Desk study and preliminary risk assessment report

relating to

Cockpit Barn, Knowle Lane, Horton Heath

Prepared for

Alderbury Homes Ltd

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SUMMARY

It is intended to redevelop an area of land in Horton Heath, Eastleigh (the site) for residential purposes. The site is currently divided into two distinct zones, one of which is an open agricultural field used for hay, the second of which houses a large poultry house with associated infrastructure and a sloped area of rough woodland. The development will comprise the conversion of the existing structure into residential units with gardens/soft cover to the rear. No additional construction is proposed, it is anticipated that the field will be retained for agricultural or grazing, and that the woodland will be tidied up but retained.

Historical information identifies that the entire site was in open agricultural use until around 1960 when cut and fill activities created a level platform, and the poultry house with infrastructure was constructed. Operation of the poultry house continued until 2018.

A preliminary risk assessment has identified the following issues relating to contaminated land:

1. Potential contaminants associated with poultry farming; and
2. Potential contaminants associated with the infrastructure and services.

It is recommended that a preliminary targeted and general site coverage intrusive investigation is undertaken, to be supervised by an appropriately qualified and experienced engineer. Additionally, an asbestos survey should be undertaken on the structures.

1 INTRODUCTION

1.1 Purpose

It is intended to redevelop an area of land in Horton Heath, Eastleigh (the Site) for residential purposes.

Lake Environmental (Lake) has been appointed by Alderbury Homes Ltd (the Client) to undertake a desk study and preliminary risk assessment in order to design a detailed specification for site investigation to investigate potential contaminants across the site.

This report has been prepared in general accordance with the following documents:

- *CLR 11: Model procedures for the management of contaminated land.* Environment Agency (2004); and
- LCRM: stage 1 risk assessment. Environment Agency (updated 2021).

To this end the report presents the following:

- A summary of the history of the site in terms of potential sources of land contamination;
- The results of a walk-over survey identifying any evidence of land contamination;
- Identification of the potential contaminants associated with the above;
- An initial conceptual site model of the site indicating potential sources, pathways and receptors;
- A qualitative assessment of the likely risks; and
- Detailed proposals for intrusive site investigation.

1.2 Information sources

This report has been informed via the following sources of information:

- Information provided by the current owner of the site, who was involved with its operation during the 1960s and between 2000 and the current day;
- Site walkover;
- Historic maps and data obtained from obtained from Groundsure Environmental;
- British Geological Survey geological map: Southampton, England and Wales Sheet 315; and
- Information provided by Eastleigh Borough Council.

1.3 The site

The site is located in Horton Heath, approximately four miles to the east of Eastleigh. It is bounded to the south and west by fields, to the north by a single residential premise with extensive land (Yew Tree Cottage), and to the east by Knowle Lane.

The site is irregular in shape, and covers approximately 2.12 hectares, centred at National Grid Reference 449845 117626. The highest point of the site is the northeast corner, sloping down towards the western boundary, with the exception of the area in the direct vicinity of the poultry house where it has been levelled to enable construction of the establishment. The location of the site is shown in Figure 1.

Figure 1: Site location

There are no plans currently available for the proposed development, although it has been specified that the residential use will be limited to the area of the existing poultry house and the surrounding area (Zone A as defined below in Figure 2).

1.4 Current site layout

An engineer from Lake undertook a site walkover on 9 April 2021 accompanied by the Client and the current site owner. Because of current and historic land use, the site has been divided into two areas (Zone A and Zone B) for the purpose of the site description, as defined on Figure 2. The description and accompanying photographs are presented below in Tables 1 (Zone A) and 2 (Zone B).

