STAGE 1: DESKTOP STUDY AND WALKOVER SURVEY REPORT AT 8 NEW BRIGHTON ROAD, EMSWORTH, HAMPSHIRE, PO10 7PS

For ER Constructions Ltd

Your Environment
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For and on behalf of *Your*Environment				

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1.0 Introduction

*Your*Environment (YE) was instructed by ER Constructions Ltd (Quote No: 687, Dated: August 17th 2015) to produce a Stage 1: Desktop Study and Walkover Report for a parcel of land known as 8 New Brighton Road, Emsworth, Hampshire, PO10 7PS.

As we understand current plans for the redevelopment of the site include;

- Erection of two (2no.) semi and one (1no.) detached residential dwellings with associated garages, access road and soft landscaping areas.

The purpose of the report is to satisfy a specific planning condition which has been attached to the redevelopment of the site by Havant Borough Council under reference APP/15/00638.

It should be noted that whilst the above stated planning reference covers the aforementioned proposed development, this report also covers a wider site area as this may form a future proposed application for the purposes of incorporating an additional residential dwelling.

The proposed redevelopment plans for the site, at the time of issuing this report can be reviewed within **Appendix A.**

Objectives

The objectives of this Stage 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 that which may affected 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	8 New Brighton Road, Emsworth, PO10 7PS
Grid reference	474993, 106470
Total area	0.31ha
Topography	The site is flat situated at approximately 7mAOD
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

Head Deposits are identified on the eastern portion of the site with the majority of the site noted to consist of River Terrace Deposits (undifferentiated). Head Deposits are generally comprised as variable deposits of impure Clay, Sands and Silts, locally gravelly. Head Deposits are generally variable and of low strength. In respect of River Terrace Deposits these are composed of an unstratified mixture of (locally clayey) sand and flint gravels.

Bedrock Geology

Underlying the superficial geology is bedrock comprising of the London Clay Formation which are predominantly argillaceous, slightly calcareous, grey to bluish grey silty to very silty Clay characteristically fissured, and brown where weathered.

Natural Hazards

On site there is a maximum low risk from shrink-swell hazards, collapsible rocks and running sand hazards. In addition, there is a very low risk from landslide hazards with a negligible risk from soluble rocks and compressible ground hazards.

Coal Mining

There are no coal mining areas recorded within 75m.

Non-Coal Mining

There are a number of non-coal mining entries located within 1000m, the closest of which is located 618m south for the excavated commodity of chalk.

Brine Affected Areas

There are no recorded being affected areas within 75m.

Artificial/Made Ground

There are no records of artificial/Made Ground within 500m.

Landslip

There are no records of landslips within 500m.

Faults

There is one record of a fault within 500m which is located 370m south, the feature is described as an axial plane trace of major syncline.

Radon

The site is in a Radon Affected Area, as between 1 and 3% of properties are above the action Level, however, no radon protective measures are necessary for new properties or extensions to existing ones.

4.0 Site Hydrogeology and Hydrology

Aquifer within Superficial Geology

As result of the superficial geology on site the aquifer is designated as being a Secondary (A) Aquifer. This is 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 Ground

On site the maximum minimum permeability is recorded as being low with the maximum permeability noted to be high.

Aquifer within Bedrock Geology

Underlying the superficial Secondary (A) Aquifer is an Unproductive Aquifer. This is defined as rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

Permeability of Bedrock Ground

On site the maximum minimum permeability is recorded as being very low with the maximum permeability noted to be moderate.

Groundwater Abstraction Licences

There are two abstraction points within 2000m, the closest of which is located 1695m east for the purposes of water bottling.

Surface Water Abstraction Licenses

There is one abstraction point within 2000m, which is located 1635m northeast for fish farm/cress pond throughflow.

Potable Water Abstraction Licenses

There are two abstraction points within 2000m, the closest of which is located 1695m east for the purposes of water bottling.

