



EARTH ENVIRONMENTAL
& GEOTECHNICAL

Phase I Geo Environmental Desk Study

No.8 The Pingot

Irlam

Greater Manchester

September 2018

On behalf of

Mr Liam brown

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Objective

- 1.5 The purpose of the Desk Study is to collate available geological and environmental data for the site (and its environment) and provide a preliminary geotechnical and geo-environmental appraisal, with a site specific conceptual model. This enables a preliminary assessment of geo-environmental risks to be undertaken and, if necessary, provides information for the design of a Phase 2 Ground Investigation.

Scope

- 1.6 The Phase I Environmental Desk Study comprises of a site reconnaissance visit and a review of the following information sources, some of which was provided by the client.
- British Geological Survey online maps.
 - Google Earth imagery.
 - Environment Agency online mapping data.
 - Historical Ordnance Survey maps.
 - The site and surrounding areas environmental, geological and mining data presented in the site specific GroundSure Reports (Appendix 1).
 - Coal Authority Interactive Viewer.
 - Salford Council Planning Portal.

2.0 SITE LOCATION AND DESCRIPTION

- 2.1 The site currently comprises an approximately triangular parcel of land which is divided into two areas.
- 2.2 The site is an irregular, roughly triangular shape with maximum dimensions of 15m east-west by 20m north-south and occupies an area of approximately 0.02ha.
- 2.3 The approximate National Grid Reference for the centre of the site is SJ 72696 95159 (X: 372696, Y: 395159) with the closest postcode being M44 6JR.
- 2.4 The northern part of the site is a rectangular strip of land, which forms the southern part of the existing landscaped garden to No.8 The Pingot. A pond is located in the western half of this area. Access to the garden is via a side gate from The Pingot.
- 2.5 The southern part of the site is a separate, enclosed triangular area, separated from the landscaped garden by a wooden panel fence, accessed via a second gate.
- 2.6 The southern part of the site is at an elevation approximately 0.5m lower than the garden of the residential property, and is occupied by a single storey, dilapidated shingle cladded out-house/shed structure with corrugated metal panel roof.
- 2.7 The area around the shed is used for discarded/disused and unwanted gardening items, building materials (bricks/tiles) and gardening waste (logs, branches etc).
- 2.8 The area surrounding the study site is residential, with scattered commercial/industrial premises.
- 2.9 A location plan is shown overleaf as Figure 2 and a site photograph as Figure 3.

Figure 2 Site Location Plan



Figure 3 Site Photograph



Site Utility Services

- 2.10 A site service plan has been not provided by the client. The status of all services should be checked with the statutory providers prior to any development (including site investigation) commencing.

3.0 ENVIRONMENTAL SETTING

- 3.1 The geology of the site is covered by British Geological Survey (BGS) online data and the site specific GroundSure GeoInsight report (Appendix 1).
- 3.2 Environmental conditions are covered by Environment Agency (EA) and British Geological Survey (BGS) online data, and the site specific GroundSure EnviroInsight report (Appendix 1).

Geology

- 3.3 The BGS states that the site is not underlain by artificial ground.
- 3.4 The site is underlain by Glaciofluvial Sheet Deposits of Devensian Age, comprising sands and gravels.
- 3.5 These superficial deposits are underlain by the Wilmslow Sandstone Formation. The BGS describes Formation as being:

'red-brown to brick-red, fine- to medium-grained, generally pebble-free, cross-bedded sandstones, with sporadic siltstones'.

- 3.6 There are no records of linear features within 500m of the site boundary.
- 3.7 There are no records of landslips within 500m of the site boundary.
- 3.8 There are no borehole records identified within 250m of the site.
- 3.9 The site is in an area where the hazard rating is negligible or very low with regard to natural subsidence, shrink-swell clays, landslides, soluble rocks, compressible deposits, collapsible deposits and running sands.

Ground Workings

- 3.10 There are 8 records of historical surface ground working features identified within 250m of the site boundary, the closest being an 'Unspecified Heap' located 218m to the southeast. Other records in the vicinity include other unspecified heaps and unspecified ground workings.
- 3.11 There is one record of a current ground working identified within 1km of the site. This refers to the Barton Grange Sand Pit located 892m to the northeast for the production of sand and gravel. Production is noted to have ceased.

Mining and Other Underground Workings

- 3.12 There are no records of historical mining within 1km of the site.
- 3.13 The site is stated as being within the specified search distance of an identified mining area.
- 3.14 A known Coal Mining Area is located 835m north of the site.
- 3.15 There are no records for non-coal mining areas located within 1km of the site.

- 3.16 There are no areas of brine extraction, gypsum extraction, tin mining or clay mining within 1km of the site.
- 3.17 There are no records for non-coal cavities or natural cavities identified within 1km of the site.
- 3.18 There are no records for historical underground working features identified within 1km of the site.

Radon Potential

- 3.19 The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level. Therefore, radon protection measures are not necessary.

Hydrogeology and Hydrology

- 3.20 The superficial deposits are classified by the Environment Agency (EA) as a Secondary A Aquifer. The Glaciofluvial Sheet Deposits have an intergranular flow type and high to very high permeability.

'Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formally classified as minor aquifers.'

- 3.21 The Wilmslow Sandstone Formation is classified by the Environment Agency (EA) as a Principal Aquifer with intergranular flow type with high permeability. The BGS states the following:

'Geology 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'

- 3.22 The EA classifies the groundwater vulnerability and soil leaching potential of the site as HU for major aquifer with high leaching potential.
- 3.23 There are 2 groundwater abstraction licence records within 2km of the site, both of which refer to a borehole at Fairhills Road, located 1.5km to the south for the purpose of general cooling.
- 3.24 There are 16 surface water abstraction licenses within 2km of the site. The nearest 3 records are historical licenses for Hydroelectric Power Generation at Irlam Locks 1.1km to the south of the site.
- 3.25 There are no potable water abstraction licences within 2km of the site.
- 3.26 The site is not within 500m of a Source Protection Zone or Source Protection Zone within a confined aquifer.
- 3.27 There are 10 water network entries within 500m of the site, the closest being for an unnamed watercourse (inland river not influenced by normal tidal action), situated 229m northwest of the site.
- 3.28 There are no surface water features identified within 250m of the site.

