Phase 1 Geo-Environmental Assessment

Land off Bartlow Road
Linton
Cambridgeshire

RLC Ref: 151077
July 2015

Prepared for
G W Balaam & Sons Ltd and Pembroke College
## Revision Schedule

**Job No. 151077**

**July 2015**

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Details</th>
<th>Prepared by</th>
<th>Reviewed by</th>
</tr>
</thead>
</table>
| 00       | 16 July 2015 | Phase 1 Geo-Environmental | Richard Martin  
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Executive Summary

1.1 Rossi Long Consulting Ltd have been commissioned by B W Balaam & Sons Ltd and Pembroke College to prepare a Phase 1 Geo-Environmental Assessment in accordance with BS 10175:2001. This report forms part of the supporting technical documentation for an Outline Planning Application to be submitted by Bidwells (Planning Department) to South Cambridgeshire District Council.

1.2 The application site is located on two separate land parcels, situated to the north and south of Bartlow Road, immediately adjacent to the village of Linton, Cambridgeshire CB21 4NA. For the purpose of this report the land to the north of Bartlow Road will be referred to as Land Parcel A and the land to the south of Bartlow Road will be referred to as Land Parcel B.

1.3 The two land parcels currently comprise of open grassland for Land Parcel A and agricultural farmland for Land Parcel B, with trees and vegetation to their perimeter. Access to both land parcels is currently achieved off of Bartlow Road (adopted highway) approximately mid-way along their southern and northern boundary lines respectively.

1.4 The proposed development comprises of 78 residential dwellings with associated gardens, garages, private drives and amenity features. Both land parcels will be served by an adoptable highway network leading off Bartlow Road via new access points designed and constructed in accordance with the Cambridgeshire County Council design requirements.

1.5 A review of historical mapping dating back to 1877 has been conducted to explore how the site and the surrounding area may have changed since this time.

- **On-site** - Since 1877 the site has comprised of agricultural farmland and remains unchanged since this time.

- **Off-site** - Since 1877 the town of Linton has expanded and residential development has extended up to the western site boundary of the north and south land parcels. The A1307 has been constructed along the eastern boundary during the 1960's and included a minor diversion of Bartlow Road where it forms a junction with the A1307.

1.6 The BGS Digital Geological map of Great Britain (Sheet No. 205) at 1:50,000 scale identifies the site geology as follows:

**Land Parcel A**

- Made Ground – None Recorded;
- Superficial Deposits – None Recorded;
- Bedrock Geology – New Pit Chalk Formation.

**Land Parcel B**

- Made Ground – None Recorded;
- Superficial Deposits – None Recorded (North);
- Superficial Deposits – Alluvium and River Terrace deposits (South);
- Bedrock Geology – New Pit Chalk Formation.
1.7 The superficial geology located to the south of the site has a Secondary (A) Aquifer designation while the bedrock geology across the entire site is underlain by a Principal Aquifer with a High leaching potential.

1.8 The entire site is located within Source Protection Zone (SPZ) 2 (Outer Catchment). SPZ 2 is defined as the area around a source with a 400 day travel time.

1.9 In the context of the site possibly being developed for residential use, the assessment yields the overall risk rating for the site in terms of contaminated land to be LOW. Risk ratings are explained further in Table 9.1.

1.10 In the light of the compressible deposits to the south of Land Parcel B being located outside of the extent of the proposed residential development and being solely located within the chalk formation, the overall risk rating for the site in terms of foundation complexity is given as LOW. Risk ratings are explained further in Table 9.1.

1.11 Further investigations are recommended including a Phase 2 risk assessment.
2 Introduction and Client’s Brief

Introduction

2.1 Rossi Long Consulting Ltd have been commissioned by B W Balaam & Sons Ltd and Pembroke College to prepare a Phase 1 Geo-Environmental Assessment in accordance with BS 10175:2001 for the proposed development comprising of 78 residential dwellings and associated soft and hard landscaping area.

2.2 This report gathers together the findings of the assessment, the primary objectives of which are:

- Check the likelihood of the presence of contamination that may affect the suitability of the site for a specific current or future use;
- Indicate its nature and effect, pathways and receptors;
- Identify special precautions and procedures to be taken during operations on the site itself (such as site visits and investigations);
- Provide information from which an effective site investigation could be designed should this be required.

2.3 This report forms part of the supporting technical documentation for an Outline Planning Application to be submitted by Bidwells (Planning Department) to South Cambridgeshire District Council.

Context

2.4 The context of a Phase 1 Assessment should be understood as part of a four stage evolving process.

2.5 Legislation and guidance regarding contaminated land requires the landowner and/or the developer of a site, which is potentially contaminated, to undertake a site investigation which is fit for purpose. Site history is often complex and could involve several different industrial uses or activities that may have lead to ground contamination from a wide variety of different sources.

2.6 Sites that have been used for one type of process may have become contaminated from a potentially large number of contaminants; processes change with time, chemicals are phased out of use and newer ones replace them, the layout of operations can be altered, demolition and reconstruction can also affect the likely presence and distribution of contaminants.

2.7 The investigation of contaminated land can be correspondingly complex and is ideally undertaken using a phased approach as identified in BS 10175. The need for and hence the cost of particular elements of an investigation are managed pro-actively depending upon the findings of the previous phase. Subsequent phases can then be carefully targeted. This avoids unnecessary work being undertaken. The phased approach typically consists of four stages as described in Table 2.1 below.
Table 2.1 – Context of a Phase 1 Assessment

Scope

2.8 The purpose of this report is to provide information on the geological and environmental risks associated with the proposed development and present site specific mitigation measures. The scope of works for this assessment has been drawn together in line with the recommendations of BS 10175:2001 with a broad overview provided within Table 2.2 below.

Table 2.2 – Scope of Works
3 Development Details

Site Location

3.1 The application site is located on two separate land parcels, situated to the north and south of Bartlow Road, immediately adjacent to the village of Linton, Cambridgeshire CB21 4NA as shown in Figures 3.1 and 3.2 below.

Figure 3.1 – Site Location Plan

Figure 3.2 – Aerial Photo
Existing Site Layout

3.2 The application site is split between two land parcels located to the north and south of Bartlow Road. For the purpose of this report the land to the north of Bartlow Road will be referred to as Land Parcel A and the land to the south of Bartlow Road will be referred to as Land Parcel B.

3.3 The development boundary as indicated in Figure 3.2 above encloses an area for:

- Land Parcel A of approximately 1.110 ha and is defined by agricultural farmland to the north and east; the Ridgeway (highway) and residential development to the west and Bartlow Road to the south.

- Land Parcel B of approximately 3.717 ha and is defined by Bartlow Road to the north; the A1307 to the east; residential development and open grassland to the west and the River Granta to the south.

3.4 A topographical survey of the existing site layout has been undertaken to GPS Datum as shown in Appendix A.

- Land Parcel A is rectangular in shape with approximate dimensions of 110m wide by 100m long. Ground levels within the site fall approximately 4.9m in a southerly direction towards Bartlow Road and range between 56.2m AOD along the northern boundary line and 51.3m AOD along the southern boundary line (Bartlow Road).

- Land Parcel B is an irregular shape with approximate dimensions of 220m wide by 170m long. Ground levels within the site fall approximately 9.3m in a southerly direction towards the River Granta and range between 50.2m AOD along the northern boundary line (Bartlow Road) and 40.9m AOD along the southern boundary line (River Granta).

3.5 The two land parcels currently comprise of open grassland for Land Parcel A and agricultural farmland for Land Parcel B, with trees and vegetation to their perimeter. Access to both land parcels is currently achieved off of Bartlow Road (adopted highway) approximately mid-way along their southern and northern boundary lines respectively.

3.6 A site walkover was conducted on 1st April 2015; a more detailed description of the physical characteristics of the site is given in Section 7 of this report

Development Proposal

3.7 The proposed development as shown in Appendix B comprises of 78 residential dwellings with associated gardens, garages, private drives and amenity features. Both land parcels will be served by an adoptable highway network leading off Bartlow Road via new access points designed and constructed in accordance with Cambridgeshire County Council design requirements.
4 Site Environment

Geology

4.1 The BGS Digital Geological map of Great Britain (Sheet No. 205) at 1:50,000 scale identifies the site geology as follows:

Land Parcel A
- Made Ground – None Recorded;
- Superficial Deposits – None Recorded;
- Bedrock Geology – New Pit Chalk Formation.

Land Parcel B
- Made Ground – None Recorded;
- Superficial Deposits – None Recorded (North);
- Superficial Deposits – Alluvium and River Terrace deposits (South);
- Bedrock Geology – New Pit Chalk Formation.

4.2 The geological maps show no recorded instances of made ground on site. However records demonstrate that occasional and minor chalk mining may have occurred on site which could have been infilled and possibly contain Made Ground.

Hydrogeology

4.3 The superficial geology located to the south of the site has a Secondary (A) Aquifer designation while the bedrock geology across the entire site is underlain by a Principal Aquifer with High leaching potential.

4.4 The entire site is located within Source Protection Zone (SPZ) 2 (Outer Catchment). SPZ 2 is defined as the area around a source with a 400 day travel time.

4.5 A surface water abstraction license currently exists on-site for spray irrigation. There are no groundwater or potable water abstraction license within the site boundary. The closest abstraction licenses to the site are:
- Groundwater = 1261.0m south of the site (General Farming and Domestic);
- Potable Water = 1411.0m north of the site (Potable Water Supply).
Hydrology

4.6 The River Granta is located to the south of the site and has a Secondary River designation. The River Granta flows in an easterly direction where its designation changes to Main River approximately 500m to the east of the site.

4.7 There is a network of rivers/drains located to the east of the site with Secondary and Tertiary River designation and discharge into the River Granta.

Environmentally

4.8 Within the UK there are many classifications of areas which are designated as being environmentally sensitive, including:

- Site of Special Scientific Interest (SSSI);
- National Nature Reserve (NNR);
- Special Areas of Conservation (SAC);
- Special Protection Areas (SPA);
- Convention on Wetlands (Ramsar);
- Ancient Woodlands
- Local Nature Reserve (LNR);
- World Heritage Site;
- Environmentally Sensitive Areas;
- Area of Outstanding Natural Beauty (AONB);
- National Park (NP);
- Nitrate Sensitive Area;
- Nitrate Vulnerable Zone.

