



Your Environment

PHASE 1: DESKTOP STUDY AND
PRELIMINARY RISK ASSESSMENT
REPORT
AT
SOUTHMERE FARM,
THE MALLARDS,
HAVANT,
PO9 1QX
For Knightsgate UK

Your Environment

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1.0 Introduction

YourEnvironment (YE) was instructed by Knightsgate UK (Quote No: Q6179, Dated: September 22nd 2018) to produce a Phase 1: Desktop Study and Preliminary Risk Assessment Report for a site located at Southmere Farm, The Mallards, Havant, PO9 1QX.

We understand current plans for the redevelopment of the site include;

- Construction of three (3no.) two story detached dwellings following the demolition of existing buildings.

The purpose of this report is to satisfy a particular planning condition, which has been attached to the redevelopment of the site by Havant Borough Council, application reference number APP/18/00380, specifically condition 5.1.

A proposed site plan provided to YE, at the time of issuing this report can be reviewed within **Appendix A.**

Objectives

The objectives of this Phase 1 report are to:

- Establish the environmental setting, including sensitivity in relation to human health, surface water, groundwater and ecological receptors;
- Review historical and recent uses to assess the potential for contamination to be present from past and current land-use;
- Assess by qualitative means the potential nature and extent of contamination from those uses and the environmental risk and liabilities which may affect the site redevelopment;
- Identify the prevalent source-pathway-receptor linkages present on site by means of a Tier 1 contamination risk assessment which incorporates the formulation of a Conceptual Site Model.

Information Sources

During the production of this report the following information sources have been utilised:

- A review of Historical Ordnance Survey Maps, EnviroInsight and GeoInsight information obtained from Groundsure (4C Group Ltd).

2.0 Site Location

The following table outlines the details of the site:

Site address	Southmere Farm, The Mallards, Havant, PO9 1QX
Grid reference	471478, 105271
Total area	0.24ha
Topography	The site is at approximately 5mAOD
Site Layout	The site is an irregular shaped plot of land

Table 1: Site Details

3.0 Site Geology & Geological Hazards

Superficial Ground and Drift Deposits

The superficial ground deposits underlying the majority of the study site are comprised of River Terrace Deposits (sand, silt and clay) with Alluvium (clay, silt, sand and gravel) in the western portion.

Bedrock Geology

Underlying the superficial drift deposits is bedrock composed of Lewes Nodular Chalk, Seaford Chalk, Newhaven Chalk, Culver Chalk and Portsdown Chalk Formations (undifferentiated) (chalk).

Artificial/Made Ground

There are no records of artificial/Made Ground within 50m.

Natural Hazards

On site, there is a moderate risk from compressible ground, a low risk from shrink-swell, collapsible rocks and running sand hazards and a very low risk from landslides and soluble rocks.

Landslips

There are no records of landslips within 500m.

Linear Features

There is one record of a linear feature within 500m, the closest of which is 314m northeast for an axial plane trace.

Coal Mining

The study site is not located within 75m of an identified mining area.

Non-Coal Mining

The study site is not located within 50m of an identified non-coal mining area.

Historical Mining

There is one records within 1000m of the study site boundary which is located 795m southeast for a coal wharf.

Radon

The study site is not located within a Radon Affected Area, as less than 1% of properties are above the Action Level. Therefore, no radon protective measures are necessary for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment.

Borehole Records

There are three records within 250m of the study site the closest of which is located 157m northeast that was drilled to a depth of 2.6 metres. The remaining records are over 170m from the site.

4.0 Site Hydrogeology and Hydrology

Aquifer within Superficial Deposits

As a consequence of the superficial geology on site the aquifer is designated as being a Secondary (A) Aquifer. These are defined as permeable layers capable of supporting water

supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as Minor Aquifers.

Permeability of Superficial Geology

The minimum permeability is recorded as being very low with the maximum permeability recorded as being high.

