



Contaminated Land Phase One Desk Study for proposed residential development at 767 Market Street, Whitworth, Rochdale, OL12 8LS.

Prepared for

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Summary

This report consists of a phase one contaminated land desk study produced in support of the discharge of a planning condition attached to permission 2022/0075 for the conversion to residential dwelling of a stable at 767 Market Street, Whitworth, Rochdale, OL12 8LS.

Following the site walkover and review of the available information it has been concluded that there is a slim chance of ground gas being present from nearby filled sites over 50 years ago, as such basic gas protection measures are recommended.

The report further recommends that a watching brief is maintained throughout the construction of the new dwellings and any signs of potential contamination found are fully investigated, with appropriate remedial action taken as necessary.



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Introduction

Martin Environmental Solutions has been commissioned, to carry out a phase one contaminated land desk study report in relation to a proposed residential development at 767 Market Street, Whitworth, Rochdale, OL12 8LS.

Aims and Objectives of the report

The aims and objectives of this report are as follows:

- Assess the likelihood of contamination affecting the site,
- Identify any likely receptors to be affected by the potential contamination,
- Identify the pathways by which the receptors will be exposed to any potential contamination,
- Identify any areas where further investigation will be required.

Scope of works

This report has been written in line with the 'BS 10175: 2011+A2: 2017 Investigation of potentially contaminated sites – Code of Practice' and Land Contamination Risk Management (LCRM).

The scope of this report covers the phase one desk study only. It will look at relevant information on: -

- the history of the site and surrounding area,
- the current use of the site and surrounding area,
- the geology and hydrogeology of the area,

A site walk-over survey has been undertaken in addition to consultations with the existing site owner, to identify any potential contamination issues.

Evaluation of the above information will be used to construct an initial conceptual model as appropriate, with the identification of any additional investigations that may be required.



The Site:

Site Address: 767 Market Street, Whitworth, Rochdale, OL12 8LS.

Grid reference: 388804; 419218

An aerial photograph of the site is included in Figure 1.

Current Site use:

The development site currently consists of a two-storey former stable building to the rear of 767 Market Street, accessed via a shared driveway with the property. The existing dwelling lies to the east of the site forming the end of a terrace row of properties stretching to the south, beyond which are more residential properties and these continue around to the northwest of the site. To the immediate north is an open park area. The main road runs to the east beyond which area additional residential properties and open agricultural land.

Research

Details of Research

This report has been based on information gathered from a number of reputable sources, covering details:

- on the historic and current use of the site,
- any known waste disposal activities in the area,
- any regulated industrial activities within the vicinity of the site including recorded industrial accidents,
- on the geology, hydrogeology, hydrology of the area,
- identification of any environmentally sensitive sites,
- any natural hazards.

Principle sources of this information have been:

- environmental data from Groundsure Limited
- the Local Planning Authority,
- historic maps (Groundsure Ltd),
- site walk-over survey and discussion with the current owners.



Site History

Information on the historic uses of the site has been obtained from historic mapping information (Appendix 2), and environmental data from Groundsure Limited.

Mapping Year	Changes on Site	Changes off Site
1851	The site forms part of a larger field	To the northeast on the far side of the road is a small smithy. The Leavengreave Cotton Mill is located 200m north of the site with a gasometer and reservoir. The River Spodden runs to the west of the site in a north/south direction. To the south an Inn with two cotton mills beyond ~250m away on each side of the road. Another gasometer is located to the south and both have reservoirs. The remaining area is primarily agricultural.
1891-92	The stable building has been built to the south of the site.	Terrace properties have been built to the southeast of the site, including 767 Market Street. The smithy is no longer shown, a school is located to the north adjacent to the New St Johns Church, Terrace properties are also shown along the roadside with the Mill to the rear. A quarry is present to the north of the school and east of the housing. To the west a railway line was built and Facit Station is located 120m southwest of the site, just north of the mill. A goods Shed is shown beyond this and a tramway heading west. Additional properties have been built in the area between the site, the station and the mill in the south. Further quarries are shown over 500m to the southeast. A tank is present at Facit Mill to the southeast of the site.
1905-12	No Change	Leavengreaves Mill is Disused and the both the reservoir and quarry are labelled as 'old'. No other significant changes are shown.



