts onto the Rochdale and Manchester Trust Road (Manchester New Road).

A Culvert is present where the small stream, which rises 500m to the south-west of the site, crosses under Nutbank Lane and a further Culvert lies beneath an embankment which appears to link the north-eastern boundary of the site and Manchester New Road.

The small settlement of Alkrington Green lies 50m to the south-east, mostly on the opposite side of Manchester New Road.

A Sand Pit is identified approximately 250m to the north-west of the site, while a Gravel pit is shown just over 500m to the south-west. Further north-west, approximately 1km from the site, lies Alkrington Colliery and its associated Refuse Heaps.

The 1:10,560 Scale Ordnance Survey of 1891 shows a similar layout within the site boundary. The previous property to the east of the site is no longer shown.

The settlement formerly known as Alkrington Green is now identified as Alkrington Colliery and a Brick Yard and Reservoir are shown 300m to the east. The former Colliery site to the north-east is no longer identified, other than the Old Shaft and road name of Coal Pit Lane, along with some earthworks relating to the former Refuse Heaps.

The 1893 Scale Ordnance Survey at 1:2,500 Scale shows more detail in the vicinity of the site, which remains undeveloped at this time and straddles parts of two field enclosures separated by a stream.

The property of Nut Bank lies 100m to the north-west, while Lower Green and Higher Green lie a similar distance away, on the opposite side of Manchester New Road to the south-east.

A terrace of residential properties associated with Alkrington Colliery Brick Yard can be seen towards the edge of the map 250m to the east.

A small pond lies 40m to the north on the edge of Nutbank lane.

The 1:10,560 Scale Ordnance Survey of 1906-07 shows no changes within the boundary of the site.

To the east, Alkrington Colliery is now identified as Disused, with some Buildings, Excavations, Refuse Heaps and a Reservoir still visible.

Some additional Unspecified Earthworks are shown to the south, approximately 300m from the site.

The Ordnance Survey of 1909 at 1:2,500 Scale shows no significant changes from the 1893 survey at the same scale.

The 1:10,560 Scale Ordnance Survey of 1915 shows no changes within the boundary of the site.

To the east, one of the former excavations is now shown as flooded and Old Shafts are identified on the plan suggesting that the site was mined as well as used as a Brick Works.

The Ordnance Survey of 1922 at 1:2,500 Scale continues to show no development within the site boundary, and no notable changes are evident within the immediate vicinity.

The 1:10,560 scale Ordnance Survey of 1923 shows no changes within the immediate area of the site.

The 1932-33 Ordnance Survey at 1:10,560 Scale shows no changes within the site boundary, but some development of the area has begun.

Residential properties have been built along the new Alkrington Hall Road South, approximately 100m to the north, and further new properties have been established to the south of Lower Green along the Manchester New Road and in Mossway and Greenway.

Allotment Gardens have been established to the south of Nut Bank, 100m south-west of the site, while the Disused Alkrington Colliery site, with two Old Shafts identified, lies 300m to the east.

The 1:2,500 Scale Ordnance Survey of 1932 shows more detail in the vicinity of the site, but few additional changes are evident. A new Structure/Enclosure is evident on an earthwork to the side of the Manchester New Road, 50m to the east of the site and a separate Earthwork is shown adjacent to Alkrington Hall Road South 125m to the north.

The 1938 1:10,560 Scale Ordnance Survey shows some further residential development to the west of Nut Bank in the form of Charnwood Road and Yewlands Avenue. With additional development extending Mossway, along the new Elleray Road off Moss Lane and to the north in Alkrington park.

The disused Alkrington Colliery continues to be shown with a new building under construction between the Colliery Cottages and Higher Green.

The 1:2,500 Scale Ordnance Survey of 1951 shows no detailed changes within the site boundary. The south-eastern boundary of the site has been established for the first time with the construction of new properties on the western side of Manchester New Road and their back gardens extending to the site limit.

The stream running through the site is named as the Boardman Brook for the first time.

An Electricity Sub-Station lies approximately 200m to the south of the site and a Refuse Heap lies 125m to the north.

The 1951-52 1:1,250 Scale Ordnance Survey shows no additional information to the 1:2,500 scale survey of the same period.

The 1:10,560 Scale Ordnance Survey of 1955-56 shows a similar layout in the immediate vicinity of the site.

To the east of the site the former Colliery site is no longer identified as such and the Reservoir within the site is no longer shown. Some excavations are still evident within the site, but the Old Shafts are no longer identified.

The 1962 1:2,500 Scale Ordnance Survey shows no significant changes within the site curtilage or the immediate surrounding area.

The 1:10,560 scale Ordnance Survey of 1965-66 shows the continued residential development of Alkrington Garden Village to the north-east and east of the site, which remains undeveloped.

No features are shown within the former Alkrington Colliery site to the east.

The Ordnance Survey of 1975 at 1:10,000 Scale shows a similar layout in the vicinity of the site. A new field boundary, closely matching one shown on the early Ordnance Surveys appears to have been re-established to the north-west of the site.

The 1:1,250 Scale Ordnance Survey of 1972-75 shows only partial coverage of the area but no changes are evident within the site boundary. An Electricity Sub-Station is shown 125m to the north on the opposite side of the valley of Boardman Brook.

The 1980-82 Ordnance Survey at 1:10,000 Scale shows no notable changes in the immediate vicinity of the site. The former Colliery Site to the east is now identified as a Playing Field.

The 1:10,000 Ordnance Survey of 1988 shows no significant changes within the site vicinity.

The 1:1,250 Scale Ordnance Survey of 1992 continues to show no changes within the site boundary.

The 2001 Ordnance Survey at 1:10,000 Scale shows no buildings within the confines of the site boundary. To the north a new Pond is shown to the north-east of Nutbank Lane. No notable changes are evident in the immediate vicinity of the site. The former Colliery Site to the east is now identified as a Playing Field.

The 1:1,250 Scale Ordnance Survey of 2003 shows no changes within the curtilage of the site. The pond to the north of the site is shown.

The 2010 Ordnance Survey at 1:10,000 Scale shows no changes within the site boundary, Nut Bank Lane is named for the first time. To the south-west of the site the M60 Motorway has been established.

The 1:10,000 Ordnance Survey of 2021 shows no changes within the site boundary. A new building is shown to the north of the pond, approximately 100m from the site.

2.3 Historical Map Summary.

The earliest located map of the area, from 1843, shows the site lying undeveloped to the south-east of the property of Nut Bank. A stream, later identified as Boardman Brook, crosses the site from the south and flows around the northern boundary towards the River Irk in the north-west.

A more detailed survey from 1848 shows the portion of the site extending to the east of Boardman Brook as lying within the grounds of a property which fronts onto Manchester New Road. The map shows the site lying to the south of the constitutional boundary of Alkrington and lying within Blackley.

The client site remains essentially unchanged until the south-eastern boundary of the site is established around 1938, when new residential properties are constructed fronting onto Manchester new Road.

Early Ordnance Surveys show Alkrington Colliery lying approximately 1km to the north-east of the site, but by 1891 the original Colliery site is shown as disused, and a new site has been established 300m to the east of the site. Initially this site is identified as a Brick Yard, but following its closure in the early 20th Century, two Old Shafts are shown on the surveys. Later the site becomes a Recreation Ground.

Between 1992 and 2001 a large Pond is shown within the site directly to the north-west of the site, with a building also established between 2010 and 2021.

Within 100m of the site no potentially contaminative operations have been identified.

Within 500m of the site, potentially contaminative operations identified from the historic maps have included; Colliery, Brick Yard, Refuse Heap, Electricity Sub-Station.