Aquifer within Bedrock Geology

As a result of the bedrock geology on site, the aquifer is designated as being a Principal Aquifer. This is defined as layers with high intergranular and/or secondary permeability capable of supporting water supplies at strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as Major Aquifers.

Permeability of Bedrock Deposits

Both the minimum and maximum permeabilities are recorded as being very high.

Groundwater Abstraction Licences

There are three active groundwater abstraction licences within 2000m, the closest of which is 1150m north for a potable water supply – direct. The remaining records are over 1350m from the study site.

Surface Water Abstraction Licences

There are no active surface water abstraction licences within 2000m.

Potable Water Abstraction Licences

There are three active potable abstraction licences within 2000m, the closest of which is 1150m north.

Groundwater Vulnerability and Soil Leaching Potential

The on site soil vulnerability category is listed as being 'H1', this is defined as soil which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.

Source Protection Zones

The study site is not located within a Source Protection Zone.

Ordnance Survey Water Network

There are a number of records within 500m of the study site, the closest two of which are 2m northwest for an inland river. There are further entries for inland river and streams 58m southwest and 90m northwest. The remaining entries are over 100m from the site.

Surface Water Features

There are eleven records within 250m of the study site, one of which is on site for a river or stream. There are further entries for the same river 1m southwest, 58m southwest and 90m northwest. The remaining entries are over 100m from the site.

Licensed Discharge Consents

There are five records of sites within 500m, the closest two of which are located 258m northwest for miscellaneous discharges – surface water. The remaining records are over 290m from the study site.

5.0 Site Flood Information

The study site is within 250m of an Environment Agency Zone 2 (fluvial /tidal models) and a Zone 3 (fluvial models) floodplain, both of which are on site. With this in mind, the highest risk from flooding from rivers and sea (RoFRaS) on site is recorded as high. There are no areas benefitting from flood defences, flood defences or areas benefitting from flood storage within 250m of the study site.

There are British Geological Survey (BGS) groundwater flooding susceptibility areas within 50m of the boundary of the study site which relate to Clearwater Flooding and therefore the potential susceptibility is from unconfined aquifers.

The BGS confidence rating in respect of this result is high.

6.0 Site Environmental and Industrial Setting

Environmental Permits, Incidents and Registers

Records of Historic IPC Authorisations

There are two records within 500m of the site, both of which are 401m north for processes involving halogens.

Records of Part A(2) and Part B Activities and Enforcements

There are two records of sites within 500m of the study site, the closest of which is a Current Part B Permit located 469m northwest for the respraying of road vehicles, with no enforcements notified. The remaining record is 493m from site.

Sites Determined as Contaminated Land under Part IIA EPA 1990

There are no records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 within 500m.

Landfill and Other Waste Sites

Potentially Infilled Land

There are fifty-three records of potentially infilled land within 500m, two of which are on site for water bodies. Off site, the closest entries are 1m southwest for water bodies. There are further entries for water bodies 5m south and 93m south. The remaining records are over 280m from the study site.

Records of Environment Agency Historic Landfill Sites

There are two entries within 1500m, the closest of which is 487m west that was licensed to accept household waste. The remaining entry is 1075m from the study area.

Records of BGS/DoE Non-Operational Landfill Sites

There is one record within 1500m of the study site, which is located 1378m west at Storhouse Lake Tip with no recorded risk.

Records of Environment Agency Licensed Waste Sites

There are thirty-nine entries within 1500m, the closest of which is 505m northwest for a WEEE treatment facility. The remaining entries are over 760m from the study area.

Workings/Tunnels and Railway Features

Historical Surface Ground Working Features

There are six ground working features within 250m, the closest three of which are 1m southwest and 5m south for water bodies. The remaining entries are 93m south for water bodies.

Historical Railways

There is one entry within 250m of the site, which is located 179m southeast for an abandoned railway.