1929-31	No Change	A refuse tip is shown 100m to the north of the site. The mill buildings to the north have been demolished and to the north east over 500m away additional quarries are shown.
1938	No Change	The quarries to the north area now 'old' Additional residential properties are being built to the immediate west of the site. A tank is shown along the railway line southwest of the site
1956	No Change	No Significant Changes
1964-68	No Change	The quarry to the south is now disused. The area of the 'tank' to the southeast has been built over.
1976-83	No Change	The area to the immediate north of the site is now identified as Jubilee Walk. The railway has gone and the station and goods shed identified as works. More housing to the south in the wider area.
1992-93	No Change	No Significant Changes
2001-03	No Change	No Significant Changes
2010-20	No change	No Significant Changes, the mill to the south is identified as works and some demolition has occurred.
Aerial Photographs	No Change	Part of the Soddan Mill to the south is demolished in 2003



Regulatory Information

Relevant information obtained from the Groundsure report (Appendix 1) is summarised below.

There are no permitted activities has been identified within 500m of the site as defined in the Environmental Permitting (England and Wales) Regulations 2016 or previous legislation.

No pollution incidents have been identified and no discharge consents are reported.

Between June 2001 and January 2018, Bardon aggregates discharged to the public sewer a pollutant. This was located 121m northwest of the site, the same company also held mercury and cadmium on site 271m northwest and the substances were listed as list 1 dangerous substances.

The above identified site is unlikely to impact on the development site.

No active landfill site records have been found in the area, nine historic landfill records have been identified relating to the refuse tip 94m north of the site, and another 200-270m south. The one to the south has not been confirmed and is located on the site of the former mill/reservoir, which at the time is identified as water on the maps. Other sites located +270m north are located on the site of the former mill and again not identified from the mapping. The site to the north operated from January 1960 to December 1973.

A waste transfer station was located 144m south of the site.

13 current potentially contaminative sites have been identified, these include;

An electricity substation 67m southwest, 131m west of the site

A ductwork company 98m west

'Works' located 120m west, 163m west177m south and 244m south.

A studio 170m south

Tanks located 141m southwest and 173m south

Garden shed sales 170m south

The Fudge Factory 196m south and

An engineer's 245m south.



The above sites are unlikely to impact on the site.

Historical potentially contaminative land uses have been identified within 250m of the site from the purchased information; most of these have been identified from the historical mapping and include:

The mills 77m south, 83m north and 96m southwest & associated reservoirs

The refuse heap 91m north

Railway sidings 79m west, and station 131msouthwest and good shed143m southwest

The quarry 109m north

The gasometer 147m northwest

The tank to the southeast 164m



Geology and Hydrogeology

Information from the British Geology Survey 1:50,000 mapping identifies the bedrock in the area as Rossendale Formation, Millstone Grit Group of Mudstone and Siltstone overlaid with Till, Devensian and Diamicton deposits.

The information obtained on the hydrogeology of the area identifies the site as having a Secondary A aquifer in the bedrock capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers, with a Secondary undifferentiated aquifer in the superficial layer.

A total of 14 groundwater abstraction licenses have been identified, all of which are historical and located 84m east, 757m 1048m, 1307m, and 1418m south, 1579m north, 1616m south of the site.

Seven surface water abstraction licenses are identified. The only active site is located 864m southwest at Spring Mill Reservoir for United Utilities.

The site is not located within a Source Protection Zone.

The Groundwater vulnerability is described as high within the surface and bedrock layers and medium in the superficial layers.

