



Report prepared at
Land at Stevenage Road
Hitchin
SG4 7JY

On behalf of
Bugler Homes Limited

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Aviron Associates Limited

Report Quality Management			
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1.0 PROJECT AND SITE INFORMATION

1.1 APPOINTMENT

Aviron Associates Limited (Aviron) was retained by Bugler Homes Limited (the “Client”) to prepare a tier 1 Preliminary Risk Assessment (PRA) of the following premises:

Land at Stevenage Road, Ashbrook, Hitchin, SG4 7JY (hereafter referred to as the “site”).

The PRA associated with the residential development of the site, forms a tier 1 assessment by completing a desk-based study with site walkover to identify potential areas of contaminative concern associated with the redevelopment. The PRA will then form a preliminary Conceptual Site Model (CSM) with recommendations for any further investigation or risk assessment if required.

In addition, geotechnical issues shall be assessed to provide recommendations for new foundations, drainage and pavement design, if required.

Aviron has relied upon information received from the Client and their agents as accurate, unless contradicted by written documentation or site observations.

1.2 THE SITE

Table 1.2 provides a summary of site details and surrounding area.

Table 1.2: Site Details	
Site Location	The site is located on Stevenage Road, in Ashbrook, 1.7 kilometres (km) south-east of Hitchin town centre and 3km north-west of Stevenage. The site is accessed via Stevenage Road, off the A602 that runs parallel with the site access road. Figure 1 is presented as the Site Location Plan.
National Grid Ref.	Centred at approximately 520120, 227940.
Current Land Use	The site currently comprises a large, grassed field. Figures 2 and 3 are presented as the Existing Site Layout Plans, using an aerial view and topographical survey, showing the positions of the walkover photographs. Figure 4 is presented as the Site Photographs.
Surrounding Land Use	The site is almost entirely surrounded by leisure facilities (e.g. football pitches that are associated with the school nearby), isolated residential buildings, roads and a stream.
Proposed Land Use	The proposed scheme comprises the erection of 50no. residential dwellings (including affordable housing), new public open space, associated parking, landscaping and access. Figure 5 is presented as the Proposed Development Plan.

1.3 SITE WALKOVER SURVEY

A site walkover survey was undertaken on 14 October 2025 and included an inspection of the site and surrounding area, where safe and accessible. The purpose of the survey is to identify any potential on-site or nearby contaminative activities or potential sources of land contamination.

Additionally, as part of the survey any features which may affect site re-development in terms of physical site and ground conditions were noted.

Table 1.3 provides a description of site features observed during the walkover survey and also current Ordnance Survey maps made available at the time of report writing.

Table 1.3: Summary of Site Walkover Survey	
Physical Site Characteristics	
Existing Structures	No buildings on-site. There is a locked gate at the site access point on the south-eastern part of the site. There are overhead cables running across the east of the site in a north-south direction.
Basements	None observed.
Visual Topography and Site Surfacing	The site comprises a large, grassed field which slopes gently downwards in an east-south-easterly direction.
Retaining Structures and Slopes	The site slopes gently downwards in an east-south-easterly direction. An overgrown bank up to approximately 2 metres (m) in height is located within the north-western site boundary, creating a level amenity space for the adjacent sports pitches.
Drainage Issues	The land along the eastern boundary, which is the lowest part of the site contains lush vegetation and is slightly boggy. There could therefore become a drainage issue at this location, especially in wetter months.
Surface Waters	Softened ground surface following prolonged rain, particularly in the eastern part of the site.
Trees and Hedges	Numerous young, semi-mature and mature trees, shrubs and hedges line the site boundaries.
Made and Infilled Ground	No significant made ground or infilled ground is anticipated. Made ground may however be encountered locally as unmade surfacing at the site entrances, and within the overgrown bank inside the north-western boundary.
Contaminative Characteristics	
Above (AST) or Underground (UST) Storage Tanks and Drums	None observed.
Fuel Interceptors	None observed.

Table 1.3: Summary of Site Walkover Survey

Waste Storage and Disposal	None observed.
Hazardous Material Storage and Use	None observed.
Asbestos Containing Materials (ACMs)	None observed.
Boiler Houses	None observed.
Sub-stations	None observed.
Surface Staining	None observed.
Potentially Contaminative Activities	No significant evidence of potentially contaminative activities observed at the site.

1.3.1 Summary of Physical Site Characteristics

Consideration should be made towards the make-up and competency of the underlying strata and the influence of trees on any proposed building.

1.3.2 Summary of Contaminative Site Characteristics

No significant evidence of potentially contaminative activities observed at the site.

2.0 DESK STUDY REVIEW

Historical Ordnance Survey (OS) maps were obtained as part of the Envirocheck database search within report package reference 387546325 dated 9 October 2025, and included within **Appendix I**. Database information within the Envirocheck report also includes reference to the hydrogeology, hydrology and ground gas hazards in the site area and is summarised in the following sections.

A summary of the ground hazards for construction purposes is also included.

2.1 HISTORICAL REVIEW

Historical Ordnance Survey (OS) maps were reviewed within the Envirocheck report, and the historical development of the site and the surrounding land is summarised in the following table.