2.4 Historical Directories.

Searches of Historic Trade Directories for the area have been carried out in an attempt to provide additional information on the history of the client site.

1828-29 Pigot's Directory of Lancashire

The 1828-29 Directory provides listings for Alkrington under Middleton and those entries that can be related to the area of the site are summarised below;

MIDDLETON.

Gentry & Clergy;

Lever John, esq.	Alkrington Hall.
Ramsbotham Peter, esq.	Alkrington Cottage.
Tetlow John, esq.	Alkrington.
Wilkinson Rev. Robt. C.W.	Rochdale Road.

No entries for Nut Bank are included in the directory.

Trades & Professions;

Coal Masters:

Lever John,	Alkrington Hall.
Ramsbotham Peter,	Alkrington Cottage.

No references to Alkrington Colliery are included.

1834 Pigot's Directory of Lancashire

The 1834 Directory provides listings for The Chapelry of Blackley & Neighbourhoods under Middleton and those entries that can be related to the area of the site are summarised below;

MIDDLETON.**Gentry & Clergy;**

Lever John, esq.	Alkrington Hall.
Smith Mr James,	Alkrington Fold.
Taylor Mr Thos. Travis,	Alkrington Cottage.
Tetlow John, esq.	Alkrington Hall.

Ireland Mr Samuel,	Blackley.
Singleton Rev. Alexander,	Blackley.
Weigall Rev. Edward,	Blackley.
Williamson Mrs Jane,	New Road.

No entries for Nut Bank are included in the directory.

Trades & Professions;**Coal Masters:**

Livesey Thomas & Co.	Alkrington.
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No references to Alkrington Colliery are included.

1848 Slater's Directory of Lancashire

The 1848 Directory provides listings for The Chapelry of Blackley & Neighbourhoods under Middleton and those entries that can be related to the area of the site are summarised below;

MIDDLETON.**Gentry & Clergy;**

Keeling Rev. Wm. Robt.	Blackley.
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No entries for Nut Bank are included in the directory.

Trades & Professions;**Coal Masters:**

No references to Alkrington Colliery are included.

Cotton Spinners:

Aspell & Bradley,	Tonge Mill.
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Cross referencing with the directory of 1850 identifies John Aspell of Aspell & Fildes as being related to Nut Bank, it is unclear whether he is also related to Aspell & Bradley.

1850 Slater's Directory of Lancashire

The 1850 Directory provides listings for The Chapelry of Blackley & Neighbourhoods under Middleton and those entries that can be related to the area of the site are summarised below;

Alphabetical List of Names;

Aspell John,	Manufacturer (Aspell & Fildes),	Nut Bank, near Blackley.
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The directory provides the first entry relating to Nut Bank.

1852 Whellan & Co.'s Directory of Manchester

The 1855 Directory provides listings for Middleton and those entries that can be related to the area of the site are summarised below;

Alphabetical List of Names;

Aspell John, Manufacturer (Aspell & Bradley), Nut Bank, near Blackley.

The directory confirms the link to Aspell & Bradley, Cotton Spinners, of Tonge Mill, identified in the Directory of 1848.

MIDDLETON.

Gentry & Clergy;

Aspell John, Bed Tick Manufacturer (Aspell & Bradley), Blackley
 Royle Thomas, Silk Manufacturer, Alkrington Cottage.

Trades & Professions;

Farmers:

Booth Richard, Nuts Farm.
 Pendleton Ann, Little Green.

John Aspell continues to be listed as residing at Nut Bank.

It is possible that Nuts Farm relates to Nut Bank Cottages (later identified as Nut Bank Farm) which lay 250m to the north-west of the site. Also, Little Green may relate to Lower Green which lay to the east.

1855 Slater's Directory of Lancashire

The 1855 Directory provides listings for Blackley under Middleton and those entries that can be related to the area of the site are summarised below;

MIDDLETON.

Gentry & Clergy;

Lees Thomas, esq. Alkrington Hall.

Donovan Very Rev. J. Blackley.
 Hodson Mr James, Blackley.
 Keeling Rev. Wm. Robt. Blackley.
 Whitestone Rev. N.G. Blackley.

No entries for Nut Bank are included in the directory, four entries listed as Blackley are summarized for future reference to Census Records. The Cotton Spinners Aspell & Bradley continue to operate from Tonge Mill.

Trades & Professions;

Aspell & Bradley, Cotton Spinners, Tonge Mill.
 No references to Alkrington Colliery are included.

1869 Slater's Directory of Lancashire

The 1869 Directory provides listings for Alkrington and Blackley under Middleton and those entries that can be related to the area of the site are summarised below;

Gentry & Clergy;

Lees James, esq. Alkrington Hall.

No entries for Nut Bank are included in the directory, four entries listed as Blackley are summarized for future reference.

Ashton Mr Joseph,	Blackley.
Charlesworth Mr David,	Blackley.
Fisher Rev. Robert,	Blackley.
Smith Mrs Harriet,	Blackley.

Trades & Professions;

Aspell & Bradley, Cotton Spinners, Tonge Mill.

No references to Alkrington Colliery are included.

Kelly's 1895 Directory of Lancashire

The 1895 Directory provides listings of Private Residents and Commercial Operations for the area of the site which are summarised below;

MIDDLETON with TONGE and RHODES.

Includes listings for Alkrington.

Private Residents;

Lees Mrs.	Alkrington Hall.
Lees Roderick L. (J.P.)	Alkrington Hall.

No entry for Nut Bank.

Coal Masters & Merchants;

Chamber Colliery Co. Lim. Alkrington & Ferney Field Collieries.

Cotton Spinners;

Aspell & Son, Tonge Mill, Tonge.

PRESTWICH.

Includes listings for Blackley.

Private Residents;

No entry for Nut Bank.

Coal Masters & Merchants;

Chamber Colliery Co. Lim. Alkrington & Ferney Field Collieries.

1903 Slater's Manchester, Salford & Suburbs Directory

The 1903 Directory provides listings for Blackley under Prestwich but no entries that can be related to the area of the site were identified.

Kelly's 1905 Directory of Lancashire

The 1905 Directory provides listings of Private Residents and Commercial Operations for the area of the site which are summarised below;

ALKRINGTON.**Private Residents;**

Lord Abraham, Alkrington Hall.
No entry for Nut Bank.

Commercial;

Kay Arthur, Farmer, Lower Green.
Kay Henry, Farmer, Higher Green.

BLACKLEY.

Listings for Blackley included within the City of Manchester.

1909 Slater's Manchester, Salford & Suburbs Directory

The 1909 Directory provides listings for Blackley under Prestwich but no entries that can be related to the area of the site were identified.

1911 Slater's Manchester, Salford & Suburbs Directory

The 1911 Directory provides listings for Blackley under Manchester but no entries that can be related to the area of the site were identified.

Kelly's 1924 Directory of Lancashire

The 1924 Directory provides listings of Private Residents and Commercial Operations for Alkrington under Middleton, and entries for the area of the site are summarised below;

ALKRINGTON.**Private Residents;**

Fitton Thomas A. Alkrington Green.
Neild Harold, Alkrington Green.
No entry for Nut Bank.

Commercial;

Fitton Thomas A. Architect, Alkrington Green.
Wood James, Farmer, Lower Green.
Wood John, Farmer, Higher Green.

BLACKLEY.

Listings for Blackley included within the City of Manchester.

Kelly's 1929 Directory of Manchester, Salford & Suburbs

The 1929 Directory provides listings of Private Residents and Commercial Operations for Alkrington under Middleton, and entries for the area of the site are summarised below;

ALKRINGTON.

