

DESKTOP STUDY REPORT

Site Address:	Glebe House Stables, Hinxworth Road, Hinxworth, Baldock, Herts. SG7 5HB
Report Date:	April 2025
Project No.:	19533
Prepared for:	Messers Patrick and Anthony Smyth
Planning Application	North Herts District Council



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LIST OF ABBREVIATIONS

BGS	British Geological Society
CIRIA	Construction Industry Research and Information Association
EA	Environment Agency
EHO	Environmental Health Officer
GL	Ground Level
GW	Groundwater
HESI	Herts & Essex Site Investigations
LAPPC	Local Authority Pollution Prevention and Control
NOS	Not Otherwise Specified (waste material)
NHBC	National House-Building Council
OS	Ordnance Survey
PAH	Poly Aromatic Hydrocarbons
SPZ	Source Protection Zone
TPH	Total Petroleum Hydrocarbons
UFST	Underground Fuel Storage Tanks

DESK STUDY GENERAL NOTES

This report has been prepared based on the findings of investigations into the site conditions using current available data which has been recovered from Envirocheck to provide environmental data in relation to the site and surrounding area. Where possible, local sources have been researched to gain a better understanding of the site conditions. As part of this review, research has been undertaken with the Local Authority and the Environment Agency as to the site condition.

We can confirm that this report has been prepared based on the information gained and that this information is not exhaustive, and that subsequent research may reveal additional facts that may influence the reporting. Where possible, this information has been researched.

All geological information has been researched using the British Geological Society website, (the geology viewer). The disclaimer associated with this portal confirms 'The British Geological Society 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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The accuracy of map extracts cannot be guaranteed, and it should be recognized that different conditions on site may have existed between subsequent to the various map surveys.

We can confirm that within the assessment of the site, various websites have been visited and as such, we cannot confirm the validity of these sites and as such, this information is accepted de facto and without prejudice. Anyone relying on these sources does so at their own risk, however, Herts & Essex Site Investigations does undertake all reasonable care to ensure this data is relevant and correct.

It should be confirmed that the extent of review of this report has undertaken a broad review of on site features which would promote a contamination ground risk, however, this does not include ecological features and in particular Japanese Knotweed which should be reviewed under separate cover.

A review of the site will be made to confirm the extent of obvious Asbestos product or sheet materials either on the surface of the site soils or evident above ground, however, does not constitute a full Asbestos Survey by any means. This should be sought under separate cover.

DOCUMENT INFORMATION AND CONTROL SHEET

Client

Messers Patrick and Anthony Smyth
11 Harcombe Road
London
N16 0RX

Environmental Consultants:

Herts & Essex Site Investigations.
Unit J8 Peek Business Centre
Woodside
Dunmow Road
Bishop's Stortford
Hertfordshire.
CM23 5RG

Tel: 01920 822233

E-Mail: csgrey@hesi.co.uk
Web: <http://www.hesi.co.uk>

Project Manager:

Chris Gray, M.Sc

Principal Author:

Rebecca Chamberlain

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			Rebecca Chamberlain	by: Chris Gray
			Signature / Date	Signature / Date
1	Final	April 2025		

SUMMARY

Client	Messers Patrick and Anthony Smyth		
Site Location	Glebe House Stables, Hinxworth Road, Hinxworth, Baldock, Herts. SG7 5HB		
Existing Development	Stables, yard and paddocks		
Proposed Development	Unknown – likely residential		
Site Settings and Previous Uses	The site is recorded as open land on and off site from the earliest map reference in 1882, in about 1968 there are stables and outbuildings recorded in place which remain in place to date.		
	To the east of the site Glebe House is in place with outbuildings, which remains in place to date, with paddocks in place to the north, west and south of the site.		
Geological and Hydrological Profile	Geology		Aquifer Classification
	Made Ground	Shallow Made Ground Anticipated	Not Classified
	West Melbury Marly Chalk Formation -	Chalk	Principal Aquifer
Nearest Surface Water Feature	The nearest surface water feature is recorded as 68 meters to the north of the site which is recorded as a ditch.		
Groundwater Abstractions	The nearest abstraction well is located 1435 meters to the southwest of the site which is recorded for Agriculture (General) No potable water supplies are recorded within 1.5km.		
Source Protection Zone	The site does not lie within a Source Protection Zone.		
Potential Sources of Contamination	Features On Site - Outbuildings & Stables - Yard - Possible ACM Features Off Site - None		
Human Health Risk	We would suggest that where there are potential sources of contamination the potential pathways in place within the site area are recorded as : - - Dermal Contact. - Inhalation of dust and fibres. - Ingestion of dust and fibres via home-grown produce with plant uptake. - Inhalation of vapours from soils. - Inhalation of vapours through contaminated groundwaters - Ingestion of contaminated water through water main pipework. - Leaching, lateral migration of shallow groundwater to a target receptor. - Leaching, migration through fissures / cracks which may migrate to a groundwater receptor. - Plant Uptake. - Inhalation Asbestos dust and fibres (from Asbestos within the building). - Inhalation Asbestos dust and fibres (from asbestos within the soil).		
Receptors	Based on the proposed use of the site and the finding of this Desktop Study the following receptors will need to be considered : - - Human Health, (Site Development Personnel). - Human Health, (Residents or staff). - Adjoining Landowners, (unlikely). - Flora. - Groundwater. - Abstraction wells. - Surface water features.		
Proposed Investigation Work	Further works should be completed based on this assessment and follow protocols under BS 10175:2011+A2:2017, (Investigation of potentially contaminated sites). These recommended works are as follows :-		
Human Health Risk	- Intrusive investigation to assess and recover samples of the made ground and underlying natural geology to consider the geology and soil contamination. - Targeted samples to be recovered from around the buildings with and/or around the sources noted above - Spatial sampling to be completed across the site area. - Chemical testing to be completed on an appropriate number of samples for the recommended pollutants.		
Land Gas Risks	No sources of land gases are in place for the site area, should significant made ground or organic matter be encountered within the site area reassessment may be required, although for the information collect to date the risk of this is low.		
Vapour Risk	- Soil testing to be undertaken to assess whether contamination that may promote a vapour risk is in place within the site area and the groundwater, where present. - Where vapour risks may be migrating onto the site from an off site source, utilize standpipes within the upper made ground and underlying granular soils to form the response zone for the site. - A minimum of 1 No standpipe should be installed and preferably 3 No standpipes around the site. - Complete vapour monitoring to assess vapour risk.		
Groundwater Risks	- Assess soils profile to consider the requirement for installation of standpipes, (Clay or absence of groundwater would suggest limited groundwater risk) - Where significant risk is identified in place, undertake leachate testing on samples to assess mobility of soil contamination. - Utilize ground gas monitoring wells as dual gas and groundwater monitoring wells and recover samples of the groundwater for later chemical analysis. - Purge groundwater monitoring wells and recover fresh samples of the groundwater for this testing. - Testing suite to be as per the recommendations within this report.		
Watching Brief	- Maintain a watching brief throughout all site investigation works. - Sample recovery should undertake due diligence to consider the presence of Asbestos as a critical risk. - An engineering description of the samples recovered and depths to be noted for use within environmental reporting. - An olfactoral assessment of the site soils exposed and recovered should be made and recorded for use within the environmental reporting.		
Reporting	- Complete an environmental report in accordance with BS 10175:2011+A2:2017. - Report all findings of the site investigation.		