- 3.29 There are no Biological river quality records within 1.5km of the site.
- 3.30 There is one Chemical river quality record within 1.5km of the site, for the Manchester Ship Canal 951m to the south. The river was graded E in 2009.

Landfill & Waste Management Activity

- 3.31 There are 33 records of historical potentially infilled land identified within 500m of the site, the closest 2 records being for an 'Unspecified Heap' located 218m southeast of the site, dated 1979 to 1995. Other records in the vicinity include other unspecified heaps, unspecified ground workings and canals.
- 3.32 There are no current Environment Agency landfill records within 1km of the site.
- 3.33 There are 10 records of historic Environment Agency landfill sites within 1.5km of the site. The closest record is located 200m southeast of the site receiving inert, industrial and commercial waste between 1916 and 1993.
- 3.34 There are 2 records of a BGS/DoE non-operational landfill site within 1.5km of the study site. The nearest is located 1.4km to the southeast at Massdales Tip which received trade and demolition waste. The site is considered to pose a risk to major and minor aquifer.
- 3.35 There are 7 records of landfills from the Local Authority and Historical Mapping Records within 1.5km of the site. The closest 2 records relate to a refuse tip located 221m southeast of the site on 1966 and 1969 mapping.
- 3.36 There are no records of waste treatment, transfer or disposal sites within 500m of the study site.
- 3.37 There are 14 records of Environment Agency/Natural Resources Wales licensed waste sites within 1.5km of the site, the closest 3 records relating to a non-hazardous and hazardous HWA site 961m NE of the site.

Industrial Land Use Information

- 3.38 There are 79 records of historical potentially contaminative uses identified within 500m of the site, with the closest 2 records being for a Nursery located 31m west of the site. Other records in the vicinity include unspecified works, other nursery records, margarine works, railway sidings, mineral railway sidings, unspecified heaps, unspecified ground workings, unspecified tanks, a smithy, unspecified depots, a ship canal and tramway sidings.
- 3.39 There are 12 records of current potentially contaminative uses identified within 250m of the site. The closest is an electrical equipment repair and servicing centre located 28m to the south. Other records include vehicle hire, bakeries, vehicle repairs and servicing, electrical features, construction completion services, industrial products and distribution and haulage.
- 3.40 There are 16 records of historical tanks identified within 500m of the site, the closest being for an unspecified tank situated 222m to the southeast of the site, dated 1987. Other records within the vicinity include tanks and unspecified tanks.

- 3.41 There are 13 records of historical energy features identified within 500m of the site, all records being for Electricity Substations, the closest record being located 106m south of the site and dated 1987.
- 3.42 There is one current petrol or fuel site within 500m of the site, this being a service station 372m southwest of the site.
- 3.43 There are no records of historical petrol or fuel sites within 500m of the site.
- 3.44 There are 5 historical garage and motor vehicle repair site records identified within 500m of the site, all records relating to garages, the closest being 172m southwest of the site and dated 1967.
- 3.45 There are no National Grid high voltage underground electricity transmission cables, or high-pressure gas transmission pipelines within 500m of the site.
- 3.46 There are 13 historical railway and tunnel features identified within 250m of the site, the closest record being railway sidings 159m east of the site. Other records within the vicinity include other railway sidings and mineral railway sidings.
- 3.47 There are no historical railway lines identified within 250m of the site.
- 3.48 There are no current active railway lines identified within 250m of the site.
- 3.49 The site is within 5km of the route of the High Speed 2 rail project.
- 3.50 The site is not within 500m of the route of the Crossrail 1 rail project.
- 3.51 There are no underground railway lines or tunnels identified within 250m of the site.

Environmental Permits, Incidents and Registers

- 3.52 The Groundsure Report includes records of environmental permits, incidents and registers within 500m of the site, which are summarised in Table 1 below.

Table 1: Environmental Permits, Incidents and Registers within 500m of the Site

Historic IPC Authorisations	None
Part A (1) and IPPC Authorised Activities	None
Red List Discharge Consents	None
List 1 Dangerous Substances Inventory Sites	None
List 2 Dangerous Substances Inventory Sites	None
Part A (2) and Part B Activities and Enforcements	4
Category 3 or 4 Radioactive Substance Authorisations	None
Licensed Discharge Consents	None
Water Industry Referrals	None
Planning Hazardous Substance Consents and Enforcements	None
Dangerous or Hazardous (COMAH and NIHHS) Sites	None

National Incidents Recording System (Pollution Incidents), List 2	1
National Incidents Recording System (Pollution Incidents), List 1	None
Sites Determined as Contaminated Land under Part 2A EPA1990	None

3.53 There are 4 records Part A(2) and Part B Activities and Enforcements within 500m of the study site, the closest 2 records relating to historical and current Part B permits for Dry Cleaning, located 234m east of the site.

3.54 The National Incidents Recording System (Pollution Incidents), List 2 records relates to an incident 399m east of the site, dated 27th April 2001, involving contaminated water and having minor (Category 3) land impacts.

Environmentally Sensitive Sites

3.55 There is one record of a Nitrate Vulnerable Zone (NVZ) within 2km of the study site, this being an existing NVZ 1.4km northwest of the site.

3.56 There are 2 records of Green Belt Land within 2km of the study site, the closest record being the Liverpool, Manchester and West Yorkshire Greenbelt 560m north of the site.

3.57 There are no other records for Designated Environmentally Sensitive Sites within 2km of the study site.

Ecology

3.58 It should be noted that an ecological assessment of the site falls outside the brief of this report and that an ecological specialist should be consulted in this regard.

Archaeology

3.59 An archaeological assessment falls outside the brief of this report. Where considered necessary, advice should be sought from an archaeological specialist in this respect.

Potential Flood Risks

3.60 Detailed assessment of flood risks is outside the scope of this report. However, the site does lie 206m southwest of an Environment Agency Zone 2 (Fluvial/Tidal Models) floodplain.