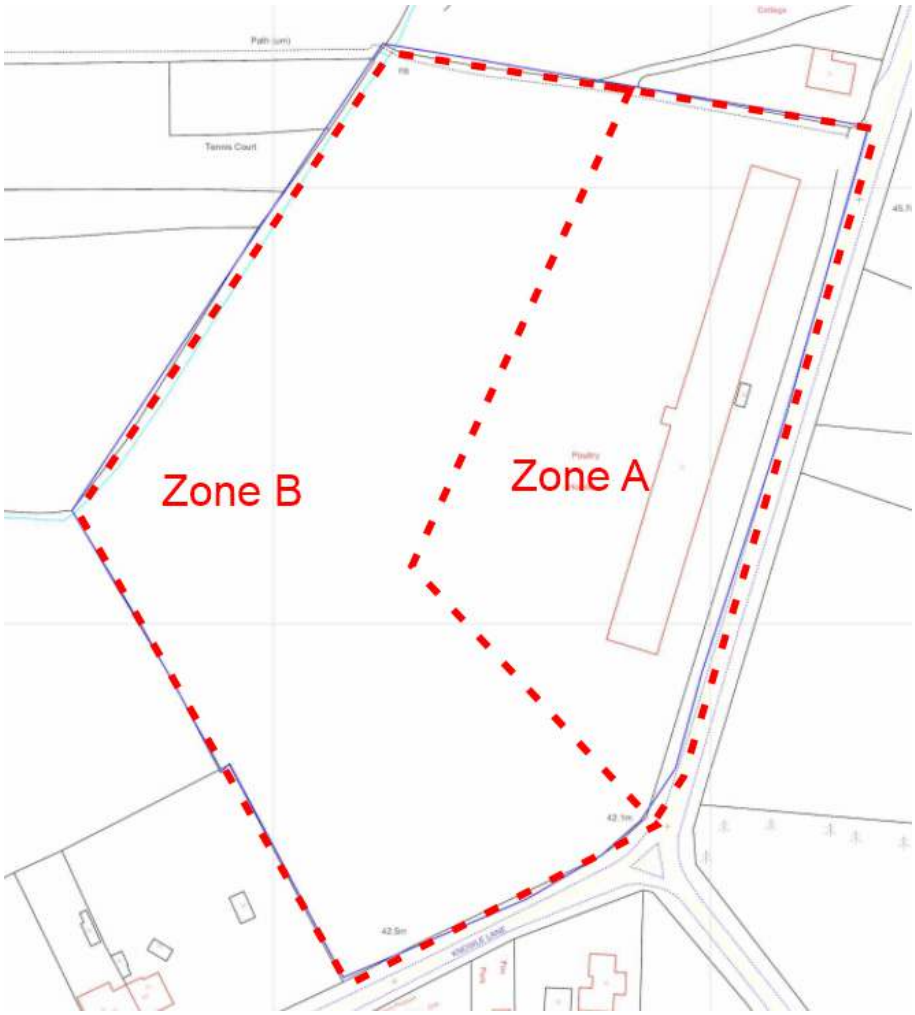
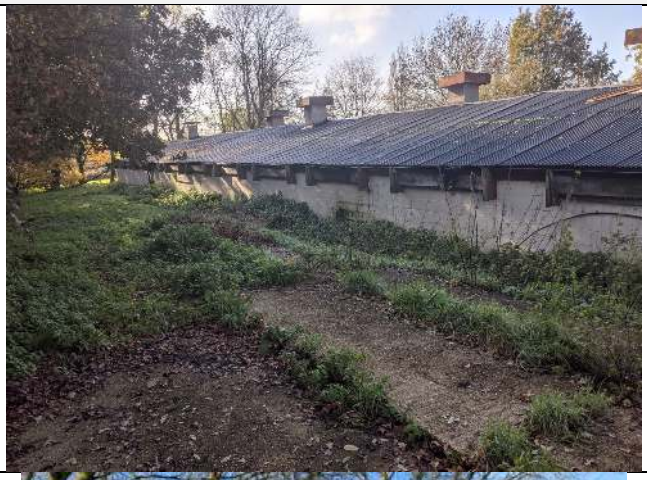


Figure 2: Delineation of Zone A and Zone B

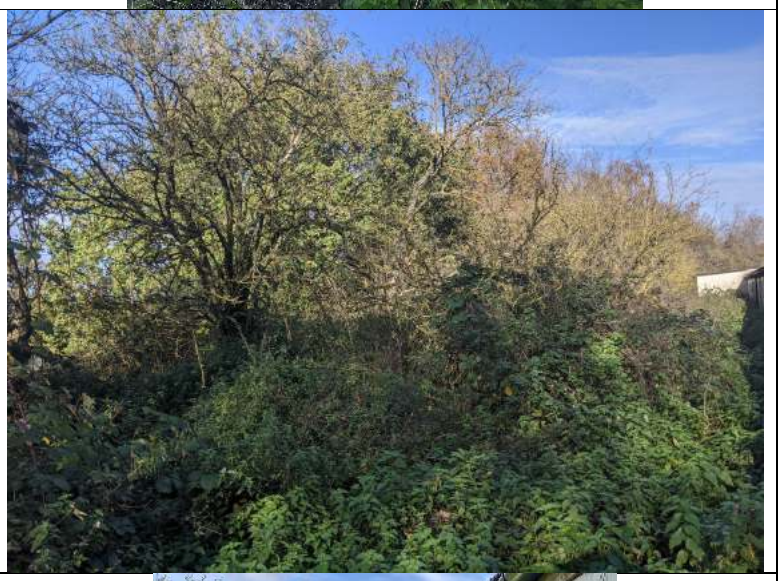
Table 1: Site walkover photographs and commentary – Zone A