Private Residents;

Fitton Thomas A. Alkrington Green.

Neild Harold, Alkrington Green.

No entry for Nut Bank.

Commercial;

Fitton Thomas A. Architect, Alkrington Green.

Wood James, Farmer, Lower Green.

Wood John, Farmer, Higher Green.

BLACKLEY.

Listings for Blackley included within the City of Manchester.

Historic Directory Summary

The Historic Directories have included only limited entries for the property of Nut Bank, which appears to be the closest related property to the site.

In 1850, the first entry located for Nut Bank lists Manufacturer John Aspell of Aspell and & Fildes to be residing at the property.

John Aspell is also listed at Nut Bank in 1852, when he is identified as being a partner of Aspell & Bradley (Bed Tick (Cotton Mattress Fabric) Manufacturers) at Tonge Mill.

No further references for Nut Bank have been identified.

2.5 Census Records

Searches of British Census Records have been carried out to provide additional information on the history of the client site.

1911 Census

Address	Head of Household	Occupation
<i>Preceded by Coronation Road...</i>		
Alkrington Hall	Amanda Lord.	
Wood Cottage	Adam Crighton,	Works Chemist.
Lower Green Farm	Arthur Kay	Farmer.
Lower Green	Ellen Coupe.	
Higher Green Farm	Henry Kay,	Farmer.
<i>Continues with Moss Lane...</i>		

Address	Head of Household	Occupation
Nut Bank Farm	John Coats	
Nut Bank Cottage 1	James Martley	
Nut Bank Cottage 2	Wm. Hy. Cassel	
Nut Bank House	James Currie	
<i>Continues with Yew Tree House...</i>		

1901 Census

Address	Head of Household	Occupation
Nut Bank House	James Currie	Corn Merchant
Nut Bank Cottages	Not at Home	
Nut Bank Cottages	Mary Taylor	Cotton Weaver
Nut Bank Farm	Edward France	Farmer
<i>Continues with Corkers Farm...</i>		

1891 Census

Address	Head of Household	Occupation
<i>Preceded by Yew Tree House...</i>		
Nut Bank Cotts	William Jolleys	Agricultural Labourer.
	Thomas Jolleys	Gardener.
Nut Bank Cotts	Leonard Wilkinson	Agricultural Labourer.
	Joseph Hunt	Coachman Groom.
Nut Bank Cotts	John Roche	Dateler.
	James Fletcher	Dateler.
	Robert Wilcock	Traveller Smallwares.
Nut Bank	Thomas Currie	Fish Curer
<i>Continues with Litchford Farm...</i>		

1881 Census

Address	Head of Household	Occupation
Nut Bank	Thomas Currie	Fish Curer & Farmer of 9 ¾ Acres
	Robert B Edmonson	Gentleman
Nut Bank Cotts	Joseph Jolley	Gardener.
Nut Bank Cotts	Samuel Bunting	Plasterer.
Nut Bank Cotts	Louis Wolf	Butcher.
<i>Continues with Yew Tree House...</i>		

1871 Census

Address	Head of Household	Occupation
<i>Preceded by Corkers Farm...</i>		
Nut Bank	John Aspell	Retired Merchant
Nut Bank Cotts	Elizabeth holt	
Nut Bank Cotts	George Tinker	Warehouseman
<i>Continues with Yew Tree House...</i>		

1861 Census

Address	Head of Household	Occupation
<i>Preceded by Litchford Lodge...</i>		
Nut Bank	Edwin Ashton	Coachman Domestic Servant
Nut Bank	Sarah Heap	Calico Weaver
Nut Bank	Edward Grey	Clerk at print Works
Nut Bank	Thomas Johnson	Gardener Domestic Servant
Hurze Fold Gate	William Barlow	Agricultural Labourer
<i>Uninhabited Property</i>		
Nut Bank House	John Aspell	Cotton Manufacturer
<i>Continues with Alsops Lodge...</i>		

1851 Census

Address	Head of Household	Occupation
<i>Preceded by Litchford Lodge...</i>		
Nut Bank	William Smith	Not discernable due to damage.
Nut Bank House	John Aspell	Cotton Manufacturer
Nut Bank	Jonathon Heywood	Not discernable due to damage.
<i>Unclear due to Damage...</i>		

1841 Census

Address	Head of Household	Occupation
Nut Bank	Samuel Kuter	Merchant

Census Summary

The Census Records have identified the property of Nut Bank, which appears to be the closest related property to the site, to be present from before the earliest document of 1841. At this point it was occupied by Merchant Samuel Kuter.

By 1851, Cotton Manufacturer John Aspell occupied the property and he continued to live at Nut Bank until between 1871 and 1881 when Thomas Currie moved into the house.

Thomas Currie was a Fish Curer and was listed at Nut Bank in 1881 and 1891, and was followed by Corn Merchant James Currie, who was listed in 1901 and 1911.

2.6 Aerial Photographs.**1926**

The earliest aerial image of the site dates from 1926 and is held in the Britain from Above Archive. Image EPW016464, "Alkington Wood, Middleton, 1926" shows the site towards the top right corner.

The property of Nut Bank can be seen, along with Nutbank Lane and the valley of Boardman Brook.

A field boundary, approximately aligned with the northern limit of the site can just be seen in the rear half of the site before a hedgerow turns north-west away from the site boundary towards the front. This feature can be seen on the Ordnance Survey of 1922.

Allotments can be seen to the south-west of Nut Bank and on the opposite side of Manchester New Road new houses can be seen to be under construction between Lower Green and Mossway.

Further to the east the former Alkington Colliery site can be seen.

2000

A Google Earth Pro Image from 2000 shows the site occupying part of a field enclosure which extends to the north-west, with a pond present on the opposite side of Nut Bank Lane from Nut Bank House.

A similar layout is shown on the image included in the Groundsure Enviro+Geo Insight Report of Appendix B.

2003

A 2003 Google Earth Pro Image shows an enclosure around the Pond lying to the north-west of the site, but few additional changes are evident.

2005

The Google Earth Pro Image from 2005 shows no notable changes in the vicinity of the site.

2009

The 2009 image from the Groundsure Archive, and included in the Enviro+Geo Insight Report of Appendix B, shows a new building on the north-west shore of the pond, with further new properties to the north-west of Nut Bank. No notable changes are evident within the site boundary.

2011

The 2011 image from the Groundsure Archive shows no notable changes within the site boundary.

2013

The Google Earth Pro Image from 2013 shows a new boundary along the northern limit of the site. No notable changes are evident within the site curtilage.

2015

The 2015 image from the Groundsure Archive shows no notable changes within the site boundary.

2016

A 2016 Google Earth Pro Image shows a new access road just to the north of the site limit and towards the rear portion of the site a rectangular feature can be seen.

2017

The 2017 Google Earth Pro Image shows a new building under construction to the north of the site and the rectangular feature seen on the previous image can be seen to be a menage.

2018

By 2017 the Google Earth Pro Image shows the new building nearing completion. A path appears to connect the menage with an entrance to Nut Bank Lane.

2019

The most recent image from 2019 shows no significant changes in the vicinity of the site.

2.7 Alkrington Colliery.

Two different sites have been identified as Alkrington Colliery on the Historic Ordnance Surveys of the area.

The 1848 1:10,560 Scale survey shows Alkrington Colliery approximately 1km to the north-east of the site in the area of Lancashire Fold.

By 1891 the Colliery is no longer shown, with just an Old Shaft and some earthworks related to the former Spoil Heaps of the mine. The link road from Manchester New Road is identified as Coal Pit Lane at this time. Today it is known as Mount Road.

