WML CONSULTING
Civil, Structural and Geotechnical Engineers

Phase 1 Desk Study and Preliminary Geo-Environmental Assessment

For a site at

Arrowfield Road, Chorlton

Undertaken for

Southway Housing Trust

Report No. 7592/G/01

April 2017

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1.0 INTRODUCTION

Appointment

1.1 WML Consulting was commissioned by Southway Housing Trust to undertake a Phase 1 Desk Study and Preliminary Geo-environmental Assessment of a site referred to as Arrowfield Road, located off Nell Lane in the Chorlton area of Manchester.

Proposed Development

1.2 It is understood that the proposed development comprises the construction of twenty four, two bedroom apartments in a three-storey structure. External areas are indicated to comprise hardstanding for access/parking and localised communal landscaped areas.

1.3 A gas governor in the south-western section of the site is to be retained as part of the redevelopment.

1.4 The current proposals indicate the need to realign a public footpath in the north-eastern section of the site and the possible closure of a footpath in the central section of the site.

1.5 The current proposed layout by JDA Architects, referenced PS0008, is reproduced in Appendix 01.

Objective

1.6 The purpose of the Desk Study is to collate available geological and environmental data for the site and its environs in order to undertake a preliminary geotechnical and geo-environmental appraisal and inform a site specific conceptual model.

1.7 This enables a preliminary assessment of geo-environmental risks to be undertaken and provides information for the design of an appropriate Phase 2 Ground Investigation in accordance with the Environment Agency (2004) Model Procedures for the Management of Land Contamination, CLR11.

Scope

1.8 The Phase I Desk Study comprised a site reconnaissance visit on 12th April 2017 and a review of the following information sources:

- British Geological Survey (1:50,000) Sheet 98 'Stockport' (Solid and Drift Editions).
- British Geological Survey Digital Geological Map of Great Britain (DiGMapGB-50; available as a Web Map Service).
- Coal Authority interactive map viewer (available as a Web Map Service).
- Environment Agency 'What's in my back yard?' website.
- The site and surrounding area's environmental compliance history from data presented in the site specific GroundSure Environmental Insight Report (Appendix 03).
- Historical Ordnance Survey maps as provided by GroundSure (Appendix 03).
- BRE Publication 211 (2015) "Radon: Guidance on Protective Measures for New Buildings".
- HPA-RPD-033 Indicative Atlas of Radon in England and Wales, 2007.

2.0 SITE LOCATION AND DESCRIPTION

Site Location

2.1 The site comprises land on the corner of Nell Lane and Arrowfield Road in the Chorlton area of Manchester. It is centred on approximate Ordnance Survey National Grid Reference 382745E, 392954N with an indicative postcode of M21 7UG.

2.2 The proposed development site is bounded to the north-east and east by Buckthorn Close with residential developments beyond. To the south, the site is bounded by Nell Lane and Southern Cemetery. To the west, the site is bounded by Arrowfield Road and Loreto High School.

2.3 The site location is indicated on the topographic plan in Appendix 01 and also edged in red in the Groundsure report in Appendix 03.

Site Description

2.4 The site is roughly rectangular in shape and covers an area of approximately 0.24 Hectares.

2.5 The central section of the site is developed with a low-rise brick structure, of which the eastern section provides residential housing and the western section a children's nursery.

2.6 The structure is surrounded by private gardens associated with the residential section of the structure and mixed hardstanding and soft play associate with the nursery.

2.7 The remaining areas comprise undulating grass landscaping and asphalt hardstanding for access and parking with Buckthorn Close extending roughly east to west across the northern and north-eastern sections of the site.

2.8 Designated vehicular parking areas are located within the eastern, northern and western sections of the site.

2.9 Localised semi-mature deciduous trees of varying species are located within the landscaped areas around the site, with the greatest densities closest to the eastern and southern site boundaries.

2.10 A gas governor of brick construction is located in an area of landscaping within the south-western section of the site. The age of the structure is unknown.

2.11 The site is fully accessible with the exception of the children's nursery and private residential properties.

2.12 Surrounding land is mainly occupied by residential development with associated hardstanding and soft landscaping, together with a cemetery and school to the south and south-west respectively.

2.13 Photographs of the site and immediately surrounding area are provided in Appendix 02.

Topography

2.14 The site is relatively level with a slight decrease in elevation from 30.40m Above Ordnance Datum (AOD) in the south-west to 29.85m AOD close to the north-eastern site boundary. The central section of the site is generally level at around 30.00m to 30.10m AOD.

2.15 However, small landscaped grass mounds, with a maximum elevation of 30.77m AOD, are located along Nell Lane on the south-western site boundary.

2.16 The topographical survey, referenced TRI-1914-01, by TRI CAD Solutions is presented in Appendix 01.

3.0 ENVIRONMENTAL SETTING

3.1 The following sections on the environmental setting of the site are summarised from the GroundSure Enviro Insight Report in Appendix 03 and supplemented by information from the Environment Agency web based 'What's in my backyard' service.

3.2 The geology of the site is covered by the British Geological Survey (BGS) Sheet 98 'Stockport' (1:50,000 scale Solid and Drift editions) and the site specific GroundSure GeoInsight report supplemented by the BGS Digital Geological Map of Great Britain (DiGMapGB-50; available as a Web Map Service).