Zone A	
Entrance from Knowle Lane	

Zone A	
Eastern boundary of the site. Raised bank to the east which reduces to the south, separating site from Knowle Lane	
Eastern side of poultry house	
Eastern side of poultry house	

Zone A	
Eastern side of poultry house looking south	
The western area of Zone A with boundary to Zone B	
As above	

Zone A	
As above	
Public footpath running along northern boundary of the site, looking east to west.	
Western side of poultry house at southern end looking north	

Zone A	
Western side of poultry house from northern end	
Trees immediately west of poultry house	
Western side of poultry house. Discarded material includes asbestos cement roof sheet, metal storage drum, metal, plastic and wood	

Zone A	
Discarded metal storage drum. Contents identified as Stobielast 133.95 which is a binder for safety surfacing and is generally used in children's play areas. Advised used to coat and bind asbestos cement roofing material.	
Area used for bonfires towards the centre of the west side of the poultry house	

Zone A	
Discarded materials in the central north of Zone A.	
Upside down intermediate bulk container (IBC). No contents noted and previous contents unknown – advised possibly to transport cleaning chemicals	
Corrugated metal covered storage area towards the centre of the east side of poultry house, immediately south of entrance	

Zone A	
Machinery within corrugated metal covered area, identified as back-up generator with fuel storage. Concrete slab to floor, attached directly to block wall of poultry house	
Storage container found in corrugated metal covered area. Identified as multipurpose heavy duty antibacterial cleaner	
Wooden shed to the southeast of corrugated metal covered storage area, with silo to rear	

Zone A	
As above	
Inside of wooden shed, a hopper used to transfer grain from the silo to the poultry house. The grain falls from the silo into the hopper, where augers drive the grain up to the roof of the poultry house to be automatically distributed to the feeders (Archimedes screw principle) driven by an electric motor. Concrete floor to shed.	
Silo	

Zone A	
As above	
Entrance to poultry house central on the eastern side, empty lorry container to the north	
Fuel filler point for tanker delivery	

Zone A	
Entrance to poultry house	
Inside empty lorry container	

Zone A	
Rear of lorry container	
Block-built external structure on central western side of poultry house. Currently containing a tank used to deliver antibiotics and water to chickens. Previously contained fuel storage tank. Concrete to floor	

Zone A	
Pipework through wall from historic fuel tank, adjacent to current antibiotic and water tank. This reportedly leads beneath the centre of the poultry house to join up with the tanker delivery point at the eastern entrance. The debris on the floor is polystyrene.	
Asbestos cement roof sheets on poultry house	
Central area as viewed from the entrance door, bisects the poultry house east to west.	

Zone A	
Electrical controls immediately left inside entrance.	
Inside of northern section of chicken shed, looking south	
Torn down roof and side panels in northern section of chicken shed	

Zone A	
Inside of southern portion of chicken shed	
Damaged asbestos cement in chicken shed roofing. Roofing material coated with binding agent.	

<u>Zone A</u>

This area is generally level with the exception of the southern and western boundaries, where there is a downwards slope away from Zone A, and the eastern boundary where there is a bank of varied height. The site currently contains an approximately 115m long derelict poultry house which extends from southwest to northeast parallel to Knowle Lane. The structure is block-built walls, with a concrete floor and corrugated cement sheets as roofing. This has been tested by the client and confirmed as asbestos cement (the analytical results are included as Appendix A).