The 1891 Ordnance Survey shows a new Alkrington Colliery lying approximately 300m to the east of the site along Moss Lane. The survey identifies a Brick Yard and Reservoir within the site.

By 1906 the new Alkrington Colliery is shown as Disused.

The Northern Mines Research Society holds the following information Alkrington Colliery. The colliery at Middleton was worked by Chamber Colliery Co. Ltd. between 1879 and 1897. The Bent and Black Mines seams were worked with 62 people employed underground with a further 10 on the surface in 1895. By 1896 this number had fallen to 25 underground and 8 on the surface and the colliery was abandoned on September 9th 1897. This data points to the colliery lying 300m to the east of the site, as the former Alkrington Colliery, to the north-east, was operational in 1848 and had closed by 1891.

The Lancashire County Council Archive includes a document “Alkrington Colliery: mines and brickworks particulars of sale 1875-78, 1896” which suggests that the original Colliery site was shut in the latter half of the 1870s, with the second site being closed in 1896.

It was not possible to locate any further records relating to the sites.

2.8 Groundsure EnviroInsight Report.

Historical Industrial Sites.

The Groundsure Enviro+Geo Insight Report is included in Appendix B of this report and identifies 56 records of sites with a potentially contaminative past land use within 500m of the site.

Distance	Land Use
0-50m	Unspecified Heaps.
50-250m	Unspecified Ground Workings, Unspecified Heap, Refuse Heap, Electricity Sub-Station, Sand Pit.
250-500m	Disused Colliery, Colliery, Unspecified Ground Workings, Refuse Heap, Unspecified Heap, Unspecified Pit, Unspecified Old Shafts, Cuttings.

Historical Tanks.

One grouped record of a Historical Tank is recorded within 500m of the client site, which is Unspecified in Nature and lies 352m to the east of the site.

Historical Energy Features.

There are 8 grouped records of Historical Energy Features within 500m of the study site, relating to 6 Electricity Sub-Stations and a Transformer located at distances between 132m and 432m from the site.

Historical Garage & Motor Vehicle Repair Sites.

The report identifies four records of Historical Garages within 500m of the site, relating to three sites, the closest lying 283m to the south.

2.9 Historical Document Summary.

The earliest located map of the area, from 1843, shows the site lying undeveloped to the south-east of the property of Nut Bank. A stream, later identified as Boardman Brook, crosses the site from the south and flows around the northern boundary towards the River Irk in the north-west.

The Census Records have identified the property of Nut Bank, which appears to be the closest related property to the site, to be present from before the earliest document of 1841. At this point it was occupied by Merchant Samuel Kuter.

A more detailed survey from 1848 shows the portion of the site extending to the east of Boardman Brook as lying within the grounds of a property which fronts onto Manchester New Road. The map shows the site lying to the south of the constitutional boundary of Alkrington and lying within Blackley.

The Historic Directories have included only limited entries for the property of Nut Bank, which in 1850, lists Manufacturer John Aspell of Aspell and & Fildes to be residing at the property.

John Aspell is also listed at Nut Bank in the Directory of 1852, when he is identified as being a partner of Aspell & Bradley (Bed Tick (Cotton Mattress Fabric) Manufacturers) at Tonge Mill.

Cotton Manufacturer John Aspell is listed as occupying the property in the Census of 1851 and he continued to live at Nut Bank until between 1871 and 1881 when Thomas Currie moved into the house.

Thomas Currie was a Fish Curer and was listed at Nut Bank in 1881 and 1891, and was followed by Corn Merchant James Currie, who was listed in 1901 and 1911.

The earliest aerial image of the site dates from 1926 and is held in the Britain from Above Archive. Image EPW016464, "Alkrington Wood, Middleton, 1926" shows the site towards the top right corner. The property of Nut Bank can be seen, along with Nutbank Lane and the valley of Boardman Brook. A field boundary, approximately aligned with the northern limit of the site can just be seen in the rear half of the site before a hedgerow turns north-west away from the site boundary towards the front. This feature can be seen on the Ordnance Survey of 1922.

The client site remains essentially unchanged until the south-eastern boundary of the site is established around 1938, when new residential properties are constructed fronting onto Manchester new Road.

Early Ordnance Surveys show Alkrington Colliery lying approximately 1km to the north-east of the site, but by 1891 the original Colliery site is shown as disused, and a new site has been established 300m to the east of the site. Initially this site is identified as a Brick Yard, but following its closure in the early 20th Century, two Old Shafts are shown on the surveys. Later the site becomes a Recreation Ground.

Between 1992 and 2001 a large Pond is shown within the site directly to the north-west of the site. A Google Earth Pro Image from 2000 shows the site occupying part of a field enclosure which extends to the north-west, with the pond present on the opposite side of Nut Bank Lane from Nut Bank House.

By 2003 an Aerial Image shows an enclosure around the Pond lying to the north-west of the site, but few additional changes are evident.

A 2009 image from the Groundsure Archive shows a new building on the north-west shore of the pond, with further new properties to the north-west of Nut Bank. No notable changes are evident within the site boundary.

By 2013 a new boundary had been established along the northern limit of the site, but no notable changes are evident within the site curtilage.

A 2016 Aerial Image shows a new access road just to the north of the site limit and towards the rear portion of the site a rectangular feature can be seen. By 2017 a Google Earth Pro Image shows a new building under construction to the north of the site and the rectangular feature seen on the previous image can be seen to be a menage.

Except for a path connecting the Menage area to an entrance on Nut Bank Lane no other changes are noted on later images or plans.

Within 100m of the site the following potentially contaminative operations have been identified; Unspecified Heaps and Ground Workings.

Within 500m of the site, potentially contaminative operations identified from the historic sources have included; Colliery, Brick Yard, Refuse Heap, Garages and Electricity Sub-Stations.

3. ENVIRONMENTAL SETTING.

3.1 Geology.

The British Geological Survey map of the area shows the client site to be located on Superficial Strata of Till, Devensian – Diamicton overlying Bedrock Deposits of the Pennine Lower Coal Measures Formation – Mudstone, Siltstone and Sandstone.

Artificial Ground comprising Made Ground, Worked Ground and Infilled Ground has been identified within 500m of the study site.

Superficial Deposits.

The Superficial Strata of Till – Devensian Diamicton are detrital, created by the action of ice and meltwater, they can form a wide range of deposits and geomorphologies associated with glacial and inter-glacial periods during the Quaternary.

These deposits were formed during the Devensian Stage of the Quaternary Period (up to 2 million years ago).

Bedrock Deposits.

The Bedrock Deposits of the Pennine Lower Coal Measures Formation typically comprise; interbedded grey mudstone, siltstone and pale grey sandstone, commonly with mudstones containing marine fossils in the lower part, and more numerous and thicker coal seams in the upper part.

They were deposited in an environment dominated by swamps, estuaries and deltas, with periodic inundation from the sea, during the Langsettian Age of the Carboniferous Period (318-319 million years ago).

Bedrock Faults and Linear Features.

Within 500m of the site, the BGS 1:10,000 scale mapping has identified 13 Bedrock Faults or Linear Geological Features.

The closest feature is a Normal Fault in the Bedrock deposits lying 43m to the North-east of the site. The downthrow of the fault leads to the inferred outcrop of a Coal Seam within the Pennine Middle Coal Measures, lying beneath the surface mantle of Superficial Glacial Till deposits.

Artificial & Made Ground.

Within 500m of the site, the BGS 1:10,000 scale mapping has identified eight records of Artificial or Made Ground.