Environmental Setting

Description	Comments
Geology	The BGS plans indicated that the site is underlain by Devensian Glaciofluvial Sheet Deposits comprising mainly sand and gravel. The Drift deposits are underlain at greater depths by the Triassic Wilmslow Sandstone Formation which generally comprise fine to medium grained sandstones with sporadic siltstones. Solid strata are indicated to dip to the south-west at an angle of around 10 degrees. A fault, with downthrow to the west, is located some 150m west of the site. The fault is not considered to pose a risk to the proposed development.
Radon	The property is not in a Radon Affected Area as defined by the Health Protection Agency as less than 1% of properties are above the Action Level of exposure. Therefore, no radon protection measures are necessary for new structures as described in publication BR211 by the Building Research Establishment.
Mining and Subsidence	In consideration of the underlying geology, risks of subsidence from coal mining can be discounted. Risks of surface subsidence relating to dissolution related subsidence are also considered low and can be discounted.
Hydrogeology	The Glaciofluvial Sheet Deposits beneath the site are classified by the Environment Agency as a 'Secondary A Aquifer'. These include 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 is classified as a 'Principal Aquifer' (former Major Aquifer). These are strata of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. However, there are no Environment Agency Source Protection Zones or active Groundwater Abstraction Licence within 500m of the site. The nearest is located 966m south-west at Chorlton cum Hardy Golf Club Ltd and relates to spray irrigation. This is not considered to be within influencing distance of the site.
Hydrology	There are no recorded Detailed River Network Features within 250m of the site. The nearest relates to Chorlton Brook which is around 420m north and is therefore not considered to be within influencing distance of the site. There are no active Surface Water Extraction Licences within 1km of the site.

Description	Comments
Landfill and Waste Management Activity	There are no active or BGS/DOE recorded non-operational landfills within 1km of the subject site. There is 1no Environment Agency recorded historic landfill within 1km of the subject site. This relates to unknown waste types at Nell Lane, 18m south-west. There are no Licensed Waste Sites within 500m of the subject site.
Industrial Land Use Information	There are 3no potentially contaminative industrial sites within 250m of the subject site. These all relate to electricity sub-stations 44m, 131m and 233m north-west. However, these are considered sufficiently remote as not to influence the site. There are no Petrol Fuel Sites recorded within 500m of the site boundary. There are no Underground High Pressure Pipelines or High Voltage Underground Cables recorded within 500m of the site boundary.
Environmental Permits, Incidents and Registers	There are no records of historic IPC Authorisations, Part A(1), or Part A(2) Authorised Activities within 500m of the site. There is 1no record of a Part B IPPC Authorised Activity within 500m of the site. This relates to a current permit for incineration at The Manchester Crematorium, 354m south-west. This is considered sufficiently remote as to have no effect on the site. There are no List 1 or List 2 Dangerous Substances Inventory Sites recorded within 500m of the site. There are no registered sites holding Licences or Radioactive Substance Authorisations within 500m of the study site. There are no Licenced Discharge Consents within 500m of the site. There are no Hazardous Substance Consents within 500m of the site. There are no COMAH and NIHHS Dangerous of Hazardous Sites within 500m of the subject site. There are no sites that has been determined as Potentially Contaminated Land under Section 78R of the Environmental Protection Act 1990 within 500m of the study site.
Potential Flood Risks	Detailed assessment of flood risk is outside the scope of this assessment. However, reference to the Environment Agency website and the Groundsure report indicates that the Risk of Flooding from Rivers and the Sea (RoFRaS) is currently designated as 'very low'. The site is indicated on BGS records to be within an area which is considered to be susceptible to groundwater flooding. The BGS confidence rating for this assessment is considered 'Low'.
Designated Environmentally Sensitive Sites	There are no Designated Environmentally Sensitive Sites within 500m of the study site.
Archaeological Information	No archaeological information has been obtained for the purpose of this report. Where considered appropriate, reference should be made to an archaeological consultant in this respect.

4.0 SITE HISTORY

4.1 The historical development of the site has been determined by reference to archive Ordnance Survey (OS) map extracts obtained from the GroundSure EnviroInsight Report in Appendix 03.

4.2 It should be noted that historical plans with no mapping information at or around the immediate site area have been omitted from the Map Dates.

Historical Development

Map Dates	Scale	Comments	
		On Site	Surrounding Area
1849	1:10,560	The site comprised undeveloped rural / agricultural land. A field boundary extended roughly north-west to south-east across the centre of the site. Nell Lane formed the south-western site boundary.	The surrounding area was generally undeveloped rural / agricultural land with localised residential developments. A number of field ponds were located in the surrounding area with the nearest some 350m south. Farms were located some 80m north-west and south-east of the site.
1881	1:2,500	A number of trees were shown in the north-western section of the site.	No significant changes apparent.
1892	1:10,560	The site was shown to form part of a Nursery, with trees extending across its entirety and a field boundary extending roughly north-east to south west across the centre.	Manchester Southern Cemetery was located immediately south of Nell Lane with a Crematorium some 355m south-west of the site. Manchester South District Railway Line ran roughly north-west to south-east some 350m north-east of the site. Chorlton Union Workhouse had been constructed some 800m south-east. Localised residential development had occurred some 750m north-west.
1894	1:2,500	No significant changes apparent.	No significant changes apparent.
1905	1:10,560	No significant changes apparent.	A Refuse Destructor had been constructed some 40m south-west of the site.
1907	1:2,500	A footpath was shown to extend roughly north-east to south-west across the centre of the site.	An area of earthworks was shown adjacent to the Refuse Destructor some 75m south-west of the site, possibly relating to disposal activity.
1911	1:10,560	No significant changes apparent.	No significant changes apparent.
1922	1:2,500	No significant changes apparent.	A Tank and Chimney had been constructed at the site of the Refuse Destructor some 75m south-west of the site.
1923	1:10,560	No significant changes apparent.	No significant changes apparent.
1933	1:2,500	No significant changes apparent.	An area some 100m north-west of the site had been subject to residential