Outside to the central eastern area of the poultry house is a metal storage container, a wooden shed, a corrugated metal covered storage area and a grain silo. Outside the central western portion of the

poultry house is a block-built structure which reportedly formerly contained a fuel oil tank for heating the building, and currently contains a tank which stores water and antibiotics for distribution to the poultry. In the north are abandoned materials including plastic pipes, a metal trailer, and an intermediate bulk container (IBC). The IBC was upside down and appeared to be empty, there was no evidence to what its former contents were, although it is considered likely to be cleaning chemicals. The area is generally soft standing with rough vegetation, small to large bushes, and small to large trees. The exception to groundcover in this area is concrete adjacent to the eastern middle area of the poultry house at and in the vicinity of the site entrance. The perimeter of Zone A is bound to the north, south and west by wooden and wire fencing most of which is covered by bushes, and trees. The eastern perimeter is bound by bushes and trees, with three metal access gates. The site can be accessed off Knowle Lane via these gates, the first set of gates are located near the southeast corner of the poultry house, the second is opposite the middle of the east side of the poultry house, the third set is located towards the northeast corner of the site next to a public footpath which runs along the northern boundary from east to west. The approximate location of the features described above and presented within Table 1 are marked on Figure 3 below.

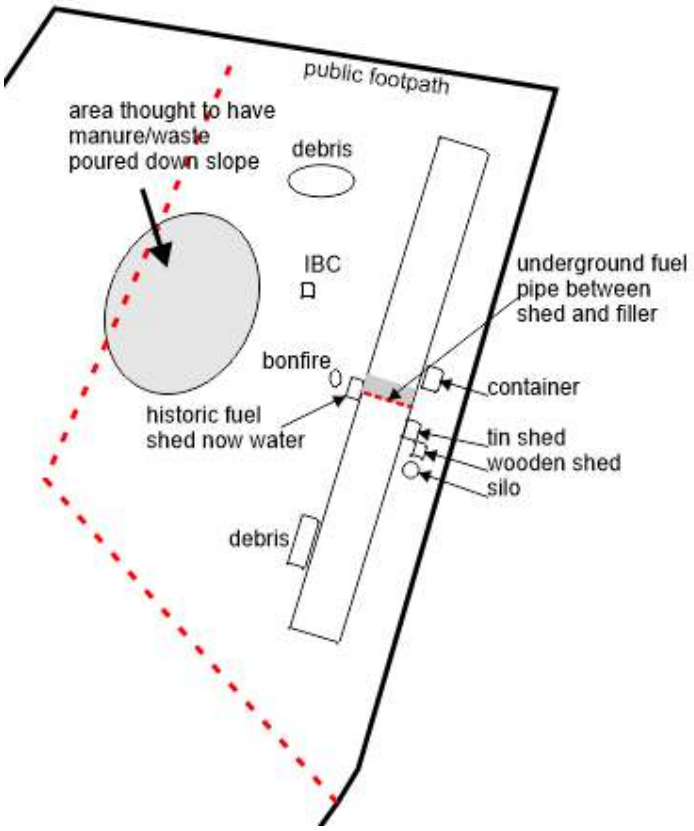
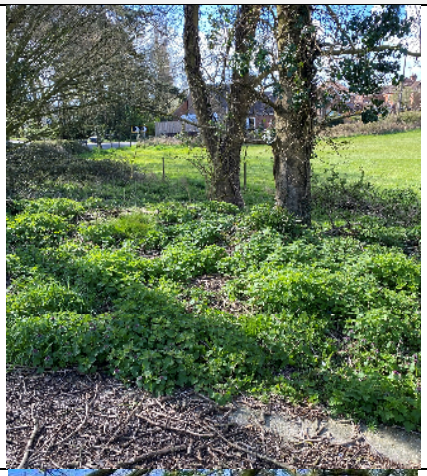
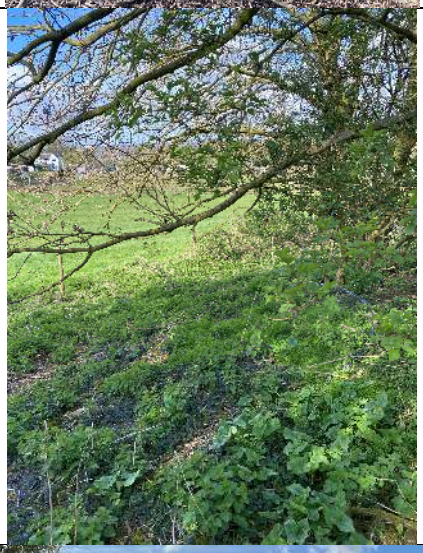