The closest areas identified on the map of Section 14.2 of the Groundsure Enviro+Geo Insight Report of Appendix B, can be seen to be related to the construction of the M60 Motorway 66m to the south-west of the site, along with sections of the A664 Manchester New Road.

Additional features include an area of Made Ground associated with the former Alkrington Colliery site 289m to the east.

Landslip.

There is one area of recorded Landslip shown on the British Geological Survey 1:10,00 scale maps. This lies 145m to the north-west of the site.

Borehole Records.

Borehole Records held by the British Geological Survey include 18 boreholes or trial pits within 250m of the site.

The closest investigation lies within the southern corner of the site and takes the form of a Trial Pit excavated to a depth of 3.0m in 1981, the findings of which are summarised below;

Trial Pit 541;

GL – 0.5m	MADE GROUND: Ash with topsoil, cobbles, bricks, clay, etc.
0.5 – 1.0m	MADE GROUND: Firm to stiff brown silty sandy clay with rock fragments and Gravel. Bricks and ash zones present.
1.0 – 1.2m	POSSIBLE MADE GROUND: Firm red brown mottled orange brown silty CLAY With numerous sand zones.
1.2 – 1.4m	Light brown mottled light grey very clayey very silty SAND.
1.4 – 2.2m	Light brown slightly silty medium SAND with occasional cobbles.
2.2 – 3.0m	Light brown slightly silty medium SAND, becoming coarser with carbonaceous zones. Distinct bedding structure.

A steady seepage of groundwater was encountered at a depth of 2.7m and the pit sides became unstable below 1.5m.

The “distinct bedding structure” observed below a depth of 2.2m suggests that this material may be the Bedrock Strata of the Lower Pennine Coal Measures Formation.

3.2 Hydrogeology.**Aquifers.**

The Superficial Glacial Till Deposits, in the area of the site, are classified by the Environment Agency 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.

The underlying Bedrock deposits of the Lower Pennine Coal Measures are also classified as a Secondary A Aquifer by the Environment Agency.

The Aquifer Designation maps for the area are shown in Figures 5.1 & 5.2 of the Groundsure Enviro+Geo Insight Report included in Appendix B.

Groundwater Vulnerability.

The site lies within an area where the Groundwater Vulnerability is classified as ‘Secondary Superficial Aquifer / Low Vulnerability’ area, as shown in Map 5.3 of Appendix B.

Groundwater Abstraction Points.

No Groundwater Abstraction Licence have been identified within 500m of the client site.

Source Protection Zones.

According to Environment Agency data, the client site does not lie within the Catchment of a Groundwater Protection Zone.

3.3 Hydrology.

Ordnance Survey MasterMap Water Network.

The MasterMap Water Network records identify 16 watercourses within 250m of the client site, with the Boardman Brook flowing across the site.

Surface Water Features.

There are 10 surface water features, covering rivers, streams and lakes (with some overlap with OS MasterMap Water Networks Data previously discussed) identified within 250m of the site.

Flood Risk.

According to Environmental Agency data, the client site lies outside of areas identified as Flood Zone 2 or 3. Although it should be noted that water levels within the valley of the Boardman Brook will naturally vary depending on rainfall.

The Risk of Flooding from Rivers and the Sea is rated as Very Low.

Ambiental Risk Analytics surface water (pluvial) FloodMap (Section 8 of the Groundsure Enviro+Geo Insight Report contained in Appendix B) identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. The area of the study site is considered generally to be at Negligible Risk, however the valley of the Boardman Brook crossing the site is believed to be at risk of flooding to a depth of greater than 1.0m during a 1 in 30-year storm simulation.

According to British Geological Survey data the site is considered to be at low risk of groundwater flooding.

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100-year return period and a 5m Digital Terrain Model (DTM).

3.4 Mining, Extraction & Natural Cavities.

Natural Cavities.

No records of Natural Cavities have been identified within 500m of the study site.

BritPit Records.

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

The Database holds no records within 500m of the study site.

Surface Ground Workings.

There are twelve historical land uses/features identified from Ordnance Survey mapping within 250m of the site, that involved ground excavation at the surface.

The closest feature is an Unspecified Heap that was identified 10m to the north-east of the site on the Ordnance Survey of 1933.

Other features include Unspecified Ground Workings 110m to the east, an Unspecified Heap/Refuse Heap 117m to the north, a Sand Pit 234m to the north-west and Unspecified Ground Workings 246m to the south.

Underground Workings.

There are 21 historical land uses, identified from Ordnance Survey mapping, within 1km of the site that indicate the presence of underground workings e.g. Mine Shafts. These relate to the two Alkrington Colliery sites, 250m to the east and 992m to the north-east.

There are no records of historical Non-Coal Mining within 1km of the site.

There are no records of Mining Cavities within 1km of the site.

The JPB Mining Areas Database does not identify the area as at risk of being affected by former Coal Mining.

The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This report has been ordered additionally and is discussed in section 4 of this report, with the data being contained in Appendix D.

There are no records of; Brine or Gypsum Extraction or Tin or Clay Mining in the area.

3.5 Ground Stability.

Information supplied by the British Geological Survey regarding Natural Hazards is included in Section 9 of the Groundsure EnviroInsight Report and are summarised below;

Hazard	Risk
Shrink – Swell	Very Low
Running Sands	Very Low
Compressible Deposits	Negligible
Collapsible Deposits	Very Low
Landslides	Very Low
Solution of Soluble Rocks	Negligible

3.6 Radon Risk.

The site is not located within a Radon Affected Area, as defined by the Health Protection Agency (HPA), as less than 1% of properties in the vicinity are above the Action Level.

BR 211 'RADON: Guidance on Protective Measures for New Buildings' shows the site to lie within an area where the Level of Protection Required is classed as 'None'. Radon Protection Measures are therefore not deemed necessary.

3.7 Designated Environmentally Sensitive Sites.

- The site does not lie within 500m of a Site of Special Scientific Interest.
- There are no Ramsar designated sites within 500m of the site.
- There are no Special Areas of Conservation within 500m of the site.
- There are no records of Special Protection Areas within 500m of the site.
- There are no National Nature Reserves within 500m of the site.
- There are 3 Local Nature Reserves within 500m of the client site, including Alkrington Woods, which is deemed to extend along the valley of the Boardman Brook and adjoins the site limit.
- There are no records of Ancient Woodland within 500m of the site.
- There are no World Heritage Sites within 500m of the site.
- There are no areas identified as Environmentally Sensitive within 500m of the site.
- There are no areas of Outstanding Natural Beauty within 500m of the client site.
- The site does not lie within a National Park.
- The site is not identified as lying within an area of Green Belt.

4. CONSULTANTS COAL MINING REPORT.

Introduction.

The Consultants Coal Mining Report is contained within Appendix D of this Report. It is based on and limited to the records held by the Coal Authority at the time of production.

Mining Activity and Geology.

- The report finds no evidence of any Past Underground Mining beneath the site.
- No Probably Unrecorded Shallow Workings are identified.
- No Spine Roadways are recorded at Shallow Depth.
- No Mine Entries are recorded within 100m of the site boundary.
- No Coal Outcrops are recorded.
- No Geological faults, Fissures or Breaklines are recorded.
- There are no records of Opencast Mines within 500m of the site boundary.
- There are no Coal Authority Managed Tips within 500m of the site.

Investigative or Remedial Activity.