4.9 The GroundSure report searches databases of all of the above and has shown that there are no designated environmentally sensitive sites within the site boundary. The whole of the site is within a Nitrate Vulnerable Zone (as is approximately 70% of England); this puts particular constraints on farmers to implement Action Programme measures to reduce nitrate pollution.
5 Site History

5.1 A review of historical mapping available for the site dating back to 1877 has been conducted to explore how the site and the surrounding area has changed since this time. A copy of these maps have been included within Appendix C, and a description of the key changes observed between the maps has been summarised within Table 5.1 below:

### Historical Mapping

<table>
<thead>
<tr>
<th>Date</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1877</td>
<td>Partial Mapping - Site description not possible. Incomplete Mapping - The River Granta defines the southern boundary of the site with the Great Eastern Railway located beyond the river. The remaining land to the south primarily comprises of undeveloped land with some minor built development and roads.</td>
</tr>
<tr>
<td>1885 - 1886</td>
<td>Land Parcels A and B comprise of undeveloped land and some trees to the site boundary. A road (Bartlow Road) is shown passing between the two land parcels. The site is surrounded by undeveloped land to the north and east with some minor built development and roads. The western boundary is also defined by undeveloped land with some minor built development and roads, the village of Linton is located approximately 200m further west of the site. The southern boundary is defined by the River Granta, incomplete mapping does not show land beyond this point.</td>
</tr>
<tr>
<td>1896 – 1901</td>
<td>No significant variation within the site boundary. Minor built development has occurred along the eastern extent of Linton village. A gravel pit is evident to the south-east of the site, adjacent to Barham Hall.</td>
</tr>
<tr>
<td>1903</td>
<td>No significant variation to the site or surrounding area.</td>
</tr>
<tr>
<td>1919</td>
<td>No significant variation to the site or surrounding area.</td>
</tr>
<tr>
<td>1946 - 1950</td>
<td>No significant variation within the site boundary. Residential development adjacent to the north-west boundary of Land Parcel B, south of Bartlow Road. Residential development located to the north-east and north-west of Linton village.</td>
</tr>
<tr>
<td>1959</td>
<td>No significant variation within the site boundary. Residential &amp; commercial development located to the north-west of Linton village. Residential development opposite Barham Hall to the south-east of the site.</td>
</tr>
</tbody>
</table>
Table 5.1 – Historical Mapping Review

<table>
<thead>
<tr>
<th>Year</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1966</td>
<td>No significant variation within the site boundary. The construction of the Linton Southern Bypass (A1307) which also defines the south-east boundary of Land Parcel B. Diversion works of the road that passes between Land Parcel A and Land Parcel B, and the construction of a new junction onto the Linton Southern Bypass (A1307).</td>
</tr>
<tr>
<td>1980</td>
<td>No significant variation within the site boundary. Two additional ponds located on either side of the River Granta approximately 100m south-east of Land Parcel B. New residential development along the eastern boundaries of Land Parcels A and B including the construction of an electricity sub-station adjacent to the north-west corner of Land Parcel B and the construction of a Gas Governor to the north-east of Land Parcel B.</td>
</tr>
<tr>
<td>1982</td>
<td>No significant variation within the site boundary. Significant residential and commercial development to the north of Linton, including a school, fire station, factory and residential dwellings. Railway line to the south of the River Granta, not in use and infilled pit at Barham Hall to the south-east of Land Parcel B.</td>
</tr>
<tr>
<td>1985</td>
<td>No significant variation within the site boundary. Residential development to the north-west of Land Parcel B and west of Land Parcel A.</td>
</tr>
<tr>
<td>1994</td>
<td>No significant variation within the site boundary. Residential development to the north of Land Parcel B and west of Land Parcel A.</td>
</tr>
<tr>
<td>2002</td>
<td>No significant variation within the site boundary. Minor residential development along the northern fringes of Linton village. Demolition of a factory building and construction of residential dwellings adjacent to the school playing fields.</td>
</tr>
<tr>
<td>2010</td>
<td>No significant variation within the site boundary. Additional built development opposite Barham Hall to the south-east of the site. Minor residential development to the north of Linton</td>
</tr>
<tr>
<td>2014</td>
<td>No significant variation to the site or surrounding area.</td>
</tr>
</tbody>
</table>

5.2 The historic maps studied and described in Table 5.1 above indicate the following features which may or may not still exist on or around the site, but which could potentially be sources of contamination:
Potential Sources

The development of the surrounding land that forms the site boundary, including the construction of residential dwellings, the Southern Bypass (A1307) and the diversion of Bartlow Road.

The Electricity Sub-Station located adjacent to the north-west boundary of Land Parcel B.

The Gas Governor Station located adjacent to the north-east boundary of Land Parcel B.

The gravel pits and ponds located to the south-east of Land Parcel B.

The railway line to the south of the River Granta.

Table 5.2 – Historical Mapping Summary
6 Review of Statutory Information / Records

GroundSure Reports

6.1 Two reports have been obtained from GroundSure via the eMapSite website (www.emapsite.com): the GeoInsight report and the EnviroInsight report. Both reports were downloaded from the website on 31 March 2015.

6.2 The GroundSure GeoInsight provides geo-environmental information such as superficial deposits and bedrock data, and also information on groundworkings, mining and extraction and natural ground subsidence. The report is based on the BGS 1:50,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPIITS database; Shallow Mining data and Borehole Records, Coal Authority data, PBA non-coal mining and natural cavities database and GroundSure’s geological database which includes historical surface ground and underground workings.

6.3 The EnviroInsight report compiles data from a number of sources such as the Environment Agency, BGS, The Health Protection Agency and the Coal Authority to produce data on industrial sites; recorded contamination; landfill sites; hydrogeology and hydrology; flooding and environmentally sensitive areas.

6.4 The full text and cartographical information from the report is reproduced in Appendix D, the salient points from the report are summarised in Table 6.1 and 6.2 below. For clarity, the table summarises only risks that have been highlighted in the report, and not risks that are recorded as being insignificant or not being present in the report. It should be noted that a '0' response indicates that a database has been searched but no records have been found, whereas a ‘-’ response indicates that a database has not been searched. With regard to natural ground subsidence risks, only moderate and high risks are recorded.

<table>
<thead>
<tr>
<th>Information Type</th>
<th>On site</th>
<th>0m - 50m</th>
<th>51m - 250m</th>
<th>251m - 500m</th>
<th>501m – 1.0km</th>
<th>1.0km – 2.0km</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historical Surface Ground Working Features</td>
<td>0 0 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>This reference relates to 2No. ponds located 105.0m and 143.0m south of the site.</td>
</tr>
<tr>
<td>Current Ground Workings</td>
<td>0 0 0 1</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>This reference relates to a Sand &amp; Gravel pit located 314.0m south of the site within the grounds of Barnham Hall.</td>
</tr>
<tr>
<td>Non-Coal Mining</td>
<td>1 0 0 0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>There is one record of occasional minor mining of chalk on the site.</td>
</tr>
<tr>
<td>Compressible Deposits</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>There is a Moderate - High hazard rating for compressible deposits along the southern boundary of Land Parcel B and corresponds with the superficial Alluvium deposits.</td>
</tr>
</tbody>
</table>
A review of the Soil Chemistry results provided for the site and surrounding area do not show any elevated Soil Guidance Value (SGVs) for residential development in accordance with the Environment Agency’s Science Report SC050021.

Table 6.1 – Groundsure GeoInsight Review

<table>
<thead>
<tr>
<th>Information Type</th>
<th>On site</th>
<th>0m - 50m</th>
<th>51m - 250m</th>
<th>251m - 500m</th>
<th>501m - 1.0km</th>
<th>1.0km - 2.0km</th>
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<tbody>
<tr>
<td>Records of List 2 Dangerous Substances Inventory Sites</td>
<td>4</td>
<td>2</td>
<td>17</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Records of Licensed Discharge Consents</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Environment Agency Licensed Waste Sites</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Current Industrial Sites Data</td>
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<td>2</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Groundwater Abstraction Licences</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Surface Water Abstraction Licences</td>
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<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
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<tr>
<td>Potable Water Abstraction Licenses</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

- This reference relates to Shaw Services located 466.0m to the south-east of the site. The status of the site is Not Active.
- This reference relates to a private treated effluent discharge located 332.0m to the north of the site which is no longer active.
- This reference relates to a metal recycling site located 884.0m to the north of the site.
- The Industrial Site located on-site, references an electricity sub-station located adjacent to the north-west boundary of Land Parcel B. The two references made to the Industrial Sites located within 50m of the site boundary both relate to the Gas Governor Station located adjacent to the north-east boundary of Land Parcel B.
- The closest groundwater abstraction point is located approximately 1261.0m to the south of the site at Bartlow New Farm.
- The on-site surface water abstraction license relates to spray irrigation purposes.
- The potable water abstraction point is located approximately 1411.0m to the north of the site via a groundwater source of supply.
### Source Protection Zone

<table>
<thead>
<tr>
<th>1</th>
<th>0</th>
<th>1</th>
<th>0</th>
<th>-</th>
<th>-</th>
</tr>
</thead>
</table>
| The entire site is located within Source Protection Zone (SPZ) 2 (Outer Catchment). SPZ 2 is defined as the area around a source with a 400 day travel time.

### Groundwater Vulnerability and Soil Leaching Potential

<table>
<thead>
<tr>
<th>1</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>-</th>
<th>-</th>
</tr>
</thead>
</table>
| The site has a H3 Soil Vulnerability Category with a High leaching potential.

### Environment Agency Zone 2 Floodplain within 250m of the Study Site

<table>
<thead>
<tr>
<th>Yes</th>
</tr>
</thead>
</table>
| The indicative flood maps show an area of the site to the south of Land Parcel B to be located within Flood Zone 2 associated with the floodplain of the River Granta.

### Environment Agency Zone 3 Floodplain within 250m of the Study Site

<table>
<thead>
<tr>
<th>Yes</th>
</tr>
</thead>
</table>
| The indicative flood maps show an area of the site to the south of Land Parcel B to be located within Flood Zone 3 associated with the floodplain of the River Granta.

### Records of Ancient Woodlands

<table>
<thead>
<tr>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>2</th>
</tr>
</thead>
</table>
| This reference relates to 2No. un-named Ancient Woodlands. One located 1163.0m to the north-west of the site and the second located 1177.0m north-east of the site.

### Records of Nitrate Vulnerable Zones

<table>
<thead>
<tr>
<th>2</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
</tr>
</thead>
</table>
| The report indicates that the site falls within a nitrate vulnerable zone which is an area designated by the EA as land that drains into nitrate polluted waters, or waters which could become polluted by nitrates. This is not considered to be detrimental to any proposed development.

*Table 6.2 – Groundsure EnviroInsight Review*
7 Site Inspection

Introduction

7.1 A site walkover was conducted on 1st April 2015; weather was mild (approximately 10°C) dry and overcast with occasional sunny spells. The purpose of the walkover was to perform a visual inspection of the site and make a record of any pertinent features. A Hazard Plan, identifying potential on-site features has been included with Appendix E with Photographs of the site/features contained in Appendix F.

Site Observation

7.2 Observations on and about the site include the following:

*On-site Observation 1 – Raised Banking along the Eastern Boundary*

7.3 The eastern boundary of Land Parcel B is raised 1.5m – 2.5m above the general site level (Photo 1). This is likely to be a result of the adjacent highway (A1307) construction which is supported by banking on either side of the highway. Although considered to be unlikely, the remains of surplus construction material and historic spillages could be encountered below the surface along the eastern boundary.

*On-site Observation 2 – Remains of Small Bonfire*

7.4 The remains of a fuel drum and bonfire were observed along the western site boundary of Land Parcel B (Photo 2).

*On-site Observation 3 – Potential Use of Fertilizers*

7.5 The current & historic site usage comprises of agricultural farming and would pose a potential risk with regards to the use of fertilizers to enhance the growth of crops.

*Off-site Observation 4 – Electricity Sub-Station*

7.6 An Electricity Sub-Station is located adjacent to the north-west boundary of Land Parcel B (Photo 3).

*Off-site Observation 5 – Gas Governor Station*

7.7 A Gas Governor Station is located adjacent to the north-east boundary of Land Parcel B (Photo 4).

*Off-site Observation 6 – Minor Fly Tipping*

7.8 Minor fly tipping was observed across the site (Photo 5 & 6) primarily around the site boundaries.
Off-site Observation 7 – Mounds of Unknown Fill

7.9 Where the former alignment of Bartlow road existed prior to the construction of the A1307 and the new junction, the remains of the old road are still evident. Vehicular access to this small parcel of land is prevented by the raised mounds comprising of various construction material (Photo 7 & 8) including road surfacing which may be a source of hydrocarbons.

Off-site Observation 8 – Surface Water Run-off from the A1307

7.10 Sections of the adjacent highway (A1307) forming the eastern boundary of Land Parcel B were not positively drained. The surface water from these areas discharge directly onto the adjacent grass banks via grips (Photo 9) and then along the eastern site boundary towards the River Granta.

Off-site Observation 9 – Agricultural Development

7.11 Unknown agricultural development existing to the south-east of Land Parcel B which has ponds located within the close vicinity of this development. A link between these ponds and the River Granta exists with the discharge located to the south-east of Land Parcel B (Photo 10).