Figure 3: Approximate locations of features identified within Table 1

Table 2: Site walkover photographs and commentary – Zone B

Site walkover photographs and commentary – Zone B	
Western edge of A towards southern boundary of B. Piece of asbestos cement roofing on ground, no additional pieces in the vicinity.	
Slope and change in levels from A towards B looking west	
View south between boundary of A (left) and B (right)	

Site walkover photographs and commentary – Zone B	
View towards south/southwest corner of the site	
View toward the west boundary of the site, with the site and area sloping down towards the northwest	
View from B towards western boundary of A. Also, the area suspected of manure/waste poured from the higher ground of A onto the lower ground of B.	

Site walkover photographs and commentary – Zone B	
North boundary of the site	
North boundary of site looking towards the public footpath	

<u>Zone B</u>

The site comprises an open field and the area is entirely soft cover with well-maintained grass covering the centre and most of the remainder. The perimeter of Zone B is bound by wooden and wire fencing most of which is covered by small to large bushes, and small to large trees.

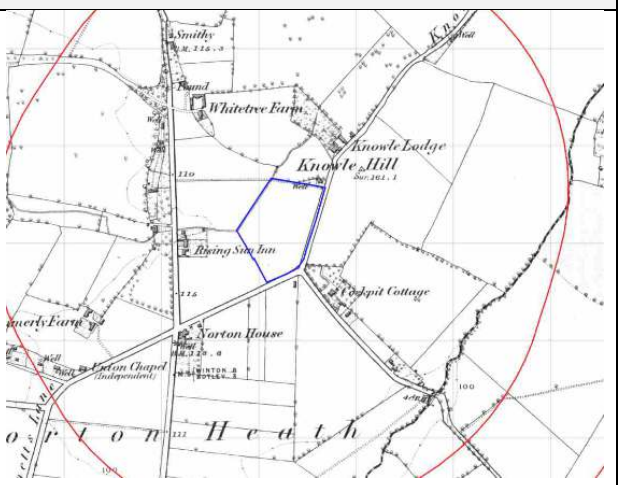
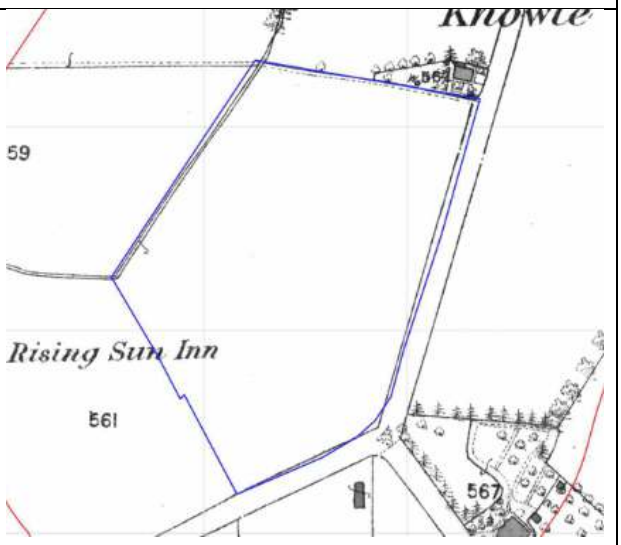
In the southwest corner of the site are approximately 20 hay bales.