3.61 The site does not lie within 250m of a Zone 3 floodplain.

3.62 There are no records of flood defences, areas benefitting from flood defences or areas used for flood storage within 250m of the site.

3.63 According to the Environment Agency the highest risk of flooding on site is very low.

3.64 According to the BGS there are areas within 50m of the site boundary that may be susceptible to clearwater flooding. The highest susceptibility to groundwater flooding is 'potential at surface' and the BGS confidence rating is low. The BGS states:

'Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.'

Previous Site Investigations

- 3.65 Earth Environmental & Geotechnical Ltd are not aware of any previous site investigations carried out for the site.

4.0 SITE HISTORY

- 4.1 The historical development of the site has been determined by reference historical plans and Google Earth imagery. The reviewed historical plans comprise only readily available records and may be limited; however, the information available to date indicates that additional searches are unlikely to add to our understanding of the site. The earliest available historical mapping covering the site dates back to 1848.
- 4.2 The site history is summarised in Table 2, below, followed by selected extracts from maps and aerial photographs.

Table 2: Summary of Site History

Date	Site	Surrounding Land Use
1848 1:10560	The site is undeveloped. A boundary fence crosses slightly NE of the centre of the site running NW-SE.	The site is part of an area labelled as Higher Irlam. The area is primarily undeveloped with some properties present in the Higher Irlam area.
1876 1:2500	No significant change.	Residential properties and additional structures ~15m S, SW and NW of the site. A nursery is present ~35m W of the site. Wells are present ~45m W, ~90m W and ~100m SE of the site.
1890 1:2500 1894 1:10560	No significant change.	Pump present ~95m NW of the site. Manchester Ship Canal present ~440m SE of the site.
1904 1:10560 1908 1:2500 1908 1:10560	No significant change.	No significant change.
1928 1:2500 1929 1:10560	The boundary fence is no longer marked on the map.	Margarine Works ~200m SE of the site.
1937 1:2500 (Partial) 1938 1:10560 (Partial)	No significant change.	Residential properties present adjacent to the NE corner of the site.
1949 1:10560 1949-1952 1:10560 1954-1955 1:10560	No significant change.	No significant change.
1967 1:1250 1966-1967 1:2500 1969 1:2500	No significant change.	Library present adjacent to the SE corner of the site. Residential properties present adjacent to the E and W boundary of the site. A road name The Pignot is present ~28m N of the site.
1971 1:2500 1971 1:10560 1970-1975 1:1250	No significant change.	No significant change.

1982 1:10000 1986-1987 1:1250 1989 1:10000 (Partial)	No significant change.	No significant change.
1992 1:1250 1995 1:10000 Partial	No significant change.	No significant change.
Google Earth 2000	No significant change. A roofed structure is present in the S of the site. The N section of the site is part of a residential garden with a structure in the NE corner.	Margarine Works has been redeveloped into residential properties.
2002 1:10000	No significant change.	No significant change.
Google Earth 2005	No significant change.	No significant change.
Google Earth 2009	The garden in the N section of the site has been redeveloped and a pond is present near the NW corner.	No significant change.
2010 1:10000	No significant change.	No significant change.
2014 1:10000	No significant change.	No significant change.
Google Earth 2017	No significant change.	No significant change.