Hazardous Materials

7.12 During the inspection a number of potential sources of hazardous materials were noted and have been summarised within Table 7.1 below:

<table>
<thead>
<tr>
<th>Potential Sources Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raised banking along the eastern boundary of Land Parcel B is connection with the construction of the adjacent highway (A1307) which is supported by banking on either side of the highway. Although considered to be unlikely, the remains of surplus construction material and historic spillages could be encountered below the surface along the eastern boundary.</td>
</tr>
<tr>
<td>The remains of a fuel drum and bonfire were observed along the western site boundary of Land Parcel B.</td>
</tr>
<tr>
<td>The use of fertilizers as a result of the sites current and historic use for agricultural farming.</td>
</tr>
<tr>
<td>Electricity Sub-Station located adjacent to the north-west boundary of Land Parcel B.</td>
</tr>
<tr>
<td>Gas Governor Station located adjacent to the north-east boundary of Land Parcel B.</td>
</tr>
<tr>
<td>Minor fly tipping around site boundaries</td>
</tr>
</tbody>
</table>
Where the former alignment of Bartlow road existed prior to the construction of the A1307 and the new junction, the remains of the old road are still evident. Vehicular access to this small parcel of land is prevent by raised mounds comprising of various construction material including road surfacing which may be a source of hydrocarbons.

Sections of the adjacent highway (A1307) forming the eastern boundary of Land Parcel B were not positively drained. The surface water from these areas discharge directly onto the adjacent grass banks via grips and then along the eastern site boundary towards the River Granta.

Agricultural development to the south-east of the site with a linkage to the River Granta via ponds and drainage outfall point.

Table 7.1 – Site Inspection Review
8 Conceptual Site Model

Introduction

8.1 The first step in preparing a risk assessment for the site is to amalgamate the research information from historic maps, statutory records and the site inspection in order to develop a Conceptual Site Model (CSM). The CSM is used to determine the presence of a plausible pollutant linkage and hence the presence of significant risk to susceptible receptors such as humans, the water environment or the built environment.

8.2 There are three essential elements to any risk:

- A Source – a substance that is in, on or under the land and has the potential to cause harm or to cause pollution of controlled waters;
- A Receptor – in general terms, something that could be adversely affected by a source, such as people, an ecological system, property, or a water body; and
- A Pathway – a route or means by which a receptor can be exposed to, or affected by, a source.

8.3 Each of these elements can exist independently, but they create a risk only where they are linked together, so that a particular source affects a receptor through a specific pathway. This kind of linked combination of source–pathway–receptor is described as a pollutant linkage.

8.4 On any individual site, there may be only a single pollutant linkage or there may be several. Different pollutant linkages may be related, for example, the same source may be linked to two or more distinct types of receptor by different pathways, or different sources and/or pathways may affect the same receptor. Not all receptors will be relevant in every context, and new pollutant linkages may be created by changes over time. Conversely, in the absence of a plausible pollutant linkage there is no risk. Therefore, the presence of measurable concentrations of contaminants does not automatically imply that the site will cause harm.

8.5 The following sections outline the possible and actual Sources, Pathways and Receptors relevant to the site and its potential development.

Conceptual Model – Sources

8.6 A review of historical maps for the site and desk study has revealed the following potential sources of contamination on the site and the surrounding land, as covered by section 5 of this report:

- The development of the surrounding land that forms the site boundary, including the construction of residential dwellings, the Southern Bypass (A1307) and the diversion of Bartlow Road;
- The Electricity Sub-Station located adjacent to the north-west boundary of Land Parcel B;
- The Gas Governor Station located adjacent to the north-east boundary of Land Parcel B;
- The gravel pits and ponds located to the south-east of Land Parcel B;
- The railway line to the south of the River Granta.
8.7 The Site Inspection revealed further potential sources of contamination on the site and the surrounding land as summarised below and, as covered by section 7 of this report.

- The eastern boundary of Land Parcel B is raised 1.5m – 2.5m above the general site level. This is likely to be a result of the adjacent highway (A1307) construction which is supported by banking on either side of the highway. Although considered to be unlikely, the remains of surplus construction material and historic spillages could be encountered below the surface along the eastern boundary.

- The remains of a fuel drum and bonfire were observed along the western site boundary of Land Parcel B;

- The use of fertilizers as a result of the site’s current and historic use for agricultural farming;

- Electricity Sub-Station located adjacent to the north-west boundary of Land Parcel B;

- Gas Governor Station located adjacent to the north-east boundary of Land Parcel B;

- Minor fly tipping around site boundaries;

- Where the former alignment of Bartlow road existed prior to the construction of the A1307 and the new junction, the remains of the old road are still evident. Vehicular access to this small parcel of land is prevent by the raised mounds comprising of various construction material including road surfacing which may be a source of hydrocarbons.

- Sections of the adjacent highway (A1307) forming the eastern boundary of Land Parcel B were not positively drained. The surface water from these areas discharge directly onto the adjacent grass banks via grips and then along the eastern site boundary towards the River Granta.

- Agricultural development to the south-east of the site with a linkage to the River Granta via ponds and drainage outfall point.

**Conceptual Model – Pathways**

8.8 The main pathways that could exist on the site to link a potential source to a potential receptor include the following:

- Migration through granular soils via water or gas;

- Migration through fractured non-granular soils via water or gas;

- Passing through disused drains, above and below ground pipework and service trenches;

- Through direct skin contact with contaminated soil;

- Ingestion of soil through direct contact or eating with dirty hands;

- Airborne migration of dust or soil particles leading to inhalation;

- Surface water infiltration leading to leaching of contaminants within soils;

- The River Granta (Main River) and surrounding secondary and tertiary watercourses.
8.9 The proposed development comprises of 78 residential dwellings with associated gardens, garages, private drives, amenity features and adoptable highway; the construction works necessary to implement this development could temporarily or permanently open additional pathways.

**Conceptual Model – Receptors**

8.10 Potential receptors on the site that may become contaminated by sources of contamination on and about the site include the following:

- Humans using the site during development and on the completed development;
- Buildings and other structures;
- Future planting in gardens and open spaces.

8.11 There are potential receptors off site which could be affected by contamination on site if suitable pathways exist to link the two. Receptors surrounding the site include:

- Surface water features as listed in section 4 of this report;
- Sub-surface water (Major Aquifer).

**Pollutant Linkages**

8.12 Based on the information collated, a preliminary risk assessment table has been formulated which identifies all possible pollutant and pollutant linkages at the site in the context of the proposed development of the site for residential use. In preparing the risk assessment, three scenarios are considered:

1. A source of contamination on site that can cause harm to a receptor off site;
2. A source of contamination off site that can cause harm to a receptor on site;
3. A source of contamination on site that can cause harm to a receptor on site.
<table>
<thead>
<tr>
<th>Source(s)</th>
<th>Receptor(s)</th>
<th>Pathway(s)</th>
<th>Pollutant Linkage</th>
<th>Comments</th>
<th>Additional Site Investigation Requirements / Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential ground gas produced by open stagnant ponds and infilled pits located to the south-east of Land Parcel B. (Barham Hall).</td>
<td>Buildings, future site users and construction workers.</td>
<td>Migration through permeable deposits below the site</td>
<td>Unlikely</td>
<td>Potential for gas to build up in unvented voids in new structures, although this is considered to be unlikely based on the distance between the source and receptor.</td>
<td>A limited phase II site investigation alongside a geotechnical investigation is recommended which should include limited ground gas monitoring.</td>
</tr>
<tr>
<td>The eastern boundary of Land Parcel B is raised 1.5m – 2.5m above the general site level. This is likely to be a result of the adjacent highway (A1307) construction which is supported by banking on either side of the highway. Although considered to be unlikely, the remains of surplus construction material (made ground) and historic spillages could be encountered below the surface along the eastern boundary.</td>
<td>Surface water features, groundwater and the River Granta.</td>
<td>Migration through permeable deposits below the site</td>
<td>Unlikely</td>
<td>The risk of migration from the source to receptor is considered possible given the high leaching potential of the aquifer and the proximity of the River Granta.</td>
<td>A limited Phase II Site Investigation should be undertaken in conjunction with the geotechnical investigation, and should include limited groundwater monitoring and analysis.</td>
</tr>
<tr>
<td>Future site users and construction workers.</td>
<td>Spillages into surface water features</td>
<td>Migration through permeable deposits below the site</td>
<td>Unlikely</td>
<td>Due to the close proximity of the River Granta, construction spillage are considered possible.</td>
<td>A limited phase II site investigation alongside a geotechnical investigation is recommended.</td>
</tr>
<tr>
<td>Future planting</td>
<td>Root uptake of contaminants.</td>
<td>Migration through permeable deposits below the site</td>
<td>Unlikely</td>
<td>Site workers may become exposed to contaminated soils during the development works.</td>
<td>A limited phase II site investigation alongside a geotechnical investigation is recommended.</td>
</tr>
<tr>
<td>Sections of the adjacent highway (A1307) forming the eastern boundary of Land Parcel B were not positively drained. The surface water from these areas discharge directly onto the adjacent grass banks via grips and then along the eastern site boundary towards the River Granta. The risk of contaminates such as oil could be present with the runoff from this area.</td>
<td>Surface water features, groundwater and the River Granta.</td>
<td>Migration through permeable deposits below the site</td>
<td>Unlikely</td>
<td>The risk of migration from the source to receptor is considered possible given the high leaching potential of the aquifer and the proximity of the River Granta. However the grass bank will act as a filter strip and remover contaminant from the runoff as it passes over.</td>
<td>A limited Phase II Site Investigation should be undertaken in conjunction with the geotechnical investigation, and should include limited groundwater monitoring and analysis.</td>
</tr>
<tr>
<td>Future site users and construction workers.</td>
<td>Runoff into surface water features (River Granta)</td>
<td>Migration through permeable deposits below the site</td>
<td>Unlikely</td>
<td>Due to the close proximity of the River Granta, construction spillage are considered possible.</td>
<td>A limited phase II site investigation alongside a geotechnical investigation is recommended.</td>
</tr>
<tr>
<td>Future planting</td>
<td>Root uptake of contaminants.</td>
<td>Migration through permeable deposits below the site</td>
<td>Unlikely</td>
<td>Site workers may become exposed to contaminated soils during the development works.</td>
<td>A limited phase II site investigation alongside a geotechnical investigation is recommended.</td>
</tr>
<tr>
<td>Future planting</td>
<td>Root uptake of contaminants.</td>
<td>Migration through permeable deposits below the site</td>
<td>Unlikely</td>
<td>Potential contaminants could impact the growth of plants or eventually be ingested by humans.</td>
<td>A limited phase II site investigation alongside a geotechnical investigation is recommended. A suitable layer of clean topsoil and subsoil may be required in areas of landscaping or gardens.</td>
</tr>
<tr>
<td>Source(s)</td>
<td>Receptor(s)</td>
<td>Pathway(s)</td>
<td>Pollutant Linkage</td>
<td>Comments</td>
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<tr>
<td>-----------</td>
<td>-------------</td>
<td>------------</td>
<td>------------------</td>
<td>----------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>The current site usage and the historic usage of surrounding land as agricultural farmland (fertilizer).</td>
<td>Surface water features, groundwater and the River Granta.</td>
<td>Migration through permeable deposits below the site.</td>
<td>Likely</td>
<td>The risk of migration from the source to receptor is considered possible given the high leaching potential of the aquifer and the proximity of the stream. However the severity of the risk is considered low as the presence of fertilizer degrades over time.</td>
<td>A limited phase II site investigation alongside a geotechnical investigation is recommended.</td>
</tr>
<tr>
<td>Polychlorinated Biphenyls (PCBs) associated with the historic oils used by the Electrical Sub-Station located adjacent to the north-west boundary of Land Parcel B and the Gas Governor Station located adjacent to the north-east boundary of Land Parcel B.</td>
<td>Surface water features, groundwater and the River Granta.</td>
<td>Migration through permeable deposits below the site.</td>
<td>Possible</td>
<td>The risk of migration from the source to receptor is considered possible given the high leaching potential of the aquifer and the proximity of the stream.</td>
<td>A limited Phase II Site Investigation should be undertaken in conjunction with the geotechnical investigation, and should include limited groundwater monitoring and analysis.</td>
</tr>
<tr>
<td>Future site users, construction workers.</td>
<td>Through skin contact, ingestion of inhalation of contaminated soil.</td>
<td>Possible</td>
<td>Site workers may become exposed to contaminated soils during the development works.</td>
<td>Targeted contamination testing should be undertaken in the vicinity of the sub-station and gas governor, in conjunction with general testing elsewhere. Site workers should wear appropriate PPE.</td>
<td></td>
</tr>
<tr>
<td>Future planting</td>
<td>Root uptake of contaminants.</td>
<td>Possible</td>
<td>Potential contaminants could impact the growth of plants or eventually be ingested by humans.</td>
<td>A suitable layer of clean topsoil and subsoil may be required in areas of landscaping or gardens.</td>
<td></td>
</tr>
<tr>
<td>Remains of a bonfire along the western site boundary of Land Parcel B and minor fly tipping around the site boundaries.</td>
<td>Surface water features, groundwater and deteriorated water supply pipes.</td>
<td>Migration through permeable deposits below the site.</td>
<td>Possible</td>
<td>The risk of migration from the source to receptor is considered possible given the high leaching potential of the aquifer and the proximity of the stream.</td>
<td>A limited Phase II Site Investigation should be undertaken in conjunction with the geotechnical investigation, and should include limited groundwater monitoring and analysis.</td>
</tr>
<tr>
<td>Future site users, construction workers.</td>
<td>Through skin contact, ingestion of inhalation of contaminated soil.</td>
<td>Likely</td>
<td>Site workers may become exposed to contaminated soils during the development works.</td>
<td>Targeted contamination testing should be undertaken in the vicinity of the bonfire, in conjunction with general testing elsewhere. Site workers should wear appropriate PPE.</td>
<td></td>
</tr>
<tr>
<td>Future planting</td>
<td>Root uptake of contaminants.</td>
<td>Possible</td>
<td>Potential contaminants could impact the growth of plants or eventually be ingested by humans.</td>
<td>A suitable layer of clean topsoil and subsoil may be required in areas of landscaping or gardens.</td>
<td></td>
</tr>
<tr>
<td>Irrigation agricultural development existing to the south-east of Land Parcel B which has ponds located within the close vicinity of this development.</td>
<td>Surface water features and groundwater.</td>
<td>A link between the ponds and the River Granta exists with the discharge located to the south-east of Land Parcel B.</td>
<td>Possible</td>
<td>The risk of migration from the source to receptor is considered possible given the high leaching potential of the aquifer and the link between the ponds and the River Granta.</td>
<td>A limited Phase II Site Investigation should be undertaken in conjunction with the geotechnical investigation, and should include limited groundwater monitoring and analysis.</td>
</tr>
</tbody>
</table>
### Table 8.1 – Conceptual Site Model