PRELIMINARY RISK ASSESSMENT – DESKTOP STUDY - PHASE 1 REPORT

1 Context and Objectives of this report

1.1 Introduction

We have been asked by Messer's Patrick and Anthony Smyth to undertake an investigation of the above site in order to assess the potential environmental impact of the existing and historical use of the site on the proposed development sufficient to document the level of risk and impact on future users and the environment.

The client is proposing to develop residential dwellings with gardens, as such the derivation of risk has been assigned as a 'Residential Land Use with Home-grown Produce'.

1.2 Reference to the Current Planning Application Details

No application is in place with North Herts District Council.

1.3 Decision Notice Relating to Contaminated Land

No conditions are in place.

1.4 Report Objectives

The objectives of the project were as follows: -

- A review of the geological, hydrological and hydrogeological setting of the site, and public domain environmental information to build up an understanding of the site and its environmental setting/sensitivity.
- Review of historical land uses for the site and surroundings with a particular emphasis on identifying potential ground hazards and on-site and off-site contamination sources.
- A visual walkover inspection of the site to review current and recent site activities, the condition of the site, potential ground related hazards and activities or areas that might have the potential to cause ground contamination as well as possible indicators of contamination; and
- Preparation of a Conceptual Site Model (CSM) with a view to identifying potentially significant source-pathway-receptor linkages followed by a qualitative risk assessment.

1.5 Timescales of the Assessment

The timescales for the site investigation process are based on immediate site investigation data and the assessment of the site conditions based on this report at present. The scope of this report which define the following: -

- Any immediate risks identified within the site that may promote a high risk to the immediate site conditions.
- Any current site use features that would promote a risk that required 'quick' action.
- Any construction or medium-term risks within the site which may be present during the construction process within the site.
- Any long-term risks within the site that may require long term assessments or interim monitoring.

- Any risks within the site that may change upon the change in use of the site to form the proposed development.

1.6 Level of Technical Confidence Expected

The scope of this report has been prepared in order to assess the historical impact of the site and any previous site uses on the existing and proposed development scheme. The level of risk will be prepared and assessed based on historical mapping and environmental information which has been gained to support the development of this report.

Whilst this is the case, gaps in map records and information will be in place that would reduce the readers confidence of the information sought. As such, this report has been prepared as a preliminary or Indicative Report with a Medium Confidence Level.

1.7 Management Constraints

The site investigation has been prepared based on a budget and time scales which has been agreed with the client. The desk top study fees have been agreed at this time which will dictate a way forward.

2 Broad Characteristics of the site

2.1 The Site

The site is located within a rural area of Radlett in Hertfordshire, the details of which are summarised in Table 1 with the location plan of the site shown in Appendix 2, Sheet 1.

Table 1 Site Detail

Site Address:	Glebe House Stables, Hinxworth Road, Hinxworth, Baldock, Herts. SG7 5HB
Site assessed under	Site Owners Request - Aid as part of planning and warranties
Current use of land:	Stables
Previous use of site, (if known)	As above
Grid Reference	NGR 523350, 239760
Site Area	0.58 Hectares
Local Authority	North Herts District Council
Gradient of the site	The site area forms a level area of land.
Proximity of Controlled Waters, (if known)	The nearest surface water feature is recorded as 68 meters to the north of the site which is recorded as a ditch.

2.2 Existing Site Use

At the time of the walk over demolition works had started, the site was previous barns used for storage of grain and hay.

2.3 Surrounding Land Uses

The surrounding land uses are detailed below: -

- To the north of the site area there is agricultural land.
- To the east of the site area a residential dwelling with outbuildings is recorded in place.
- To the south of the site area there is agricultural land.
- To the west of the site area there is agricultural land.

2.4 Site Reconnaissance

The site walk over visit was undertaken in April 2025 on which the weather conditions were recorded dry and sunny.

Access

At the time of the walk over the site was accessed from Hinxworth Road to the east of the site, where a driveway leads to the west and onto the southeast of the site area where a yard area is in place.

Site Area

The site forms a rectangular parcel of land, within the north of the site there is a ménage in place.

Within the centre of the site there is a large barn in place, the is divided into stables along the south of the barn with an open sided storage area within the northwest, the majority of the barn is laid to a concrete floor with a ménage area within the northeast of the barn laid to sand.