Groundwater Vulnerability and Soil Leaching Potential

On site as a consequence of the Minor Aquifer, there is a high leaching potential.

Detailed River Networks

There are a significant number of networks within 500m, the closest of which is located 125m southeast for a secondary river.

Surface Water Features

There are a number of surface water features located within 250m, the closest of which is located 124m southeast which we consider to be a tributary.

Records of Licensed Discharge Consents

The nearest active discharge consent is located 262m southeast for the purposes of sewer storm overflow.

5.0 Site Flood Information

The site is located 12m and 21m south from an Environment Agency Zone 2 and Zone 3 floodplain respectively. The highest risk of flooding on site from Rivers and the Sea is recorded as being very low. The site is located 148m southeast from flood defences, however, there are no areas benefitting from flood defences or area benefitting from flood storage within 250m.

There are British Geological Survey (BGS) groundwater flooding susceptibility areas within 50m and these relate to the flooding of superficial deposits.

The overall BGS confidence rating in respect of this result is recorded as being moderate.

6.0 Site Environmental and Industrial Setting

Environmental Permits, Incidents and Registers

Records of National Incidents Recording System, List 2

There are three records within 500m, the closest of which was located 198m west and took place in April 2006 involving oils and fuels as pollutant. This incident had a significant (category 2) impact to water with no impact to either land or air.

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

Twenty three sites are recorded as being within 500m, the closest of which is 223m east for a pond (1932). The majority of the other entries are noted to ponds.

Records of Environment Agency Historical Landfill Sites

There are two records of sites within 1500m, the closest of which is 846m northeast which was licensed to accept inert and industrial wastes.

Workings/Tunnels and Railway Features

Historical Surface Ground Working Features

There are six records of historical surface ground working features within 250m, these entries are all located within 223 to 232m east and are associated with a pond.

Current Ground Workings

There are two records of current ground workings within 1000m, both of which are recorded as being ceased in activity. The closest of which is located 732m north which was a brick works.

Historical Railway and Tunnel Features

There are a number of historical railway or tunnel features identified within 250m of the study site boundary, all of which are noted to be railway sidings. The closest of which is located 158m southwest.

Active Railways

There are a number of active railways within 250m, the closest of which is located 115m south.

Historical/Current Land Uses

Potentially Contaminative Uses

There are a significant number of potentially contaminative past land uses within 500m, the closet of which is a nursery 68m northwest (1932). Of other notable interest is railway infrastructure located 140-161m southwest.

Records of Potentially Contaminative Industrial Sites

There are twenty records of potentially contaminative industrial sites within 250m, the closest of which is a gas governor 66m west. Of other notable interest is a garage 201m southwest and works 208m south.

Historical Tanks

There are a number of features located within 500m, the closest of which is an unspecified tank (1908) 71m north. Other notable features include a gas compound 95m southeast (1989 & 1993) and gas works 248 -252m south.

Historical Energy Features

There are forty six features located within 500m, the closest of which is a gas governor located 65m west. Other notable features include a gas compound 95m southeast (1989 & 1993).

Historical Garage and Motor Vehicle Repair Sites

One site is recorded as being within 500m which is 324m south for a coach works (1968).

Records of Planning Hazardous Substances Consents and Enforcements

There is one record located within 500m, which is 296m south for the purposes of storing natural gas, no enforcements are recorded.

Dangerous or Hazardous Sites

There is one record located within 500m, which is 275m south for an historical NIHHS.

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 EnvironInsight 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
1859	The mapping is incomplete and therefore it is not possible to ascertain what the site and immediate are comprised of.

