

Contaminated Land Phase One Desk Study for proposed three storey building comprising retail unit (Class E) to ground floor and two one-bed self-contained apartments on upper floors at 52 Manchester Street, Heywood, OL10 1DL.

Prepared for

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Summary

This report consists of a phase one contaminated land desk study produced in support of a discharge of a planning condition attached to permission 20/00969/FUL for a replacement building comprising retail to the ground floor and residential apartments to the upper floors at 52 Manchester Street, Heywood, OL10 1DL.

Following the site walkover and review of the available information it has been concluded that there is a small potential for off-site contamination to migrate to the site as such a gas protection system is recommended during the construction of the development.

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 mixed use development at 52 Manchester Street, Heywood, OL10 1DL.

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: 52 Manchester Street, Heywood, OL10 1DL.

Grid reference: 385938, 410574

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

Current Site use:

The site currently consists of a two-storey brick-built property. To the east is Manchester Street, the south an electricity substation and car park, to the rear commercial units including a metal fabrication business which extends round to the north and further commercial properties.

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 current building is present on site	To the immediate rear (west) of the site is a Cotton Mill and beyond that reservoirs. To the north of the mill west of the site are residential properties. Northwest ~100m away the Bowling Green Cotton Mill, with residential properties between the two mills. To the north on the opposite side of the road are residential properties with Lane End Mill (Cotton) and additional reservoirs. To the east more residential and behind them open land. In the wider area Heywood is shown to the north, although a number of properties including residential, mills are shown along and off Manchester Street to the south which leads to the Railway Station and the east-west line ~400m away. 500m northeast are some sand quarries and a brick yard.
1890	No change	No significant changes, more development in the wider area. The railway line is now the Liverpool, Bolton & Bury line and the sidings at the station have been extended. Additional mills are now evident further to the south of the site (they were there previously but not shown on the mapping scale), with reservoirs. An iron works is shown beyond the railway station 500m away. The reservoir at Lane End Mill is no longer shown.
1909-10	No change	A tram-way is shown running along Manchester Street. A saw-mill is shown ~230m northeast of the site. Bowling green Mill is no longer present.

1928-29	No Change	No significant changes, a large school has been built to the southwest in "Central Ward". Further development in the wider area continues, predominantly residential.
1937-38	No change	Hey Mills to the south are shown as dis-used.
1956-58	No Change	The mill to the immediate west is now a rope works, with a rope walk running south along Schofield Street, an electricity substation is shown to the west. The other section of the works to the southwest is an Engineering works. The reservoir is no longer shown. To the north the properties appear to have been amalgamated, while beyond them a large garage is shown. Bowling Green Mill has been built on with residential properties occupying the site. To the northeast a building is shown on the site of the former reservoir at Lane End Mill To the north of this site a warehouse is shown and beyond this an engineering works 100m away. To the east behind the first row of properties is a bakery, paper works and engineering work. To the south the first of the disused Hey Mills buildings has been demolished and the reservoir is no longer present.
1968-69	No Change	Housing has been built to the west adjacent to the school. Properties around the Lane End Mill site have been demolished and the warehouse extended as has the engineering works to the north. In the east the paper works and bakery are no longer identified and a small industrial estate is shown to the east approx. 200m away.
1975-78	No change	No significant changes

1983-87	No Change	No significant changes, works are shown on the far side of the road to the southeast. A garage is shown to the southeast 200m away.
1991-94	The property is shown as 52 and 52a.	The properties to the immediate south have been demolished. The industrial buildings to the west are shown as “works”. Residential properties opposite have also been demolished with “works still shown to the southeast.
2001-03	No change	No significant changes
2010-23	No change	No significant changes
Aerial photos	No Change	The site of the Hey’s Mills to the south was redeveloped into housing between 2005-2013.



Regulatory Information

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

Three permitted activities has been identified within 500m of the site as defined in the Environmental Permitting (England and Wales) Regulations 2016 or previous legislation. These include a current petrol station 200m north of the site, a historic leather/hide tannery process 257m east of the site and a vehicle resprayer 455m east of the site.