Table 2.1: History of the Site and Surrounding Land		
Date	Site History	Surrounding Land History
1881 (1:2,500) 1884 (1:10,560) 1898 (1:2,500) 1899 (1:10,560)	The site is shown to have comprised undeveloped agricultural land or pasture intersected by a path and surrounded by field boundaries, tracks or roads. Ash Brook shown to have formed the eastern site boundary at this time, flowing in a northerly direction.	The site is shown to have been surrounded by agricultural land or pasture in all directions. It is bound by a road to the south-west. A small settlement at Ashbrook is located approximately 100–250m E, and Ippollitts is around 800m SW. A railway line is present approximately 500m NE. Off-site features include gravel pits (500m, 700m, and 900m NW), a chalk pit (900m NW), a gravel pit (800m SE), and an iron foundry (900m SW).
1924 (1:2,500) 1924 (1:10,560) 1924-25 (1:10,560)	No notable changes identified at the site. The track that bounds to the southwest is called Hambridge Way.	A pumping house is shown 250m NW. No notable changes are identified in the surrounding area.
1946 (1:10,560) 1947-50 (1:10,560)	No notable changes identified at the site.	No notable changes identified in the surrounding area.
1960 (1:10,000) 1964 (1:10,000) 1965 (1:2,500) 1966-81 (1:2,500) 1976 (1:10,000) 1981-82 (1:10,000) 1984 (1:2,500) 1986 (1:2,500)	No notable changes identified at the site.	The pumping house previously identified approximately 250m NW is labelled as “Kingshott.” By the time of the 1981–1982 mapping edition, a large area from around 500m NW had been developed with residential housing, and a school had been constructed approximately 150m to the NW. A sewage works was present about 250m S. The gravel pit located 500m SE had expanded during the early 1960s but was recorded as disused by 1981–1982.

Table 2.1: History of the Site and Surrounding Land

Date	Site History	Surrounding Land History
1992-93 (1:2,500) 1992 (1:10,000) 1993 (1:2,500) 1999 (1:10,000) 1993 (aerial photograph) 2000 (aerial photograph) 2006-2016 incl (1:10,000)	No notable changes identified at the site.	No notable changes are identified in the surrounding area with the exception of an additional school building or structure being constructed adjacent to the site between 2006-2025, and a small depot to the south-east by 1992.
2025 (1:10,000) 2025 walkover	Site is used for agriculture or pastoral purposes. No structures present aside from overhead cables.	Land use in the immediate vicinity is a mix of agriculture, leisure and housing. To the east and south-east there are a small number of dwellings. To the west there are school sports pitches.
Note: All distances are approximate.		

2.1.1 Anecdotal Evidence

No anecdotal evidence available at the time of reporting.

2.1.2 Summary of Historical Landuses

The site has remained undeveloped throughout the available mapping history.

No significant industrial or commercial landuses shown in the surrounding area. A number of gravel pits were shown; the nearest was 500m (SW). One of the gravel pits was extended in the early 1960s (500m SE) but by 1981-1982 had become disused and possibly infilled. Small depot noted to the south-east by 1992.

2.2 GEOLOGY, HYDROGEOLOGY AND HYDROLOGY

2.2.1 Anticipated Geology

Relevant geological information has been sourced using the British Geological Survey (BGS) extract sheet 221 of Hitchin and is summarised in table 2.1.1 below.

Table 2.2.1: Anticipated Geology

Stratum	Age	Possible Thickness (m)	Typical Description	Aquifer Status
Artificial/Made Ground None indicated on site	N/A	N/A	N/A	N/A
Superficial Glaciofluvial Deposits, Mid Pleistocene - majority of the site	Cromerian	Not recorded	Sand and gravel	Secondary aquifer - A
Superficial Alluvium - strip along the south-east of the site, associated with Ash Brook	Holocene	Not recorded	Clay, silt, sand and gravel	Secondary aquifer - A
Superficial Head Deposits - triangular area in SE, between the Glaciofluvial deposits and Alluvium	Holocene	Not recorded	Clay, silt, sand and gravel	Secondary aquifer - A
Solid Holywell Nodular Chalk Formation and New Pit Chalk Formation	Cenomanian - Turonian	100-115m	Undifferentiated Chalk	Principal aquifer

An area of artificial ground – ‘worked ground, undivided – void’ is marked 84m to the north of the site.

The BGS website indicates that there are no references to faults recorded on site or within 500m of the site.

2.2.2 Ground Conditions – BGS Borehole and Trial Pit Records

The nearest BGS borehole log(s) for drilling or excavation works undertaken within circa 250m of the site, and a summary of the ground conditions encountered to approximate depths in metres (m) below ground level (bgl), are presented in table 2.2.2.

Table 2.2.2: Summary of Local BGS Borehole Logs

Unit	Description	From (bgl)	To (bgl)
TL22NW306 – OLE - W3 - INVESTIGATION – 31m east			
Topsoil	Topsoil	0.0	0.1
Possibly Drift	Sandy CLAY	0.1	0.6
	SAND and GRAVEL	0.6	3.4
	Silty CLAY	3.4	4.6
Groundwater	N/A – seepages	4.6	
TL22NW47 – HILLCREST, ASHBROOK, IPPOLLITTS– 178m east			
Drift	Tough, hard, CLAY	0.0	9.5
	Red SAND (water bearing)	9.5	12.5
	Blue CLAY	12.5	17.7
Solid	CHALK (hard thin layer)	17.7	39.6
	CHALK (sticky)	39.6	45.7
Groundwater	9.1m (drift) and 20.7m (chalk)		
TL22NW62 - PROP.BYPASS AT LITTLE A602 WYMONOLEY BH6 – 175m south-east			
Topsoil	Topsoil	0.0	0-3
Drift	Silty sandy CLAY	0.3	1.4
Solid	White structureless CHALK	1.4	8.0
	Unweathered CHALK with occasional flints	8.0	21.5
	Hard to very hard medium hard in part, brittle blocky CHALK	21.5	25.0
Groundwater	14.6m		

2.2.4 Hydrogeology

The hydrogeology of the site has been determined by the superficial geology of the Glaciofluvial Deposits, Head Deposits and Alluvium, which are classified by the Environment Agency as a secondary aquifer – ‘A’, undifferentiated’ and ‘A’ respectively, and the Chalk bedrock which is classified as a principal aquifer.

Secondary A aquifers are described 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.*

Secondary (undifferentiated) aquifers have been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.

Principal aquifers are described as *layers of rock or drift deposits that have high intergranular and/or fracture permeability. They usually provide a high level of water storage and may support water supply and/or river base flow on a strategic scale. In most cases, these aquifers were previously classified as major aquifers.*

The combined classification groundwater vulnerability beneath the site is noted as 'secondary aquifer - high vulnerability'.

Both the Envirocheck report and the Environment Agency website (October 2025) indicate that the site is not located within an Environment Agency source protection zone (SPZ).