- There have been no recorded Site Investigations within 50m of the site boundary.
- There are no recorded Remediated Sites within 50m of the site.
- There are no records of Coal Mining Subsidence within 50m of the site boundary.
- Mine Gas Incident/Remediation has been recorded 360m to the East and South-East of the study site. This appears to be related to the former Alkrington Colliery Site. The site therefore does lie within an area of previous interest, and a recommendation for a Coal Authority Mine Emission Report is therefore automatically raised. This can be ordered separately if required.
- There are no records of Mine Water Treatment Schemes being carried out within 500m of the site.

Licensing and Future Mining Activity.

- There are no indications of planned Future Underground Mining beneath the site.
- No Coal Mining Licenses are recorded within 200m of the site boundary.
- No Court orders have been recorded.
- No Section 46 Notices, relating to Coal Mining Subsidence, have been applied to the site.
- The site is not within an area where a notice to withdraw support has been given.
- The site is not in an area where a relevant notice has been published under the Coal industry Act 1975/Coal Industry Act 1994. MasterMap Water Network records identify 16 watercourses within 250m of the client site, with the Boardman Brook flowing across the site.

Summary.

Despite the location of Alkrington Colliery 350m to the east of the site, mine workings have not taken place beneath the site, probably due to geological faulting between the site and the former Colliery.

Mine Gas Emissions have been recorded at the former Alkrington Colliery Site, and a recommendation is made for a Coal Authority Mine Emission Report, although no records of emissions have been recorded elsewhere in the vicinity of the site.

5. REGULATORY AUTHORITIES.

5.1 Landfill Sites.

According to Environment Agency data, there are no Active or Recently Closed Landfill Sites within 500m of the client site.

BGS Records of Historical Landfill (1973) include no entries within 500m of the study site.

Local Authority / Mapping Records do identify a Historical Landfill Site within 500m of the site. The site lies 333m to the east of the site, identified from the 1962 Mapping, and relates to the former Alkrington Colliery site.

Environment Agency data holds a single record of a Historical Landfill Site lying 157m to the west of the client site. The site is identified as “Land to the rear of Symond Road” and is shown on the Map of Section 3 of the Groundsure Enviro+Geo Insight Report of Appendix B. Much of this site was built upon between the Ordnance Surveys of 1966 and 1975, with the M60 also being constructed on the north-eastern limit of the site between 2001 and 2010.

5.2 Other Waste Sites.

There are no records of Historical Waste Sites from Local Authority Planning Records and Historical Mapping with 500m of the study site.

There are two records relating to the Storage, Treatment or Disposal of Waste that are exempt from needing a permit. They are detailed in Section 3.7 of the Groundsure Enviro+Geo Insight Report of Appendix B.

5.3 Recent Industrial Land Uses.

Section 4.1 of the Groundsure Enviro+Geo Insight Report identifies 5 current potentially contaminative sites within 250m of the site.

Distance	Land Use
0-50m	None Listed.
50-250m	Electricity Sub-Station, Travelling Cranes & Gentries, Vehicle Repair, Testing & Servicing.

5.4 Current or Recent Fuel Sites.

There are two records of current or recent fuel filling stations located within 500m of the client site.

Company: Obsolete
Address: 1357 Rochdale Road, Manchester, M9 6QT.
Status: Obsolete
Location: 428m South

Company: Tesco
Address: Victoria Avenue East, Blackley, Manchester, M9 6HP.
Status: Open
Location: 465m South

5.5 Sites Determined as Contaminated Land.

There are no records of sites determined as Contaminated Land under Part 2a of the Environmental Protection Act 1990 within 500m of the client site.

5.6 Dangerous or Hazardous Substance Storage Sites.

There are no records of COMAH or NIHHS sites within 500m of the client site.

5.7 Industrial Pollution.

There are no records of Historic IPC Authorisations within 500m of the client site.

Part A(1) Activities.

There are no records of Part A (1) Authorised Activities within 500m of the client site.

Part A(2)/B Activities.

There is one record of a Part (B) Authorised Activities within 500m of the client site.

Address:	Tesco Petrol Station, Victoria Avenue East, M9 6HP
Process:	Unloading of Petrol into Storage
Type:	Part B
Status:	Current Permit
Distance:	450m South

Licensed Discharge to Controlled Waters.

There are 10 records of Discharges of treated or untreated effluent to controlled waters within 500m of the client site. All relate to Sewage Discharges due to Storm Overflow, with the closest incident being 16m to the east of the site, with effluent entering the Boardman Brook.

Pollutant Release to Surface Waters.

There are no records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the client site.

List 1 & 2 Dangerous Substances.

There are no records of List 1 or List 2 Dangerous Substances Inventory Sites within 500m of the client site.

5.8 Sites Licensed for Radioactive Substances.

According to Environment Agency data there no records of Category 3 or 4 Radioactive Substance Authorisations within 500m of the client site.

5.9 Recorded Pollution Incidents.

According to Environment Agency records, there is one record of Substantiated Pollution Incident within 500m of the client site.

Date	Distance	Description	Impact
20/01/2002	21m NE	Sewage Materials Crude Sewage	Water: Cat3 (Minor) Land: Cat4 (No Impact) Air: Cat4 (No Impact)

6. WALKOVER SURVEY.

6.1 General Site Description.

The site currently comprises a grassed field/paddock with a Menage area to the east of the main development area.

6.2 Topography.

The site slopes from the north to the south, with a change in level of approximately 4m across the proposed development area in the northern half of the site. The Menage Area is approximately flat and appears to have been terraced accordingly.

The site continues to extend down into the wooded valley of the Boardman Brook.

There are no signs of landslip on site.

6.3 Soils and Rocks.

The exposed soil on site is silty in nature with some gravel.

6.4 Visible Evidence of Contamination.

There is no evidence of visible contamination on site.

There are no visible tanks on the study site.

There are no bodies of surface water on the site.

Gas Protection Measures are not evident in or around the site.

An asbestos survey has not been carried out as part of the desk study, but no buildings are present within the site boundary.

6.5 Vegetation.

Most of the site has a covering of grass, with the wooded valley of the Boardman Brook running along the eastern boundaries of the site. Vegetation within all areas appears healthy.

There are a number of trees within the valley of the Boardman Brook which lie outside of the main development area.

There is no evidence of any recently removed trees in the immediate vicinity of the site.

There is no evidence of invasive weeds such as Japanese Knotweed, Giant Hogweed or Himalayan Balsam within the site.

6.6 Surface Water Bodies.

The Boardman Brook crosses the south-eastern portion of the site but lies outside of the proposed development area.

A Man-Made Pond lies to the north-west of the site, within the grounds of the adjoining property.

There are no signs of flooding on site.

There is no evidence of reeds or other water loving plants.

There is no evidence of dis-coloured water within the site.

6.7 Groundwater.

There are no wells evident on site.

There are no groundwater seepages/springs evident on site.

There are no signs of water-logged topsoil on site.

Groundwater abstraction is not carried out on site.

6.8 Presence of Wildlife.

The site does not lie within an area of ecological importance e.g. SSSI or National Park.

There are no obvious animal burrows present within the site.

6.9 Services.

A full survey of services has not been carried out as part of the walkover survey.

A drain is present approximately 4m from the south-eastern boundary of the site.

6.10 History of Use.

The site comprises a field/paddock with a Menage Area to the north and there is no evidence of any other usage.

6.11 Surrounding Area.

The surrounding area comprises residential properties on all sides.

Approximate distance to nearest properties.	Industrial:	Not immediately evident.
	Commercial:	Not immediately evident.
	Residential:	Adjacent to North-West.

7. CONCEPTUAL MODEL.

7.1 Site Summary.

The earliest located map of the area, from 1843, shows the site lying undeveloped to the south-east of the property of Nut Bank. A stream, later identified as Boardman Brook, crosses the site from the south and flows around the northern boundary towards the River Irk in the north-west.