Map Dates	Scale	Comments	
		On Site	Surrounding Area
			development. The crematorium structure 355m south-west had been modified.
1938	1:10,560	No significant changes apparent.	The wider surrounding area had seen extensive residential development.
1955	1:2,500 & 1:10,560	No significant changes apparent.	No significant changes apparent.
1956	1:1,250	No significant changes apparent.	No significant changes apparent.
1966	1:10,560	No significant changes apparent.	Further expansion of the crematorium to within 255m south-west of the site was apparent.
1981	1:10,000	The site had been developed with a structure located in the south-western section. Buckthorn Close had been constructed and extended roughly north-west to south-east across the north-eastern section of the site. Arrowfield Road formed the north-western and western site boundaries.	The area immediately to the north and west of the site had undergone residential development. The railway 350m north-east of the site had been dismantled. St Thomas Aquinus AC High School had been constructed some 50m north-west of the site.
1984	1:1,250	No significant changes apparent.	The former Refuse Destructor some 40m south-west was now shown as a Depot.
1988	1:10,000	No significant changes apparent.	Further residential development had occurred some 200m north-east of the site.
1992	1:1,250	No significant changes apparent.	No significant changes apparent.
2002	1:10,000	No significant changes apparent.	The depot (former Refuse Destructor) had been cleared to the south-west. Residential structures had been constructed immediately south-west of the site on Nell Lane.
2010	1:10,000	No significant changes apparent.	The area of the former depot had been redeveloped as residential housing.
2014	1:10,000	No significant changes apparent.	The dismantled railway line 350m north-east had been re-developed as a Tram Line.

4.3 In summary, the site remained in rural / agricultural use until it was developed with a residential structure on the southern part sometime prior to 1981. Other than potential part change of use to a children's nursery the site has since remained relatively unchanged.

4.4 The earliest available records indicated the surrounding area to have comprised undeveloped rural / agricultural land with localised residential developments. Nearby industrial development was limited to a Refuse Destructor built some 40m south-west of the site in the 1900's with a Cemetery and Crematorium to the south-west of Nell Lane. The wider area surrounding the site underwent extensive residential

development by the 1930's, with the area immediately surrounding the site undergoing residential development by the 1980's.

4.5 On the basis of the above, no significant sources of ground contamination are envisaged within the site although the potential for Asbestos Containing Materials (ACM) within the existing buildings cannot be wholly discounted.

4.6 The cemetery to the south could contain contaminated materials and/or materials with the potential to generate hazardous concentrations of ground gas.

5.0 PRELIMINARY CONTAMINATION RISK ASSESSMENT

Introduction

5.1 The following paragraphs outline a Preliminary Risk Assessment (PRA) for the site as defined by DEFRA and the EA Model Procedures for the Management of Land Contamination, CLR11 (2004).

5.2 The table in Paragraph 5.4 provides a Preliminary Conceptual Model (PCM) which defines the site in terms of a potential pollution linkage, that is, whether a pathway exists between a contamination source and a sensitive environmental receptor (Source-Pathway-Receptor relationship).

5.3 The table considers whether a pollution linkage is potentially present or not and provides a preliminary qualitative assessment of risk, based on the information currently available and in accordance with guidance provided in the CIRIA document C552 (2001) Contaminated Land Risk Assessment – A guide to good practice. The risk evaluation process is described further in Appendix 04.

5.4 Where a possible linkage is identified, it does not necessarily mean that a significant risk exists, but indicates that further information is required through appropriate site investigation to substantiate the conceptual model.

Source	Pathway	Receptor	Probability of Linkage	Comment
The likelihood of significant ground contamination sources being present at the site due to its past use is considered low. However, the presence of Asbestos Containing Materials (ACM) within the existing structures cannot be discounted at this stage.	Direct contact, ingestion of soil, dermal contact, dust exposure pathways.	Current Site Users	Unlikely	No significant sources of contamination are anticipated with private gardens and landscaped areas surfaced with grass and / or topsoil. The risk to current site users is therefore considered **VERY LOW**.
		Site End Users	Low	The provision of buildings and new hard cover will break the direct pollution linkage significantly, with direct exposure to contaminants in landscaped areas considered unlikely. Although residual risks could remain within communal gardens, these are considered **LOW**.
		Construction Workers	Unlikely	Construction workers are unlikely to be exposed to significantly contaminated soils during earthworks and foundation construction. Also, any perceived contamination risks will be mitigated by adopting good site working practices including appropriate Health and Safety measures during the works, thus providing a **VERY LOW** preliminary risk.
		Adjacent land users	Unlikely	Contact via wind-blown dust/debris, particularly during the development phase is possible. The current risk is considered **VERY LOW** although this would increase during construction works. Appropriate health and safety measures adopted during site development, will ensure that the risk remains very low.

Source	Pathway	Receptor	Probability of Linkage	Comment
The likelihood of significant soluble and/or liquid and therefore mobile contaminants occurring at the site due to its past use is considered low.	Direct downward migration through leaching and/or mobile liquids.	Groundwater	Unlikely	The site is indicated to be directly underlain by a Secondary A Superficial Aquifer and a Principal Bedrock Aquifer. Therefore, a direct pollution linkage is plausible although the preliminary risk is assessed as no more than **LOW** due to the likely limited contamination source.
	Off-site migration in groundwater or surface water flow.	Surface water	No linkage envisaged	There nearest surface water feature is Chorlton Brook located some 420m north of the site. Therefore, risks to surface water from the site are considered **VERY LOW**.
		Groundwater /surface water abstractions	Unlikely	The site is not within an Environment Agency Source Protection Zone and there are no surface water abstractions within 500m of the site. Therefore, risks to groundwater/surface water abstractions are considered **VERY LOW.**
		Adjacent Properties	Unlikely	No significant sources of mobile contaminants are anticipated at the site. The preliminary perceived risk to adjacent properties is therefore assessed as **LOW**.
		Ecology	No linkage envisaged	There are no Designated Environmentally Sensitive Sites within influencing distance of the subject site. Therefore, risks to the surrounding ecology are considered **VERY LOW.**
The likelihood of significant volatile contamination occurring at the site due to its past use is considered low.	Inhalation of harmful vapours (indoor and outdoor airspaces)	Current Site Users	Unlikely	No significant sources of volatile contaminants are envisaged. Therefore the current risk from inhalation of indoor/outdoor air is considered **LOW**.
		Site End Users	Unlikely	Significant sources of volatile contaminants at the site are not anticipated. Therefore the preliminary risk from inhalation of indoor/outdoor air is considered **LOW.**
		Construction Workers	Unlikely	In the unlikely event of construction workers coming into contact with possible volatile compounds, the exposure time would be relatively short. The chronic exposure risk to construction workers, assuming that appropriate health and safety measures will be adopted, is therefore considered **LOW.**