1866	It is possible to observe that the site consists of a large piece of arable field. Off site, the immediate surrounds also consist of arable fields with a railway line noted 125m south, which runs from east to west.
1869	The mapping is largely incomplete and therefore it is not possible to ascertain if any changes have occurred on site or to the immediate surrounds. However, it is possible to note that the previously observed railway line is located within a cutting.
1874	The mapping is largely incomplete and therefore it is not possible to ascertain if any changes have occurred on site or to the immediate surrounds.
1877	The mapping is largely incomplete and therefore it is not possible to ascertain if any changes have occurred on site or to the immediate surrounds.
1896	On site, in the extreme northwestern portion it would appear that there is a residential dwelling which extends off site. Off site, it is possible to observe the amount of development that has occurred to the surrounding environs. A corn mill is noted 250m east and gas works 250m south.
1898	On site, the previously noted residential dwelling is in fact a large greenhouse. Off site, there have been no significant changes to the immediate surrounds.
1907	On site, it would now appear that the previously noted greenhouse has been replaced with a residential dwelling which extends off site. Off site, development continues to the surrounding environs mainly in the form of residential dwellings. Of notable interest is a laundry over 500m north and a brick works over 750m north.
1908	There have been no significant changes on or off site, to the immediate surrounds.
1912	The mapping is incomplete and therefore it is not possible to ascertain if any changes have occurred on or off site to the immediate surrounds.
1914	There have been no significant changes on or off site, to the immediate surrounds.
1932	On site, in the extreme northwest portion it is possible to observe that there is a number of small detached structures and greenhouses. Off site, no significant changes have occurred.
1940	The mapping is incomplete and therefore it is not possible to ascertain if any changes have occurred on or off site to the immediate surrounds.
1942	There have been no significant changes on or off site, to the immediate surrounds.
1952	On site, the previously noted buildings have been replaced with a two structures, one in the northwest and a larger irregular shaped structure to the south thereof with the remainder of the site remaining undeveloped, these are presumed to be residential dwellings. Off site, beyond 100m are residential dwellings with associated garden areas west and north.
1963	The site appears to remain unchanged. Off site, the immediate surrounds are largely unchanged although over 125m southwest and beyond large scale development has occurred mainly in the form of residential dwellings.
1966	There have been no significant changes on or off site, to the immediate surrounds.
1968	There have been no significant changes on or off site, to the immediate surrounds.
1975	There have been no significant changes on or off site, to the immediate surrounds, however beyond 500m southwest development continues in the form of residential dwellings.
1978	The mapping is incomplete and therefore it is not possible to ascertain if any changes have occurred on or off site to the immediate surrounds.
1981	There have been no significant changes on or off site, to the immediate surrounds.
1989	The mapping is incomplete and therefore it is not possible to ascertain if any changes have occurred on or off site to the immediate surrounds.
1991	The site would now appear to be devoid of any structures previously noted. Off site, the A27 is now noted immediately to the south of the site which is set in a cutting.
1993	The site remains unchanged. Off site approximately 80m west is a gas governor.
2002	No apparent changes have occurred on site. No significant changes have occurred off site.
2010	No apparent changes have occurred on site. No significant changes have occurred off site.
2014	No apparent changes have occurred on site. No significant changes have occurred off site.

Table 2: Historical Mapping Review

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

On site sources of possible contamination:

- Made Ground as a result of limited historical development.

Off-site sources of possible contamination:

- Railway line (125m south);
- Corn mill (250m east);
- Gas works (250m south);
- Laundry (over 500m north);
- Brick works (over 750m north).

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

8.0 Walkover Survey

The site was attended on August 17th 2015. The weather was fine and dry.

Access
The site has one gated access.

Topography
The site is mostly flat with a slight include towards the south of approximately 2m.

Vegetation
The site was predominantly laid to soft standing grassland. Several large trees and multiple small tress of various species were found surrounding the site. Additionally, the road was lined with a hedgerow.

Buildings
There are no buildings on the site currently apart from a very small brick meat smoker which has been partially demolished.

Surface Permeability
The ground predominantly comprises soft standing grassland. No surface water was evident at the time of the survey. The access road which is in the middle of the site is tarmacadam.

Drainage Features
There is drainage on the site from the road.