Historical/Current Land Uses

Records of Potentially Contaminative Uses

There are fifty-two records of sites with a potentially contaminative past land use within 500m, the nearest two of which are 201m north for an unspecified works and an unspecified commercial/industrial site. The remaining entries are over 205m from the study area.

Historical Tanks

There are thirty records of sites within 500m, the nearest of which is 268m west for an unspecified tank. The remaining results are over 275m from the study area.

Historical Energy Features

There are thirty-eight records of sites within 500m, the nearest four of which are 78-79m north for electricity substations. The remaining entries are over 250m from the study area for electricity substations.

Records of Potentially Contaminative Industrial Sites

There are eleven records of sites with a potentially contaminative industrial usage within 250m, the closest of which is 82m north for an electricity substation. The remaining entries are over 160m from the study area.

Designated Environmentally Sensitive Sites

The study site is located within a Nitrate Vulnerable Zone.

Information on the environmental and geological setting of the site is presented in a Groundsure EnviroInsight and GeoInsight Report prepared for the site, a copy of this report is reproduced in **Appendix B**.

7.0 Historical Mapping Study

The object of this search was to report on the evidence of site history and redevelopment of the site and its environs from available County Series and Ordnance Survey Maps dating from the mid to late 19th Century to the present day as downloaded from Groundsure.

Maps only represent a “snap shot” of the site and its environs at the date of the survey. Changes that had occurred either to the site and/or the environs may well not have been recorded on the maps and could represent a hazard to the site.

The information reported might not represent all pertinent information that could be obtained.

The interpretation of the maps and/or other data commented on in this report is subjective.

Year	Information
1866	The site is an irregular shaped plot of land within a rural setting. There is an 'L' shaped structure within the central portion of the site, labelled as Langstone House. Also, there is a section of a mill stream in the western flank of the site. Off site, the mill stream continues to the north and south of the site, flowing in a north-south orientation. There is a mill dam located 250m south. A railway with a northeast-southwest orientation is located 200m east of the site.
1869	The site remains unchanged. Off site, there are three structures to the immediate east, labelled as Langstone Farm.
1877	The mapping is incomplete, with no information available on site or in the surrounding environs.
1896	There have been no discernible changes to the site or in the immediate surrounding environs.
1897	There have been no discernible changes to the site or in the immediate surrounding environs.
1898	There have been no discernible changes to the site or in the immediate surrounding environs.
1907	There have been no discernible changes to the site or in the immediate surrounding environs.
1909	There have been no discernible changes to the site or in the immediate surrounding environs.
1914	There have been no discernible changes to the site or in the immediate surrounding environs.
1931	The site remains unchanged. Off site, there has been urban development in the form of residential structures from 100m east.
1932	The site remains unchanged. Off site, the river to the immediate west of the site has reduced in width, with the area either side of it now marked as marshland. The mill dam located 250m south is now labelled as 'Old Mill Dam' and is assumed to no longer be in use.
1942	There have been no discernible changes to the site or in the immediate surrounding environs.
1952	There have been no discernible changes to the site or in the immediate surrounding environs.
1957	The mapping is incomplete, with no information available until 250m south of the site. With this in mind, there have been no observable changes from 250m south.
1963	There have been no discernible changes to the site or in the immediate surrounding environs.
1966	There have been no discernible changes to the site or in the immediate surrounding environs.
1968	There are four additional structures of unknown usage in the central portion of the site. The site is now labelled as a dairy farm. Off site, there is an electricity substation 90m northeast of the site.
1972	The structures on site have changed in layout. Off site, there have been no discernible changes.
1974	There have been no discernible changes to the site or in the immediate surrounding environs.
1975	The site remains unchanged. Off site, works are located from 400m northeast.
1989	The site remains unchanged. Off site, there has been the development of a number of residential structures from immediately north of the site.
1991	There have been no discernible changes to the site or in the immediate surrounding environs.
1993	There is an additional structure of unknown usage in the northwest corner of the site. Off site, there have been no discernible changes.
2002	The site remains unchanged. Off site, there is a large structure of unknown usage 200m west of the site.
2010	The site remains unchanged. Off site, there are depots located 450m west.