15 pollution incidents have been identified in the surrounding area. The nearest was located 213m northeast in January 2003 involving oil and fuel and having a minor impact on the water environment. The second closest 258m southeast involving organic chemicals have a minor impact on water and land in January 2003. Other incidents involved construction and demolition waste, other waste products, burning, vegetation waste and some asbestos, all occurrences were between 2001-2002.

located 427m south in July 2001 involving organic chemicals and have a minor impact on the air.

Three licensed discharge consents are reported. All of which relate to sewer storm overflow discharges into the Millers Brook located 431-443m north of the site.

The above identified sites are, given the locations and nature of the activity unlikely to impact on the development site.

No active landfill site records have been found in the area, historic landfills have been identified 399m north as a refuse tip on the 1967 mapping. In addition a historic site at Roe Acre Mill 279m northeast of the site is identified accepting inert and commercial waste between May 1972 and August 1992. The site is now identified as a skip company.

Six historic waste sites are identified , the nearest being 220m east of the site at the Bradshaw Street, Tannery for a waste recycling centre (identified from planning application in 2009). The next three relate to a scrap yard 349m north of the site and the final two sites identified located 426m southeast a transfer/recycling depot. Four other waste licenses are held covering the above skip/transfer station at Bradshaw St Mill 157m east of the site, Rochdale Skip Hire site 273m east also on Bradshaw Street.



25 waste exemptions have been identified. The nearest 37m northwest for the repair of WEEE equipment at the electrical shop, the use of waste in construction 224m east at Bradshaw Street, in addition to the cleaning, sorting, bailing, screening of waste. Aerobic composting, burning waste, and storage of waste.

Given the distances and nature and age of the sites it is unlikely that the above sites will pose any risk to the development.

58 current potentially contaminative sites have been identified from the purchased information with 250m of the site. These include a number of retail sites, in addition to the following:

- Electricity Substation 3m south of the site, 109m south 154m north, 203m east and 226m west.
- Unspecified works , 15m, 47m southwest, 23m south, 38m, 148m, 151m east, 78m, 156m, 183m, 219m, 226m southeast, 104m north, 143m northeast.
- Tanks located 167m northeast, 191m 244m east 223m south.
- Petrol Stations 67m west and 197m southeast (Both obsolete, 198m north
- Vehicle servicing 37m, 237m east, 79m northwest, 114m, 191m, 228m southeast, 185m northeast, 195m north
- Of these is the electrical sub-station located 38m north of the site, this is 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:

Cotton Mills, located 15m, 86m, 236m northwest, 110m southeast, 211m south,

Unspecified works 66m, 210m northwest, 107m east, 182m southeast, 229m north

Rope walk 130m west.

Leather works 154m, 197m northeast,

Brewery 169m south,

Tannery 211m south



Geology and Hydrogeology

Information from the British Geology Survey 1:50,000 mapping identifies the bedrock in the area as Pennine Lower Coal Measures Formation of mudstone, Siltstone and Sandstone overlaid with Glaciofluvial Deposits, Devensian - Sand and Gravel. The nearest borehole is 14m identifying a layer of clay with shale below which includes bands of coal, and sandstone.

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 13 groundwater abstraction licenses have been identified, of which only two are active located 731m southeast at Oak Brewing Company Ltd for general cooling and 1825m north of James Sallow Ltd, general use. The nearest historical site was located 256m east at the Tannery site for cold storage and warehousing.

12 surface water abstraction licenses are identified. The only active site is located 1928m north at Union Papertech Ltd, for boiler feed water.

The site is not located within a Source Protection Zone.

The Groundwater vulnerability is described as low within all geological layers.

Hydrology

The nearest watercourse is the Millers Brook located 211m northeast of the site.

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

Environmental Sensitivity

The only Environmental Sensitivity sites identified are the Merseyside and Greater Manchester Greenbelt located 633m north of the site along with seven ancient woodlands, the nearest of which is 1435m northeast.