The structure forms a wooden frame building with wood cladding and corrugated sheeting forming the walls and corrugated sheets and corrugated metal on the roof.

Within the south of the site area there is a concrete yard area where horse trailers and vehicles are parked at the time of the walk over. To the boundary there are some small paddock areas in place with a small stable.

Within the southeast of the site area there is a timber frame structure in place with a corrugated sheet roof. The area is laid to concrete and in use as a storage and office area, although stable divides are still in place from the historical use of the building.

Vegetation

The majority of the site is laid to the buildings and yard areas, some soft land scaping is in place with the south of the site area forming paddocks laid to grass.

Above or below ground fuel or oil storage tanks

By examination of the site no above ground tanks are in place, no features are present to suggest that any below ground fuel tanks would be in place within the site area.

Asbestos Containing Materials

Asbestos containing materials have been identified in place on the barns in the form of corrugated sheeting which may contain asbestos. We would suggest that the soil within the site is testing for asbestos especially in and around the barns and where hardcore fill is in place and an asbestos survey of the building be carried out, if not done so already, prior to any further demolition or works on site. This is particularly relevant in terms of post demolition assessments which may record Asbestos spread across the site post demolition.

Surrounding Area

Surrounding the site area, to the north, west and south of the site there is paddocks in place. To the east of the site there are additional out buildings in place and a residential dwelling with a well established garden.

Site Levels and Ground Cover

The site area forms a generally level area of land.

The site area is laid to a mixture of soft landscaped paddock, concrete yard and horse ménage areas.

Current site activities

The current site use forms stables.

Effluent, Site Drainage and Services

Limited services and drainage was seen in place within the site although no service search is known to us, therefore the location condition nor status of these services is known.

2.5 Site Reconnaissance – Photos

Print 1



Print 2



Print 3



Print 4



Print 5



Print 6



Print 7



Print 8



Print 9



Print 10



Print 11



Print 12



Print 13



Print 14



Print 15



Print 16



Print 17



Print 18



Print 19



Print 20



Print 21



Print 22

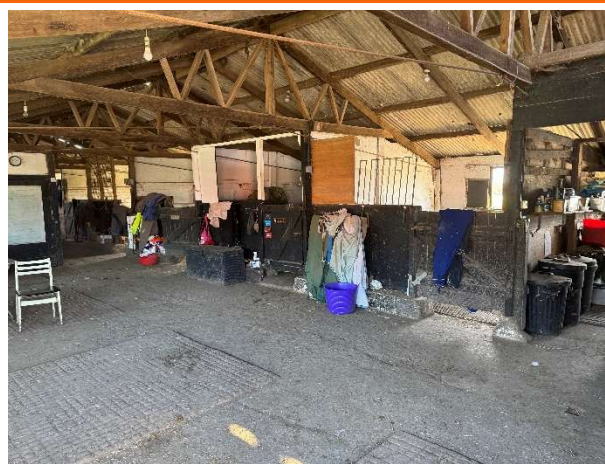


Table 2 **Walk Over Inspection Risk**

Feature	Location	Elevation	Is Risk Present?	Location to Target
Stables	On Site	At GL.	✓	Within and around the feature
Yards	On Site	At GL.	✓	Within and around the feature
Paddocks	On Site	At GL	X	Limited sources
Asbestos sheeting	containing On Site	At GL	✓	Sitewide risk

3 **Details of Searches Undertaken**

Within this report, various searches have been undertaken in order to assess the risk associated with the development of the site from the historical and current use of the site and surrounding area. These include: -

- Environmental Data Search 1:10,000.
- Environmental Data Search 1:2,500.
- Site Sensitivity Maps and Data Sheets.
- Historical Maps.
- Internet Search.
- Local Authority Search – Planning Files.
- Consultation with Site Owner / Architect.

4 **Information on Historical and Current Activities on the Site and Surrounding Area**

The history of the site's land-use and development from Victorian times onwards has been researched from Ordnance Survey, (O.S.) maps. Extracts of the O.S. Maps and plans are presented in Appendix 4. Reference to

historical maps provides invaluable information regarding the land use/history of the site, but historical evidence may be incomplete for the period pre-dating the first edition and between successive map references.

4.1 *Discussion of the Development History*

A summary of the historical development of the site and surrounding area based on the information obtained from the above sources is provided in Table 3. It should be noted that these maps are only a small section of time and represent the timescales given in each of the map records. It is highly possible that development or features may have been developed within or surrounding the site which may influence the site, and this should be born in mind when assessing the history of the site.

Table 3 *Historic Maps Assessment*

Date	Scale	On Site Feature	Off Site Features
1882	1:2,500 1:10,560	Open Land	Road – E Open land – all directions
1898	1:2,500	No Change	Glebe House - E
1887	1:10,560	No Change	No Change
1899	1:10,560	No Change	No Change
1901	1:2,500 1:10,560	No Change	No Change
1903	1:10,560	No Change	No Change
1924	1:2,500	No Change	No Change
1925	1:10,560	No Change	No Change
1938	1:10,560	Outbuildings / Stables – E & SE	No Change
1950	1:10,560	No Change	No Change
1960	1:10,000	No Change	No Change
1968	1:2,500	No Change	Residential dwelling - E Place Farm - E 30m

Table 4 **Historic Map Assessment - Continued.....**

Date	Scale	On Site Feature	Off Site Features
1970	1:10,560	No Change	No Change
1986	1:10,000	No Change	No Change
1993	1:2,500	No Change	No Change
1999	Historic Aerial Photo 1:10,000	Lage barn within the site. Ménage within the north of the site. Yard area within the south.	No Change
2006	1:10,000	No Change	No Change
2023	1:10,000	No Change	No Change

Table 5 **Overview of Historic Map Assessment Risk**

Identified Risk	Distance & Direction	Year	Is risk in place?	Considering All Pathways		Justification
				Assessment Required.	Method of Assessment	
Open Land	On and Off Site – N, E, S, W	Pre 1882 - 1968	X			No Source
Outbuilding / Stables	On Site	1968 - Present	✓	Possible Soil Risk Possible GW Risk Possible Vapour Risk	Recover Soil Samples Install Standpipes GW & Vapour Assessments	
Glebe House	Off site - E	1898 - Present	X			Limited Sources
Residential dwelling	Off site - E	1968 - Present	X			Limited Sources

5 *Details of the Intended Future Use of the Site*

It is proposed to convert the existing barns to form two residential dwellings, with a new access point to the northwest of the site. Driveways and detached garages are proposed within the west of the site. Private gardens are proposed within the east of the site.