The Envirocheck report indicates that there are references to groundwater abstraction licences for premises within 1000m of the site. At least four records between 674-682m SE relate to private water supply from a well or borehole. A record 890m N is for General Farming and Domestic purposes. An abstraction for Public Water Supply is situated 1525m to the SE.

The BGS groundwater flooding susceptibility for the site is shown as follows: in the north-west – 'Limited Potential for Groundwater Flooding to Occur', in the centre – 'Potential for Groundwater Flooding of Property Situated Below Ground Level', and in the east – 'Potential for Groundwater Flooding to Occur at Surface'.

2.2.5 Hydrology

The Envirocheck report indicates that the nearest surface water feature is located on site. The historical mapping shows that Ash Brook flows in a northerly direction along the eastern boundary and near the northern boundary. In addition, there is Ippollitts Brook 480m to the north-west.

The Envirocheck report indicates that there is three 'Discharge Consents' for premises within 250m of the site. The records relate to discharges of final/treated effluent (137m SE and 202m S) and storm overflow (216m SE).

The Envirocheck report indicates that there are three records of 'Pollution Incidents to Controlled Waters'

within 500m. A release of unknown pollutant (431m NW), Crude Sewage (446m N and 462m W). All three incidents were categories as significant.

There are no 'Local Authority Pollution Prevention and Controls' for premises within 250m of the site. The nearest record is related to iron, steel and non-ferrous metal foundry processes 933m to the southwest.

The eastern section of the site, presumably associated with Ash Brook, is located in an area that is at risk of 'extreme flooding' and 'flooding' from rivers without defences. The site is not located in a flood water storage area, nor does it benefit from flood defences.

A strip of land inside the eastern boundary falls within areas of 1 in 30, 1 in 100 and 1 in 1000 year flood extents.

2.3 LANDFILLS AND BIO-GROUND GAS

2.3.1 Landfills, Waste Management Facilities and Infilled Ground

The Envirocheck report indicates that there no historical landfill sites, Local Authority recorded landfill sites, registered landfill sites, or waste facilities within 250m of the site.

There are also no references to potentially infilled land (non-water or water) within 250m of the site.

2.3.2 Preliminary Risk Assessment (PRA) – Bio-Ground Gas

Table 2.3.2 summarises the gas risk for the site, based on the above information gained through the desk-based research.

In accordance with current guidance (CIRIA C665), the gas generation potential for each source has been individually assessed, with references to potential gassing risk made according to the following definitions: Negligible, Very Low, Low, Moderate, High and Very High.

The definitions are explained in Section 10.0 of the guidance. The objective of this exercise is to determine if potentially unacceptable bio-ground gas risks exist, and whether further investigation and assessment is necessary.

Table 2.3.2: Preliminary Risk Assessment (PRA) – Bio-Ground Gas

Potential Source	Risk	Risk Rating	Rationale
Made Ground (CO ₂ + CH ₄)	Human health Explosion	Very Low	The site has remained undeveloped. Although Made Ground may be encountered locally at site entrance points and within the overgrown bank in the north-west. Significant organic biodegradable material is not expected.
Alluvial Strata (CO ₂ + CH ₄)	Human health Explosion	Low	Alluvial deposits on-site associated with Ash Brook. The Alluvial deposits are located along the eastern boundary.
Landfills (CO ₂ + CH ₄)	Human health Explosion	Negligible	No landfill sites noted within 250m of the site.
Infilled Ground + Burial Sites (CO ₂ + CH ₄)	Human health Explosion	Negligible	No significant infilled ground recorded within 250m of the site.
Coal and Mining (CO ₂ + CH ₄)	Human health Explosion	Negligible	The risk in connection with 'non-coal mining area(s) of Great Britain' is noted to be 'rare'.
Soil Vapours	Human health Explosion	Very Low	No evidence of fuel storage.
COMBINED RISK RATING = LOW			

A combined Low risk from ground gas ingress and explosion is considered and ground gas monitoring is considered necessary. Gas monitoring would be advised during future ground investigation.

2.4 RADON GAS

The Envirocheck Report indicates that the site is split between a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level), and an Intermediate probability radon area where 1% to 3% of homes are affected by Radon. It is indicated that no radon protective measures are necessary in the construction of new dwellings or extensions.

A Radon report is recommended immediately prior to any re-development plans as radon guidance periodically changes and the above advice may be outdated by the time of any re-development.

The HSA website (ukradon.org) can be used to purchase radon reports, where an address-specific radon report may be obtained. It should however be noted that for redevelopment sites, a GeoReport provided by the British Geological Survey may be more appropriate.

2.5 GROUND STABILITY, NATURAL CAVITIES AND MINING HAZARDS

Table 2.5 indicates potential ground stability, natural cavities and mining hazards identified within the Envirocheck report for the site.

These will be considered in terms of the proposed development and detailed in the following section 2.5, Preliminary Ground Hazards Summary.

Table 2.5: Ground Stability, Natural Cavities and Mining	
Hazard	Ground Stability and Natural Cavities Hazard Potential
Potential for Collapsible Ground Stability	Very Low for the western two-thirds of the site.
Potential for Compressible Ground Stability	Moderate for the eastern section of the site associated with the Alluvium.
Potential for Ground Dissolution	Very Low.
Landslides	Very Low.
Running Sands	Very Low for the western two-thirds of the site. Low for the eastern section of the site associated with the Alluvium.
Shrink-Swell Clay	Very Low in the south-eastern section of the site associated with the Head Deposits.
Hazard	Mining Hazard Potential
Non coal mining areas of Great Britain	Risk noted as 'rare'.

Table 2.5: Ground Stability, Natural Cavities and Mining	
Coal Mining Affected Areas	Not located in an area affected by coal mining.
Infilled Land	No potentially infilled land (non-water or water) within the site extents or immediate vicinity.
Other mining/quarrying	None noted on the historical mapping within the site. Artificial ground noted 84m to the north.