Source	Pathway	Receptor	Probability of Linkage	Comment
		Adjacent Properties	Unlikely	Significant sources of volatile contaminants at the site are not anticipated. Therefore the preliminary perceived risk to adjacent properties and users is assessed as **LOW**.
The presence of appreciable thicknesses of Made Ground with the potential to generate significant volumes of ground gas beneath the site is unlikely. However, there is a historic landfill recorded 18m south-west of Nell Lane. The Cemetery to the south could also contain materials with the potential to generate hazardous concentrations of ground gas. The presence of ground gas resulting from shallow unrecorded mine workings is unlikely.	Emissions from the ground beneath the site collecting in confined spaces and excavations	Construction/ services maintenance workers	Low	Ground workers could possibly come into contact with potentially toxic and/ or flammable/ explosive gas within excavations and confined spaces at the site. Assuming that appropriate health and safety measures will be adopted during construction, the preliminary risk is therefore considered **LOW**.
	Migration of gases on/off site and collecting in confined spaces on/off site.	Adjoining site users	Unlikely	A significant source of potentially degradable material beneath the site is considered unlikely. The preliminary risk to adjoining site users from toxic and/or flammable/ explosive gas arising from the site is therefore considered **LOW**.
		Current/future site users	Low	Although elevated concentrations of ground gases could migrate from the nearby historic landfill and to a much lesser degree the cemetery, the age and extent of in-fill is such that continued generation of significant volumes are unlikely. The potential risk to current and future site users is therefore considered **LOW** although this will need to be confirmed by an appropriate level of ground investigation and monitoring.
The site is not in an area which is affected by naturally occurring radon gas.	Natural emissions from the ground collecting in confined spaces within buildings	Site end users	Unlikely	The site is not located in an area where radon protection measures are required. No further action is necessary regarding radon protection as the risk is **VERY LOW**.
Chemicals which could prove aggressive to construction materials are unlikely to be present on site.	Direct contact	Construction concrete, plastic water pipes.	Unlikely	Any risks to construction materials identified after site investigation and assessment will be mitigated as part of the structural design. The perceived risk is therefore considered **LOW**.

Preliminary Risk Assessment

5.5 Under the proposed development scenario, potential pollution linkages are on the whole considered unlikely with associated preliminary risks being assessed as low.

5.6 The approach at the Phase 1 Desk Study stage must, however, be precautionary until such time as uncertainties in the conceptual model can be verified by appropriate site investigation.

5.7 Such uncertainties relate in the main to the potential migration of hazardous ground gas associated with landfilling to the south-west and to a lesser degree the cemetery to the south.

5.8 In addition, potential background levels of ground contamination may be present as a result of the site's brownfield status. The presence of Asbestos Containing Materials (ACM) within the existing structures and Made Ground also cannot be discounted at this stage.

6.0 PRELIMINARY GEOTECHNICAL APPRAISAL

Site Preparation and Earthworks

6.1 No demolition should proceed until an appropriate asbestos survey of the existing building has been undertaken and any Asbestos Containing Materials (ACM) removed by an appropriately licensed contractor.

6.2 Historical/existing foundations, ground floor slabs and other buried concrete obstructions associated with current and former structures will need to be broken out to suitable depths below formation levels where they are to impinge on the proposed redevelopment.

6.3 All existing asphalt/concrete hardstanding and below ground foundations removed as part of the clearance work, subject to appropriate screening and crushing, may be suitable for re-use as bulk fill beneath hard cover areas.

6.4 As part of the site clearance, the removal of trees and other vegetation should be undertaken under consultation with an ecological specialist.

6.5 It should be noted that the stopping-up and/or realignment of public footpaths will likely be subject to consultation with the local authority and/or Department of Transport. To this end, the status of the footpaths will need to be determined and the time allowed within the development programme for all relevant applications, consultations and approvals.

Foundations and Floor Slabs

6.6 Any Made Ground should be considered unsuitable for the direct support of structural loads as it will be inherently weak and therefore incompetent as a bearing medium, resulting in the potential for unacceptable total and differential settlements.

6.7 It is anticipated that traditional style spread foundations may be suitable for the support of a new three storey structure at the site. However, deep mass concrete trench fill, ground improvement or piled foundations cannot be ruled out within areas underlain by deeper Made Ground or where underlain by incompetent natural strata. This will need to be confirmed by appropriate site investigations.

6.8 Foundation construction will need to take account of any nearby services and, where they are in close proximity, may need to be taken down to beneath the lowest level of the service trench so that their structural integrity is maintained.

6.9 During excavation works, care should also be taken to avoid damage / undermining of existing structural foundations and infrastructure such as to the gas governor and adjacent highways, with the provision of adequate support measures where considered appropriate.