Figure 4 OS Map Extract 1876



Figure 5 OS Map Extract 1967

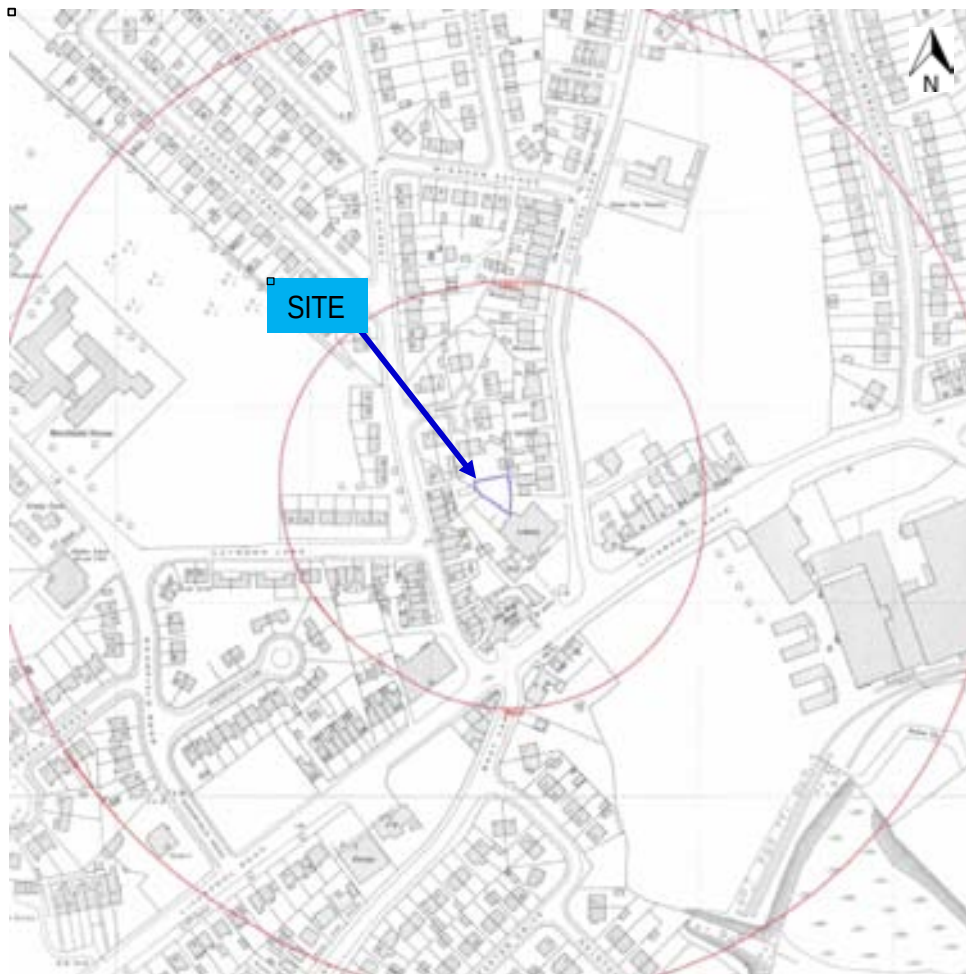


Figure 6 OS Map Extract 1992

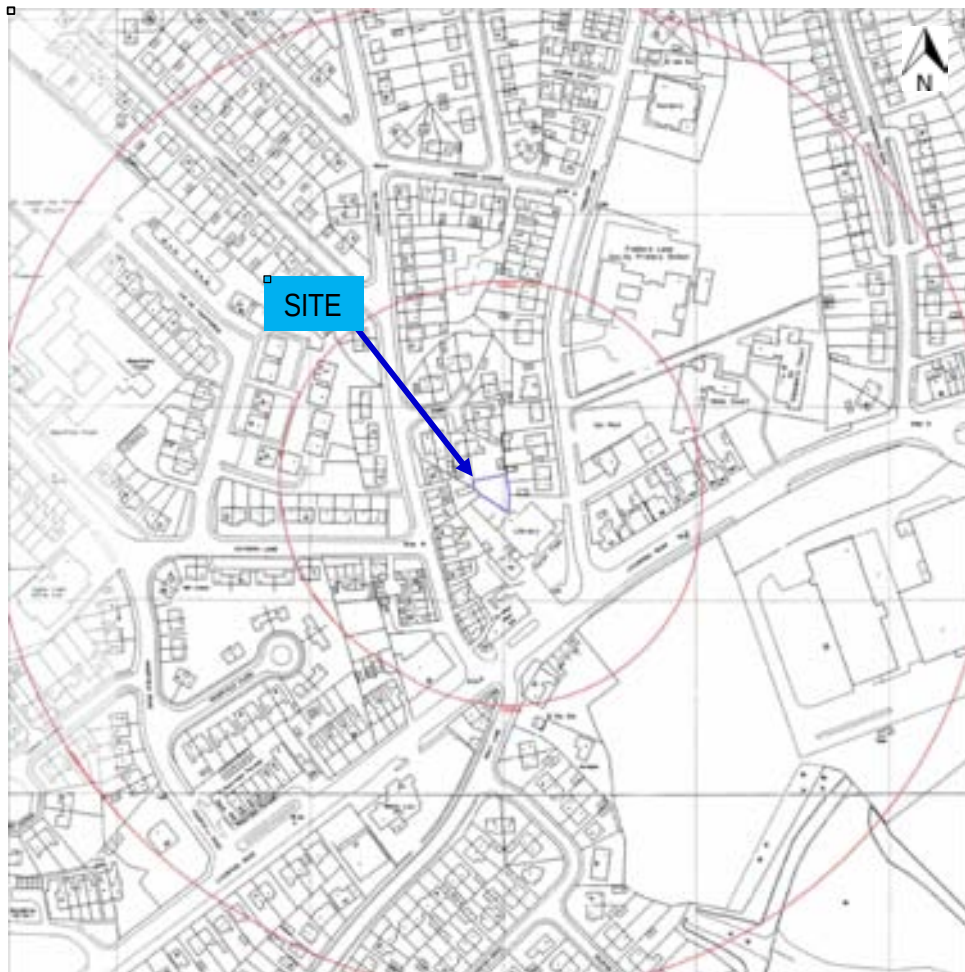
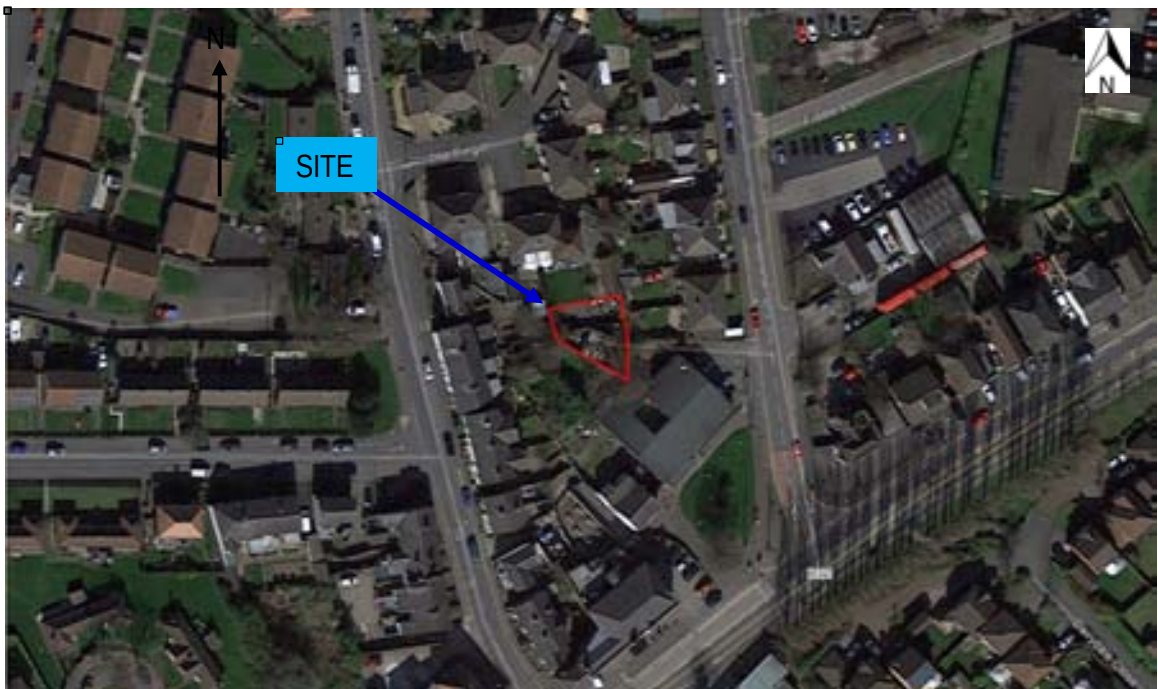


Figure 7 Aerial Photograph 2017



5.0 WALKOVER SURVEY

- 5.1 A walkover survey was completed on the 6th September 2018. The photographs and notes from this survey are appended to this report as Appendix 2 and Appendix 3 respectively.
- 5.2 The site currently forms part of the garden and land belonging to the residential property (No.8 The Pingot) located to the north.
- 5.3 The site currently comprises two separate areas (north and south), which are separated by the current southern garden fence of No. 8 The Pingot.