The site is not located in a coal mining affected area. The risk associated with 'non-coal mining area(s) of Great Britain' is noted to be 'rare'.

The risk of compressible soils is noted to be 'moderate' and running sand as 'low' for the Alluvium in the east of the site. The risk of shrink/swell clays is noted to be 'very low' for the south-eastern section of the site.

The risk of ground dissolution of soluble rocks is noted to be 'very low' for the site and the surrounding area.

2.6 PRELIMINARY GROUND HAZARDS SUMMARY

The following Table 2.6 provides a summary of the preliminary ground hazards identified with the ground and groundwater conditions and historical site use as determined from the desk-based information accumulated within the PRA. The following key plan should be considered in regard of plausible risk:

○ - Further action required. Potentially plausible hazard.

○ - Unlikely to represent a hazard, no further consideration required.

Table 2.6: Preliminary Ground Hazards Summary		
Ground Hazard	Plausible	Description
Topographic		
Site constraints	○	Restricted site access. The site is almost entirely soft surfaced; however, overhead cables run through the east of the site north-south. The land along the eastern boundary, which is the lowest part of the site contains lush vegetation and is slightly boggy.
Slopes, embankments, cuttings	○	The site is slightly sloping to the east-south-east, with an overgrown bank some 2m in height inside the north-western boundary. Foundation type and construction difficulties. Remedial measures to stabilise slopes, embankments and cuttings, and mitigate risks of landslides.

Table 2.6: Preliminary Ground Hazards Summary

Ground Hazard	Plausible	Description
Man-made		
Filled ground/ made ground/ infilled basements	○	Foundation type and construction difficulties associated with the overgrown bank in the north-west of the site.
Existing foundations and below ground structures	○	Foundation type and construction difficulties. Obstructions to new construction. Influence of existing and adjacent foundations to new construction. Vibration associated with the construction technique.
Mining instability	○	Foundation type and construction difficulties. Appropriate mining investigation.
Ground chemistry	○	Made Ground is heterogenous and subject to composition may present a risk of sulphate and sulphide attack on buried concrete.
Unexploded Ordnance	○	Detailed unexploded ordnance (UXO) risk assessment did not form part of our project instruction.
Geological		
Frost action	○	Susceptibility of soils affected at pavement and foundation formation. Provision of non-frost susceptible materials.
Lateral soil instability	○	Foundation type and construction difficulties. Provision of temporary works – shoring.
Soft clays, silts and compressible soils	○	Foundation type and construction difficulties. Sufficient bearing resistance to support the proposed construction.
Shrinkable soils	○	Foundation type and construction difficulties. Influence of trees on foundation depths. Potential for desiccation to have occurred and heave protection. NHBC Standards Chapter 4.2, Building Near Trees.
Ground dissolution of soluble rocks	○	The risk of ground dissolution of soluble rocks is noted to be 'very low'. Foundation type and construction difficulties. Dynamic probing, torque readings.
Ground chemistry	○	Natural soils may present a risk of sulphate and sulphide attack on concrete.
Hydrogeological/Hydrological		
Elevated or rising groundwater	○	Foundation type and construction difficulties. Provision of temporary works – dewatering (possibly well-points) in shallow excavations due to surface water flooding.

Table 2.6: Preliminary Ground Hazards Summary		
Ground Hazard	Plausible	Description
		Provision of temporary works – shoring. Reduced bearing resistance. Effectiveness of soakaway drainage. Sufficient freeboard required to enable effective infiltration. Secondary Aquifers anticipated
Fluvial or coastal scour/erosion	○	Ash Brook along the eastern boundary, not considered a significant risk. Foundation type and construction difficulties. Remedial or preventative measures.
○ - Further action required. Potentially plausible hazard. ○ - Unlikely to represent a hazard, no further consideration required.		

The available mapping history indicates that the site has remained undeveloped with the exception of overhead cables and the overgrown bank in the north-west. The site therefore is not expected to be overlain by significant thicknesses of made ground.

Any proposed new construction will need to consider the required bearing resistance of the proposed buildings, the influence of trees and groundwater, as well as temporary works.

A conventional shallow foundation solution may be feasible; however, a suitable ground investigation would confirm an appropriate foundation solution.

Shallow soakaway drainage may be successful locally given the anticipated soils at shallow depth. Soil infiltration testing and groundwater monitoring are however recommended.

Groundwater may be expected at shallow depth in the east of the site, and perched water or water held in coarse soils may be encountered following periods of heavy rainfall.

3.0 REGULATORY INFORMATION, CONSULTATIONS AND OTHER

Unless otherwise stated regulatory database information has been obtained from the Envirocheck report included as **Appendix I**.

3.1 STATUTORY REGISTERS AND AUTHORISATIONS

Table 3.1 includes the statutory registers and authorisations that relate to the site and surrounding area. Pertinent registers and authorisations will be used in conjunction with the desk-based review to determine the preliminary environmental risk.

Table 3.1: Statutory Registers and Authorisations		
Item	Number of entries 0 – 250m	Number of entries 251 – 500m
Contaminated Land Register Entries and Notices	0	0
Records of Licensed Discharge Consents	24 (three locations)	5
Prosecutions Relating to Controlled Waters	0	1
Enforcements and Prohibition Notices	0	0
Integrated Pollution Controls	0	0
Integrated Pollution Prevention and Control	0	0
Local Authority Integrated Pollution Prevention and Control	0	0
Local Authority Pollution Prevention and Controls	0	0
Local Authority Pollution Prevention and Control Enforcements	0	0
Pollution Incidents to Controlled Waters	0	3
Substantiated Pollution Incident	0	0
Prosecutions Relating to Authorised Processes	0	1
Registered Radioactive Substances	0	0
Records of Water Industry Act Referrals	0	0