2014	There have been no discernible changes to the site or in the immediate surrounding environs.
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Table 2: *Historical Mapping Review*

Therefore, from the historical maps we can consider the following:

On site sources of possible contamination;

- Structures of unknown usage.

Off site sources of possible contamination;

- Potentially infilled river to the immediate west, however, this appears to representative a reduction in water level due to the removal of the dam 250m downstream.
- Electricity substation (90m northeast).

The Historical Ordnance Survey Maps were obtained from Groundsure and are available for review within **Appendix C**.

8.0 Walkover Survey

The site was visited by YE on the 10th October 2018. The weather was dry and sunny at the time.

Access

The site is accessible from The Mallards, via a wooden gate, which could be opened to provide vehicular access. Potential pedestrian access is located on the western flank of the site via a track and a bridge over a small stream.

Topography

The site was relatively flat. Off site, to the west was a stream running in a north-south orientation with embankments either side.

Vegetation

The site is covered, predominantly in grass and weeds. The western boundary is overgrown, with dense vegetation present.

Buildings and Structures / Floor Covering

There were several structures on site. The first and largest being a two story. 'L' shaped wooden barn. This was used for storage at the time of the walkover, including the storage of a tractor. Access into the barn was not possible at the time of the walkover, however the contents were visible through windows and grates.

The other structures on site were located in the western section and comprised three wooden frame barns with corrugated metal walls and roofs. One of these contained a tractor while the others sat empty.

Surface Permeability / Ground Covering

It is estimated that approximately 80% of the site is permeable soft scaping, with 20% comprising hardstanding in the form of a concrete slab to the immediate south of the barn.

Drainage Features

A surface water drain was located potential surface water drain was noted proximal to the large barn.

Other Services

The site had access to water, with several taps noted within the barns.

Surrounds

Residential properties boarder the site to the north and east. A large arable field is located to the immediate south, with an area of woodland to the west, beyond a stream.

Direction	Description of Site boundary
North	Wooden panel fencing.
East	Brick built wall with fence panels above.
South	Wooden fence to the east and a flint wall to the west.
West	Stream to the west of the site.

Table 3: Summary of site boundaries

Direction	Description of Surrounding Land Use
North	Residential dwellings.
East	Residential dwellings.
South	Large arable field.
West	Dense woodland.

Table 4: Summary of Surrounding Land Uses

Potentially Contaminative Land Uses

On site sources:

- Storage of agricultural machinery, although these appeared to be modern and in good condition.

Off site sources:

- None identified.

Photographs taken during the walkover of the site and surrounds, can be reviewed within **Appendix D.**

9.0 Framework for Assessment of Contamination

Environmental risks are assessed within the risk management framework established in Part IIA of the Environmental Protection Act (EPA) 1990 introduced by Section 57 of the Environment Act 1995 which provides a statutory definition of contaminated land. To fall within this definition it is necessary that, as a result of the condition of the land, substances may be present on or under the land such that:

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

or

(b) Pollution of controlled water is being, or is likely to be caused.

Risk from contamination is assessed by consideration of possible linkages between contaminant sources and potential receptors which could be harmed or polluted.

The key aspect of the framework is the development of a Conceptual Site Model (CSM) which illustrates the spatial interaction between the potential sources and receptors on site.

The information presented in this report was collated and evaluated to develop an initial CSM to assess ground contamination issues at the site.

For a risk of pollution or environmental harm to occur as a result of ground contamination, **all** of the following elements must be present:

- A source, i.e., a substance that is capable of causing pollution or harm;
- A receptor, i.e., something which could be adversely affected by the contaminant;
- A pathway, i.e., a route by which the contaminant can reach the receptor.