Other Services
Services are available locally but there are none to the site presently

Surrounding Environs
The north, east and west of the site are residential. To the south, the A27 is present.

Potentially Contaminative Land Use
The site is currently being used as grassland / garden area.

On site sources of contamination:

- None observed from the site inspection.

Off site sources of contamination:

- None observed from the site inspection.

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

9.0 Summary of Possible Contamination Sources

The earliest complete mapping (c.1866) indicates the entirety of the site being comprised of a larger arable field and large situated in a rural setting. Throughout the course of mapping reviewed limited historical development is noted on site, which is mainly confined to the extreme northwestern portion and in general is comprised of small detached structures. In mapping of 1952 these structures are replaced with two structures, one located in the northwest and a larger irregular shaped structure to the south thereof with the remainder of the site remaining undeveloped, which are presumed to be residential dwellings. These structures in mapping of 1991 are no longer observed, possibly associated with the construction of the adjoining A27, with the site observed during the walkover predominately laid with grass and large mature trees.

The surrounding environs are largely composed of residential dwellings and associated garden areas. A limited number of historical land uses have been identified from historical mapping such as Railway line (125m south), Corn mill (250m east), Gas works (250m south), Laundry (over 500m north) and Brick works (over 750m north). However, the distances from these features to the study site would negate their potential impact.

The site is underlain by superficial drift deposits of Head Deposits on the eastern portion of the site with the majority of the site noted to consist of River Terrace Deposits (undifferentiated), this overlies bedrock comprising of the London Clay Formation. There are no records of artificial/Made Ground within 500m, with the nearest historical surface ground working feature located at 223 to 232m periphery and is recorded as being a pond. In respect of current ground workings the nearest is identified 732m northwest. Furthermore, the nearest potentially infilled land is located 223m east for a pond with the nearest recorded landfill site located at 846m northeast,

A limited number of historic and current potentially contaminative uses have been identified such as a nursery 68m northwest, railway infrastructure located 140 to 161m southwest, a garage 201m southwest, an unspecified tank 71m north, historic coach works 324m south and gas works 248 to 252m south. However, again these can be discounted as the distances from these features to the study site would negate their potential impact.

The hydrogeological and hydrological setting of the site is considered to be relatively low given the presence of a Secondary (A) Aquifer in the superficial drift deposits which is underlain by an Unproductive Aquifer in the bedrock geology. The nearest abstraction point is located 1635m northeast, however, there are surface water features within 250m with the closest located 125m southeast for a secondary river.

Based on the foregoing, we have not identified any potential sources of potential contamination which may affect the study site, or conversely that the study site would pose a risk to off site receptors. We acknowledge that there may be a latent risk from potential

historical agricultural usage however, these associated contaminates such as pesticides for example are unlikely to persist in soils due to degradation.

Furthermore, given the limited amount of development which has historically occurred on site coupled with the fact that the current proposals for the redevelopment of the site include residential dwellings and associated soft landscaping areas we would propose a pragmatic approach be adopted in so far as risks are concerned and that a watching brief being undertaken during the redevelopment phase of the site.

10.0 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.

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
None identified	On or Off site	None identified.

Table 3: 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)	Soft landscaping is to be incorporated into the proposed site development.
	Construction workers	Reworking of potentially impacted materials in the limited Made Ground which is anticipated within the western portion of the site 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 in the underlying superficial and an Unproductive Aquifer within bedrock geology. No abstractions are recorded within 1500m, the nearest surface water is located 125m away.
Plant (species and uptake) and Wildlife	Various	Attributes will be influenced by factors such as relative quality, scale, rarity and substitutability.

Table 4: 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 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	Preferential flow	Depending on the foundation solution adopted, preferential flow paths for the

Infrastructure and Obstructions		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. However, the site has had a limited history of development.

Table 5: 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 and therefore would be classed as been a generic end land use of 'residential'.