<table>
<thead>
<tr>
<th>Source(s)</th>
<th>Receptor(s)</th>
<th>Pathway(s)</th>
<th>Pollutant Linkage</th>
<th>Comments</th>
<th>Additional Site Investigation Requirements / Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where the former alignment of Bartlow road existed prior to the construction of the A1307 and the new junction, the remains of the old road are still evident. Vehicular access to this small parcel of land is present by the mounds of various construction material including road surfacing which may provide a source of Hydrocarbon leaching into the subsoil.</td>
<td>Surface water features, groundwater and the River Granta.</td>
<td>Migration through permeable deposits below the site</td>
<td>Possible</td>
<td>The risk of migration from the source to receptor is considered possible given the high leaching potential of the aquifer and the proximity of the stream.</td>
<td>A limited Phase II Site Investigation should be undertaken in conjunction with the geotechnical investigation, and should include limited groundwater monitoring and analysis.</td>
</tr>
<tr>
<td>Future site users, construction workers.</td>
<td>Through skin contact, ingestion or inhalation of contaminated soil.</td>
<td>Likely</td>
<td>Site workers may become exposed to contaminated soils during the development works.</td>
<td>Targeted contamination testing should be undertaken in the vicinity of the known spoil heaps, in conjunction with general testing elsewhere.</td>
<td></td>
</tr>
<tr>
<td>Future planting</td>
<td>Root uptake of contaminants.</td>
<td>Possible</td>
<td>Potential contaminants could impact the growth of plants or eventually be ingested by humans.</td>
<td>A suitable layer of clean topsoil and subsoil may be required in areas of landscaping or gardens.</td>
<td></td>
</tr>
</tbody>
</table>
9 Discussion and Conclusion

Discussion

9.1 A Phase 1 Geo-Environmental Assessment has been made of the site, located on two separate land parcels situated to the north and south of Bartlow Road, immediately adjacent to the village of Linton, Cambridgeshire. The assessment consists of a desk study to investigate the history and environmental setting of the site along with a site walkover to record pertinent features.

9.2 The information gathered as part of the desk study and site walkover has been amalgamated, forming the basis of the Conceptual Site Model (CSM) in which potential pollutant linkages have been explored.

9.3 The CSM shows that there is a low probability that contamination exists across the site, with a possibility of isolated hotspots, that there are potentially sensitive receptors, and that suitable pathways may exist to link these receptors to the source of the contamination (hotspots). In this case it is likely that a limited scheme of soil or geotechnical investigations will be recommended across the site, and if necessary a Phase 2 qualitative risk assessment of identified risks. Therefore Rossi Long Consulting deem the overall risk rating of the site in terms of contaminated land to be LOW. To put this in context there are four potential risk ratings as set out in Table 9.1 below.

9.4 The BGS mapping shows the site to be underlain by chalk bedrock, with superficial deposits of Sand & Gravels and Alluvium to the southern quarter of Land Parcel B. If close to the surface, the chalk bedrock will be suitable for supporting strip footings for low-rise residential dwellings. However the Alluvium strata will be problematic for the construction foundations as it is highly compressible. It is understood that in the proposed site layout there will be no development in the southern quarter of Land Parcel B, but the extent of the Alluvium deposits should be established accurately by intrusive surveys to determine whether or not there will be any dwellings constructed in the alluvium zone. Piled foundations or removal of the alluvium strata may be required if dwellings are proposed in areas of alluvium soils.

9.5 With the proximity of the river, groundwater may be at a high level in some parts of the site, although the ground does rise to the north so may not be an issue for the construction of foundations for the dwellings. Dewatering of excavations may be required if groundwater levels are high.

<table>
<thead>
<tr>
<th>Risk Rating</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>A site will be given a Low risk rating in terms of contaminated land if there are few or no possible pollutant linkages identified, and if the likelihood and/or severity of these linkages materialising is considered to be minimal. A low risk rating in terms of geotechnical risks indicates no significant geotechnical risks have been identified during this phase of investigation. In this case it is likely that a limited scheme of soil or geotechnical investigations will be recommended across the site, and if necessary a Phase 2 qualitative risk assessment of identified risks.</td>
</tr>
<tr>
<td>Medium</td>
<td>A site will be given a Medium risk rating in terms of contaminated land if there are several possible pollutant linkages identified, and if the likelihood and/or severity of these linkages materialising is appreciable.</td>
</tr>
</tbody>
</table>
A medium risk rating in terms of geotechnical risks indicates minor geotechnical risks have been identified during this phase of investigation, which may impact on foundation design. Examples include shrinkable soils or loose ground.

In this case it is likely that some site or geotechnical investigation works will be required on site in specific locations to prove or otherwise the presence of suspected sources of contamination or geotechnical features. Specific tests may be recommended based on the findings of the Phase 1. A detailed Phase 2 qualitative risk assessment will be required.

---

A site will be given a High risk rating in terms of contaminated land if there are many possible pollutant linkages identified, and if the likelihood and/or severity of these linkages materialising is considered to be high.

A high risk rating in terms of geotechnical risks indicates significant geotechnical risks have been identified during this phase of investigation, which will impact on foundation design, and may require a more complex foundation solution. Examples include potential subsidence from mining or solution features; or the presence of soft ground.

In this case it is likely that significant site or geotechnical investigation works will be required on site in specific locations to prove or otherwise the presence of suspected sources of contamination or geotechnical features. Specific tests may be recommended based on the findings of the Phase 1. Several site visits to take repeated readings will likely be required to build up a picture of how potential pollution levels are changing with time. A detailed Phase 2 qualitative risk assessment will be required, and it is quite likely that physical measures will need to be implemented on site to mitigate the effects of contamination.

---

A site will be given a Very High risk rating in terms of contaminated land if there are numerous and widespread possible pollutant linkages identified, and if these linkages are already in situ or the likelihood and/or severity of these linkages materialising is considered to be extreme.

A very high risk rating in terms of geotechnical risks indicates severe geotechnical risks have been identified during this phase of investigation, which will impact on foundation design, and will require a novel foundation solution. Examples include extensive evidence of subsidence; land slip or very soft ground.

In this case it is likely that numerous and widespread site or geotechnical investigation works will be required on site in many locations to prove or otherwise the presence of suspected sources of contamination or geotechnical features. Specific tests may be recommended based on the findings of the Phase 1. Several site visits to take repeated readings will be required to build up a picture of how potential pollution levels are changing with time. A detailed Phase 2 qualitative risk assessment will be required, and it is quite likely that physical measures will need to be implemented on site to mitigate the effects of contamination.

---

Table 9.1 – Risk Rating Categories

9.6 A Site Investigation covers features above the ground surface including stored or building materials with some testing. A Geotechnical Investigation involves intrusive below ground sampling of soils and associated testing.
Liability

9.7 In the UK there are two principal areas of legislation governing sites containing potentially contaminated land:

- Environmental Protection Act (1990) amended by the Environment Act (1995);

9.8 The relevant Local Authority for the development site is South Cambridgeshire District Council which has the primary regulatory role under Part IIA of the Environmental Protection Act. The Council’s duties include inspecting sites for contaminated land; determining whether conditions at any particular site meet the statutory definition of contaminated land; and to act as the enforcing authority for all contaminated land, unless the site meets the definition of a ‘special site’ (in which case the Environment Agency will act as the enforcing authority).

9.9 A legal definition of contaminated land is given in section 78A(2) of Part IIA of the Environmental Protection Act 1990 as:

"Contaminated land is any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that,

(a) significant harm is being caused or there is a significant possibility of such harm being caused; or

(b) pollution of controlled waters is being, or is likely to be caused."

9.10 Critically, an area of land can only be designated contaminated land if a significant risk has been proven.

Conclusions

9.11 As a result of the findings, the possible pollutant linkages identified above will be investigated further. The investigation will include an intrusive geotechnical investigation including a Phase 2 qualitative risk assessment of the identified potential risks in accordance with CLR11. The Phase 2 investigations will also involve groundwater monitoring and analysis, gas monitoring and sampling and testing Subsoil material to determine allowable bearing pressures for foundation design. It is proposed that these Phase 2 investigations can be secured through a planning condition requiring approval of the detail of the proposed investigation and its completion prior to the commencement of development.
Appendices
Appendix A

Existing Site Layout (Topographical Survey)
Survey Area
Appendix B

Proposed Development Layout
Appendix C

Historical Maps
Appendix D

GroundSure GeoInsight & EnviroInsight Report
Groundsure Geoinsight

Address: ,

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the Groundsure Geoinsight as requested.

If you would like further assistance regarding this report then please contact the emapsite customer services team on 0118 9736883 quoting the above report reference number.