6 *References of Planning Applications*

No current planning application is in place for the site area.

From a review of the North Herts District Council web site the following applications is recorded for the site area.

Historical applications are also in place with Council as follows: -

Application No: 91/00307/1

Proposal: Retention of use of agricultural land for stabling and grazing of horses and use of part of barn for indoor exercise area.

Decision: Conditional Permission

Application No: 86/00051/1

Proposal: Conversion and adaptation of part of existing stable block into residential use, to be occupied by agricultural students associated with Glebe Farm.

Decision: Conditional Permission

Application No: 81/00265/1

Proposal: Erection of two storey and single storey extension and bay window on side elevation.

Decision: Conditional Permission

Application No: 03/01206/1HH

Proposal: Part two storey and part single storey rear extension

Decision: Conditional Permission

7 *Discussion with Local Authority*

No discussion with the Local Authority has been completed.

8 *Consultation with Environment Agency*

Consultation has not been made with the Environment Agency at this time. The information gained from Envirocheck and the EA web site has provided sufficient information at this stage. The assessment of the site should take into account the groundwater regime within the site area and the possible risk from both on-site and off-site contamination.

Should heavy or persistent contamination be identified within any Phase 2 or intrusive investigation, consultation will be required and will be undertaken.

9 Consultation with Appropriate Bodies/Local Sources

Limited consultation with the Local Authority has taken place a review of the online planning files has been made. The current owner of the site notes that the barns were in use for storage of grain and hay, for an agricultural farm. No other local sources of information were available at the time of the walk over. This forms the level of assessments made.

10 Previous Reporting

No previous reports are known to us at the time of writing this report.

11 Environmental Settings

11.1 Superficial Deposits and Solid Geology

The ground conditions based on geological maps and BGS information shows the site to be located within West Melbury Marly Chalk Formation - Chalk. To the east of the site area a small pocket area which is identified as Lowestoft Formation is in place.

The Lowestoft Formation is characterised by a Chalky till, together with outwash sands and gravels, silts and clays. The till is characterised by its chalk and flint content.

11.2 BGS Boreholes

A BGS Boreholes are reported to the southeast of the site which noted boulder clay over chalk. In 1960 a hand pump was recorded in place although was disused.



Table 6 **Geological Information**

<i>Geological Unit</i>	<i>Brief Description</i>	<i>Anticipated thickness, (m)</i>	<i>Aquifer Type</i>
Superficial Deposits/Drift On Site			
Filled/Re-worked ground	Made Ground, (Potentially Contaminated Stratum).	0.5-1.00 meters+	Not Classified
Off site – E 50m Lowestoft Formation	Chalky till, together with outwash sands and gravels, silts and clays	4-6 meters	Secondary Aquifer Undifferentiated
Solid Geology Deposits			
Chalk	Chalk	15m +	Principal Aquifer

11.3 Hydrology

The nearest surface water feature is recorded as 68 meters to the north of the site which is recorded as a ditch.

The nearest discharge consent is recorded 497 meters to the east of the site, Sewage Discharges - Final/Treated Effluent - Not Water Company.

No pollution incident to controlled waters are recorded within 800 meters of the site area.

11.4 Hydrogeology

The published Environment Agency Groundwater Vulnerability Map of the area indicates the site to be located within an area classified as a Principal Aquifer within the chalk.

Principal aquifers provide significant quantities of drinking water, and water for business needs. They may also support rivers, lakes and wetlands.

The nearest abstraction well is located 1435 meters to the southwest of the site which is recorded for Agriculture (General) No potable water supplies are recorded within 1.5km.

The site does not lie within a Source Protection Zone.

11.5 Implication of groundwater

Considering the underlying secondary aquifer undifferentiated with the principle aquifer below, groundwater links are possible and therefore some degree of assessment will be required to classify the extent of risk to a groundwater system, as well as abstraction wells, surface water features and source protections zones surrounding the site area.

In accordance with Environment Agency guidance document: -

- The Environment Agency's approach to groundwater protection, Version 1.2, (February 2018).

The document confirms: -

- “Selecting compliance points for use in land contamination risk assessments the distance to a set compliance point should not exceed 50 metres for hazardous substances or a maximum of 250 metres for non-hazardous pollutants unless there are specific physical constraints on the ability to use the groundwater resource. Any increases above these specified distances may be justified but must be supported by a sustainability assessment that takes into account environmental, social and economic factors.”

Considering the above, groundwater risk may be in place if significant contamination or a persistent source of contamination are encountered or recorded within the site area, within the information to date risk is considered possible.

11.6 Flooding

Based on the BGS Flood GFS Data the site is recorded within an area with potential for groundwater flooding to occur at surface. Off site to the north and east of the site there are area at a low risk (1000 year return) for flooding from surface water.

Based on a post code search of the Gov.com website the risks are noted as follows.