Northern Area

- 5.4 The northern area is a rectangular strip of land which currently forms the southern part of the existing landscaped garden of No.8 The Pingot. This area is accessed through a gate on the eastern side of the property.
- 5.5 The strip of garden currently comprises shale gravel/shingle surfacing and a pond is located in the western half, together with shrubs and trees.
- 5.6 This area is bound to the east, west and south by wooden panel fences, and is open to the rest of the garden to the north.
- 5.7 A gate in the fence leads into the southern area.

Southern Area

- 5.8 The southern area is an enclosed triangular land parcel accessed from the northern area by the gate in the fence. This part of the site sits at an elevation of approximately 0.5m lower than the northern part of the site, and a brick retaining wall and stone steps are present between the two areas.
- 5.9 The filtration system for the pond in the northern part of the site is located in this area, so a power and water supply is assumed to be present.
- 5.10 The southern part of the site is mostly occupied by a dilapidated single-storey, shingle clad, out-building/shed-type structure, with corrugated metal panel roof. The outer panelling of the structure may contain asbestos cement.
- 5.11 The structure is currently used for storage of gardening equipment, old toys, paints and miscellaneous disused items. Internal access was not permitted at the time of the walkover.
- 5.12 The area surrounding the shed is used for discarded/disused and unwanted gardening items, building materials (bricks/tiles) and gardening waste (logs, branches etc).
- 5.13 This part of the site is bordered by wooden panel fences, which, with the exception of the fence separating it from the northern part of the site, appear to be in poor state of repair.
- 5.14 The area surrounding the study site is predominantly residential.

6.0 PRELIMINARY CONTAMINATION RISK ASSESSMENT

Introduction

- 6.1 The following paragraphs outline a Preliminary Risk Assessment (PRA) for the site based on the above desk study information as defined by DEFRA and the EA Model Procedures for the Management of Land Contamination, CLR11⁽²⁰⁰⁴⁾.
- 6.2 Table 5 provides a Preliminary Conceptual Model (PCM) which considers the source-pathway-receptor linkages present alongside the likelihood, severity and risk level as defined within Table 3 and Table 4 below. The assessment of probability, a modified risk table, and certain consequence definitions are based on CIRIA C552 and CLR11.
- 6.3 Table 5 considers whether a pollution linkage is potentially present and provides a preliminary qualitative assessment of risk based on the information currently available. 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.
- 6.4 The PCM/PRA is based on a proposed residential end use.

Table 3: Consequence, Probability and Risk

Probability	Consequence,	Risk
High Likelihood- There is a pollution linkage and an event either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution	Very High – acute risk to the human health likely to result in significant harm. Risk of severe or irreversible effect on ground/surface water quality. Catastrophic damage to buildings / property.	Very High – there is a high potential that the source-pathway-receptor scenarios may give rise to harm to human health or the environment and remedial action is likely to be required.
Likely – there is a pollution linkage and all the elements are present, which means that it is probable an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.	High – Severe or irreversible effect on human health. Temporary severe or irreversible effect on ground/surface water quality. Reduction of water quality rendering groundwater or surface water unfit to drink and/or substantial adverse impact on groundwater dependant environmental receptors.	High – it is likely that the source-pathway-receptor scenarios may give rise to an impact on human health or the environment, which may require remediation and/or control measures to mitigate risks
Low likelihood– there is a pollutant linkage and circumstances are possible for an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term	Moderate – Long term or short term moderate effect on human health. Moderate effect on ground/surface water quality, reversible with time. Reduced reliability of a supply at a groundwater or surface water abstraction source	Moderate – it is possible that the source-pathway-receptor scenarios may give rise to an impact on human health or the environment, however it is either relatively unlikely that such are would be severe, or if any harm were to occur it is more likely that harm would be mild.
Unlikely – there is a pollution linkage but circumstances are such that it is doubtful that an event would occur even in the very long term.	Low – Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc.) Slight effect on ground/surface water quality, reversible with time. Marginal reduced reliability of a supply at a groundwater or surface water abstraction source.	Low – it is possible that harm could arise at the source, however it is likely that this would at worst be mild.
		Very Low – it is unlikely that the source-pathway-receptor scenarios will give rise to an impact on human health or the environment.

Table 4: Estimation of Level of Risk by Comparison of Consequence and Probability

		Consequence			
		High	Moderate	Low	Very low
Probability	High Likelihood	Very High	High risk	Moderate risk	Moderate to low risk
	Likely	High risk	Moderate risk	Moderate to low risk	Low risk
	Low Likelihood	Moderate risk	Moderate to low risk	Low risk	Very low risk
	Unlikely	Moderate to low risk	Low risk	Very low risk	Very low risk

Potential sources

There is potential for the presence of contamination associated with the following:

- Possible made ground associated with the structure and pond present on site as well as nearby developments.

Potential Receptors

The following receptors have been considered for the construction and operational stages of the proposed redevelopment.

- Current site users;
- Adjacent land users;
- Future land users;
- Construction workers during site development works;
- Groundwater within the underlying Secondary A and Principal Aquifers;

Potential Pathways

The following pathways have been considered for the construction and operational stages of the proposed redevelopment.

- Dermal contact, ingestion, inhalation pathways of potentially contaminated soils;
- Downward vertical migration of leachate to shallow groundwater;
- Vertical or lateral migration of ground gas associated with potential made ground.