Excavations and Groundwater

6.10 Geological records indicate the site to be directly underlain by Glaciofluvial Sheet Deposits. These deposits generally comprise sand and gravel and therefore have the potential to be relatively permeable in nature. As such, significant inflow of groundwater into excavations cannot be wholly discounted at this stage.

6.11 Conventional 'sump and pump' dewatering measures in open excavations may not therefore be adequate to keep excavations dry and it cannot be discounted that groundwater exclusion measures such as interlocking sheet piles may be required in conjunction to prevent excessive ingress of water into excavations. This will be subject to confirmation by site investigation.

6.12 Due to the potentially permeable nature of the Glaciofluvial Sheet Deposits, soakaway drainage may be feasible although this will be influenced by the depth to groundwater. This should be confirmed by ground investigation and, if deemed appropriate, subsequent infiltration testing at drainage design stage.

7.0 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

General

7.1 The site has historically been occupied and surrounded by a residential structure although nearby areas have historically also included a Refuse Destructor and a cemetery.

7.2 The likelihood of significant and or widespread ground contamination sources being present beneath the site is therefore considered low with the overall risk from such contamination also considered low.

7.3 Notwithstanding this, a possible pollution linkage may exist in relation to the potential migration of hazardous ground gas associated with landfilling to the south-west and to a lesser degree the cemetery to the south.

7.4 In addition, potential background levels of ground contamination may be present as a result of the site's brownfield status. The presence of Asbestos Containing Materials (ACM) within the existing structures and Made Ground also cannot be discounted at this stage.

7.5 It is anticipated that traditional style spread foundations may be suitable for the support of new structures at the site. However, ground improvement or the adoption of a piled foundation solution cannot be wholly discounted at this stage and will need to be confirmed by appropriate site investigations.

7.6 In view of the potentially permeable nature of the underlying solid strata, soakaway drainage may be feasible although this will be influenced by the depth to groundwater. This should be confirmed by ground investigation and, if deemed appropriate, subsequent infiltration testing at drainage design stage.

7.7 The use of closed sheet piles to support excavations and to prevent groundwater ingress cannot be discounted at this stage.

Site Investigation

7.8 Site investigation is required to provide information on the physical and chemical ground conditions. This will enable the assumptions made in the preliminary site conceptual model to be confirmed or modified so as to assess the actual environmental risks posed by the site.

7.9 The investigation will comprise sampling and chemical analysis of the near surface soil and possibly groundwater and the installation of ground gas monitoring standpipe with subsequent monitoring for hazardous ground gas concentrations and flow. Chemical analysis will also allow a classification of soil for re-use/disposal purposes, should this be required.

7.10 In addition, appropriate investigation will provide geotechnical parameters for the design of foundations, floor slabs and pavement construction.

7.11 Site investigations will be undertaken in accordance with British Standard Institution (BSI), Code of Practice for Ground Investigations – BS5930:2015 and Investigation of Potentially Contaminated Sites – Code of Practice. BS 10175:2011.

APPENDIX 01

Drawings

930 Arrowfield

PS008 Proposed Site Plan 1:200



perimeter railings @ 1800mm

perimeter railings @ 1500mm with defensible planting

close board fencing @ 1800mm

Accommodation Schedule

19no. 2B3P (61m2)
5no. 2B4P (75m2)
24 Total

Parking

36 number parking spaces
6 number visitor spaces
5 number Nell Lane spaces

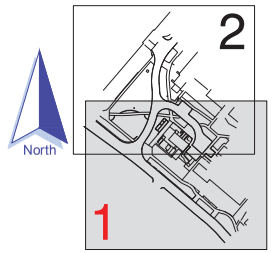
Site Boundary





Notes

All Dimensions to be checked on site. Walls shown on plans are not to be assumed to be solid & should be checked for thickness, construction, load bearing capacity & stability.



0 2 4 6 8 10 12 14 16 18 20
Metres

ABBREVIATIONS

BOL	Bollard
BT	BT Cover
CATV	Cable TV Cover
CB	Control Box
CH	Cable Height
CL	Cover Level
DK	Drop Kerb
EH	Eaves Height
FH	Fire Hydrant
GV	Gas Valve
GU	Gully
IC	Inspection Cover
LP	Lamp Post
MH	Man Hole
RH	Ridge/Roof Height
RWP	Rain Water Pipe
SP	Sign Post
TC	TriCAD Control
TF	Top of Fence
TL	Threshold Level
TP	Telegraph Pole
TH	Top of Hedge
TW	Top of Wall
WP	Waste Pipe
WV	Water Valve

NOTE

All levels and coordinates relate to OSGB36(15) using GNSS data.

Levels defining edge of carriageway are observed at channel (bottom of kerb).

Rev.0 Description. Issued

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Site Address
Buckthorn Close
Manchester

Project Description
Site Survey

Drawing Title
Existing Site Layout

Scale	Date	Drawn By
1:200@A1	14/02/2017	AD

Drawing Number
TRI-1914-01

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APPENDIX 02

Site Photographs



Photograph 1
View north towards the junction between Buckthorn Close and Arrowfield Road.



Photograph 2
View north-east across Buckthorn Close.



Photograph 3
View south-east along northern elevation of the centrally located structure.



Photograph 4
View south-west along Arrowfield Road at the western site boundary.



Photograph 5
View south-west along Nell Lane at the south-western site boundary.



Photograph 6
View north across the central site area from Nell Lane.



Photograph 7
View north-east towards the gas governor in the south-eastern section of the site.



Photograph 8
View north across the eastern site area from Nell Lane.



Photograph 9
The front elevation of the gas governor in the south-western section of the site.



Photograph 10
The western most end of Buckthorn Close.