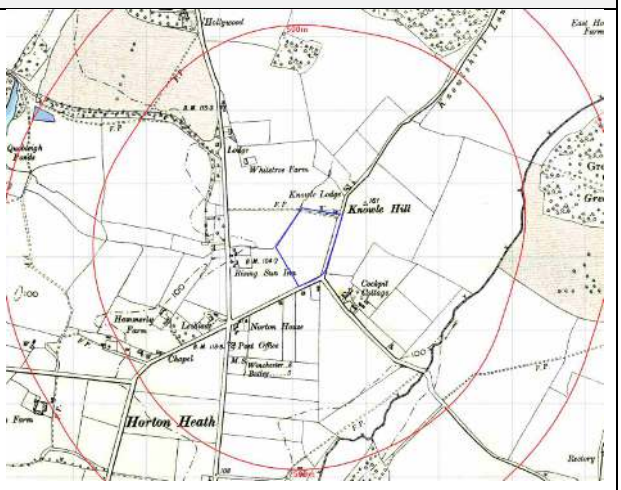
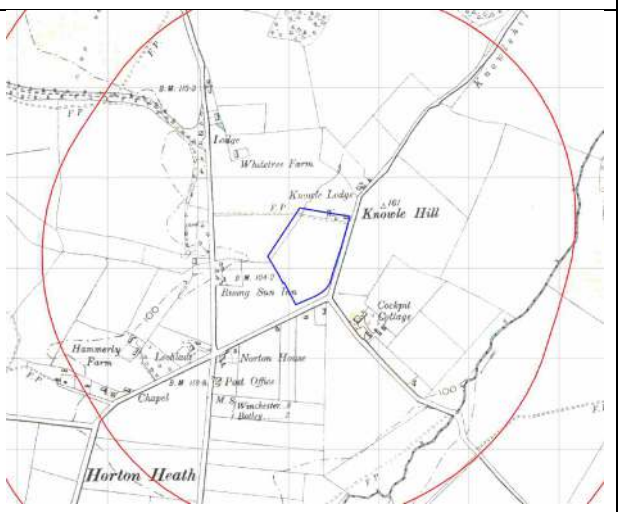
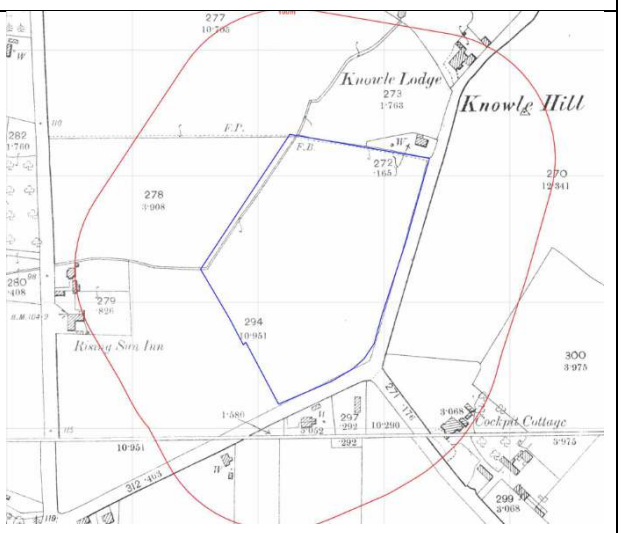
2 BACKGROUND INFORMATION

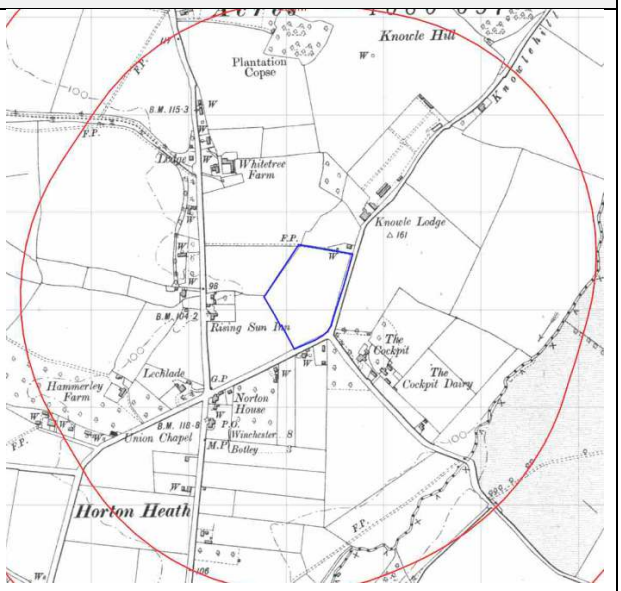
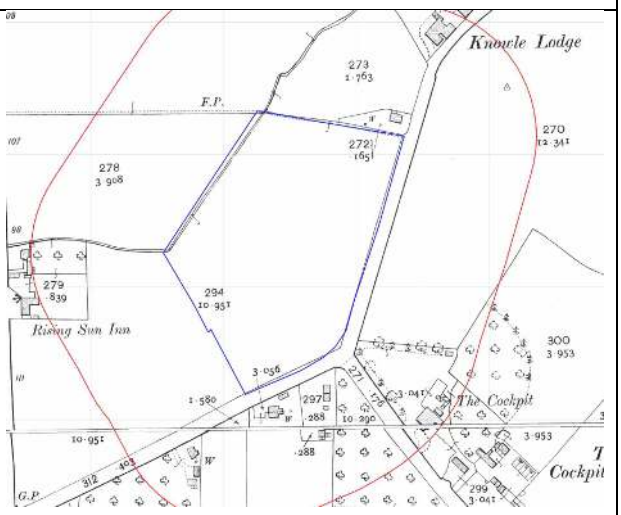
Background information from several sources has been referred to in order to gain an understanding of site conditions. Extracts are presented below, and items relevant to contaminated land noted.