Yours faithfully,

emapsite customer services team

Enc.
Groundsure Geoinsight
Groundsure
Geoinsight

Address: 

Date: 31 Mar 2015

Reference: EMS-296149_400443

Client: EmapSite

Aerial Photograph Capture date: 01-Aug-2013
Grid Reference: 557224,246480
Site Size: 4.76ha
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Overview of Findings

The Groundsure Geoinsight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Shallow Mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure’s unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the 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: Geology

1.1 Artificial Ground

1.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site? No

1.1.2 Are there any records relating to permeability of artificial ground within the study site boundary? No

1.2 Superficial Geology and Landslips

1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site? Yes

1.2.2 Are there any records relating to permeability of superficial geology within the study site boundary? Yes

1.2.3 Are there any records of landslip within 500m of the study site boundary? No

1.2.4 Are there any records relating to permeability of landslips within the study site boundary? No

1.3 Bedrock, Solid Geology & Faults

1.3.1 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section. Yes

1.3.2 Are there any records relating to permeability of bedrock within the study site boundary? Yes

1.3.3 Are there any records of faults within 500m of the study site boundary? No

1.4 Radon data

1.4.1 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

1.4.2 Is the property in an area where Radon Protection Measures 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 2: Ground Workings

<table>
<thead>
<tr>
<th></th>
<th>On-site</th>
<th>0-50m</th>
<th>51-250</th>
<th>251-500</th>
<th>501-1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Historical Surface Ground Working Features from Small Scale Mapping</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>Not Searched</td>
<td>Not Searched</td>
</tr>
<tr>
<td>2.2 Historical Underground Workings from Small Scale Mapping</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2.3 Current Ground Workings</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Report Reference: EMS-296149_400443
EMS_296149_400443
<table>
<thead>
<tr>
<th>Section 3: Mining, Extraction &amp; Natural Cavities</th>
<th>On-site</th>
<th>0-50m</th>
<th>51-250</th>
<th>251-500</th>
<th>501-1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Historical Mining</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.2 Coal Mining</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.3 Johnson Poole and Bloomer Mining Area</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.4 Non-Coal Mining</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.5 Non-Coal Mining Cavities</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.6 Natural Cavities</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.7 Brine Extraction</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.8 Gypsum Extraction</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.9 Tin Mining</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.10 Clay Mining</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Section 4: Natural Ground Subsidence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1 Shrink Swell Clay</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2 Landslides</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.3 Ground Dissolution of Soluble Rocks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.4 Compressible Deposits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5 Collapsible Deposits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.6 Running Sand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 5: Borehole Records</td>
<td>On-site</td>
<td>0-50m</td>
<td>51-250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 BGS Recorded Boreholes</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Section 6: Estimated Background Soil Chemistry</td>
<td>On-site</td>
<td>0-50m</td>
<td>51-250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Records of Background Soil Chemistry</td>
<td>4</td>
<td>2</td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 7: Railways and Tunnels</td>
<td>On-site</td>
<td>0-50m</td>
<td>51-250</td>
<td>251-500</td>
<td></td>
</tr>
<tr>
<td>7.1 Tunnels</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Not Searched</td>
</tr>
<tr>
<td>7.2 Historical Railway and Tunnel Features</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Not Searched</td>
</tr>
<tr>
<td>7.3 Historical Railways</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Not Searched</td>
</tr>
<tr>
<td>7.4 Active Railways</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Not Searched</td>
</tr>
</tbody>
</table>

Report Reference: EMS-296149_400443
Client Reference: EMS_296149_400443
<table>
<thead>
<tr>
<th>Section 7: Railways and Tunnels</th>
<th>On-site</th>
<th>0-50m</th>
<th>51-250</th>
<th>251-500</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.5 Railway Projects</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
1 Geology

1.1 Artificial Ground Map
1 Geology

1.1 Artificial Ground

1.1.1 Artificial/ Made Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:205

Are there any records of Artificial/Made Ground within 500m of the study site boundary? Yes

<table>
<thead>
<tr>
<th>ID</th>
<th>Distance (m)</th>
<th>Direction</th>
<th>LEX Code</th>
<th>Description</th>
<th>Rock Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>281.0</td>
<td>SE</td>
<td>WGR-OPEN</td>
<td>WORKED GROUND (UNDIVIDED)</td>
<td>VOID</td>
</tr>
</tbody>
</table>

1.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.
1.2 Superficial Deposits and Landslips Map
1.2 Superficial Deposits and Landslips

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary?  Yes

<table>
<thead>
<tr>
<th>ID</th>
<th>Distance (m)</th>
<th>Direction</th>
<th>LEX Code</th>
<th>Description</th>
<th>Rock Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.0</td>
<td>On Site</td>
<td>ALV</td>
<td>ALLUVIUM</td>
<td>CLAY, SILT, SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]</td>
</tr>
<tr>
<td>2</td>
<td>0.0</td>
<td>On Site</td>
<td>T1T2</td>
<td>RIVER TERRACE DEPOSITS, 1 TO 2</td>
<td>SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]</td>
</tr>
<tr>
<td>3</td>
<td>159.0</td>
<td>SW</td>
<td>T1T2</td>
<td>RIVER TERRACE DEPOSITS, 1 TO 2</td>
<td>SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]</td>
</tr>
</tbody>
</table>

1.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary?  Yes

<table>
<thead>
<tr>
<th>Distance (m)</th>
<th>Direction</th>
<th>Flow Type</th>
<th>Maximum Permeability</th>
<th>Minimum Permeability</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>On Site</td>
<td>Intergranular</td>
<td>Very High</td>
<td>High</td>
</tr>
<tr>
<td>0.0</td>
<td>On Site</td>
<td>Intergranular</td>
<td>High</td>
<td>Very Low</td>
</tr>
</tbody>
</table>

1.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary?  No

Database searched and no data found.

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.
1.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site* boundary?  

No

Database searched and no data found.

---

* This includes an automatically generated 50m buffer zone around the site
1.3 Bedrock and Faults Map

Bedrock and Faults Legend

Site Outline

Search Buffers (m)

1.3 Bedrock, Solid Geology & Faults

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:205

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/ Solid Geology within 500m of the study site boundary:

<table>
<thead>
<tr>
<th>ID</th>
<th>Distance (m)</th>
<th>Direction</th>
<th>LEX Code</th>
<th>Description</th>
<th>Rock Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.0</td>
<td>On Site</td>
<td>NPCH-CHLK</td>
<td>New Pit Chalk Formation - Chalk</td>
<td>Turonian</td>
</tr>
<tr>
<td>2</td>
<td>59.0</td>
<td>NE</td>
<td>CKR-CHLK</td>
<td>Chalk Rock Member - Chalk</td>
<td>Turonian</td>
</tr>
<tr>
<td>3</td>
<td>89.0</td>
<td>NE</td>
<td>LESE-CHLK</td>
<td>Lewes Nodular Chalk Formation And Seaford Chalk Formation (undifferentiated) - Chalk</td>
<td>Santonian / Turonian</td>
</tr>
</tbody>
</table>

1.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site’s boundary?  Yes

<table>
<thead>
<tr>
<th>Distance (m)</th>
<th>Direction</th>
<th>Flow Type</th>
<th>Maximum Permeability</th>
<th>Minimum Permeability</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>On Site</td>
<td>Fracture</td>
<td>Very High</td>
<td>Very High</td>
</tr>
</tbody>
</table>

1.3.3 Faults

Are there any records of Faults within 500m of the study site boundary?  No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as Faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

* This includes an automatically generated 50m buffer zone around the site
1.4 Radon Data

1.4.1 Radon Affected Areas
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.

1.4.2 Radon Protection
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.
2 Ground Workings Map
2 Ground Workings

2.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure’s unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping.

Are there any Historical Surface Ground Working Features within 250m of the study site boundary?  Yes

The following Historical Surface Ground Working Features are provided by Groundsure:

<table>
<thead>
<tr>
<th>ID</th>
<th>Distance (m)</th>
<th>Direction</th>
<th>NGR</th>
<th>Use</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>105.0</td>
<td>S</td>
<td>557247 246255</td>
<td>Pond</td>
<td>1982</td>
</tr>
<tr>
<td>2</td>
<td>143.0</td>
<td>S</td>
<td>557293 246209</td>
<td>Pond</td>
<td>1982</td>
</tr>
</tbody>
</table>

2.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary?  No

Database searched and no data found.

2.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary?  Yes

The following Current Ground Workings information is provided by British Geological Survey:

<table>
<thead>
<tr>
<th>ID</th>
<th>Distance (m)</th>
<th>Direction</th>
<th>NGR</th>
<th>Commodity Produced</th>
<th>Pit Name</th>
<th>Type of working</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not shown</td>
<td>314.0</td>
<td>S</td>
<td>557339 246077</td>
<td>Sand &amp; Gravel</td>
<td>Barham Hall</td>
<td>A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site</td>
<td>Ceased</td>
</tr>
</tbody>
</table>
3 Mining, Extraction & Natural Cavities Map

Mking, Extraction and Natural Cavities Legend

Site Outline

Historical Mining
Non-Coal Mining Cavities
Natural Cavities

Search Buffers (m)
250
500

Non-Coal Mining

Highly likely
Likely
Unlikely
Highly unlikely
Rare

3 Mining, Extraction & Natural Cavities

3.1 Historical Mining
This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

3.2 Coal Mining
This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

3.3 Johnson Poole and Bloomer
This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

3.4 Non-Coal Mining
This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

<table>
<thead>
<tr>
<th>ID</th>
<th>Distance (m)</th>
<th>Direction</th>
<th>Name</th>
<th>Commodity</th>
<th>Assessment of likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.0</td>
<td>On Site</td>
<td>Not available</td>
<td>Chalk</td>
<td>Occasional minor mining may have occurred but of restricted extent.</td>
</tr>
</tbody>
</table>
3.5 Non-Coal Mining Cavities
This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled “Review of mining instability in Great Britain, 1990” PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

3.6 Natural Cavities
This dataset provides information based on Peter Brett Associates natural cavities database.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

3.7 Brine Extraction
This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

3.8 Gypsum Extraction
This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

3.9 Tin Mining
This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level.

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.
3.10 Clay Mining

This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.
4 Natural Ground Subsidence

4.1 Shrink-Swell Clay Map
4.2 Landslides Map
4.3 Ground Dissolution Soluble Rocks Map
4.4 Compressible Deposits Map
4.5 Collapsible Deposits Map

Collapsible Deposits Legend

Site Outline

Search Buffers (m)

- 125
- 250

Legend:

- No Data / Null
- Negligible
- Very Low
- Low
- Moderate
- High


Report Reference: EMS-296149_400443
Client Reference: EMS_296149_400443
4.6 Running Sand Map

Running Sand Legend

- Site Outline
- 125
- 250
- Search Buffers (m)
- No Data / Null
- Negligible
- Very Low
- Low
- Moderate
- High

4 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site* boundary? Moderate-High

4.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

<table>
<thead>
<tr>
<th>ID</th>
<th>Distance (m)</th>
<th>Direction</th>
<th>Hazard Rating</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.0</td>
<td>On Site</td>
<td>Very Low</td>
<td>Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.</td>
</tr>
<tr>
<td>2</td>
<td>0.0</td>
<td>On Site</td>
<td>Negligible</td>
<td>Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.</td>
</tr>
</tbody>
</table>

4.2 Landslides

The following Landslides information provided by the British Geological Survey:

<table>
<thead>
<tr>
<th>ID</th>
<th>Distance (m)</th>
<th>Direction</th>
<th>Hazard Rating</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.0</td>
<td>On Site</td>
<td>Very Low</td>
<td>Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.</td>
</tr>
<tr>
<td>2</td>
<td>0.0</td>
<td>On Site</td>
<td>Negligible</td>
<td>No indicators for slope instability identified. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.</td>
</tr>
</tbody>
</table>

* This includes an automatically generated 50m buffer zone around the site

Report Reference: EMS-296149_4D0443
Client Reference: EMS_296149_4D0443
4.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

<table>
<thead>
<tr>
<th>ID</th>
<th>Distance (m)</th>
<th>Direction</th>
<th>Hazard Rating</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.0</td>
<td>On Site</td>
<td>Negligible</td>
<td>Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.</td>
</tr>
<tr>
<td>2</td>
<td>0.0</td>
<td>On Site</td>
<td>Very Low</td>
<td>Significant soluble rocks are present. Problems unlikely except with considerable surface or subsurface water flow. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, or increased construction costs are likely. An increase in financial risk due to potential problems with soluble rocks is unlikely.</td>
</tr>
</tbody>
</table>

4.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

<table>
<thead>
<tr>
<th>ID</th>
<th>Distance (m)</th>
<th>Direction</th>
<th>Hazard Rating</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.0</td>
<td>On Site</td>
<td>Negligible</td>
<td>No indicators for compressible ground identified. No special actions required to avoid problems due to compressible ground. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible ground.</td>
</tr>
<tr>
<td>2</td>
<td>0.0</td>
<td>On Site</td>
<td>Moderate-High</td>
<td>Significant potential for compressibility problems. Do not drain, load or de-water ground near the property without technical advice. For new build, consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property, possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.</td>
</tr>
</tbody>
</table>

4.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

<table>
<thead>
<tr>
<th>ID</th>
<th>Distance (m)</th>
<th>Direction</th>
<th>Hazard Rating</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.0</td>
<td>On Site</td>
<td>Very Low</td>
<td>Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.</td>
</tr>
<tr>
<td>2</td>
<td>0.0</td>
<td>On Site</td>
<td>Negligible</td>
<td>No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.</td>
</tr>
</tbody>
</table>
4.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

<table>
<thead>
<tr>
<th>ID</th>
<th>Distance (m)</th>
<th>Direction</th>
<th>Hazard Rating</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.0</td>
<td>On Site</td>
<td>Negligible</td>
<td>No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.</td>
</tr>
<tr>
<td>2</td>
<td>0.0</td>
<td>On Site</td>
<td>Very Low</td>
<td>Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.</td>
</tr>
<tr>
<td>3</td>
<td>0.0</td>
<td>On Site</td>
<td>Low</td>
<td>Possibility of running sand problems after major changes in ground conditions. Normal maintenance to avoid leakage of water-bearing services or water bodies (ponds, swimming pools) should reduce likelihood of problems due to running sand. For new build, consider possibility of running sand into trenches or excavations if water table is high or sandy strata are exposed to water. Avoid concentrated water inputs to site. Unlikely to be an increase in construction costs due to potential for running sand. For existing property, no significant increase in insurance risk due to running sand problems is likely.</td>
</tr>
</tbody>
</table>
5 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary: 0

Database searched and no data found.
6 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary:

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geoinsight User Guide, available on request.