Photograph 11
The public footpaths immediately north-east of the site. Viewed from Buckthorn Close.



Photograph 12
Centrally located structure as viewed from the north-eastern site boundary.

APPENDIX 03

Groundsure EnviroInsight Report

WML Consulting

UNIT 8 WRIGHT MOTTERSHAW LYDON CONSULTING LTD, STANLEY GREEN BUSINESS PARK,
CHEADLE/CHEADLE HULME, SK8 6QL

Groundsure Reference:	GS-3786492
Your Reference:	7592G_-_Arrowfield_Road
Report Date	6 Apr 2017
Report Delivery Method:	Email - pdf

Groundsure Enviro Insight

Address: BUCKTHORN CLOSE, MANCHESTER, M21 7UG

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,



Managing Director
Groundsure Limited

Enc.
Groundsure Enviroinsight

Groundsure Enviro Insight

Address:	**BUCKTHORN CLOSE, MANCHESTER, M21 7UG**
Date:	**6 Apr 2017**
Reference:	**GS-3786492**
Client:	**WML Consulting**

NW N NE

W E



SW S SE

Aerial Photograph Capture date:	11-Jun-2015
Grid Reference:	382745,392954
Site Size:	0.24ha

Report Reference: GS-3786492
Client Reference: 7592G_-_Arrowfield_Road

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Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	9	20	32	26
1.2 Additional Information – Historical Tank Database	0	0	1	1
1.3 Additional Information – Historical Energy Features Database	0	5	7	9
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Potentially Infilled Land	0	7	23	16

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	1
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	0
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	0
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	1	0	0	0	4
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	2
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	12	1	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	0	0

Section 4: Current Land Use

	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	1	2	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology

5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	No
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	Yes
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology

	0-500m
6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?	Yes
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?	Yes

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	1	0
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	2
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	0	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site?	No	No	No	No	No	No
6.10 Detailed River Network entries within 500m of the site	0	0	0	2	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	No	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Are there any Enviroment Agency Zone 2 floodplains within 250m of the study site?	No
7.2 Are there any Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	No
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Very Low
7.4 Are there any Flood Defences within 250m of the study site?	No
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Limited potential
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Low

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	0
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	1	1
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	0	0	0	0	1	1

Section 9: Natural Hazards

9.1 What is the maximum risk of natural ground subsidence?	Very Low
9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Negligible
9.1.2 What is the maximum Landslides hazard rating identified on the study site?	Very Low
9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Negligible
9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	Negligible
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Very Low
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining

10.1 Are there any coal mining areas within 75m of the study site?	No
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	No
10.3 Are there any brine affected areas within 75m of the study site?	No

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

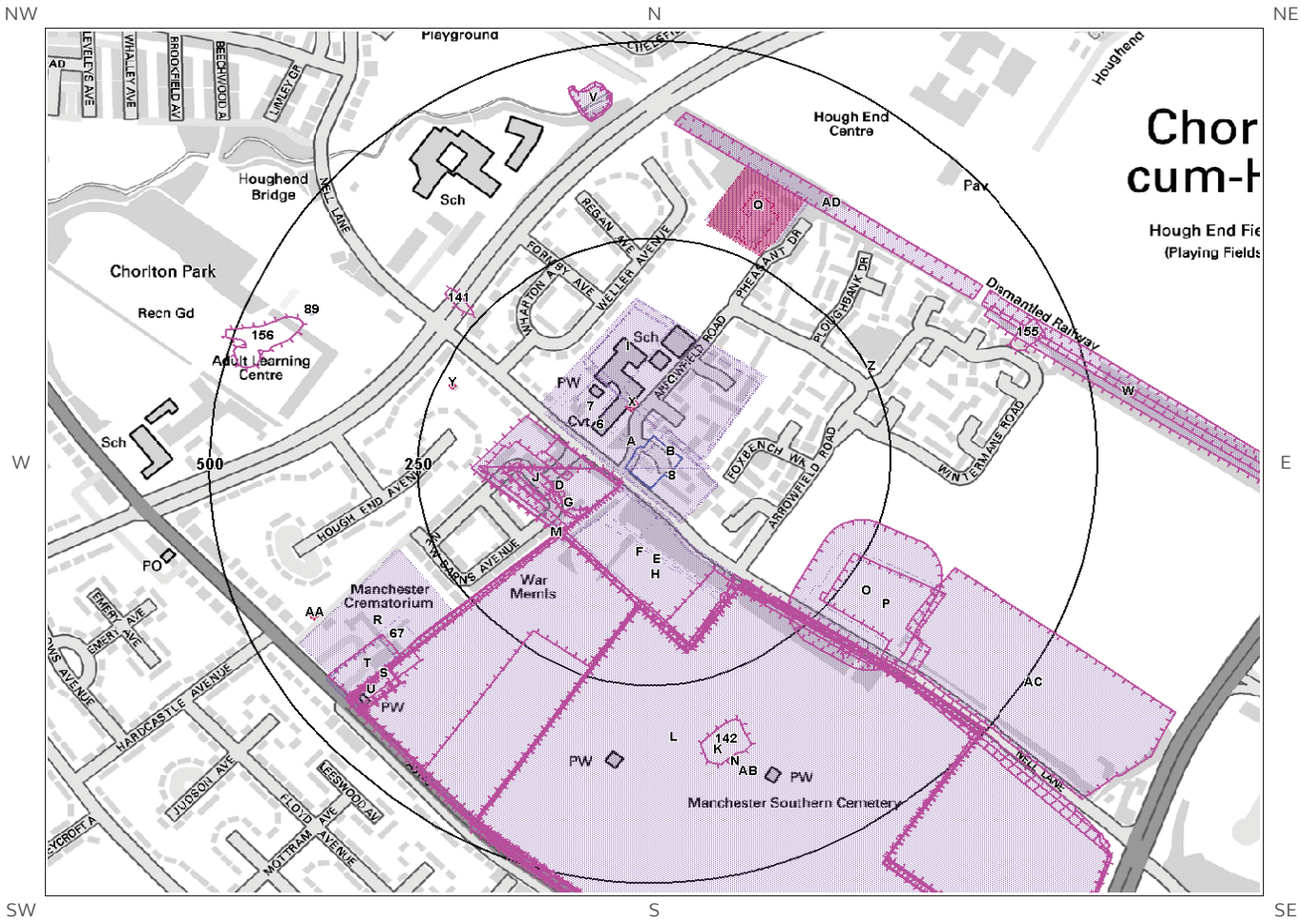
Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier “A” on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as “Not Shown”.