Table 3.1: Statutory Registers and Authorisations		
Item	Number of entries 0 – 250m	Number of entries 251 – 500m
Explosive Sites	0	0
Planning Hazardous Substance Consents/Planning Hazardous Substance Enforcements	0	0
Notification of Installations Handling Hazardous Substances (NIHHS) Facilities and Control of Major Accident Hazards Facilities (COMAH)	0	0
Fuel Stations	0	0
Contemporary Trade Directory Entries	Contemporary Trade Directory Entries within 250m of the site: 145m SE – Electrical Engineers (inactive) 148m SE - Garage Services (active) 158m SE - Distribution Services (inactive) 171m E - Crane Hire, Sales & Service (inactive)	
Commercial Services Entries	Relevant Commercial Services Entries within 250m of the site. 148m SE - Vehicle Repair, Testing and Servicing 171m E - Vehicle Repair, Testing and Servicing	
Manufacturing and Production	Relevant Manufacturing and Production Entries within 250m of the site: 177m NW – tank (generic)	
National Grid High Voltage Underground Electricity Transmission Cables	0	0
National Grid High Pressure Gas Transmission Pipelines	0	0
Item	Immediate Vicinity	
Sensitive Land Uses	Site located in an area of Adopted Green Belt and in an Area of Outstanding Natural Beauty.	

3.2 CONSULTEES

3.2.1 Local Authority - Contaminated Land Officer

The Local Environmental Health Department has not been contacted as part of our project instruction.

3.2.2 Local Authority - Building Control Officer

The Local Authority Building Control Officer has not been contacted as part of our project instruction.

3.2.3 Local Authority - Petroleum Officer

The Local Authority Petroleum Officer has not been contacted as part of our project instruction.

3.2.4 Local Authority - Archaeological Officer

The Local Authority Archaeological Officer has not been contacted as part of our project instruction.

3.2.5 Environment Agency - Contaminated Land and Groundwater

The Contaminated Land and Groundwater Team of Environment Agency has not been contacted as part of our project instruction.

3.2.6 Coal Authority and Mining Searches UK

The Coal Authority and Mining Searches UK have not been contacted as part of our project instruction.

4.0 PRELIMINARY RISK ASSESSMENT

4.1 METHODOLOGY

A tier 1 PRA and CSM have been prepared in accordance with the technical approach on Land Contamination Risk Management (LCRM), which replaced 'CLR11'. Possible hazards identified by a potential source of contamination and sensitive receptors have been assessed via a source-pathway-receptor (SPR) model in accordance with current UK protocols. A risk may only exist where a plausible SPR linkage is viable and where the quantity or concentration of a contaminant (source) is sufficient to cause harm. Under the statutory definition "Contamination" may only exist where contaminants pose a risk of harm to a receptor. Risk may be defined as a function of the likelihood and severity of any adverse effects resulting from a contamination event in accordance with CIRIA C552. A summary of how risk is derived and the associated definition is presented in tables 4.1.1 and 4.1.2.

Table 4.1.1: Risk Ratings Matrix				
	Consequence			
Probability	Severe	Medium	Mild	Minor
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

Table 4.1.2: Risk Ratings Definition	
Risk Rationale	Definition
Very high risk	A high probability that severe harm could occur to determined receptor from identified contaminant - OR - evidence exists that severe harm to receptor is currently occurring. Urgent investigation and remediation should be considered. If demonstrated this risk is likely to result in substantial liability.
High risk	Harm is likely to occur to determined receptor from identified contaminant. Urgent investigation and short-term risk minimisation remediation followed by longer term fit for purpose remediation should be considered. If demonstrated this risk is likely to result in substantial liability.
Moderate Risk	It is possible that harm could occur to a determined receptor from identified contaminant. It is relatively unlikely that any harm would be severe or should harm occur it is likely to be relatively mild.
Moderate/low risk	It is possible that harm could occur to a determined receptor from identified contaminant. It is unlikely that any harm would be severe or should harm occur it is probable to be relatively mild.
Low risk	It is possible that harm could occur to a determined receptor from identified contaminant. It is unlikely that such harm, if indeed present, would at worst be mild.
Very low risk	There is a low possibility that harm could occur to a receptor. In such event the harm would not be severe.

4.2 POTENTIAL SOURCES OF CONTAMINATION

Based on the desk-study and walkover survey completed, table 4.2 presents a summary of the potential sources identified.

Table 4.2: Potential Sources			
Source	Key Contaminants of Concern	Description	Plausible?
1. Site-wide soil contamination	Metals, hydrocarbons (TPH/PAH), asbestos.	Limited risk of soil contamination within the site associated likely limited presence of Made Ground	Yes
2. Local soil contamination	Metals, hydrocarbons (TPH/PAH), asbestos.	Limited risk of soil contamination. No structures, aside from track.	Yes
3. Asbestos	Asbestos	Limited risk of Asbestos Containing Soils (ACS) and Asbestos Containing Materials (ACMs). No buildings.	No
4. Groundwater	Groundwater is not anticipated at shallow depth beneath the site.	Site is underlain by secondary aquifers above a principal aquifer. Not located in an SPZ.	Yes
5. Surface Water	Ash Brook along eastern site boundary.	Ash Brook flowing in a northerly direction along the eastern site boundary.	Yes
6. Ground gases/vapours	Hazardous bio-ground gas. Complete routine bio-ground gas monitoring.	Alluvial deposits noted along the eastern boundary. Other significant hazardous ground gas sources are not anticipated on-site.	Yes

4.3 PATHWAYS

A pathway is one or more routes or means that a receptor can be exposed to, or affected by, a contaminant.

Table 4.3: Plausible Pathways
On-Site and Locally
Direct contact; to humans and infrastructure
Underlying geology/ <i>hydrogeology</i> ; Superficial strata comprising secondary aquifers above solid geology comprising a principal aquifer.
Inhalation and ingestion
Surface run-off/drainage

4.4 RECEPTORS

A receptor is either a living organism, a group of organisms, an ecological system, controlled waters or property that could be harmed or polluted by a contaminant. Table 4.4 examines the potential receptors.