Surface water:

Yearly chance of flooding – Very Low

Yearly chance of flooding between 2040 and 2060 - Very Low

River and the sea:

Yearly chance of flooding - Very Low

Yearly chance of flooding between 2036 and 2069 - Very Low

Groundwater – Unlikely

Reservoirs - Unlikely

(<https://www.gov.uk/check-long-term-flood-risk>)

Based on the EA Flood map for planning search, as noted in the appendix of this report, this site is recorded within a flood zone 1, land within flood zone 1 has a low probability of flooding from rivers and the sea. (<https://flood-map-for-planning.service.gov.uk/>)

11.7 Landfill Sites

No landfill sites or potentially infilled land is recorded in place surrounding the site area.

11.8 Environmentally Sensitive Sites

Surrounding the site area, no environmentally sensitive receptors are recorded in place.

Table 7 **Sensitivity of Environmental Receptors in the Vicinity of the Site**

Receptor Type	Receptor(s)	Sensitivity	Comments
Groundwater	Principal Aquifer	High	Possible risk to the groundwater in the chalk.
Water Abstraction	Agriculture (General)	Medium	The nearest abstraction well is located 1435 meters to the southwest of the site.
Source Protection Zone	NONE		
Surface Water	Ditch / stream	Medium	The nearest surface water feature is recorded as 103 meters to the north of the site.
Flooding	NONE		
Ecological	NONE		

12 **Site Drainage and Other Potential Man-Made Pathways**

Drainage is recorded in place, although, the site has not been reviewed for drainage routes. A full drainage assessment may aid in the assessment of the site in relation to pathway creation for pollution to migrate.

13 **Regulatory Data**

Information relating to the potential hazards associated with environmental regulatory controls are summarised in Table 7 and 8. This information is recorded in full within the Envirocheck data provided within Appendix 5. The salient points recorded within this data are re-created below.

Table 8 **Summary of Regulatory Data - Sources**

<i>Data Sources</i>	<i>On Site</i>	<i>Off Site</i>	<i>Distance from site.</i>	<i>Is potential risk in place?</i>
Discharge Consents	None	Sewage Discharges - Final/Treated Effluent - Not Water Company	E 497m	X
Radon Potential - Radon Protection Measures	No radon protective measures are necessary in the construction of new dwellings or extensions			X

Table 9 **Summary of Regulatory Data - Receptors**

<i>Data Receptors</i>	<i>On Site</i>	<i>Off Site</i>	<i>Distance from site.</i>	<i>Is potential risk in place?</i>
Nearest Surface Water Feature	None	Ditch / Stream	68m N	X
Water Abstractions	None	Agriculture (General)	1435m SW	X
OS Water Network Lines	None	Inland river	68m N	X
Source Protection Zone	None			X

Table 10 *BGS Estimated Chemistry Data*

<i>BGS Estimated Soil Chemistry Pollutant</i>	<i>BGS Estimated Soil Chemistry</i>
Arsenic	<15
Cadmium	<1.8
Chromium	40-60
Lead	<100
Nickel	15-30

Considering the background concentrations present, potential for human health risk is not anticipated within this area.

Table 11 *Geological Hazards*

<i>Geological Hazard</i>	<i>Distance & Direction</i>	<i>Feature</i>	<i>Risk Assessment Required</i>
Non-Coal Mining Areas of Great Britain	On Site		Negligible
Collapsible Ground	On Site		Very Low
Compressible Ground	On Site		Negligible
Ground Dissolution Features	On Site		Very Low
Landslide	On Site		Very Low
Running Sand	On Site		Very Low
Shrinking or Swelling Clay	On Site		Low

Table 12 **Summary of Contemporary Trade Entries**

<i>Trade Name</i>	<i>Trade Use</i>	<i>Distance & Direction from Site</i>	<i>Is potential risk in place?</i>	<i>Comment</i>
X				
No trades are recorded within 500 meters of the site, (See Envirocheck Data)				

*NB The above information is taken from the Envirocheck trade directories

14 Identification of Potential Contaminants of Concern and Source Areas

Potential sources of contamination are brought forward for further risk assessment which are detailed in Table 13: -

Table 13 *Table of Source Risk*

Risk Assessment	Source Risk	Source of Information	Location	Date	Considering Site Specific Pathways	
					Assessment Required.	Method of Assessment
A	On Site Features					
	Outbuildings & Stables	Walk Over Survey Historical Maps	North & SE	1938 – Present	Possible Soil Risk Possible GW Risk Possible Vapour Risk	Recover Soil Samples Install Standpipes GW & Vapour Assessments
	Yard	Walk Over Survey	Centre			
	Possible ACM	Walk Over Survey	North & SE			

15 Outline Conceptual Model

What must now be considered is what contamination should be identified as a potential hazard as a result of the use of the site-specific areas. In order to undertake this task, the **Contaminated Land Reports, (CLR10)**, has been used which details some trades and potential sources of contamination. In addition to this, the Department of Environment Industry Profiles have been incorporated which detail trade, and also, specific site usage of the trade and contaminant sources.

The information below incorporates a hazard assessment of the features surrounding the site that could potentially impact on the proposed development. This is based on the information below: -

Table 14 **CIRIA Contaminated Land Risk Assessment Table**

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate/Low Risk
	Likely	High Risk	Moderate Risk	Moderate/Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate/Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk	Very Low Risk