The property is in an area identified as having less than 1% of properties above the action level of 200 Becquerel's per cubic metre, based on specific property search. Radon protection measures are not 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.



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. Records of the historic previously identified sand pits and brick works are held.



Site Walkover

A site walkover was undertaken on the 11th February 2023 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 Manchester Street to the east and consists of the existing two-storey brick-built property which fronts onto the road. The building has most recently be used for the sale and repair of bicycles. The site has no external areas.

To the south is located a small, relatively recent, electricity sub-station, beyond this a small shop and carpark. To the southwest an industrial unit and to the west “Ken Brogden” metal works. On the opposite side of the road is a fish and chip shop, an open piece of land and a car repair centre. To the north an open grass verge, some shops, and a car sales centre.

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 or off site that are likely to present a significant possibility of significant harm to any identified receptor.

However a number of historic land uses have occurred in the immediate vicinity of the site, including the infilling of mill reservoirs, although many of these sites have been redeveloped since. A potential risk therefore exists from these sites, particularly from potential ground gas emissions and leaching.

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	Low,
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	Migration of products to site	Construction workers	Low
6	In-direct ingestion of contaminated soil	-	Future users	V. Low
7	Absorption via direct dermal contact with contaminated soil	Migration of products to site	Construction workers	Low



Recommendations

As a result of the investigation into the historical use of the site and surrounding area it has been identified that there is a small potential for contamination from surrounding historic land uses to migrate onto and affect the site.

The existing building is to be demolished and a new building erected, no external areas will be present once complete and so no occupants will be exposed to any soil, contaminated or not.

There are however a number of infilled reservoirs in the area and therefore the potential for ground gas emissions exists. As such it is recommended that a gas protection system is installed as part of the development, see Appendix 4 for an indicative design

No other sources of contamination have been identified on or off site which present a significant possibility of significant harm to the any of the identified receptors.