Table 4.4: Potential Receptors			
Receptor	Description	Comments	Plausible
Construction workers	Groundworkers and general construction works.	Construction works proposed within the site.	Yes
End users	Occupants of the proposed development.	Gardens areas proposed at the site.	Yes
Adjacent land users	Occupants of surrounding residencies.	Adjacent residential dwellings (limited) which could be affected by run-off or migration.	Yes
Soft landscaping	Areas of new planting including lawns.	Landscaped areas proposed around the site.	Yes
Water supply pipes	Plastic pipework for potable water supply may be affected if laid in contaminated soils.	New supply required for redevelopment.	Yes
Buildings & infrastructure	Buried concrete for new foundations may be in contact with aggressive ground (sulphur attack).	New building works proposed.	Yes
Groundwater	Controlled waters (aquifers) beneath the site.	Site underlain by secondary aquifers above a principal aquifer. No public water supply boreholes within 1000m of the site. The site is not located in an SPZ.	Yes
Surface waters	Controlled water such as lakes, streams, rivers or coastal waters.	Ash Brook flows along the eastern site boundary.	Yes
Ecological receptors	Sensitive areas of ecological significance defined under Part 2A of EPA 1990.	Site located in a Nitrate Vulnerable Zone which is relevant to agriculturalists (not developers). Also, in an area of Adopted Green Belt.	Yes

4.5 SUMMARY OF POLLUTANT LINKAGES FOR PROPOSED LAND USE - INITIAL CSM

The initial CSM is based upon the proposed site end use and the information currently consulted relating to various risk sources and plausible pollutant linkages and is presented within table 4.5.

Table 4.5: Initial Conceptual Site Model (for plausible pollutant linkage pathways)

Source	Receptor	Pathway	Probability	Consequence	Risk & Justification	Linkage No.
Sources 1 and 2 Site-wide and local soil contamination	Construction workers	Direct contact	Unlikely	Mild	Very Low <i>Note 1.</i> Site in use as agricultural land or pasture. It is not occupied with buildings. Very limited potential for made ground and contaminants that may normally be associated with any buildings locally.	1
	End users	Direct contact	Low Likelihood	Mild	Low <i>See Note 1.</i>	2
	Adjacent land users	Direct contact via run-off	Unlikely	Mild	Very Low <i>Note 2.</i> Secondary aquifers beneath the site, overlying a principal aquifer bedrock. Domestic buildings off-site to the SE. Site predominantly soft surfaced.	3
	Soft landscaping	Root uptake	Low Likelihood	Mild	Low <i>Note 3.</i> No evidence of made ground following walkover and desk based study. Vegetation is well established with no signs of die-back.	4
	Water supply pipes	Direct contact	Low Likelihood	Mild	Low <i>Note 1.</i>	5
	Buildings & infrastructure	Direct contact	Low Likelihood	Mild	Low <i>Note 1.</i>	6
	Groundwater	Vertical migration through hydrogeology	Unlikely	Mild	Very Low <i>Note 4.</i> Secondary A aquifer beneath the site, overlying a Principal aquifer bedrock. The site is not located in an SPZ. No evidence of significant potential contamination sources made ground following walkover and desk	7

Table 4.5: Initial Conceptual Site Model (for plausible pollutant linkage pathways)

Source	Receptor	Pathway	Probability	Consequence	Risk & Justification	Linkage No.
					based study	
	Surface water	Run-off	Unlikely	Mild	Very Low <i>See Note 4.</i>	8
	Ecology	Direct contact via run-off	Unlikely	Mild	Very Low <i>See Note 4.</i>	9
Source 3 Asbestos	Construction workers	Inhalation	Low likelihood	Minor	Very Low <i>Note 5. No potential for ACMs due to absence of existing buildings.</i>	10
	End users	Inhalation	Low likelihood	Minor	Low <i>See Note 5.</i>	11
	Adjacent land users	Inhalation	Unlikely	Mild	Very Low <i>See Note 5.</i>	12
Sources 4 and 5 Groundwater	Construction workers End users Adjacent land users Water supply pipes	Direct contact	Unlikely	Mild	Very Low <i>Note 6. Secondary A aquifer beneath the site, overlying a Principal aquifer bedrock.</i> Groundwater and surface water contamination from site unlikely as risk of soil contamination is low.	13
	Soft landscaping	Root uptake	Unlikely	Mild	Very Low <i>See Note 6.</i>	14
	Groundwater Surface water Ecology	Lateral migration through hydrogeology	Unlikely	Mild	Very Low <i>See Note 6.</i>	15
Source 6 Ground gases and Soil vapours (on/off site source)	Construction workers	Inhalation of vapours/gas	Low likelihood	Minor	Very Low <i>Note 7. Alluvium is potential source of ground gas identified within the site. Made ground possible in the overgrown bank in the north-west. Possible made ground at site entrance points.</i>	16
	End users	Inhalation of vapours/gas	Low likelihood	Mild	Low	17

Table 4.5: Initial Conceptual Site Model (for plausible pollutant linkage pathways)

Source	Receptor	Pathway	Probability	Consequence	Risk & Justification	Linkage No.
					<i>See Note 7.</i> Perceived risk increased due to long-term occupancy.	

The overall environmental risk classification for the site is considered to be generally **LOW – VERY LOW**.

Due to the sensitivity of the proposed land use and site investigation and suitable risk assessment should be completed, to include:

1. Complete precautionary site-wide soil contamination testing of overlying soils to determine the presence or absence of contaminants. Additionally, pH, sulphate and sulphur testing should be completed to enable design of buried concrete.
2. Complete ground gas monitoring to provide quantification to the qualitative risk assessment.

To assess the risk, the following analysis should be completed:

-  Aviron's "ES-1" of laboratory analysis shall be applied to future site investigations which includes; arsenic, barium, cadmium, total chromium, copper, nickel, zinc, lead, mercury, selenium, water soluble boron, total cyanide, total sulphate, water soluble sulphide, speciated Polycyclic Aromatic Hydrocarbons (PAH), speciated Total Petroleum Hydrocarbons (TPH), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) and Methyl Tert-Butyl Ether (MTBE), organic matter, total phenols, pH and asbestos. **Provides broad analysis of common soil contaminants.**

The listed suite of analysis is considered suitable and will provide a screening for the majority of commonly found soil contaminants.