<table>
<thead>
<tr>
<th>Distance (m)</th>
<th>Direction</th>
<th>Sample Type</th>
<th>Arsenic (As)</th>
<th>Cadmium (Cd)</th>
<th>Chromium (Cr)</th>
<th>Nickel (Ni)</th>
<th>Lead (Pb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>On Site</td>
<td>RuralSoil</td>
<td>15 - 25 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>60 - 90 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>0.0</td>
<td>On Site</td>
<td>RuralSoil</td>
<td>15 - 25 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>40 - 60 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>0.0</td>
<td>On Site</td>
<td>RuralSoil</td>
<td>&lt;15 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>40 - 60 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>0.0</td>
<td>On Site</td>
<td>RuralSoil</td>
<td>&lt;15 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>40 - 60 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>38.0</td>
<td>W</td>
<td>RuralSoil</td>
<td>15 - 25 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>60 - 90 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>38.0</td>
<td>W</td>
<td>RuralSoil</td>
<td>15 - 25 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>60 - 90 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>59.0</td>
<td>NE</td>
<td>RuralSoil</td>
<td>&lt;15 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>40 - 60 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>66.0</td>
<td>NW</td>
<td>RuralSoil</td>
<td>15 - 25 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>60 - 90 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>77.0</td>
<td>NW</td>
<td>RuralSoil</td>
<td>15 - 25 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>60 - 90 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>80.0</td>
<td>NW</td>
<td>RuralSoil</td>
<td>&lt;15 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>40 - 60 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>81.0</td>
<td>E</td>
<td>RuralSoil</td>
<td>&lt;15 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>40 - 60 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>89.0</td>
<td>NE</td>
<td>RuralSoil</td>
<td>&lt;15 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>40 - 60 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>95.0</td>
<td>SW</td>
<td>RuralSoil</td>
<td>15 - 25 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>40 - 60 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>96.0</td>
<td>SW</td>
<td>RuralSoil</td>
<td>&lt;15 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>40 - 60 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>96.0</td>
<td>NE</td>
<td>RuralSoil</td>
<td>&lt;15 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>40 - 60 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>108.0</td>
<td>SE</td>
<td>RuralSoil</td>
<td>&lt;15 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>40 - 60 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>124.0</td>
<td>SE</td>
<td>RuralSoil</td>
<td>&lt;15 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>40 - 60 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>151.0</td>
<td>SE</td>
<td>RuralSoil</td>
<td>&lt;15 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>40 - 60 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
<tr>
<td>159.0</td>
<td>SW</td>
<td>RuralSoil</td>
<td>15 - 25 mg/kg</td>
<td>&lt;1.8 mg/kg</td>
<td>40 - 60 mg/kg</td>
<td>15 - 30 mg/kg</td>
<td>&lt;100 mg/kg</td>
</tr>
</tbody>
</table>

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.
7 Railways and Tunnels Map

Railways and Tunnels Legend

- Underground or Partially Underground Railway / Subway System
- Railway Track (OpenStreetMap)
- Railways and Tunnels from Historical Mapping
- Railway Track (OS Mapping)
- Crossrail
- High Speed 2
- Abandoned or Dismantled Railway (OpenStreetMap)
- Search Buffers (m)
- Site Outline


Report Reference: EMS-296149_400443
Client Reference: EMS_296149_400443
7 Railways and Tunnels

7.1 Tunnels
This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary? No
Have any underground railway lines been identified within 250m of the study site boundary? No
Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels Map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary? No
Have any other railway tunnels been identified within 250m of the site boundary? No
Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels Map.

7.2 Historical Railway and Tunnel Features
This data is derived from Groundsure’s unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? No
Have any historical railway or tunnel features been identified within 250m of the study site boundary? No
Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels Map.
7.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No
Have any historical railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Note: multiple sections of the same track may be listed in the detail above

Any records that have been identified are represented on the Railways and Tunnels Map.

7.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No
Have any active railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Note: multiple sections of the same track may be listed in the detail above

Any records that have been identified are represented on the Railways and Tunnels Map.

7.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail.

Is the study site within 5km of the route of the High Speed 2 rail project? No
Is the study site within 500m of the route of the Crossrail rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail Report.
Contact Details

EmapSite
Telephone: 0118 9736883
sales@emapsite.com

British Geological Survey Enquiries
Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email: enquiries@bgs.ac.uk
Web: www.bgs.ac.uk
BGS Geological Hazards Reports and general geological enquiries

British Gypsum
British Gypsum Ltd
East Leake
Loughborough
Leicestershire
LE12 6HX

The Coal Authority
200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Public Health England
Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
https://www.gov.uk/government/organisations/public-health-england
Email: enquiries@phe.gov.uk
Main switchboard: 020 7655 8000

Johnson Poole & Bloomer Limited
Harris and Pearson Building, Brettel Lane
Brierley Hill, West Midlands
DY5 3JH
Tel: +44 (0) 1384 262 000
Email: enquiries.jp@jpb.co.uk
Website: www.jpb.co.uk

Ordnance Survey
Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505
Website: http://www.ordnancesurvey.co.uk/

Getmapping PLC
Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444
Website: http://www1.getmapping.com/

Peter Brett Associates
Caversham Bridge House
Waterman Place
Reading
Berkshire RG1 8DN
Tel: +44 (0)118 950 0761 E-mail: reading@pba.co.uk
Website: http://www.peterbrett.com/home

Report Reference: EMS-296149_400443
Client Reference: EMS_296149_400443
Groundsreservedtherighttowithdrawanyquotationorproposalatany
timebeforeanOrderisacceptedbyGroundsures.Groundsures’acceptance
ofanOrderwillonlybethatmadeinwritingandsignedby
GroundsuresauthorisedrepresentativeorwhenacceptedthroughtheOrder
Website.

3 The Client’s obligations

3.1 The Client shall comply with the terms of this Contract and
(i) procure that the Beneficiary or any third party relying on the Services
complies with and acts as if it is bound by the Contract and
(b) be liable to Groundsures for the acts and omissions of the
Beneficiary or any third party relying on the Services as if such acts and
omissions were those of the Client.

3.2 The Client shall be solely responsible for ensuring that the Services
are appropriate and suitable for its and/or the Beneficiary’s needs.

3.3 The Client shall supply to Groundsures, as soon as practicable and
without charge all requisite information (and the Client warrants that such information
is accurate, complete and appropriate), including without limitation any
environmental information relating to the Site and shall give such assistance as
Groundsures shall reasonably require in the provision of the Services including,
without limitation, access to the Site, facilities and equipment.

3.4 Where the Client’s approval or decision is required to enable Groundsures
to carry out work in order to provide the Services, such approval or decision shall
be given or procured in reasonable time and so as not to delay or disrupt the
performance of the Services.

3.5 Save as expressly permitted by this Contract the Client shall not, and shall
prevent that the Beneficiary shall not, re-sell, alter, add to, or amend the
Groundsures Materials, or use the Groundsures Materials in a manner for
which they were not intended. The Client may make the Groundsures Materials
available to a third party who is considering acquiring some or all of, or
providing funding in relation to, the Site, but such third party cannot rely on the
same unless expressly permitted under clause 4.

3.6 The Client is responsible for maintaining the confidentiality of its user name
and password if using the Order Website and the Client acknowledges that
Groundsures accepts no liability of any kind for any loss or damage suffered by the
Client as a consequence of using the Order Website.

4 Reliance

4.1 The Client acknowledges that the Services provided by Groundsures consist
of an analysis of this Project from third party sources and other content and that
information obtained from a Third Party Data Provider cannot be
guaranteed or warranted by Groundsures to be reliable.

4.2 In respect of Data Reports, Mapping and Risk Screening Reports, the following
classes of person and no other are entitled to rely on their contents:
(i) the Client;
(ii) the Client's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or
as part of a lending syndicate),
(iv) the first purchaser or first tenant of the Site, and
(v) the professional advisers and lenders of the first purchaser
or tenant of the Site.

4.3 In respect of Support Services, only the Client, Beneficiary and parties
expressly named in a Report and no other parties are entitled to rely on its
contents.

4.4 The Client shall be entitled to use information as set out in clauses 4.2 and 4.3
and unless otherwise expressly agreed in writing, no other person or entity of any kind is entitled to rely on any Services or Report issued or provided by Groundsures. Any party considering such Reports and Services does so at their own risk.

5 Fees and Disbursements

5.1 Groundsures shall charge and the Client shall pay fees at the rate and
frequency specified in the written proposal, Order Website or Order
acknowledgement form, plus (in the case of Support Services) all proper
disbursements, incurred by Groundsures. The Client shall in addition pay all value
added tax or other tax payable on such fees and disbursements in relation to
the provision of the Services (together “Fees”).

5.2 The Client shall pay all outstanding Fees to Groundsures in full without
deduction, counterclaim or set off within 30 days of the date of Groundsures’
invoice or such other period as may be agreed in writing between Groundsures
and the Client (“Payment Date”). Interest on late payments will accrue on a
daily basis from the Payment Date until the date of payment (whether before or
after judgment) at the rate of 8% per annum.

5.3 The Client shall be deemed to have agreed the amount of any invoice unless
an objection is made in writing within 28 days of the date of the invoice. As soon as
reasonably practicable after being notified of an objection, without prejudice to
clause 5.2 a member of Groundsures’s management team will contact the
Client and the parties shall then use all reasonable endeavours to resolve the
dispute within 15 days.

6 Intellectual Property and Confidentiality

6.1 Subject to
(i) full payment of all relevant Fees and
(ii) compliance with this Contract, the Client is granted (and is permitted to sub-licence to the Beneficiary) a royalty-free, worldwide,
non-assignable and (save to the extent set out in this Contract) non-transferable licence to make use of the Groundsures Materials.

6.2 All Intellectual Property in the Groundsures Materials are and shall remain
owned by Groundsures or Groundsures’s licensors (including without limitation the Third Party Data Providers) the Client acknowledges, and shall procure

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Standard Terms and Conditions

1 Definitions

1.1 “Beneficiary” means the person or entity for whose benefit the Client has
obtained the Services.

1.2 “Client” means the party or parties entering into a Contract with Groundsures.

1.3 “Commercial” means any building or property which is not Residential.

1.4 “Confidential Information” means the contents of this Contract and all information
received from the Client as a result of, or in connection with, this Contract other than
(i) information which the Client can prove was rightfully in its possession prior to disclosure by Groundsures and
(ii) information which is in the public domain (other than by virtue of a breach of this Contract).