If one of these elements is absent there can be no significant risk. If all are present then the magnitude of the risk is a function of the magnitude and mobility of the source, the sensitivity of the receptor and the nature of the migration pathway.

Potential sources, pathways and receptors are identified in the sections below and the risks associated with possible pollutant linkages outlined.

10.0 Contaminant Sources

On Site Sources

The following possible on site sources have been identified from the historical study:

- Structures of unknown usage.

The following on site sources have been identified from the site walkover:

- Storage of agricultural machinery, although these appeared to be modern and in good condition.

The following possible on site sources have been identified from the EnviroInsight and GeoInsight:

- Infilled water bodies.

The following contaminants are potentially associated with these sources:

- Heavy Metals;
- TPH and PAH;
- Pesticides;
- Ground gas – methane and carbon dioxide, from decomposition of organic carbon in Made Ground /infilled material associated infilled water bodies.

In practice, a broad contaminant screen should be analysed for to ensure that potential contaminants are not omitted.

Off Site Sources

The following off site sources have been identified from the historical study:

- Potentially infilled river to the immediate west, however, this appears to representative a reduction in water level due to the removal of the dam 250m downstream;
- Electricity substation (90m northeast).

There are further entries present but these are considered far enough from the site to pose no risk.

The following off site sources have been identified from the site walkover:

- None identified.

The following off site sources have been identified from the GeoInsight and EnviroInsight:

- Infilled water bodies (1m southwest, 5m south and 93m south);
- Electricity substation (78-82m north).

The following contaminants are potentially associated with these sources.

- PCBs;
- Ground gas – from the potentially infilled land in the area that could have led to methane and carbon dioxide generation from decomposition of organic carbon in Made Ground/infilled material. However, this appears to representative a reduction in water level due to the removal of the dam 250m downstream.

11.0 Source / Pathway / Receptor

Sources

The **main sources** of potential contamination that have been identified at the site or in the vicinity of the site are summarised above and below:

Source	Location	Description
Potentially infilled water bodies	On and Off site	Potential for infilled land. However, this appears to representative a reduction in water level due to the removal of the dam 250m downstream rather than infilling of the river. Therefore, the risk is reduced.
Electricity substations	Off site	Potential contamination PCBs, although the distance from the site reduces the risk.

Table 5: Sources

Receptors

The site specific **receptors** that could be potentially affected by the contamination hazards identified during this preliminary appraisal are summarised below:

Category	Receptor	Properties
Humans	End users (such as residents and visitors)	Potential contact with contaminated soils in existing/proposed soft landscaping areas.

	Construction workers	Reworking of the contaminant impacted materials in Made Ground during construction works can expose workers to contamination.
Property	Materials and site structures	Foundations and site services may be damaged by potentially aggressive compounds present in soils.
Controlled Waters	Underlying superficial / bedrock Aquifer and surface water	The site is recorded as having a Secondary (A) Aquifer within the superficial deposits and a Principal Aquifer within the bedrock underlying the site. The nearest groundwater and potable water abstraction licence is 1150m north. There are no surface water abstraction licences within 2000m. In addition, the nearest surface water feature and river networks is on site for a river/stream. The site is not within a source protection zone.
Plant (species and uptake) and Wildlife	Various	Attributes will be influenced by factors such as relative quality, scale, rarity and substitutability.

Table 6: Receptors

Pathways

In order for contaminants to reach potential receptors, there has to be a viable **pathway** for the contaminant. Potential pathways that may affect the migration of contaminants are listed below:

Pathway	Medium	Properties
Direct Contact	Dust, solid and liquid phase	There may be direct contact with potentially impacted soil and Made Ground across the site. There is a possibility of dust fumes being produced during earthworks in the construction phase. Dermal contact and ingestion of potentially contaminated soils during construction or operational phase of the site.
Leaching through Made Ground	Unsaturated flow	Potential for leaching and migration of potential contaminants along preferential flow paths in the Made Ground due to its heterogeneity.
Foundations and Underground Infrastructure and Obstructions	Preferential flow	Depending on the foundation solution adopted, preferential flow paths for the vertical migration of potential contaminants to the underlying groundwater could be created.
Migration of Ground Gas	Gaseous flow	Made Ground is known to be highly variable in composition. Migration through granular material in Made Ground and alongside buried utility pipes / cables or along preferential flow paths.