Hydrology

The only watercourses identified are the River Seddon, the nearest point being 115m west of the site. This runs from the north to the south and is fairly straight.

The site is not within a floodplain, and the risk of flooding is classified as low.

Environmental Sensitivity

The site lies 8m south of the Merseyside and Greater Manchester Greenbelt.

The property is in an area identified as having between 5% -10% of properties above the action level of 200 Becquerel's per cubic metre, based on specific property search. Basic radon protection measures are required in line with BR211.

No additional natural hazards have been identified & the site has very low/negligible risk of shrink swell, running sand, and compressible ground. Moderate for landslides.

There are no mining activities identified in the immediate area although the site is located within a coal mining area as identified by the Coal Authority.



Site Walkover

A site walkover was undertaken on the 17th October 2022 and confirmed much of what had already been identified from the information obtained on the site. The photographs in Appendix 3 provide some indication of the current layout and condition of the site.

The site is accessed from Market Street to the east of the site. Existing housing lie to either east, south and west and northwest of the site. Jubilee park lies to the north with a steep banking down to the park.

The site 'L' shaped with the northern section forming the access and future car parking area.

In the centre is the stable block to be converted. This is a two-storey building with a slate roof and floor. The flooring is to be replaced as part of the conversion.

To the south is a small overgrown garden area.

No signs of contamination, discoloration or olfactory evidence, dead or dying vegetation were seen during the walkover.

The current owners are unaware of any issues on site which could have led to contamination and the site has been used as a garden since the property was purchased.



Conclusions

Potential Contaminants

Following a review of the information gathered on the history of the site and the surrounding area and following the site walk-over survey there are no contaminants identified on site that are likely to present a significant possibility of significant harm to any identified receptor.

Off site there are a number of locations within 250m of the site that may have been infilled at some point, along with a refuse tip to the north in the 1960's-70's. It is unlikely that after 50 years this small site would still be generating any ground gas but there is a slim risk of ground gas from these nearby sites affecting the property.

Receptors and Pathways

Potential receptors which may be affected by any unknown contamination on site will include:

- Construction workers who are likely to be affected by any potential contamination as they will initially be working in the ground and are likely to be the ones who unearth any potential contaminants.
- Future users of the site, including residents, staff and visitors to the site. For the purpose of evaluating any effects from any contamination found during any intrusive investigation future users/visitors to the site should be regarded as the 0-6-year-old female child.
- Any building on site e.g., foundations which may be attacked by any contaminants in the ground or services.
- The underlying groundwater which may be contaminated by migrating pollutants present on the site. There is also the potential for further pollution of the groundwater or the watercourse from disturbing any potential contaminants on site.

The pathways by which these receptors may be exposed to any unforeseen potential contamination will include:



Construction workers

- Inhalation, of gases or vapours released during ground work or fine particles.
- Ingestion of the contaminants, principally from cross contamination with contaminated soil and inadequate hand washing before smoking and eating.
- Absorption through the skin following contact with contaminated soil.

Future users and visitors

- Inhalations of gas/vapours or fibres, particularly if these are allowed to enter the new structures through the ground and build up in an enclosed area.
- Ingestion of contaminants, through the ingestion of contaminated soil from the garden area via direct contact, e.g., playing in the garden.
- Absorption of contaminants from dermal contact with contaminated soil.

Buildings

Contaminants on site have the potential to affect the foundations to the new building or the services supplying it.

Watercourses

As discussed above, if they exist on site, there is a potential for any contaminants to migrate through the ground into the groundwater and aquifer or via run-off into the watercourse.

Neighbouring sites

If present on site contaminants have the potential to migrate to neighbouring sites through ground water or air blown transfer.



Conceptual Model

The table represents a basic conceptual model. It highlights the potential sources of pollutants identified from the gathered information, and potential pathways in which any contaminants could reach the identified receptors.