5.0 CONCLUSIONS AND RECOMMENDATIONS

This PRA comprising a Desk Study review was undertaken for environmental and geotechnical purposes. Through evaluating all the relevant information Avron have been able to assess the relevant linkages in terms of risk and identified any area where further information may be required to increase the certainty in the recommendations.

5.1 ENVIRONMENTAL

Through evaluating the relevant and commercially available desk-based information Avron have been able to assess the relevant pollutant linkages in terms of risk the 'source – pathway – receptor' method. Accordingly, an initial Conceptual Site Model was prepared for relevant pollutant linkages with through qualitative means has determined a LOW – VERY LOW risk. The contaminative risk principally emanates from the use of the site as farmland.

An increase in certainty in the risk assessment can be achieved by the collection of quantitative data, typically by means of site investigation, which should target pollutant linkages considered to be of greater risk than low. Accordingly, site investigation is recommended to refine the risk assessment. Table 5.1 summarises the pertinent environmental risks providing advice on further works and assessment.

Table 5.1: Environment Risk Summary			
Medium	Item	Risk Description	Comments/Recommendations
Soils	1	Generally Very Low soil contamination risk to construction workers, end users, new planting, new water mains, buried concrete, groundwater, surface water and ecology.	Complete precautionary site-wide investigation and collect suitable soil samples for chemical analysis to complete risk assessment.
Ground Gas	2	Low risk of ingress of hazardous ground gases (CH ₄ + CO ₂) and soil vapours into new buildings and depleted oxygen; as a result of potentially organic alluvial strata nearby.	Install monitoring wells during site investigation to complete gas/vapour monitoring to quantify the risk assessment.

Once the above risks have been investigated the corresponding linkages within the CSM can be revaluated and the environmental risk assessment refined.

5.2 NEW FOUNDATIONS AND DRAINAGE SUMMARY

5.2.1 New Foundations

Ordinarily the overlying superficial strata of the Glaciofluvial Deposits and the Head Deposits would be expected to provide the required bearing resistance to support lightly loaded buildings on conventional shallow foundations. However, the extent of Alluvium may influence the foundation solution locally.

Typically, mixed soil types including low to high volume change potential Clay should be expected of the superficial strata. Therefore, the suitability of conventional footings would be subject to, though not limited to:

-  the required bearing resistance to support the proposed buildings.
-  the volume change potential of the overlying soils and the proximity of trees to new buildings in accordance with NHBC Chapter 4.2.
-  elevated groundwater, implications for reduced bearing resistance and temporary works: dewatering and excavation stability.

A suitable site investigation would confirm an appropriate foundation solution and should include in-situ and laboratory soil strength and material property testing.

5.2.2 Soakaway Drainage

Shallow soakaway drainage may be successful outside of the flood zone associated with the Alluvium in the east of the site, however soil infiltration testing and groundwater monitoring is recommended to confirm the drainage strategy for the site.

Alternative means for disposal include the possibility of utilising Ash Brook along the eastern boundary, as well as other forms of sustainable drainage.

5.2.3 Pavement Design

A low California Bearing Ratio (CBR) value should be anticipated, likely in the order of 2-5% for any overlying soils at shallow depth.

6.0 PROJECT INSTRUCTION AND LIMITATIONS

6.1 SCOPE OF WORKS

The following scope of work was undertaken to an agreed brief set out in Aviron's proposal and involved the following:

-  Site reconnaissance survey, to include inspection of the infrastructure and potential discussions with the owner or occupant regarding site activities.
-  Procurement of available historical mapping editions, geo-environmental sensitivity data and British Geological Survey (BGS) borehole records.
-  Identification of potential areas of environmental concern relating to current and/or historic site use and surroundings to prepare a refined CSM.
-  Preparation of suitable conclusions and recommendations with regard to the site's suitability for use or the requirement for further assessment and site investigation on the basis of the CSM.

Aviron has relied upon information received from the Client and their agents as accurate, unless contradicted by written documentation or site observations.

6.2 PUBLISHED GUIDANCE

This report follows the technical approach presented on Land Contamination Risk Management (LCRM), accessed on gov.uk website. The guidance replaced the Contaminated Land Report 11 (CLR11) "Model Procedures for the Management of Land Contamination" prepared by the Environment Agency in 2004. CLR11, which was withdrawn in 2020, provided guidance on the application of management processes when assessing potentially contaminated land.

This project and report have been designed to fulfil the information requirements set out in LCRM.

This report is additionally prepared in accordance with current guidance notes, standards and practices as set out by the Environment Agency and statutory organisations in order to establish potential and significant contaminant linkages as defined in Part IIA of the Environmental Protection Act 1990.

6.3 LIMITATIONS

The conclusions and recommendations made in this report are limited to those that can be made on the basis of the information review and current landuse. The results of the work should be viewed in the context of the range of data sources consulted, the number of locations where the ground was sampled previously and the number of soil gas or groundwater samples tested. No liability can be accepted for the information in other data sources or conditions not revealed by the sampling or testing. Any comments made on the basis of information obtained from the client or other third parties are given in good faith on the assumption that the information is accurate.

Changes in legislation, statutory requirements or industry practices may mean that this the conclusions of this report should be reviewed.

7.0 REFERENCES AND OTHER SOURCES OF INFORMATION

Landmark Envirocheck database search report package reference 387546325 dated 9 October 2025.