Table 5 : Preliminary Conceptual Model

Source	Pathway	Receptor	Probability	Consequence	Risk	Comment
Possible Made Ground associated with minor site development.	Dermal contact, ingestion and inhalation of soils dust	Current Site Users	Unlikely	Moderate	Low risk	The site is currently used as a garden and storage area. The risk to current site users from potential is considered to be LOW.
		Adjacent land users	Unlikely	Moderate	Low risk	Residential properties partially surround the site. The risk is considered LOW, although usual dust control measures should be implemented as part of good site working practices during construction.
		Future land users	Low Likelihood	Moderate	Moderate to Low risk	Limited development and site usage is thought to have taken place. An existing pond is located on site. The risk to future site users via direct exposure is considered to be LOW. This assessment is based on the sensitivity of the receptor and the potential for contamination to be present beneath the proposed garden area.
		Construction Workers	Low Likelihood	Moderate	Moderate to Low risk	Construction workers are likely to be exposed to Made Ground materials during construction works, however exposure duration will be short-term only. Assuming appropriate health and safety measures are adopted (in line with CDM and other relevant health and safety guidance) a LOW risk to construction workers is anticipated.
	Downward vertical migration of leachate to shallow groundwater	Groundwater within the Underlying Secondary A and Principal Aquifers	Low Likelihood	Moderate	Moderate to Low risk	The underlying superficial soils are anticipated to be granular and permeable. The risk to groundwater within the underlying Superficial Deposits is therefore considered LOW.
	Vertical or lateral migration of ground gas	Current Site Users	Low Likelihood	Moderate	Moderate to Low risk	The site contains only a shed-like structure and garden areas with an existing pond. The risk to current site users from ground gas is considered LOW.
		Adjacent land users	Unlikely	Moderate	Low risk	The risk to adjacent site users from ground gas is considered LOW.
		Future land users	Low Likelihood	Moderate	Moderate to Low risk	The proposed site end use is residential. The risk to future site users from ground gas is considered LOW.
		Construction Workers	Low Likelihood	Moderate	Moderate to Low risk	The risk to construction workers from ground gas is considered LOW.

7.0 CONCLUSIONS AND RECOMMENDATIONS

- 7.1 Other than a fence line running through the site, the first evidence of development is from an aerial photograph from 2000 that depicts a roofed shed-like structure that is still present on the site at the time this report was written.
- 7.2 The proposed development of the site includes the demolition of the current structure and construction of a new one bedroomed bungalow with garden area and driveway.
- 7.3 The likelihood of soil contamination on the site/in the immediate vicinity of the proposed development is considered to be LOW.
- 7.4 Given the anticipated limited extent of made ground on site, the risk of ground gas is considered to be LOW.
- 7.5 The site is underlain by superficial Glaciofluvial Deposits and the Wilmslow Sandstone Formation.
- 7.6 The site underlain by Secondary (A) and Principal aquifers.

Recommendations

- 7.7 No further investigation is required in relation to environmental conditions on the site.