Extracted from CIRIA Publication C552 Contaminated Land Risk Assessment

Table 15 **Risk Assessment A**

Source (Potential Contaminating Use)	Potential Contaminants	Receptors	Pathways	Associated Hazard, [Severity]	Proposed Site Use Risk Assessment		
					Likelihood of occurrence	Potential Risk	Notes
Outbuildings / Stables / Yard Possible ACM	TPH's	Site Users Construction Workers.	Direct contact. Inhalation dust and fibers. Dermal contact	Medium	Likely	Moderate	Possible risk in place
			Ingestion of home-grown produce	Medium	Likely	Moderate	Possible risk in place
			Ingestion of contaminated water through water main pipework	Medium	Likely	Moderate	Possible risk in place
			Inhalation of vapours	Medium	Likely	Moderate	Possible risk in place
			Inhalation of land Gases	Medium	Likely	Moderate	Possible risk in place
			Inhalation of vapours through contaminated ground waters	Medium	Likely	Moderate	Possible risk in place
		Adjoining Landowners	Direct contact. Inhalation dust and fibers. Dermal contact	Medium	Low Likelihood	Moderate / Low	Limited risk in place
			Ingestion of home-grown produce	Medium	Low Likelihood	Moderate / Low	Limited risk in place
			Ingestion of contaminated water through water main pipework	Medium	Low Likelihood	Moderate / Low	Limited risk in place
			Inhalation of vapours	Medium	Low Likelihood	Moderate / Low	Limited risk in place
			Inhalation of vapours through contaminated ground waters	Medium	Low Likelihood	Moderate / Low	Limited risk in place
		Controlled Surface Water;	Leaching, lateral migration of shallow groundwater to a target receptor.	Medium	Likely	Moderate	Possible risk in place
		Ground Water. Abstraction Well.	Leaching, migration through fissures / cracks which may migrate to a groundwater receptor.	Medium	Likely	Moderate	Possible risk in place
		Flora	Plant Uptake Direct Contact	Medium	Likely	Moderate	Possible risk in place
	Asbestos	Site Users Construction Workers.	Inhalation dust and fibers (from Asbestos within the building)	Severe	Likely	High	Possible risk in place
			Inhalation dust and fibers (from asbestos within the soil)	Severe	Likely	High	Possible risk in place
	Metals Metalloids PAH's	Site Users Construction Workers.	Direct contact. Inhalation dust and fibers. Dermal contact;	Medium	Likely	Moderate	Possible risk in place
			Ingestion of home-grown produce	Medium	Likely	Moderate	Possible risk in place
		Controlled Surface Water;	Leaching, lateral migration of shallow groundwater to a target receptor.	Medium	Likely	Moderate	Possible risk in place
		Ground Water. Abstraction Well.	Leaching, migration through fissures / cracks which may migrate to a groundwater receptor.	Medium	Likely	Moderate	Possible risk in place
		TPH's Buildings. Construction Materials. Services	Direct contact with contaminated soils;	Medium	Likely	Moderate	Possible risk in place
			Direct contact with contaminated groundwater	Medium	Likely	Moderate	Possible risk in place

Table 16 Overview of Risk Assessments - Proposed Site Use

Receptors	Pathways	A
		Outbuildings / Stables / Yard
		Possible ACM
Site Users Construction Workers	Direct Contact, Inhalation of Dust and Fibres, Dermal Contact	✓
	Ingestion of home-grown vegetation	✓
	Ingestion of contaminated water through water main pipework	✓
	Inhalation of vapours from soils	✓
	Inhalation of vapor from contaminated ground waters	✓
	Inhalation of land gas vapours	X
	Inhalation Asbestos dust and fibers (from Asbestos within the building)	✓
	Inhalation Asbestos dust and fibers (from asbestos within the soil)	✓
Adjoining Owners	Land	
	Direct Contact, Inhalation of Dust and Fibres, Dermal Contact	X
	Ingestion of home-grown vegetation	X
	Ingestion of contaminated water through water main pipework	X
	Inhalation of vapours from soils	X
Flora		
	Plant Uptake / Direct Contact	✓
Groundwater; Abstraction Well & Surface Water	Leaching, lateral migration of shallow groundwater to a River or surface water receptor.	✓
	Leaching, lateral migration of shallow groundwater system underlying the site and subsequent abstraction well or SPZ	✓
Buildings	Direct contact with contaminated soils.	✓
	Direct contact with contaminated groundwater	✓

*NB: Due to Severe Consequence from Asbestos and Explosive Gases, some risk is assessed and potentially in place and therefore highlighted above.

GW Only: Some risks have been assessed as a direct result of potential mobilisation of groundwater contamination that may influence the site. A pictorial conceptual model has been reproduced within this report to confirm the above findings

16 Discussion on Sources of Contamination

The assessments of the site have drawn conclusions of historical and ongoing land uses which may impact on the proposed development which will be further considered through location, (either on or off site) and nature of risk. These are discussed below: -

Table 17 Pollutant Risk

Risk Assessment	Land Use	Pollutant
Soil, Groundwater & Vapour Risk		
Risk Assessment A	Outbuildings / Stables / Yard	Moisture Content, pH, Electrical Conductivity, Cyanide, (Free), Cyanide, (Total), Organic Matter, Boron, Sulfate, (2:1 water soluble), Chromium, (Hexavalent), Sulfate, (Total), Arsenic, Cadmium, Chromium, Copper, Mercury, Nickel, Lead, Zinc, Speciated PAH's, (EPA Priority 16), Phenols, Asbestos, Total Petroleum Hydrocarbons (aliphatic/ aromatic 8-Band),
	Possible ACM	
Soil Sampling Groundwater & Vapour Assessment		
Spatial Sampling, (General Assessment)		Moisture Content, pH, Electrical Conductivity, Cyanide, (Free), Cyanide, (Total), Organic Matter, Boron, Sulfate, (2:1 water soluble), Chromium, (Hexavalent), Sulfate, (Total), Arsenic, Cadmium, Chromium, Copper, Mercury, Nickel, Lead, Zinc, Speciated PAH's, (EPA Priority 16), Phenols. BS3882:2015
		Asbestos
		25-meter Centres In accordance with BS10175: 2011+A2:2017.
		5-10-meter Centres In accordance with BS10175: 2011+A2:2017.

17 Next Steps

Considering the information gathered to date, we would suggest that an appropriate way forward would be to assess the condition of the subsoil within the site resulting from the historical and former uses of the site as detailed within previous sections of this report. We would suggest that the most viable way of assessing risk will be to consider the following assessment techniques.