1.5 “Support Services” means Support Services provided by Groundsures including,
without limitation, interpreting third party and in-house environmental data,
providing environmental support advice, undertaking environmental audits and
assessments, site monitoring and related items.

1.6 “Contract” means the contract between Groundsures and the Client for the
provision of the Services, and which shall incorporate these terms and
conditions, the Order, and the relevant User Guide.

1.7 “Third Party Data Provider” means any third party providing Third Party
Data to Groundsures.

1.8 “Data Reports” means reports comprising factual data with no accompanying
interpretation.

1.9 “Fees” has the meaning set out in clause 5.1.

1.10 “Groundsures” means Groundsures Limited, a company registered in England
and Wales with a registered office at 69/70 Queen Victoria Street, London, EC4V 4HT.

1.11 “Groundsures Materials” means all materials prepared by Groundsures and
provided as part of the Services, including but not limited to Third Party
Content, Data Reports, Mapping, and Risk Screening Reports.

1.12 “Intellectual Property” means any patent, copyright, design rights, trade or
service mark, logo, database rights, trade secrets or any other proprietary
rights, know-how, trade mark or trade secret in each case whether registered or not and including applications for the same or any other
rights of a similar nature anywhere in the world.

1.13 “Mapping” means a map, map data or a combination of historical maps of
various ages, time periods and scales.

1.14 “Order” means an electronic written or other order form submitted by the
Client requesting Services from Groundsures in respect of a specified Site.

1.15 “Ordnance Survey” means the Secretary of State for Business, Innovation and
Skills, acting through Ordnance Survey, Adanagan Drive, Southampton, SO16
OAS, UK.

1.16 “Order Website” means the online platform through which Orders may be
placed by the Client and accepted by Groundsures.

1.17 “Report” means a Risk Screening Report or Data Report for Commercial or
Residential property.

1.18 “Residential” means any building or property used as or intended to be used as
a single dwelling.

1.19 “Risk Screening Report” means a risk screening report comprising factual data
with an accompanying interpretation by Groundsures.

1.20 “Services” means any Report, Mapping and/or Support Services which
Groundsures has agreed to provide by accepting an Order pursuant to clause
3.

1.21 “Site” means the area of land in respect of which the Client has requested
Groundsures to provide the Services.

1.22 “Third Party Content” means data, database information or other information
which is provided to Groundsures by a Third Party Data Provider.

2 Scope of Services, terms and conditions, requests for insurance and
quotations

2.1 Groundsures agrees to provide the Services in accordance with the Contract.

2.2 Groundsures shall exercise reasonable skill and care in the provision of the
Services.

2.3 Without prejudice to clause 7.3 the Client acknowledges that it has not relied on any
statement or representation made by or on behalf of Groundsures which is not
set out and expressly agreed in writing in the Contract and all such statements
and representations are hereby excluded to the fullest extent permitted by law.

2.4 The Client acknowledges that terms and conditions appearing on a Client’s order
Website or in a Client’s Site or in any other communication, or any terms or
conditions implied by custom, practice or course of dealing shall be of no effect,
and that this Contract shall prevail over all others in relation to the Order.

2.5 If the Client or Beneficiary requests insurance in conjunction with or as a
result of the Services, Groundsures shall use reasonable endeavours to
recommend such insurance, but makes no warranty that such insurance will
be available from insurers or that it will be offered on reasonable terms. Any
insurance purchased by the Client or Beneficiary shall be subject solely to the
terms of the policy issued by insurers and Groundsures will have no liability
therefor. In addition you acknowledge and agree that Groundsures does not act as
an agent or broker for any insurance providers. The Client should (and
even if the Beneficiary takes) independent advice to ensure that the
insurance policy requested or offered is suitable for its requirements.

2.6 Groundsures’s quotations or proposals are valid for a period of 30 days only
unless an alternative period of time is explicitly stipulated by Groundsures.

---
8 Groundsure’s right to suspend or terminate

8.1 If Groundsure reasonably believes that the Client or Beneficiary has not provided the information or assistance required to enable the proper provision of the Services, Groundsure shall be entitled to suspend all or any part of the performance of the Services until such time as any such deficiency has been made good.

8.2 Groundsure shall be entitled to terminate the Contract immediately on written notice in the event that:

(i) the Client fails to pay any sum due to Groundsure within 30 days of the Payment Notice; or

(ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an administration order made against it or if a receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved;

(iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986; or

(iv) the Client shall enter into any arrangement with the Client’s creditors under or for the benefit of which such creditor shall suffer distress or execution to be levied on his goods; or

(v) the Client or the Beneficiary breaches any term of the Contract (including, but not limited to, the obligations in clause 4) which is incapable of remedy or if remediable, is not remedied within five days of notice of the breach.

9. Client’s Right to Terminate and Suspend

9.1 Subject to clause 10.1, the Client may at any time upon written notice terminate or suspend the provision of all or any of the Services.

9.2 In any event, where the Client is a consumer (and not a business) he/she hereby expressly acknowledges and agrees that:

(i) the supply of Services under this Contract (and therefore the performance of this Contract) commences immediately upon Groundsure’s acceptance of the Order; and

(ii) the Reports and/or Mapping provided under this Contract are

(a) supplied to the Client’s specification(s) and in any event

(b) by their nature cannot be returned.

10 Consequences of Withdrawal, Termination or Suspension

10.1 Upon termination of the Contract:

Groundsure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client and/or Beneficiary any property of the Client and/or Beneficiary in Groundsure’s possession or control; and

(iii) the Client shall pay to Groundsure all and any Fees payable in respect of the Services up to the date of termination or suspension. In respect of any Support Services provided, the Client shall also pay Groundsure any additional costs incurred in relation to the termination or suspension of the Contract.

11 Anti-Bribery

11.1 The Client warrants that it shall:

(i) comply with all applicable laws, statutes and regulations relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010;

(ii) comply with such of Groundsure’s anti-bribery and anti-corruption policies as are notified to the Client from time to time; and

(iii) promptly report to Groundsure any request or demand for any undue financial or other advantage of any kind received by or on behalf of the Client in connection with the performance of this Contract.

11.2 Breach of this Clause 11 shall be deemed a material breach of this Contract.

12 General

12.1 The Mapping contained in the Services is protected by Crown copyright and must not be used for any purpose other than as part of the Services or as specifically provided in the Contract.

12.2 The Client shall be permitted to make one copy only of each Report or Mapping Order. Thereafter the Client shall be entitled to make unlimited copies of the Report or Mapping Order only in accordance with an Ordinance Survey map copy license available through Groundsure.

12.3 Groundsure reserves the right to amend or vary this Contract. No amendment or variation to this Contract shall be valid unless signed by an authorised representative of Groundsure.

12.4 No failure on the part of Groundsure to exercise, and no delay in exercising, any right, power or provision under this Contract shall operate as a waiver thereof.

12.5 Save as expressly provided in this Contract, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.

12.6 The Secretary of State for Business, Innovation and Skills (“BIS”) or BIS’ successor body, as the case may be, acting through Ordinance Survey may exercise a breach of clause 6.4(v) and clause 6.4(vi) of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.

12.7 Groundsure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:

acknowledgement by the Beneficiary of, such ownership. Nothing in this Contract purports to transfer or assign any rights to the Client or the Beneficiary in respect of such Intellectual Property.

6.3 Third Party Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client shall, and shall procure that any recipients of the Groundsure Materials shall:

(i) not remove, suppress or modify any trade mark, copyright or other proprietary marking belonging to Groundsure or any third party from the Services;

(ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;

(iii) not create any product or report which is derived directly or indirectly from the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);

(iv) not combine the Services with or incorporate such Services into any other information data or service;

(v) not reformat or otherwise change (whether by modification, addition or enhancement), the Services (save that those acting for the Beneficiary in a professional capacity shall not be in breach of this clause 6.4(v) where such reformatting is in the normal course of providing advice based upon the Services);

(vi) where a Report and/or Mapping contains material belonging to Ordinance Survey, acknowledge and agree that such content is protected by Crown Copyright and shall not use such content for any purpose outside of receiving the Services; and

(vii) not reproduce (in whole or in part) any means any map prints or run-on copies containing content belonging to Ordinance Survey (other than that contained within Ordinance Survey’s OS Street Map) without first being in possession of a valid Paper Map Copying Licence from Ordinance Survey.

6.5 Notwithstanding clause 6.4, the Client may make reasonable use of the Groundsure Materials in order to advise the Beneficiary in a professional capacity. However, Groundsure shall have no liability in respect of any advice, opinion or report given or provided to Beneficiaries by the Client.

6.6 The Client shall procure that any person to whom the Services are made available shall notify Groundsure of any request or requirement to disclose, publish or republish any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.

7. Liability: Particular Attention Should Be Paid To This Clause

7.1 This Clause 7 sets out the entire liability of Groundsure, including any liability for the acts or omissions of its employees, agents, consultants, subcontractors and Third Party Content, in respect of:

(i) any breach of contract, including any deliberate breach of the Contract by Groundsure or its employees, agents or subcontractors;

(ii) any use made of the Reports, Services, Materials or any part of them; and

(iii) any representation, statement or tortious act or omission (including negligence) arising under or in connection with the Contract.

7.2 All warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from the Contract.

7.3 Nothing in the Contract limits or excludes the liability of the Supplier for death or personal injury resulting from negligence, or for any damage or liability incurred by the Client or Beneficiary as a result of fraud or fraudulent misrepresentation.

7.4 Groundsure shall not be liable for

(i) loss of profits;

(ii) loss of business;

(iii) depletion of goodwill and/or similar losses;

(iv) loss of anticipated savings;

(v) loss of goodwill;

(vi) loss of contract;

(vii) loss of use;

(viii) loss or corruption of data or information;

(ix) business interruption;

(x) any kind of special, indirect, consequential or pure economic loss, costs, expenses, charges or expenses;

(xi) loss or damage that arise as a result of the use of any or part of the Groundsure Materials in breach of the Contract;

(xii) loss or damage arising as a result of any error, omission or inaccuracy in any part of the Groundsure Materials where such error, omission or inaccuracy is caused by any Third Party Content or any reasonable interpretation of Third Party Content;

(xiii) loss or damage to a computer, software, modem, telephone or other property; and

(xiv) loss or damage caused by a delay or loss of use of Groundsure’s internet ordering service.

7.5 Groundsure’s total liability in relation to or under the Contract shall be limited to £10 million for any claim or claims.

7.6 Groundsure shall procure that the Beneficiary shall be bound by limitations and exclusions of liability in favour of Groundsure which accord with those detailed in clauses 7.4 and 7.5 (subject to clause 7.3) in respect of all claims which the Beneficiary may bring against Groundsure in relation to the Services or other matters arising pursuant to the Contract.
the Client or Beneficiary’s failure to provide facilities, access or information;

(ii) fire, storm, flood, tempest or epidemic;

(iii) Acts of God or the public enemy;

(iv) riot, civil commotion or war;

(v) strikes, labour disputes or industrial action;

(vi) acts or regulations of any governmental or other agency;

(vii) suspension or delay of services at public registries by Third Party Data Providers;

(viii) changes in law; or

(ix) any other reason beyond Groundsure’s reasonable control.

In the event that Groundsure is prevented from performing the Services (or any part thereof) in accordance with this clause 12.6 for a period of not less than 30 days then Groundsure shall be entitled to terminate this Contract immediately on written notice to the Client.

12.8 Any notice provided shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.

12.9 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email (save to the extent such day is not a working day where it shall be deemed to have been delivered on the next working day) and on the second working day after the day of posting if sent by first class post.

12.10 The Contract constitutes the entire agreement between the parties and shall supersede all previous arrangements between the parties relating to the subject matter hereof.

12.11 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.

12.12 This Contract shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with this Contract shall be subject to the exclusive jurisdiction of the English courts.

12.13 Groundsure is an executive member of the Council of Property Search Organisation (CoPSO) and has signed up to the Search Code administered by the Property Codes Compliance Board (PCCB). All Risk Screening Reports shall be supplied in accordance with the provisions of the Search Code.