The Census Records have identified the property of Nut Bank, which appears to be the closest related property to the site, to be present from before the earliest document of 1841.

A more detailed survey from 1848 shows the portion of the site extending to the east of Boardman Brook as lying within the grounds of a property which fronts onto Manchester New Road. This area of the site lies outside of the proposed development area.

The earliest aerial image of the site dates from 1926 and is held in the Britain from Above Archive. Image EPW016464, "Alkrington Wood, Middleton, 1926" shows the site towards the top tight corner. The property of Nut Bank can be seen, along with Nutbank Lane and the valley of Boardman Brook. A field boundary, approximately aligned with the northern limit of the site can just be seen in the rear half of the site before a hedgerow turns north-west away from the site boundary towards the front. This feature can be seen on the Ordnance Survey of 1922.

The client site remains essentially unchanged until the south-eastern boundary of the site is established around 1938, when new residential properties are constructed fronting onto Manchester new Road.

Between 1992 and 2001 a large Pond is shown within the site directly to the north-west of the site. A Google Earth Pro Image from 2000 shows the site occupying part of a field enclosure which extends to the north-west, with the pond present on the opposite side of Nut Bank Lane from Nut Bank House.

By 2003 an Aerial Image shows an enclosure around the Pond lying to the north-west of the site, but few additional changes are evident.

A 2009 image from the Groundsure Archive shows a new building on the north-west shore of the pond, with further new properties to the north-west of Nut Bank. No notable changes are evident within the site boundary.

By 2013 a new boundary had been established along the northern limit of the site, but no notable changes are evident within the site curtilage.

A 2016 Aerial Image shows a new access road just to the north of the site limit and towards the rear portion of the site a rectangular feature can be seen. By 2017 a Google Earth Pro Image shows a new building under construction to the north of the site and the rectangular feature seen on the previous image can be seen to be a menage.

Apart from a path connecting the Menage area to an entrance on Nut Bank Lane no other changes are noted on later images or plans.

7.2 Surrounding Area.

The surrounding area comprises residential properties to the north-west and south-east, with the valley of the Boardman Brook running along the eastern side.

Early Ordnance Surveys show Alkrington Colliery lying approximately 1km to the north-east of the site, but by 1891 the original Colliery site is shown as disused, and a new site has been established 300m to the east of the site. Initially this site is identified as a Brick Yard, but following its closure in the early 20th Century, two Old Shafts are shown on the surveys. Later the site becomes a Recreation Ground.

7.3 Geology.

The British Geological Survey map of the area shows the client site to be located on Superficial Strata of Till, Devensian – Diamicton overlying Bedrock Deposits of the Pennine Lower Coal Measures Formation – Mudstone, Siltstone and Sandstone.

Artificial Ground comprising Made Ground, Worked Ground and Infilled Ground has been identified within 500m of the study site. The closest areas identified can be seen to be related to the construction of the M60 Motorway 66m to the south-west of the site, along with sections of the A664 Manchester New Road. Additional features include an area of Made Ground associated with the former Alkrington Colliery site 289m to the east.

7.4 Hydrogeology & Hydrology.

The Superficial Glacial Till Deposits, in the area of the site, are classified by the Environment Agency 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.

No Groundwater Abstraction Licence have been identified within 500m of the client site.

The site lies within an area where the Groundwater Vulnerability is classified as 'Secondary Superficial Aquifer / Low Vulnerability' area.

The site does not lie within a Flood Risk Area.

The potential permeability of the underlying strata could allow the migration of contamination onto or away from the site through the natural strata.

7.5 Potential Sources of Contamination.

The following is based on information from the desk study:

Within 100m of the site the following potentially contaminative operations have been identified; Unspecified Heaps and Ground Workings.

Within 500m of the site, potentially contaminative operations identified from the historic sources have included; Colliery, Brick Yard, Refuse Heap, Garages, Filling Station and Electricity Sub-Stations.

The potential permeability of the underlying strata could allow the migration of contaminants to and from the site, however no significant sources have been identified in the immediate vicinity of the site.

Source	Potential Risk	Potential Contaminants
Made Ground associated with terracing and levelling of the site associated with Menage Area to the north-east of the proposed development area.	The nature and presence of Made Ground on site is unknown but could lie beneath terraced areas of the site.	Potential contaminants within the Made Ground could include; Metals, Polycyclic Aromatic Hydrocarbons (PAHs) and Asbestos.

7.6 Ground Gases.

According to Environment Agency data, there are no Active or Recently Closed Landfill Sites within 500m of the client site.

BGS Records of Historical Landfill (1973) include no entries within 500m of the study site.

Local Authority / Mapping Records record an area of Historical Landfill 333m to the east of the site and is related to the former Alkrington Colliery site.

Environment Agency data holds a single record of a Historical Landfill Site lying 157m to the west of the client site. The site is identified as “Land to the rear of Symond Road” and is shown on the Map of Section 3 of the Groundsure Enviro+Geo Insight Report of Appendix B. Much of this site was built upon between the Ordnance Surveys of 1966 and 1975, with the M60 also being constructed on the north-eastern limit of the site between 2001 and 2010.

According to BR211 ‘RADON: Guidance on Protective Measures for New Buildings’ the site lies in an area where the Level of Protection Required is assessed as ‘None’.

The Consultants Coal Mining Report identifies that Mine Gas Emissions have been recorded at the former Alkrington Colliery Site, and a recommendation is made for a Coal Authority Mine Emission Report, although no records of emissions have been recorded elsewhere in the vicinity of the site.

Although no significant areas of Household Landfill have been identified in the vicinity of the site, due to the records relating to “Land to the Rear of Symond Road” and the Mine Gas Emissions recorded at Alkrington Colliery site, Ground Gas Monitoring is recommended as part of the Ground Investigation of the site.

7.7 Potential Pathways.

The following potential pathways are identified for the site,

- Direct contact (P1) – contaminant effect to building materials.
- Contact with soil or dust on the site (P2) – contaminants may be absorbed by dermal contact, or by inhalation of dust particles, by Ground-workers and Future Site Users.
- Uptake by Vegetation (P3) – Vegetation on site shows no signs of sparseness or die back.
- Migration through the Saturated Zone (P4) – the site is located upon deposits identified as a Secondary A Aquifer. The material is considered to have significant permeability.
- Surface Run Off (P5) – surface run-off of storm water containing potential soluble or mobile contaminants could affect the Boardman Brooks and adjacent sites.
- Migration through the Vadose Zone (P6) – the migration of Ground Gases through the unsaturated strata.

7.8 Potential Receptors.

The following list of potential receptors are identified for the site

- Future Users of Site & Groundworkers
- Adjacent Properties & Land (Residential)
- Vegetation
- Buildings and Materials
- Underlying Strata & Secondary A Aquifer
- Boardman Brook

7.9 Limitations and Uncertainties.

The following limits and uncertainties apply to the conceptual model of the site,

- Actual presence, nature and extent of any contamination.
- Presence, thickness and permeability of any Made Ground.

8. RISK ASSESSMENT.

8.1 General.

The desk study has identified that the client site has been a field/paddock originally probably related to the residential property of Nut Bank, but later associated with the newer residential properties directly to the north-west. This includes the establishment of the Menage to the north of the proposed development area.

The Risk Assessment considers the proposed end-use as a Residential Property with associated garden areas.

The Risk Assessment adopts the source-pathway-receptor assessment principal based on the Conceptual Model developed in Section 7 of this report.

8.2 Identification of Hazards.

Contamination from 'On Site Sources'.