Table 7: Pathways

12.0 Qualitative Risk Assessment

Potential pollutant linkages are identified using the source-pathway-receptor framework detailed above. An assessment of the potential significance of each linkage is then made by consideration of the likely magnitude and mobility of the source, the sensitivity of the receptor and nature of the migration/exposure pathways.

This qualitative risk assessment has been undertaken in accordance with CIRIA C552: Contaminated Land Risk Assessment, A Guide to Good Practice (Rudland et al., 2001).

An assessment of the likelihood of the risk being realised and the magnitude of potential risk is presented below to give an estimation of the significance of each potential pollutant linkage identified.

The assessment is undertaken based on the current proposals for the site, at the time of issuing this report, which would be classed as been a generic end land use of 'residential with homegrown produce'.

13.0 Preliminary Conceptual Site Model

Contaminant Source	Pathways	Receptor	Potential Severity	Probability of Risk	Level of Risk	Justification
On Site: Made Ground soils on site possibly containing elevated metals, other inorganics and organics such as TPH, PAH, phenols, VOC and SVOCs.	Ingestion, dermal contact, inhalation of dusts/vapours	Future end users and site visitors	Medium	Low Likelihood	Low	A low risk is assessed due to the lack of potentially contaminative land uses on site. There are records of infilled land, however, these appear to be a result of a reduced water level in a river, rather than infilling. Contact is likely between future residential occupiers/visitors and contaminants in the shallow soil in garden areas of the site, soil/dust tracked back into the house, from ingestion of home grown produce and from vapour intrusion.
		Construction Workers	Medium	Likely	Low	Construction workers are likely to come into direct contact with soils during groundworks. Safe working practices should be implemented and appropriate personal protective equipment (PPE) should be used to mitigate any potential risk from contact with soils and shallow/perched groundwater.
	Leaching through soils and migration via groundwater or soil pore moisture	Controlled Waters	Medium	Low Likelihood	Low	A low risk is assessed due to the lack of potentially contaminative sources on site and the presence of a Secondary (A) Aquifer within the superficial deposits and a Principal Aquifer within the bedrock underlying the site. The nearest groundwater and potable water abstraction licence is 1150m north. There are no surface water abstraction licences within 2000m. In addition, the nearest surface water feature and river networks is on site for a river/stream. The site is not within a source protection zone.
	Permeation of water pipes	Construction materials, future end users and site visitors	Medium	Likely	Low	Hydrocarbons, especially aromatics are known to permeate plastic pipes. Provision of water supply pipes and connectors formed from proprietary "barrier pipe" materials (eg polyethylene-aluminium-polyethylene) may be required by the water supply company.
	Uptake	Plant and Wildlife	Mild	Low Likelihood	Low	A low risk is assessed due to the lack of identified sources of phytotoxic contamination.
On Site: Asbestos at/near ground surface in Made Ground soils.	Inhalation of fibres in airborne dust	Future end users and site visitors	High	Low Likelihood	Low/Moderate	Likelihood is considered to be low/moderate as although the site walkover did not identify any potential asbestos containing materials (ACMs), the commercial history of the site creates potential for asbestos contamination. An asbestos survey should be undertaken prior to investigative works proceeding.
		Construction Workers	High	Low Likelihood	Low/Moderate	Despite the lack of identified ACMs during the walkover, safe working practices should be implemented and appropriate personal protective equipment (PPE) should be used to mitigate any potential risk from asbestos in soils.