APPENDIX 1

GROUNDSURE REPORTS

APPENDIX 2

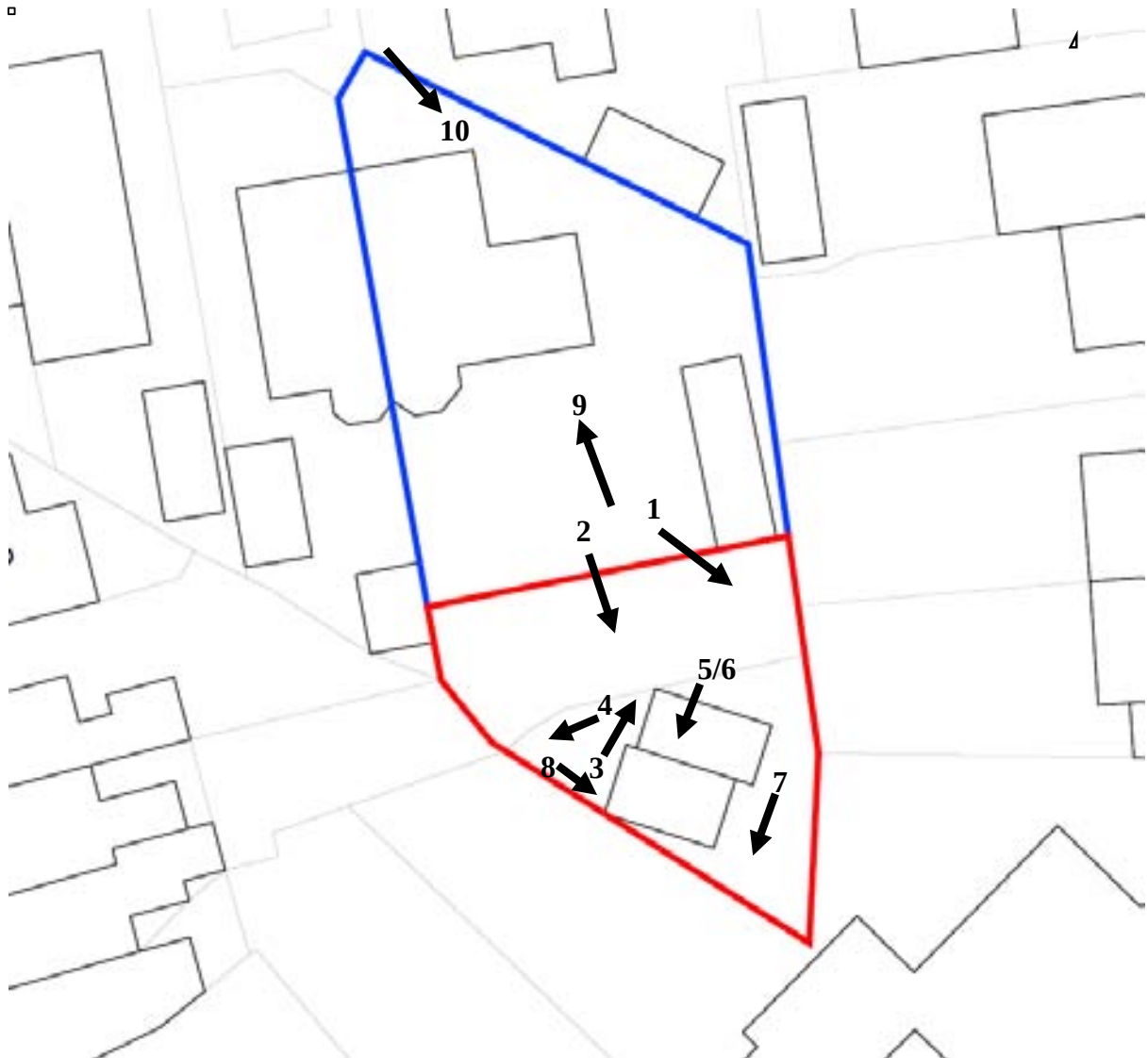
SITE PHOTOGRAPHS

Earth Environmental & Geotechnical Ltd Tel: 0161 975 6088 Email: info@earthenvironmental.co.uk Web: www.earthenvironmental.co.uk	SITE PHOTOGRAPHS 
Job No.: A2714/18	Site: No.8 The Pingot, Irlam
Plate 1 View of northern part of site, looking SE	Plate 2 View of northern part of site with pond in foreground, looking S onto fence which divides the site
	
Date: 6th September 2018	Date: 6th September 2018
Plate 3 View of access gate and steps down into the southern (enclosed) part of the site, looking NE	Plate 4 Power supply and filtration system for pond, looking W
	
Date: 6th September 2018	Date: 6th September 2018

Earth Environmental & Geotechnical Ltd Tel: 0161 975 6088 Email: info@earthenvironmental.co.uk Web: www.earthenvironmental.co.uk	SITE PHOTOGRAPHS 
Job No.: A2714/18	Site: No.8 The Pingot, Irlam
Plate 5 Northern elevation of shed structure in southern part of site, looking S	Plate 6 View of items stored/discarded in outbuilding/shed structure
	
Date: 6th September 2018	Date: 6th September 2018
Plate 7 Building materials stored in southern part of site, looking S	Plate 8 Western elevation of outbuilding/shed with suspected asbestos cement panelling, looking E
	
Date: 6th September 2018	Date: 6th September 2018

Earth Environmental & Geotechnical Ltd Tel: 0161 975 6088 Email: info@earthenvironmental.co.uk Web: www.earthenvironmental.co.uk	SITE PHOTOGRAPHS 
Job No.: A2714/18	Site: No.8 The Pingot, Irlam
Plate 9 Southern elevation of No.8 The Pingot (offsite)	Plate 10 Northern elevation of No.8 The Pingot (offsite)
	
Date: 6th September 2018	Date: 6th September 2018

Figure 8 Site Walkover Photo Locations



APPENDIX 3

SITE WALKOVER NOTES

WALK OVER SURVEY REPORT

Site: No.8 The Pingot, Irlam

Date: 6th September

Job No: A2714

Undertaken By: J Sheridan

Purpose of Site Walkover:

- 1) Provide further information for the Desk Study Report;
- 2) Identify potential contamination sources, pathways and receptors;
- 3) Identify geotechnical features and potential geohazards;
- 4) Determine locations for exploratory boreholes.

Desk Study features checked during site visit	Feature and Information required	Present	Description / Comments
Site Setting	Description required for: Town/Country/Suburb Setting Industrial/Residential/Retail Usage Current Site use (if undertaking security and access to the site)		Suburban setting. The study site is surrounded by residential properties. Site currently part of garden to No.8 and an area used for storage.
Evidence of Past Activities	Are there: Any relevant street names in area? Features or relics which indicate past history?	Yes/No Yes/No	
Geographic Setting	Description required for: Low lying flood plain/dry valley/rolling hills etc.		Site is on two different levels with a low retaining wall dividing the two areas.
Ground Conditions	Is there any evidence of: Mining, Mine entries Subsidence Landslip/slope erosion Former investigation works	Yes/No Yes/No Yes/No	

Desk Study features checked during site visit	Feature and Information required	Present	Description / Comments
Topography	Description required for: Are there apparent differences between site and surrounding area? (If yes describe the presence of retaining walls, and slopes).	Yes/No	There is minor difference between the level of the northern and southern part of the site. A low retaining wall is present between the two areas.
	Is there evidence of Made Ground / Fill on site?	Yes/No	Likely to be made ground beneath existing structure and concrete.
Site Boundaries and Neighbours	Description required for: Type of boundary demarcation (if any) on each side of site, usage of adjacent land and name of industrial/commercial occupiers. Note any adjacent features such as water course and other potentially environmentally sensitive uses (residential, school, infirmary, SSSI etc)		N – open to garden of No.8 E – wooden panel fencing with residential properties beyond S – Fence along property boundary with vacant land parcel beyond. W – Fence along property boundary with residential properties beyond.
Vegetation	Are there any vegetation/trees on or close to site (if yes describe locations, type, maturity, etc)	Yes/No	Planted trees in west of site and adjacent east boundary.
	Is there any evidence of poor health / distress?	Yes/No	
Ground Surface	Are there areas of hardstanding and estimate the split between hard and soft cover? (If yes describe locations, types and conditions).	Yes/No	Southern part of the site appears to be concrete. Shingle/soft cover in the northern part. ~60% hardstand.
	Is there any evidence of any spillages or staining?	Yes/No	

Desk Study features checked during site visit	Feature and Information required	Present	Description / Comments
Site Drainage	Are there any drain covers / soakaways (if yes describe locations) Are there any outfalls/water courses on site (note the condition of water courses in open water courses. discolouration, odour, eutrophication, oily sheen, gas bubbling water, clear or cloudy) Where a watercourse runs alongside or crosses a site are there any differences in visible water quality upstream and downstream of the site?	Yes/No Yes/No Yes/No	None seen. Pond on site – likely overflow drainage.
Electrical Equipment	Are there any electricity sub stations on or adjacent to the site? Are there any electrical transformers, capacitors, pylons etc on site?	Yes/No	None seen.
Buildings	Is there any evidence of asbestos construction materials e.g. roofing, insulation materials. Do any buildings have basements? Do any buildings have a boiler room (if yes, describe fuel type and storage arrangements)?	Yes/No Yes/No Yes/No	Possible asbestos cement panelling on the existing outbuilding/structure. N/A N/A