The assessment of the site proposed in this report and the following recommendations which are detailed below have been prepared in accordance with key guidance documents as follows: -

- National Planning Policy Framework.
- British Standards 10175:2011+A2:2017
- Land contamination risk management (LCRM)
- Contaminated Land Report, (CLR11) 11, 'Model Procedures for the Management of Contaminated Land', (2004).
- DEFRA: Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance, (April 2012)
- Environment Agency, (2010) GPLC1 Guidance Principles for Land Contamination.

The investigation is proposing to undertake the following at the site: -

- Determine the ground and groundwater conditions.
- Determine if there are any obstructions such as old service and foundations, buried tanks, etc.
- Obtain samples of the made ground, natural soils and groundwater for contamination testing at targeted site-specific designed locations. Test soil and groundwater samples for a range of contaminants, as identified in Table 18.
- Obtain samples of soil to test for vapours contaminants, as identified in Table 18.
- Visually appraise soils to consider olfactorily or visual presence of contamination factors, risk, vapours or fragments.
- All laboratory testing should be completed to MCERT/UKAS accredited standard.
- All detection limits provided by chemical laboratories must fall below the set screening values.

17.1 Soil Assessment

Soil sampling will be completed recovering samples in appropriate containers for analysis by the analytical chemist. All sampling will be sent directly to the chemist in cool boxes to retain the integrity of the soil sample.

Based on the site area and size of the site, (approximately 3200 m²), we would recommend that the site should be subjected to a sampling density of between 15-20 meter grid pattern or moderate risk pollutants which is broadly in line with that proposed by 10175:2011+A2:2017 and offers a greater density sampling pattern of 10-15 meter grid pattern for high risk pollutant such as Asbestos. As such, we can confirm that a likely 8-10 samples will be required across the site to provide a 'good' spatial density and an additional 20-22 sample locations being tested for Asbestos.

Table 18 **Soils Assessment - Targeted Sampling**

<i>Feature</i>	<i>Contaminant</i>	<i>Method of Investigation</i>
Outbuildings / Stables / Yard	Metals, Semi Metals, PAHs, TPHs, Asbestos	Window Sampler Boreholes Hand Auger Boreholes
Possible ACM	Asbestos	Trial Pits

Table 19 **Soils Assessment – Spatial Sampling**

<i>Feature</i>	<i>Contaminant</i>	<i>Method of Investigation</i>
Made Ground	Metals, Semi Metals, PAHs, TPHs	Window Sampler Boreholes Hand Auger Boreholes Trial Pits

Upon completion of on-site sampling and the associated chemical analysis, the soil data will be compared against the Generic Assessment Criteria derived by AtRisk Soils which has been purchased as a reviewing standard. This has been prepared by Atkins as Soil Screening Values, (SSV's). Additionally, values will be adopted for screening values using LQM / CIEH – Suitable 4 Use Levels in the absence of Atkins adopted values.

17.2 Groundwater Assessment

In order to gain an understanding of the groundwater system and the level of risk in place, we can confirm that the following works should be completed: -

The Geology within the site should be confirmed.

- The depth of the Geology within the site should be assessed and if ground water is encountered or has the potential to be in place, some assessment of the risk to groundwater and surface water features should be carried out as well as potential human health risk from vapours.
 - Considering the size and nature of the site, the groundwater elevation may be perched at locations and as such, strikes may be local to lenses or pockets of more permeable ground in order to provide surface water runoff.

Standpipes should be installed across the site, in order to orientate the groundwater table to identify groundwater flow direction. Three standpipes should be installed for groundwater assessment such that orientation of the groundwater table can be undertaken.

- We would recommend that the installation of the boreholes at the site should be completed in order to determine the groundwater elevation. The boreholes should be left for a minimum period of one week in order to allow the groundwater to reach equilibrium at which time, purging of the standpipe well should be completed to consist of a minimum of 3 well volumes removed from the standpipes prior to samples being recovered. Sampling of the groundwater can be completed and retained in appropriate containers dependent upon the analysis proposed. The sample should then be sent to the analytical chemist for assessment in appropriate transport conditions.

- It is possible that groundwater assessments may require extending the standpipes through any superficial deposits suggested by the Envirocheck report. The Chalk aquifer is the principal aquifer in which assessments should be completed.
- Considering the size and nature of the site should ground water risk be recorded within the site area each borehole should be sampled and tested for the range of pollutants as identified within this report. The potential risks should be initially assessed against the UK Drinking Water standard as a Tier 1 assessment Criteria with possible further assessments required where heavy contamination or risk deemed in place. Groundwater samples should be compared against the EQS standards, (Environmental Quality Standards).
- The assessment of groundwater will also be used to consider the risks to surface water features and whether the site may impact of this feature.
- Risk assessment A should be tested for so the extent of pollutants can be identified within the groundwater sample.

17.3 Land Gas Assessment

No sources of land gases are in place for the site area, should significant made ground or organic matter be encountered within the site area reassessment may be required, although for the information collect to date the risk of this is low.

17.4 Vapour Risk Assessment

Considering the potential for vapour risk to be in place from various source as noted below, the following risk are in place.

Table 20 **Vapour Risk Assessment - Response Zone**

<i>Feature</i>	<i>Targeted Response Zone</i>	<i>Location to Target</i>	<i>Vapour risk</i>
Outbuildings / Stables / Yard	Made Ground	Site wide	TPH's

Considering the above, we would suggest that soil testing is undertaken to assess whether contamination that may promote a vapour risk is in place within the site area and the groundwater.

17.5 Working Brief

It should be noted that this investigation is undertaken in order to identify the extent of contamination as a result of historic and ongoing use. Should any areas of the site be encountered within the development that appear potentially contaminated through visual or olfactory assessment outside that discussed within this report, consultation with ourselves should be undertaken in order to identify the risk associated with the material.