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use



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Site Outline

250
500
Search Buffers (m)

Historical 1:10,000 and 1:10,560 scale mapping

Industrial Land Use

Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping

Energy Features

Petrol Stations

Tanks

Garages

1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 87

ID	Distance [m]	Direction	Use	Date
1A	0	On Site	Nursery	1892
2A	0	On Site	Nursery	1905
3A	0	On Site	Nursery	1916
4A	0	On Site	Nursery	1934
5B	0	On Site	Nursery	1938
6	0	On Site	Nursery	1938
7	0	On Site	Nursery	1955
8	0	On Site	Nursery	1923
9B	0	On Site	Nursery	1911
10C	5	NE	Nursery	1934
11C	6	NE	Nursery	1938
12C	13	NE	Nursery	1966
13C	13	NE	Nursery	1955
14D	14	SW	Corporation Destructor	1908
15D	15	SW	Refuse Destructor	1911
16D	15	SW	Refuse Destructor	1911
17E	15	SW	Nursery	1911
18C	16	NE	Nursery	1938
19E	16	SW	Nursery	1938
20D	16	SW	Refuse Destructor	1938
21E	20	SW	Nursery	1955
22E	21	SW	Nursery	1934
23E	21	SW	Nursery	1916
24D	21	SW	Refuse Destructor	1934
25D	21	SW	Refuse Destructor	1916
26D	23	SW	Refuse Destructor	1905
27D	23	SW	Refuse Destructor	1923
28F	24	SW	Nursery	1892
29F	25	SW	Nursery	1938
30H	59	SW	Nursery	1908
31I	65	NW	Nursery	1905
32G	66	SW	Refuse Heap	1911
33G	66	SW	Refuse Heap	1911

34G	67	SW	Unspecified Ground Workings	1923
35H	69	SW	Nursery	1905
36H	69	SW	Nursery	1923
37I	70	NW	Nursery	1911
38J	89	W	Refuse Heap	1938
39J	89	W	Refuse Heap	1911
40J	89	W	Refuse Heap	1911
41J	96	W	Sand Pit	1905
42L	107	SW	Cemetery	1911
43K	112	SW	Cemetery	1955
44K	112	SW	Cemetery	1978
45K	112	SW	Cemetery	1966
46K	112	SW	Cemetery	1988
47L	113	SW	Cemetery	1892
48K	114	SW	Cemetery	1938
49M	117	SW	Unspecified Tank	1923
50M	119	SW	Unspecified Tank	1916
51N	143	S	Cemetery	1908
52N	145	S	Cemetery	1938
53N	149	S	Cemetery	1905
54N	149	S	Cemetery	1923
55AB	151	S	Cemetery	1934
56N	151	S	Cemetery	1916
57O	200	SE	Cemetery Nursery	1934
58O	200	SE	Cemetery Nursery	1916
59O	224	SE	Nursery	1955
60P	236	SE	Cemetery Nursery	1923
61P	247	SE	Nursery	1938
62Q	264	NE	Electricity Substation	1978
63Q	272	NE	Electric Substation	1988
64R	276	SW	Crematorium	1966
65R	276	SW	Crematorium	1978
66R	276	SW	Crematorium	1988
67	330	SW	Crematorium	1938
68AC	342	SE	Cemetery	1955
69S	345	SW	Crematorium	1955
70AD	350	NE	Cuttings	1966
71S	359	SW	Cemetery	1938
72T	360	SW	Crematorium	1911
73T	366	SW	Crematorium	1923
74T	366	SW	Crematorium	1934
75T	366	SW	Crematorium	1916
76T	366	SW	Crematorium	1905
77T	366	SW	Crematorium	1892
78S	381	SW	Cemetery	1908

79S	383	SW	Cemetery	1911
80U	390	SW	Cemetery	1905
81U	390	SW	Cemetery	1923
82U	391	SW	Cemetery	1916
83W	406	NE	Cuttings	1892
84V	406	N	Unspecified Pit	1938
85V	408	N	Unspecified Pit	1955
86W	408	NE	Cuttings	1966
87U	434	SW	Mortuary	1934

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary: 2

ID	Distance (m)	Direction	Use	Date
88M	121	SW	Unspecified Tank	1922
89	422	NW	Unspecified Tank	1894

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary: 21

ID	Distance (m)	Direction	Use	Date
90X	40	NW	Electricity Substation	1992
91X	40	NW	Electricity Substation	1992
92X	41	NW	Electricity Substation	1978
93X	41	NW	Electricity Substation	1986
94X	41	NW	Electricity Substation	1972
95Y	228	NW	Electricity Substation	1978
96Y	229	NW	Electricity Substation	1986
97Y	229	NW	Electricity Substation	1972
98Y	229	NW	Electricity Substation	1992
99Y	229	NW	Electricity Substation	1992
100Z	250	NE	Electricity Substation	1983
101Z	250	NE	Electricity Substation	1981
102Z	251	NE	Electricity Substation	1992

103Z	251	NE	Electricity Substation	1992
104Q	262	NE	Electricity Substation	1992
105Q	262	NE	Electricity Substation	1992
106Q	266	NE	Electricity Substation	1986
107Q	266	NE	Electricity Substation	1972
108Q	267	NE	Electricity Substation	1978
109AA	414	SW	Electricity Substation	1992
110AA	415	SW	Electricity Substation	1984

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 0

Database searched and no data found.