Desk Study features checked during site visit	Feature and Information required	Present	Description / Comments
Landfilling	Is there any evidence of gas protection measures (gas membrane, gravel-filled trenches, venting pipes, etc)?	Yes/No	N/A
Process Air Emissions	Point Source: Are there any stacks / vents / cooling towers / abatement equipment?	Yes/No	N/A
	Fugitive Source: is there any stockpiled material / windblown dust / vapour process?	Yes/No	N/A
Storage of fuels & Chemicals	Are there any drums / containers (if yes, describe quantity, full /empty, stored on hard standing / soft landscaping, bunding)?	Yes/No	A single discarded empty steel oil drum was observed in the southern part of the site.
	Are there any above ground fuel tanks (if yes, describe locations, volumes, how many, bunding, used / disused, condition?)	Yes/No	N/A
	Is there any evidence of underground fuel tanks (fuel pumps, covers, vent pipes, how many and how large, fill point, used / disused, and condition)?	Yes/No	N/A
Accidents	In the event of a large spillage would runoff affect any vulnerable watercourse/culverts?	Yes/No	N/A
	Are emergency procedures / equipment in place?	Yes/No	N/A

Desk Study features checked during site visit	Feature and Information required	Present	Description / Comments
Waste	Are there any waste skips present on site? Are waste storage facilities adequate? Is there any litter/fly tipped material?	Yes/No Yes/No Yes/No	Several discarded items and plant waste/debris including logs and branches from felled trees
Atmospheric	Are there any fumes, odours originating from site or affecting site from neighbouring sites?	Yes/No	
Access / Further Investigations	If a Phase 2 Investigation is likely to be required, describe any access problems including headroom where relevant, services, overhead cables, restricted access areas, confined spaces, trafficked areas, etc that are likely to affect investigation scope/techniques. Identify possible site office and storage locations. Identify possible water supply		Access to northern part of site through gate 1.1m wide. Access to southern part of site is through a second gate and down some steps, could not be accessed using conventional rig. Access may be possible from access track from Fiddlers lane and lifting out a fence panel. Corer/breaker would be required
Site Environs	Are there any local features that could have a harmful influence e.g. landfill, industrial processes, railway land? Are there any sensitive water features/courses near to the site?	Yes/No Yes/No	
Local Knowledge / Anecdotal Evidence			
Site Dimensions	Describe shape of Site in plan and measure dimensions.		Site is irregular/approximately triangular shape with dimensions 15m east-west by 20m north-south.

APPENDIX 4

REPORT LIMITATIONS

LIMITATIONS

This contract was completed by Earth Environmental & Geotechnical Ltd on the basis of a defined programme and scope of works and terms and conditions agreed with the client. This report was compiled with all reasonable skill, and care, bearing in mind the project objectives, the agreed scope of works, the prevailing site conditions, the budget and staff resources allocated to the project.

Other than that expressly contained in the above paragraph, Earth Environmental & Geotechnical Ltd provides no other representation or warranty whether express or implied, is made in relation to the services. Unless otherwise agreed this report has been prepared exclusively for the use and reliance of the client in accordance with generally accepted consulting practices and for the intended purposes as stated in the agreement under which this work was completed. This report may not be relied upon, or transferred to, by any other party without the written agreement of a Director of Earth Environmental & Geotechnical Ltd.

If a third party relies on this report, it does so wholly at its own and sole risk and Earth Environmental & Geotechnical Ltd disclaims any liability to such parties.

It is Earth Environmental & Geotechnical Ltd understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was an important factor in determining the scope and level of the services. Should the purpose for which the report is used, or the proposed use of the site change, this report will no longer be valid and any further use of, or reliance upon the report in those circumstances by the client without Earth Environmental & Geotechnical Ltd review and advice shall be at the client's sole and own risk.

The report was written in 2018 and should be read in light of any subsequent changes in legislation, statutory requirements and industry best practices. Ground conditions can also change over time and further investigations or assessment should be made if there is any significant delay in acting on the findings of this report. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of Earth Environmental & Geotechnical Ltd. In the absence of such written advice of Earth Environmental & Geotechnical Ltd, reliance on the report in the future shall be at the client's own and sole risk. Should Earth Environmental & Geotechnical Ltd be requested to review the report in the future, Earth Environmental & Geotechnical Ltd shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between Earth Environmental & Geotechnical Ltd and the client.

The observations and conclusions described in this report are based solely upon the services that were provided pursuant to the agreement between the client and Earth Environmental & Geotechnical Ltd. Earth Environmental & Geotechnical Ltd has not performed any observations, investigations, studies or testing not specifically set out or mentioned within this report.

Earth Environmental & Geotechnical Ltd is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, Earth Environmental & Geotechnical Ltd did not seek to evaluate the presence on or off the site of electromagnetic fields, lead paint, radon gas or other radioactive materials.

The services are based upon Earth Environmental & Geotechnical Ltd observations of existing physical conditions at the site gained from a walkover survey of the site together with Earth Environmental & Geotechnical Ltd interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The findings and recommendations contained in this report are based in part upon information provided by third parties, and whilst Earth Environmental & Geotechnical Ltd have no reason to doubt the accuracy and that it has been provided in full from those it was requested from, the items relied on have not been verified.

No responsibility can be accepted for errors within third party items presented in this report. Further Earth Environmental & Geotechnical Ltd was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the services. Earth Environmental & Geotechnical Ltd is not liable for any inaccurate information, misrepresentation of data or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to Earth Environmental & Geotechnical Ltd and including the doing of any independent investigation of the information provided to Earth Environmental & Geotechnical Ltd save as otherwise provided in the terms of the contract between the client and Earth Environmental & Geotechnical Ltd.

Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable and as investigation excavations only allow examination of the ground at discrete locations. The potential exists for ground conditions to be encountered which are different to those considered in this report. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and Earth Environmental & Geotechnical Ltd] based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The normal speed of investigation usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site.