Table 21 **Overview of Works**

Receptor	Scope of Investigation Works Required			Proposed Method of Assessment	Proposed Site Works to Complete
	Assessment of: Soils	Vapour and Gas	Ground Surface Water and		
Human Health	✓	✓	✓	Window Sampling - Soil sampling - Install standpipe - Groundwater sampling*	Recover samples of the made ground. Assessment of the underlying natural soils to consider contamination. Leachate testing on elevated samples. Vapour Risk Assessment. Analysis of soil samples for GQRA Assessment. Reporting
Surface Water	X	X	X	No Action	
Ground Water	✓	X	✓	Window Sampling - Soil sampling - Install standpipe - Groundwater sampling*	Recover samples of the made ground. Assessment of the underlying natural soils to consider contamination. Leachate testing on elevated samples. Vapour Risk Assessment. Analysis of soil samples for GQRA Assessment. Reporting
Services & Building	✓	✓ #	X	Window Sampling - Soil sampling	Recover samples of the made ground. Vapour Risk Assessment. Groundwater Assessment. Analysis of soil samples for GQRA Assessment. Reporting
Geotechnical Assessment	✓	N/A	X	Window Sampling	Recover samples of the natural soils for laboratory testing. Assessment of shallow soils for conventional foundation. Consider deeper or piled foundations. Reporting.

NB * Initial assessments of the site should be undertaken using Leachate Testing and water sampling if required.

Complete soils testing to assess if vaporous contamination is in place within the site area.

APPENDIX ONE

ADDITIONAL INFORMATION

Flood map for planning

Your reference
Unspecified

Location (easting/northing)
523333/239770

Created
22 April 2025 14:53

Your selected location is in flood zone 1, an area with a low probability of flooding.

You will need to do a flood risk assessment if your site is **any of the following**:

- bigger than 1 hectare (ha)
- in an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2025 AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference

Unspecified

Location (easting/northing)

523333/239770

Scale

1:2,500

Created

22 Apr 2025 14:53

-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area



0 20 40 60m

APPENDIX TWO

CONCEPTUAL MODEL

Glebe House Stables, Hinxworth Road, Hinxworth, Baldock, Herts. SG7 5HB

Site Conceptual Model - Proposed Site Plan

Potential Pathways

Human Health

- ① Direct contact with contaminants in soil/dust or water
- ② Inhalation of contaminants through soil/dust/particles
- ③ Dermal Contact
- ④ Ingestion of home grown produce
- ⑤ Ingestion of contaminated water through water main pipework
- ⑥ Inhalation of Land Gases / Vapours From Soils
- ⑦ Inhalation of Vapours from Groundwater
- ⑧ Migration to off site Adjoining Land Owners

Flora

- ⑨ Plant uptake & direct contact with soil

Controlled Surface Water, Ground Water & Abstraction Well

- ⑩ Leaching, lateral migration of shallow groundwater to a target receptor

Off Site Sources

- A Migration of contamination to the site area
- B Migration of land gases/ vapours to the site area
- C Migration of contaminated groundwater to the site area

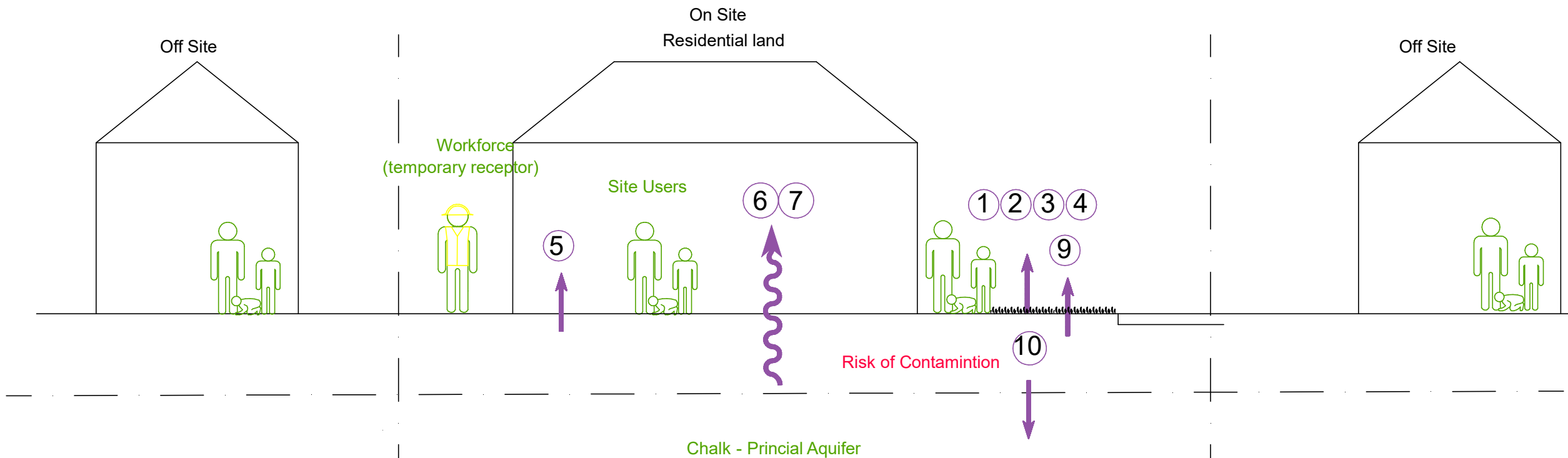
Key

Purple =Possible pathways

Green =Possible receptors

Red =Possible sources

Grey = Not in place within this site



Not to Scale
Sketch No. : DTS / 19533 / 02 / 01

APPENDIX THREE

SITE PLANS

Glebe House Stables, Hinxworth Road, Hinxworth, Baldock, Herts. SG7 5HB

Existing Site Plan