Some small-scale terracing of the site may have taken place in the past, during the establishment of the Menage in the north-eastern corner of the site.

The nature of the Made Ground is unknown.

Contamination from Adjoining Sites.

The client site is adjoined to the north-west by residential properties and by the valley of the Boardman Brook on the south-east and north-eastern flanks.

The potential permeability of the underlying Glaciofluvial Deposits could allow the migration of contaminants to and from the site, however no significant sources have been identified in the adjoining sites.

Contamination from the Surrounding Area.

As noted above, the area surrounding the site is almost exclusively residential in nature.

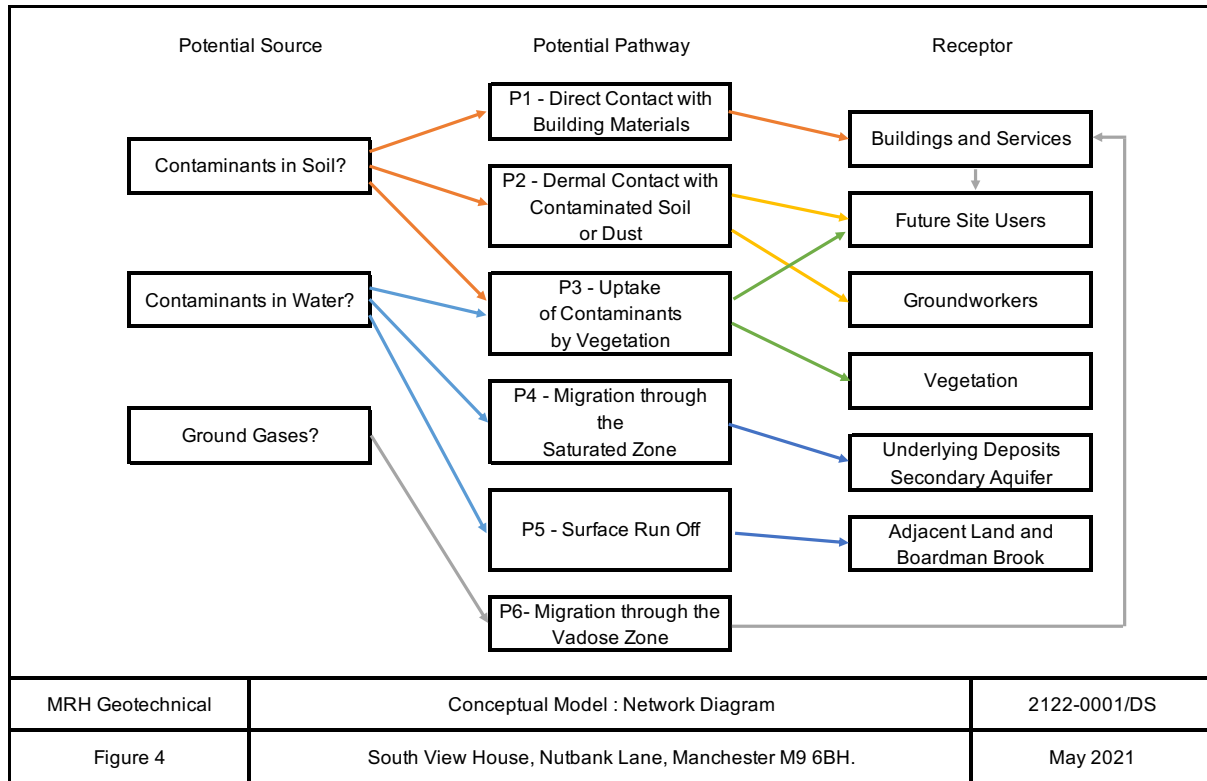
Potentially contaminative operations within 500m of the site include; Colliery, Brick Yard, Refuse Heap, Garages, Filling Station and Electricity Sub-Stations.

No significant sources have been identified in the immediate vicinity of the site.

Although no significant areas of Household Landfill have been identified in the vicinity of the site, due to the records relating to "Land to the Rear of Symond Road" and the Mine Gas Emissions recorded at Alkrington Colliery site, Ground Gas Monitoring is recommended as part of the Ground Investigation of the site.

8.3 Identification of Potential Pollutant Linkages.

Figure 4, Conceptual Model – Network Diagram, below shows the potential Pollutant-Pathway-Receptor linkages for the site.



8.4 Risk Assessment.

The potential Pollutant-Pathway-Receptor linkages have been assessed through a preliminary qualitative risk assessment based on the following guidelines set out in Figure 5.

Probability	High Likelihood	Very High	High	Moderate	Moderate/Low
	Likely	High	Moderate	Moderate/Low	Low
	Low Likelihood	Moderate	Moderate/Low	Low	Very Low
	Unlikely	Moderate/Low	Low	Very Low	Very Low
		Severe	Medium	Mild	Minor
		Consequence			

Figure 5, Risk Classification Matrix

Figure 6 presents the potential Pollutant-Pathway-Receptor linkages and assess the probability and consequence of the risks.

Source	Pathway	Receptor	Consequence of Risk	Likelihood of Risk	Assessed Risk
Contaminated Soil	Direct Contact / Inhalation of Dust	Construction Phase Personnel	Medium	Unlikely	Low
Contaminated Soil	Direct Contact / Inhalation of Dust	Site End Users	Medium	Unlikely	Low
Contaminated Soil	Consumption of Home Grown Produce	Site End Users	Medium	Unlikely	Low
	Uptake of Phytotoxic Contaminants	Vegetation	Minor	Unlikely	Very Low
Leaching from Contaminated Soil	Indirect Discharge to Aquifer	Secondary A Aquifer	Medium	Unlikely	Low
	Run-Off	Adjoining Sites or Water Course	Minor	Unlikely	Very Low
(Concrete) Elevated pH or SO ₄	Direct Contact	Construction Materials	Medium	Unlikely	Low
(Water Supply) PAH & Organic Compounds	Permeation of Plastic Pipes	Water Supply Pipes	Medium	Unlikely	Low
Ground Gases Landfill or Mine	Migration through the Vadose Zone	Buildings & Future Site Users	Severe	Unlikely	Moderate/Low

Figure 6, Assessed Identified Risk.

8.5 Evaluation and Recommendations.

As can be seen above, the site is overall considered to be at Moderate/Low Risk of significant contamination affecting the site, predominantly due to the possible presence of Ground Gases associated with either Historic Landfill or Mine Emissions. Both are considered unlikely due to the age of any Landfill in the area and the distance to the recorded Mine Emissions but due to the severe consequences of such risk, some Ground Gas Monitoring is deemed necessary. Three visits to monitor the Ground Gas regime on site should prove sufficient to establish whether further work or mitigation is required.

Further to this, there is some potential for Made Ground associated with possible terracing of the site in the area of the Menage.

Uncertainties always exist as to the *actual* presence of contamination in the vicinity of the site. This report highlights only the *potential* for contamination to be present, based on the data available at the time of research.

As the development of the site is residential in nature it is considered prudent to carry out a screen of the surface materials in the proposed soft landscaped areas of the site and should any unexpected areas of suspicious or Made Ground be identified during the geotechnical investigation of the site, then additional sampling and analysis should be carried out.

Analysis would generally be limited to a Wide Range Suite including; Metals, Speciated Polycyclic Aromatic Hydrocarbons, Soluble Sulphates, pH, Asbestos Screen and Organic Matter.

If any visual or olfactory evidence of Hydrocarbon contamination is suspected, then a Total Petroleum Hydrocarbon Suite with Aliphatic/Aromatic Split and Equivalent Carbon Banding should be added.

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