12.14 If the Client or Beneficiary has a complaint about the Services, written notice should be given to the Compliance Officer at Groundsure who will respond in a timely manner.

12.15 The Client agrees that it shall, and shall procure that each Beneficiary shall, treat in confidence all Confidential Information and shall not, and shall procure that each Beneficiary shall not (i) disclose any Confidential Information to any third party other than in accordance with the terms of this Contract; and (ii) use Confidential Information for a purpose other than the exercise of its rights and obligations under this Contract. Subject to clause 6.6, nothing shall prevent the Client or any Beneficiary from disclosing Confidential Information to the extent required by law.

© Groundsure Limited June 2013
Groundsure Enviroinsight

Address: ,

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the Groundsure Enviroinsight as requested.

If you would like further assistance regarding this report then please contact the emapsite customer services team on 0118 9736883 quoting the above report reference number.

Yours faithfully,

emapsite customer services team

Enc.
Groundsure Enviroinsight
Groundsure Enviroinsight

Address: 
Date: 31 Mar 2015
Reference: EMS-296149_400444
Client: EmapSite

Aerial Photograph Capture date: 01-Aug-2013
Grid Reference: 557224,246480
Site Size: 4.76ha
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### Section 2: Landfill and Other Waste Sites

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<td>Records of Petrol and Fuel Sites</td>
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### Section 4: Geology

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

### Section 5: Hydrogeology and Hydrology

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</tr>
<tr>
<td>5.6</td>
<td>Source Protection Zones (within 500m of the study site)</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>5.7</td>
<td>Source Protection Zones within Confined Aquifer</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5.8</td>
<td>Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5.9</td>
<td>Is there any Environment Agency information on river quality within 1500m of the study site?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>5.10</td>
<td>Detailed River Network entries within 500m of the site</td>
<td>0</td>
<td>2</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>5.11</td>
<td>Surface water features within 250m of the study site</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Not searched</td>
</tr>
</tbody>
</table>
## Section 6: Flooding

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Are there any Environment Agency Zone 2 floodplains within 250m of the study site?</td>
<td>Yes</td>
</tr>
<tr>
<td>6.2 Are there any Environment Agency Zone 3 floodplains within 250m of the study site?</td>
<td>Yes</td>
</tr>
<tr>
<td>6.3 Are there any Flood Defences within 250m of the study site?</td>
<td>No</td>
</tr>
<tr>
<td>6.4 Are there any areas benefiting from Flood Defences within 250m of the study site?</td>
<td>No</td>
</tr>
<tr>
<td>6.5 Are there any areas used for Flood Storage within 250m of the study site?</td>
<td>No</td>
</tr>
<tr>
<td>6.6 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?</td>
<td>Potential at Surface</td>
</tr>
<tr>
<td>6.7 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?</td>
<td>High</td>
</tr>
</tbody>
</table>

## Section 7: Designated Environmentally Sensitive Sites

<table>
<thead>
<tr>
<th>Sensitive Site</th>
<th>On-site</th>
<th>0-50m</th>
<th>51-250</th>
<th>251-500</th>
<th>501-1000</th>
<th>1000+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Records of Sites of Special Scientific Interest (SSSI)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Records of National Nature Reserves (NNR)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Records of Special Areas of Conservation (SAC)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Records of Special Protection Areas (SPA)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Records of Ramsar sites</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Records of Ancient Woodlands</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Records of Local Nature Reserves (LNR)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Records of World Heritage Sites</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Records of Environmentally Sensitive Areas</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Records of Areas of Outstanding Natural Beauty (AONB)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Records of National Parks</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Records of Nitrate Sensitive Areas</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Records of Nitrate Vulnerable Zones</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Records of Green Belt Data</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
## Section 8: Natural Hazards

8.1 What is the maximum risk of natural ground subsidence? Moderate

8.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site? Very Low

8.1.2 What is the maximum Landslides hazard rating identified on the study site? Very Low

8.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site? Very Low

8.1.4 What is the maximum Compressible Ground hazard rating identified on the study site? Moderate

8.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site? Very Low

8.1.6 What is the maximum Running Sand hazard rating identified on the study site? Low

## Section 9: Mining

9.1 Are there any coal mining areas within 75m of the study site? No

9.2 What is the risk of subsidence relating to shallow mining within 150m of the study site? Low

9.3 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. 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.

2. 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.

3. 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 underground oil and gas pipelines.

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

5. 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.

6. Flooding
   Provides information on surface water flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

7. 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.

8. 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.

9. Mining
   Provides information on areas of coal and shallow mining.

10. 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. Environmental Permits, Incidents and Registers Map

Environmental Permits, Incidents and Registers Legend

- Site Outline
- Search Buffers (m)
- 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 / NI-HHS Sites
- Sites Determined as Contaminated Land
- Hazardous Substance Consents and Enforcements


Report Reference: EMS-296149_400444
Client Reference: EMS_296149_400444
1. Environmental Permits, Incidents and Registers

1.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency and Local Authorities reveal the following information:

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

Database searched and no data found.

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

Database searched and no data found.

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

Database searched and no data found.

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

Database searched and no data found.

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

Database searched and no data found.
1.1.6 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

The following List 2 Dangerous Substance Inventory Site records are represented as points on the Environmental Permits, Incidents and Registers Map:

<table>
<thead>
<tr>
<th>ID</th>
<th>Distance</th>
<th>Direction</th>
<th>NGR</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>466.0</td>
<td>SE</td>
<td>557800</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>246300</td>
<td>Name: Shaw Services &amp; Associated Companies</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Status: Not Active</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Receiving Water: Na</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Authorised Substances: pH</td>
</tr>
</tbody>
</table>

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

Database searched and no data found.

1.1.8 Records of Category 3 or 4 Radioactive Substances Authorisations:

Database searched and no data found.

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

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

<table>
<thead>
<tr>
<th>ID</th>
<th>Distance</th>
<th>Direction</th>
<th>NGR</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>332.0</td>
<td>N</td>
<td>557233</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>246944</td>
<td>Address: Wheatsheaf Farm Buildings, Horseheath Rd, Linton, Cambridgeshire, CB21 4LT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Effluent Type: Sewage Discharges - Final/treated Effluent - Not Water Company</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Permit Number: PR1LF2132</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Permit Version: 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Receiving Water: Into Land</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Status: Pre Nra Legislation Where Issue Date &lt; 01-sep-89 (historic Only)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Issue date: 30/9/1985</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Effective Date: 30/9/1985</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Revocation Date: 1/10/1996</td>
</tr>
</tbody>
</table>

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

Database searched and no data found.
1.2 Dangerous or Hazardous Sites

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

Database searched and no data found.

1.3 Environment Agency Recorded Pollution Incidents

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

Database searched and no data found.

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

Database searched and no data found.

1.4 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?

Database searched and no data found.
2. Landfill and Other Waste Sites Map

Landfill and Other Waste Sites Map

Legend:
- Site Outline
- E.A. Active Landfill
- Historic and Planned Waste Sites
- E.A. Historic Landfill
- E.A. Licensed Waste Site
- Local Authority Landfill
- BGS / DoE Survey Landfill


Report Reference: EMS-296149_400444
Client Reference: EMS_296149_400444
2. Landfill and Other Waste Sites

2.1 Landfill Sites

2.1.1 Records from Environment Agency landfill data within 1000m of the study site:

Database searched and no data found.

2.1.2 Records of Environment Agency historic landfill sites within 1500m of the study site:

Database searched and no data found.

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

Database searched and no data found.

2.1.4 Records of Local Authority landfill sites within 1500m of the study site:

Database searched and no data found.

2.2 Other Waste Sites

2.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

Database searched and no data found.
2.2.2 Records of Environment Agency licensed waste sites within 1500m of the study site:

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

<table>
<thead>
<tr>
<th>ID</th>
<th>Distance (m)</th>
<th>Direction</th>
<th>NGR</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not shown</td>
<td>884.0</td>
<td>N</td>
<td>557200 247500</td>
<td>Site Address: Hill View, Balsham Road, Linton, Cambridgeshire, CB1 6LD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Type: Metal Recycling Site (mixed MRS's)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Size: &lt; 25000 tonnes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Environmental Permitting Regulations (Waste) Licence Number: SM1002</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EPR reference: EA/EPR/QP3592NT/A001</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Operator: Smith</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Waste Management licence No: 75056</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Annual Tonnage: 25000.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Issue Date: 22/11/2000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Effective Date: -</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Modified: -</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Surrendered Date: -</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Expiry Date: -</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cancelled Date: -</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Status: Issued</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Site Name: W Smith Scrap Metals - Linton</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Correspondence Address: -</td>
</tr>
</tbody>
</table>
3. Current Land Use Map
3. Current Land Uses

3.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site:

The following records are represented as points on the Current Land Uses map.

<table>
<thead>
<tr>
<th>ID</th>
<th>Distance (m)</th>
<th>Direction</th>
<th>Company</th>
<th>NGR</th>
<th>Address</th>
<th>Activity</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.0</td>
<td>On Site</td>
<td>Electricity Sub Station</td>
<td>CB21</td>
<td>Electrical Features</td>
<td>Infrastructure and Facilities</td>
<td></td>
</tr>
<tr>
<td>2A</td>
<td>26.0</td>
<td>NE</td>
<td>Gas Governor Station</td>
<td>CB21</td>
<td>Gas Features</td>
<td>Infrastructure and Facilities</td>
<td></td>
</tr>
<tr>
<td>3A</td>
<td>26.0</td>
<td>NE</td>
<td>Gas Governor Station</td>
<td>CB21</td>
<td>Gas Features</td>
<td>Infrastructure and Facilities</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>84.0</td>
<td>NW</td>
<td>Avalon Aerospace Ltd</td>
<td>557045 246594</td>
<td>62, Bartlow Road, Linton, Cambridge, CB21 4LY</td>
<td>Aeroplanes</td>
<td>Industrial Products</td>
</tr>
</tbody>
</table>

3.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site:

Database searched and no data found.

3.3 Underground High Pressure Oil and Gas Pipelines

Records of high pressure underground pipelines within 500m of the study site:

Database searched and no data found.
4. Geology

4.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

4.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

<table>
<thead>
<tr>
<th>Lex Code</th>
<th>Description</th>
<th>Rock Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALV</td>
<td>ALLUVIUM</td>
<td>CLAY, SILT, SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]</td>
</tr>
<tr>
<td>T1T2</td>
<td>RIVER TERRACE DEPOSITS, 1 TO 2</td>
<td>SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]</td>
</tr>
</tbody>
</table>

4.3 Bedrock and Solid Geology

The database has been searched on site, including a 50m buffer.

<table>
<thead>
<tr>
<th>Lex Code</th>
<th>Description</th>
<th>Rock Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPCH-CHLK</td>
<td>NEW PIT CHALK FORMATION</td>
<td>CHALK</td>
</tr>
</tbody>
</table>

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)
5. Hydrogeology and Hydrology
5a. Aquifer Within Superficial Geology

Aquifer Within Superficial Geology

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Site Outline
Principal Aquifer
Secondary (A) Aquifer - Permeable Layers
Secondary (B) Aquifer - Lower Permeability Layers
Secondary Aquifer - Undifferentiated Layers
Unproductive
Unknown (lakes and landdrig)
5b. Aquifer Within Bedrock Geology and Abstraction Licenses

Aquifer Within Bedrock Geology and Abstraction Licenses

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Site Outline

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

Secondary (B) Aquifer - Lower Permeability Layers

Groundwater Abstraction License

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

Surface Water Abstraction Licence

Report Reference: EMS-296149_400444
Client Reference: EMS_296149_400444
5c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses

Map Legend

Source Protection Zones and Potable Water Abstraction Licenses

- Site Outline
- Search Buffers (m)
- Source Protection Zone 1 - Inner Catchment
- Source Protection Zone 2 - Outer Catchment
- Source Protection Zone 3 - Total Catchment
- Source Protection Zone 4 - Zone of Special Interest

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