1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 46

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
111D	15	SW	Refuse Destructor	1911
112D	15	SW	Refuse Destructor	1911
113D	16	SW	Refuse Destructor	1938
114D	21	SW	Refuse Destructor	1916
115D	21	SW	Refuse Destructor	1934
116D	23	SW	Refuse Destructor	1905
117D	23	SW	Refuse Destructor	1923
118G	66	SW	Refuse Heap	1911
119G	66	SW	Refuse Heap	1911
120G	67	SW	Unspecified Ground Workings	1923

121J	89	W	Refuse Heap	1938
122J	89	W	Refuse Heap	1911
123J	89	W	Refuse Heap	1911
124J	96	W	Sand Pit	1905
125L	107	SW	Cemetery	1911
126K	112	SW	Cemetery	1955
127K	112	SW	Cemetery	1978
128K	112	SW	Cemetery	1966
129K	112	SW	Cemetery	1988
130L	113	SW	Cemetery	1892
131K	114	SW	Cemetery	1938
132K	143	S	Cemetery	1908
133K	145	S	Cemetery	1938
134N	149	S	Cemetery	1923
135N	149	S	Cemetery	1905
136N	151	S	Cemetery	1916
137AB	151	S	Cemetery	1934
138O	200	SE	Cemetery Nursery	1916
139O	200	SE	Cemetery Nursery	1934
140O	236	SE	Cemetery Nursery	1923
141	260	NW	Pond	1851
142	309	S	Pond	1851
143AC	342	SE	Cemetery	1955
144AD	350	NE	Cuttings	1966
145S	359	SW	Cemetery	1938
146U	381	SW	Cemetery	1908
147U	383	SW	Cemetery	1911
148U	390	SW	Cemetery	1923
149U	390	SW	Cemetery	1905
150U	391	SW	Cemetery	1916
151W	406	NE	Cuttings	1892
152V	406	N	Unspecified Pit	1938
153V	408	N	Unspecified Pit	1955
154W	408	NE	Cuttings	1966
155	421	E	Pond	1851
156	428	NW	Ponds	1851

2. Environmental Permits, Incidents and Registers Map



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- Site Outline
- Search Buffers (m) — 250 / 500
- Recorded Pollution Incident
- Dangerous Substances (List 1)
- Dangerous Substances (List 2)
- Water Industry Referrals
- Licenced Discharge Consents
- Red List Discharge Consents
- RAS 3 & 4 Authorisations
- Part A(1) Authorised Processes and Historic IPC Authorisations
- Part A(2) and Part B Authorised Processes
- COMAH / NIHHS Sites
- Sites Determined as Contaminated Land
- Hazardous Substance Consents and Enforcements

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

0

Database searched and no data found.

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

1

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
1	354	SW	382428 392734	Address: The Manchester Crematorium Ltd, Barlow Moor Road, Chorlton, M21 2GL Process: Incineration Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

0

Database searched and no data found.

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

0

Database searched and no data found.

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

Database searched and no data found.

2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site? 0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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Site Outline

250
500
Search Buffers (m)

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

5

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
14B	18	SW	382600 392900	Site Address: Nell Lane, Manchester Waste Licence: - Site Reference: F042 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	1101	W	381200 392700	Site Address: Hardy Farm, Manchester Waste Licence: Yes Site Reference: F012 Waste Type: Inert, Industrial, Commercial, Household, Special, Liquid, sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 01-Jan-1974 Licence Surrendered: Licence Holder Address: - Operator: Manchester Corporation Cleansing Department Licence Holder: - First Recorded: 31-Dec-1967 Last Recorded: 01-Feb-1974
Not shown	1202	SW	381500 392000	Site Address: Landfill site at Barlow Hall Farm, Willenhall Road, Charlton-Cum-Hardy Waste Licence: Yes Site Reference: F025, RD/RES/001/85, RD/RES/001/77 Waste Type: Inert, Industrial, Commercial, Household, Special Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 20-Feb-1986 Licence Surrendered: 30-Jan-1991 Licence Holder Address: - Operator: - Licence Holder: Greater Manchester Waste Disposal Authority First Recorded: 06-Jul-1978 Last Recorded: 02-Jun-1986

ID	Distance (m)	Direction	NGR	Details	
Not shown	1378	S	382100 391300	Site Address: Princess Road - Yew Tree Road, Greater Manchester Waste Licence: - Site Reference: F051 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: 31-Dec-1948 Last Recorded: 31-Dec-1994
Not shown	1467	W	380800 393400	Site Address: Ivy Green, Ivy Green Road, Stretford, Manchester Waste Licence: Yes Site Reference: F013 Waste Type: Inert, Industrial, Commercial, Household, Special, Liquid, sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 01-Jan-1976 Licence Surrendered: Licence Holder Address: - Operator: Manchester Corporation Cleansing Department Licence Holder: Manchester City Council First Recorded: 08-Jan-1963 Last Recorded: 31-Dec-1970

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

2

The following landfill records are represented as points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
Not shown	1338	SW	381633 391958	Refuse Tip	1991 mapping	Polygon
Not shown	1338	SW	381633 391958	Refuse Tip	1991 mapping	Polygon