13.0 Preliminary Conceptual Site Model

Hazard / Pollutant	Pathways	Receptor	Potential Severity	Probability of Risk	Level of Risk	Justification
Potential on and off site historical /current activities.	Ingestion, dermal contact, inhalation	Future end users and site visitors	Medium	Low Likelihood	Low	A low risk is considered given the historic/current setting of the site, there has been very limited development on the site and that no potential contamination has been identified during the walkover survey undertaken
		Construction Workers	Medium	Likely	Low[1]	Construction workers are likely to come into direct contact with soils during groundworks and therefore to mitigate against potential risks the use of appropriate PPE should be adopted as part of best practices [1].
	Leaching through soils and migration via groundwater or soil pore moisture	Controlled Waters	Medium	Low Likelihood	Negligible	A negligible risk is considered given the historic/current setting of the site and surrounding environs. There is a Secondary (A) Aquifer within the superficial drift deposits which is underlain by an Unproductive Aquifer in the bedrock geology. The nearest abstraction point is located 1635m northeast, however, there are surface water features within 250m with the closest located 125m southeast for a secondary river.
	Uptake	Plant and Wildlife	Mild	Low Likelihood	Low	A low risk is considered given the lack of historical development/usage which has occurred on site.
Ground Gases	Gas generation, migration and build up within properties	Future end users, site workers and proposed site structures.	Medium	Low Likelihood	Low	A low risk is considered given limited amount of potential contaminative sources identified from historical and current land use on site and in proximity to the study site. Furthermore, there has been very limited development identified on site from a review of historical mapping.

Table 6: Preliminary Conceptual Site Model

The risk posed to future end users, proposed structures, construction workers and plant & wildlife has been estimated as LOW with the risks posed to controlled waters estimated as being NEGLIGIBLE.

[1] The risk to construction workers and site operatives can be reduced lo Low by the use of suitable Health and Safety measures such as suitable PPE, education and appropriate inductions.

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 watching brief be undertaken particularly during the groundworks stage.

15.0 Recommendations

15.1 Consultees

We would recommend that this report be forwarded to the relevant Statutory Consultees including the Environment Agency (EA) and the relevant Local Authority Environmental Health and Planning Department prior to any ground works commencing to seek their comments and subsequent approval.

15.2 Groundworks Watching Brief

We would recommend that a watching brief be maintained during the course of the development, particularly during the ground works stage.

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 Services

Given that new services will be installed as part of the redevelopment of the site, we would recommend the local water board be contacted to determine their specification for the type of pipework which should be used on this site.

15.6 Muckaway

If any soils are to be removed off site, the waste contractors and/or landfill operators should be involved to ascertain their requirements with regards to removal of soils from the site and the acceptance of the waste at landfill. It may be prudent to undertake Waste Acceptance Criteria (WAC) analyses on the soils to be removed.

All materials must be transported in compliance with the Duty of Care Regulations by authorising movements with Carrier's individually numbered Duty of Care conveyance notes, complete with the appropriate EWC Codes. All relevant dockets will need to be kept to provide evidence of the removal as these may be required as part of a Validation Report.

15.7 Soft Landscaping Areas

As private soft landscaping garden areas are to be incorporated into the proposed development it may be prudent to undertake confirmatory testing to ensure that it is fit for the intended end use.

Testing should include a basic screen of contamination parameters in conjunction with the specifications for topsoil requirements as outlined within BS3882:2015 '*Specification for Topsoil and Requirements for Use*', which should be used as guidance for the composition and chemical analysis required for any imported material.

All certification of the removal, importation and re-use of any materials will have to be kept. It is prudent to contact the Local Authority to determine their specification for imported topsoil analysis.

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.

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.

The recommendations contained in this report represent our professional opinions. These opinions were arrived at in accordance with currently accepted industry practices at this

time and as such are not guarantee that the sites are free of hazardous, or potentially hazardous materials, or conditions.

This report has been prepared solely for the use of the named client, and may not be relied upon by other parties without written consent from YE. YE disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.