Land Contamination Risk Management (LCRM) - LCRM: Stage 1 risk assessment - GOV.UK (www.gov.uk)

British Geological Survey. Solid and drift edition sheet BGS map 221 - Hitchin

British Geological Survey Website. www.bgs.ac.uk and <https://mapapps2.bgs.ac.uk/geoindex/home.html>

Environment Agency Website: www.environment-agency.gov.uk

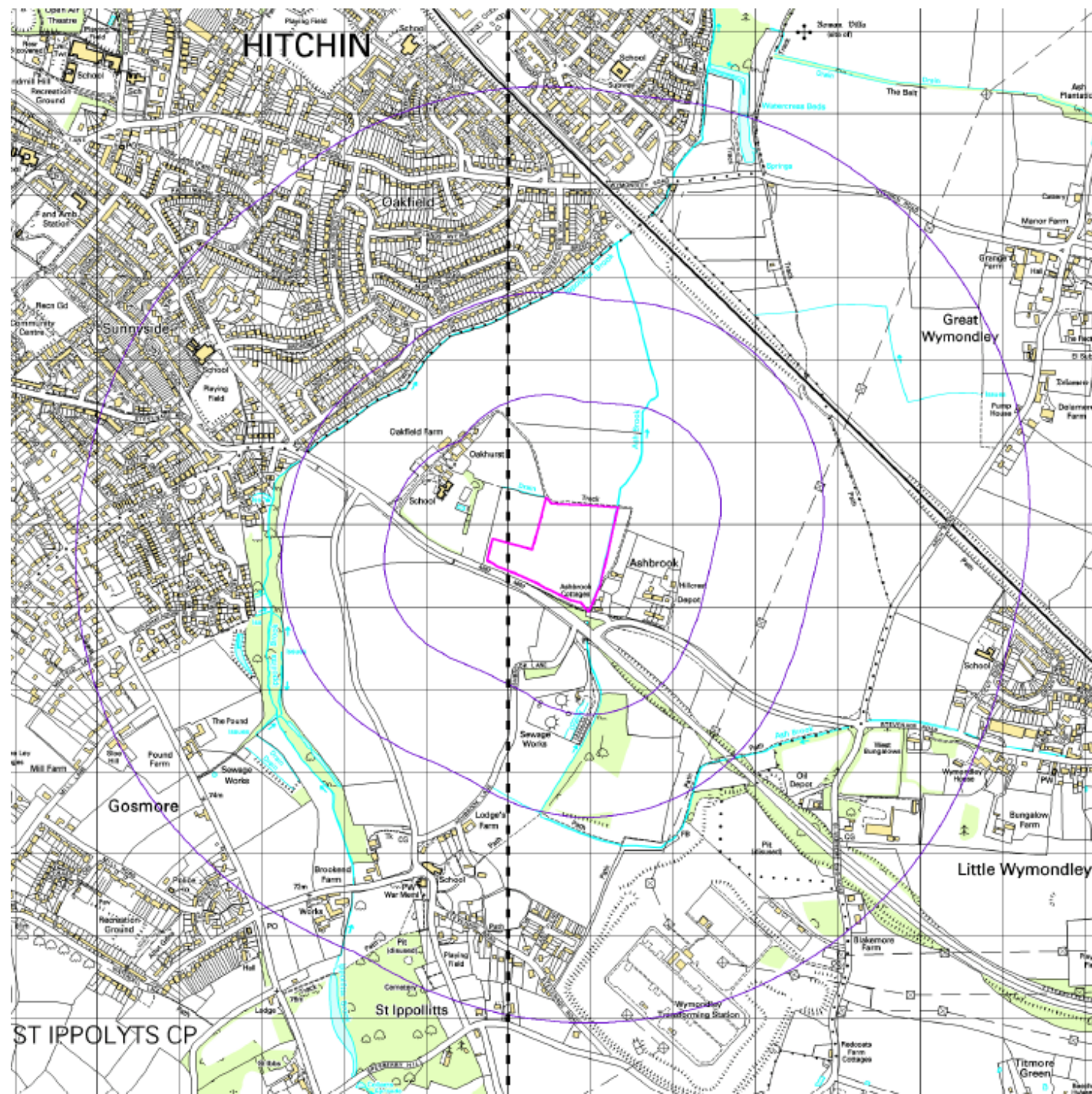
BS 10175:2011+A2:2017. British Standards Institute, Investigation of Potentially Contaminated Land - Code of Practice.

Environment Agency. July 2005. Guidance on Requirements for Land Contamination Reports.

CIRIA. C552. Contaminated Land Risk Assessment. A Guide to Good Practice. January 2001.

Figures

- | | |
|---|---|
| 1 | Site Location Plan |
| 2 | Existing Site Layout Plan – Aerial View |
| 3 | Existing Site Layout Plan – Topographical |
| 4 | Site Photographs |
| 5 | Proposed Development Plan |



Legend

— Approximate Site Boundary

Notes

Drawing supplied by Client

Figure 1

Drawing Title

Site Location Plan

Project Number 25-268.01

Project Title

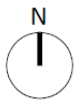
Land at Stevenage Road, Hitchin, SG4 7JY

Drawn by DN

Checked by JB

Scale NTS





Legend

— Approximate Site Boundary

Notes

Figure 2

Drawing Title

Existing Site Layout Plan - Aerial View

Project Number 25-268.01

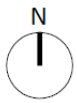
Project Title
Land at Stevenage Road, Hitchin, SG4 7JY

Drawn by DN

Checked by JB

Scale NTS





KINGSHOTT SCHOOL

STEVENAGE ROAD

P1

P2

P3

P4

P5

P7

P6

P8

P9

Legend

-  Approximate Site Boundary
-  Photo Direction

Notes

Drawing supplied by Client

Figure 3

Drawing Title

Existing Site Layout Plan - Topographical

Project Number 25-268.01

Project Title
Land at Stevenage Road, Hitchin, SG4 7JY

Drawn by DN

Checked by JB

Scale NTS





Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9

Legend

Notes

Figure 4

Drawing Title

Site Photographs

Project Number 25-268.01

Project Title

Land at Stevenage Road, Hitchin, SG4 7JY

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Legend

 Site Boundary

Notes

Drawing supplied by Client

Figure 5

Drawing Title

Proposed Development Plan

Project Number 25-268.01

Project Title

Land at Stevenage Road, Hitchin, SG4 7JY

Drawn by DN

Checked by JB

Scale NTS



Appendices

I	Envirocheck Maps and Database Reports
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