On Site: Ground Gases (CH ₄ , CO ₂) from on site Made Ground.	Gas migration and build up within buildings (explosion/ asphyxiation risk)	Future end users and building structures.	High	Low Likelihood	Low	There are records of infilled land on site, however, these appear to be a result of a reduced water level in a river, rather than infilling. Current guidance indicates that Made Ground is generally classified as low risk in terms of potential for gas generation.
Off Site: Historical land uses and activities, Made Ground/infilled material possibly containing elevated metals, other inorganics, TPH, PAH, PCBs, phenols, VOC and SVOCs.	Leaching through soils and migration via groundwater or soil pore moisture	Future end users and site visitors	Mild	Low Likelihood	Low	Given the variable permeability of the underlying geology and hydrogeology, there is a risk for the leaching of contaminants. However, the lack of sources of contamination off site result is the low risk assessed.
	Inhalation of vapours	Future end users and site visitors	Medium	Low Likelihood	Low	A low level of risk is assessed due to the lack of potentially contaminative land uses/activities within proximity to the site that could pose a potential risk to the site.
Off Site: Ground Gases (CH ₄ , CO ₂ , H ₂ S) from off site Made Ground historical land uses/activities.	Gas migration and build up within buildings (explosion/ asphyxiation risk)	Future end users and building structures.	High	Low Likelihood	Low	There are records of infilled land proximal to the site, however, these appear to be a result of a reduced water level in a river, rather than infilling. Current guidance indicates that Made Ground is generally classified as low risk in terms of potential for gas generation.

Table 8: *Preliminary Conceptual Site Model*

14.0 Proposed Site Investigation

Given the findings of this report we do not anticipate the need for completing any Site Investigation (SI) works. The historical, current and proposed use of the site and the surrounding environs suggests there are no viable pollutant linkages present. However, we would recommend that a watching brief be undertaken during the groundworks stage.

15.0 Recommendations

15.1 Consultees

We would recommend that this report be forwarded to the relevant Local Authority Environmental Health and Planning Department prior to the proposed site investigation works commencing to seek their comments and subsequent approval.

15.2 Groundworks Watching Brief

During construction works visual and olfactory appraisal of the underlying soils should be made. If during construction works any material is noted to show visual and/or olfactory signs of contamination an environmental consultant should be contacted to supervise/guide further works. This material should be stockpiled separately and tested prior to its appropriate removal off site or re-use as necessary.

If any landscaping materials are to be imported on site they should be tested to check that they are suitable for the intended use. Clean, uncontaminated rock, subsoil brick rubble, crushed concrete, ceramics and topsoil only should be permitted as infill material.

15.3 Soakaways

Soakaways are for the disposal of clean uncontaminated surface water only and must not be constructed in contaminated land, or land suspected of having contamination present.

15.4 Flood Risk Assessment

This report does not replace a full hydrogeological survey and specialist studies may need to be undertaken to ascertain the risks posed from flooding.

15.5 Asbestos Survey

We would recommend that an asbestos survey is carried out on site, prior to construction works proceeding. If any asbestos containing material (ACMs) are identified these will need to be dealt with in accordance with current guidance.

16.0 Limitations and Uncertainties

This report has been prepared by YE with all reasonable skill, care and diligence. The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources, together with a site walkover inspection of the site.

The opinions given in this report have been dictated by the finite data on which are they based and are relevant only to the purpose for which the report was commissioned.

Information reviewed should not be considered exhaustive and has accepted in good faith as providing true and representative data with respect to site conditions. Should additional information become available which may influence the opinion expressed in this report, YE reserves the right to review such information and, if warranted, to alter the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site. This report is an environmental phase 1 report and does not consider the geotechnical implications for the site, its redevelopment and proposed future use. Further advice should be sought on geotechnical investigation requirements for the proposed development.

The 'vicinity' of the site for the purposes of the report, is defined as locations situated within an approximate 250m radius of the site, although certain source of contamination and/or sensitive targets further than 250m of site have also been included.