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

Northeast corner looking west and then south



northeast to southwest corner



Southeast looking north, then west





Southwest looking north then east





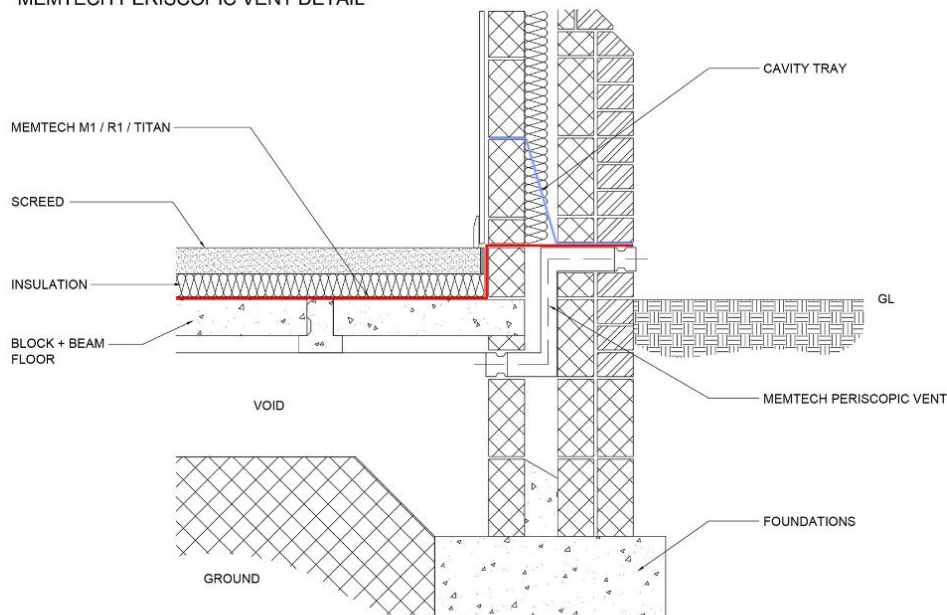
southwest to northeast corner



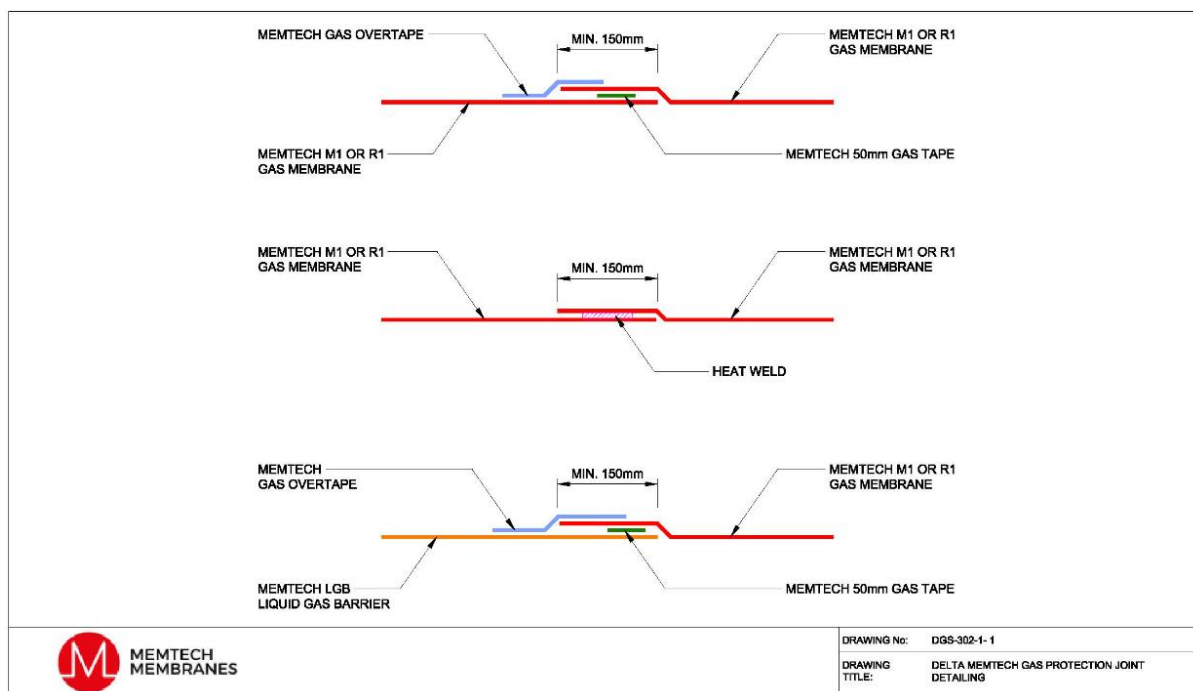
Appendix 4 Indicative Gas Protection Design

NOTE: Manufacturers Installation Instructions Must be Followed.

MEMTECH PERISCOPIC VENT DETAIL



DRAWING No: DGS-333-1
DRAWING TITLE: MEMTECH - PERISCOPIC VENT DETAIL



DRAWING No: DGS-302-1-1
DRAWING TITLE: DELTA MEMTECH GAS PROTECTION JOINT DETAILING



Appendix 5 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

This report was undertaken for at the request of James Campbell Associates and as such should not be entrusted to any third party without written permission of **Martin Environmental Solutions**. No other third parties may rely upon or reproduce the contents of this report without the written permission of **Martin Environmental Solutions**. If any unauthorised third party comes into possession of this report, they rely on it at their own risk and the authors do not owe them any duty of care or skill.

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The findings and opinions provided in this document are made in good faith and are based on data provided by third parties (Groundsure, Environment Agency, The Coal Authority, and Regulatory Bodies) and the report should be read in conjunction with the limitations on the document control form. The accuracy of map extracts cannot be guaranteed and it should be recognised that different conditions on /adjacent to the site may have existed between and subsequent to the various map surveys.

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.

All of the comments and opinions contained in this report, including any conclusions, are based on the information obtained by **Martin Environmental Solutions**. The conclusions



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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.