Pathway	Description	Identified sources	Receptor at risk	Likelihood
1	Run off and seepage into groundwater from any spillages	-	Watercourse/ Environment	V Low
2	Migration of gases into the building.	Infilled / made ground	Future users	Medium,
3	Inhalation of gases/ vapours outside	-	Construction workers/future users	V Low
4	Inhalation of fine particles	-	Construction workers/future users	V Low
5	Direct ingestion of contaminated soil	-	Construction workers	V Low
6	In-direct ingestion of contaminated soil	-	Future users	V Low
7	Absorption via direct dermal contact with contaminated soil	-	Construction workers/future users	V Low



Recommendations

As a result of the investigation into the historical use of the site and surrounding area the site has been identified as being potentially at risk from ground gas emissions entering the property.

As such it is recommended that basic gas protection measures are installed within the development in the form of a gas protection membrane.

It is further recommended that a watching brief is maintained throughout the construction of the new building and any signs of potential contamination found are fully investigated, with appropriate remedial action taken as necessary and the local planning authority informed of the findings.

Figure 1 - Aerial Photograph





Appendix 1 – Groundsure Data



Appendix 2 – Historical Mapping

Appendix 3 – Site Walkover Photographs

Access to the site from the main road





The rear "Garden", plus a trench that has been dug showing the topsoil.







Inside the building ground floor



First floor





Appendix 4 Report limitations and exclusions

Basis of Risk Assessment

The methods used follow a risk-based approach with the potential risk assessed using the 'Source – pathway – receptor pollution linkage concept.

Limitations and Exceptions of this Report

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This report is prepared and written in the context of the purposes stated above and should not be used in a different context. Furthermore, new information, improved practices and legislation may necessitate an alteration to this report in whole or in part after its submission.

The conclusions and recommendations of this report are based on the development described, for any other development the report may require revision.

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The report should be read in its entirety, including all associated drawings and appendices.

Martin Environmental Solutions cannot be held responsible for any misinterpretations arising from the use of extracts that are taken out of context.

This report does not comprise a geotechnical assessment of the strata underlying the site.

Any borehole data from the British Geological Survey sources is included on the following basis: 'The British Geological Survey accept no responsibility for omissions or misinterpretations of the data from their Data Bank as this may be old or obtained from non-BGS sources and may not represent current interpretation'.

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Any risks identified in a Phase I Desk Study Report are perceived risks. Actual risks can only be assessed following a physical investigation of the site.

The findings of this report are based on finite information obtained from research and consultations. Martin Environmental Solutions cannot guarantee the reliability of all such information and the searches should not be considered exhaustive. The findings of the report may need to be reviewed as any future exploratory investigations progress and in the event that additional archive information becomes available.

Notwithstanding the findings of this study (and any subsequent investigations), if any indication of contaminated soil (visual or olfactory) is encountered at any stage of the development further investigation may be required.



Arboricultural Survey and advice on arboricultural issues are considered to be outside the scope of this report except for their effect on the foundations to the proposed buildings.

Where identification of any species is made, especially invasive plants such as Japanese Knotweed, Himalayan Balsam or Giant Hogweed, this should only be considered as a preliminary assessment and subject to confirmation by a professional Arboriculturist. Martin Environmental Solutions takes no responsibility for failing to identify, or the incorrect identification of, any tree or plant species on site.

Our investigations exclude surveys to identify the presence or indeed absence of asbestos in buildings/infrastructure on site. If asbestos is suspected to be present, we recommend specialists in the identification and control / disposal of asbestos are appointed prior to commencement of any works on site or, if appropriate, purchase of the site. The presence of asbestos on site may have considerable effects on the cost / timescale in developing the site. There is good guidance in relation to Asbestos available on the Health and Safety Executive (HSE) web site.

Whilst a site walkover has been undertaken as part of this report, the survey does not constitute either an asbestos or structural survey and all areas of the site may not have been visited / inspected.