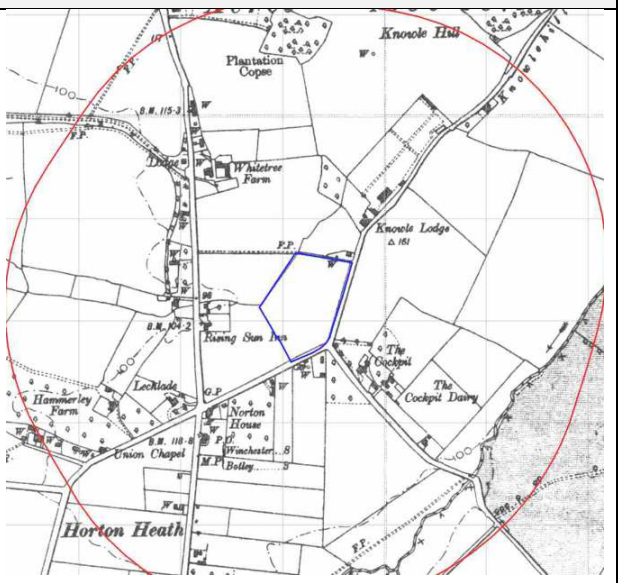
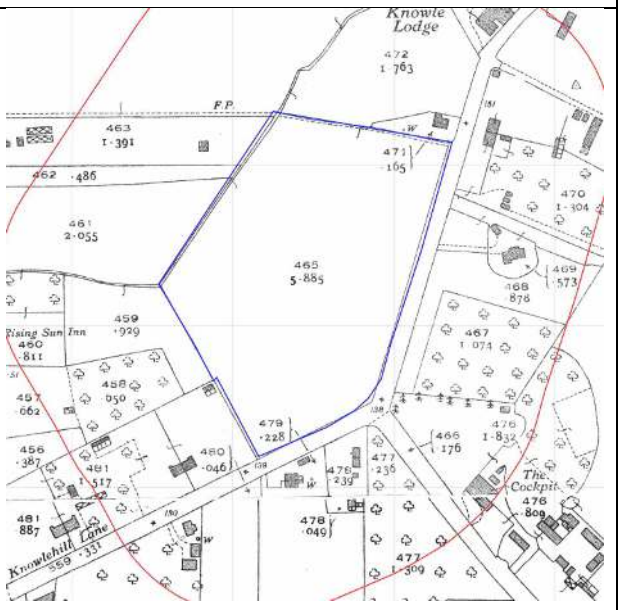
2.1 Historic maps

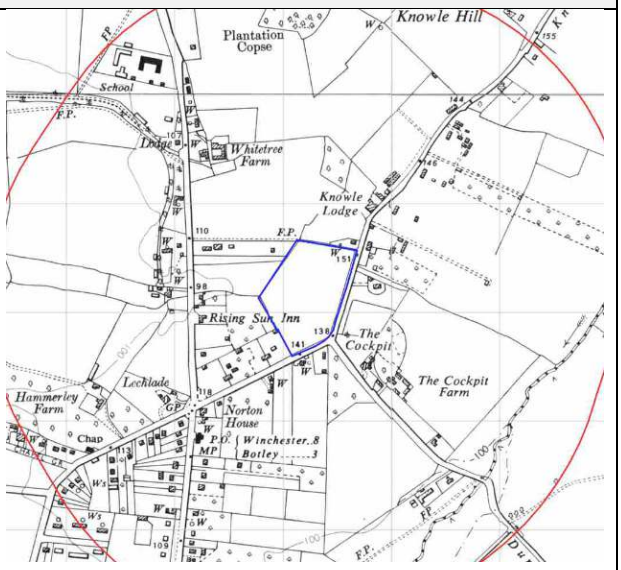
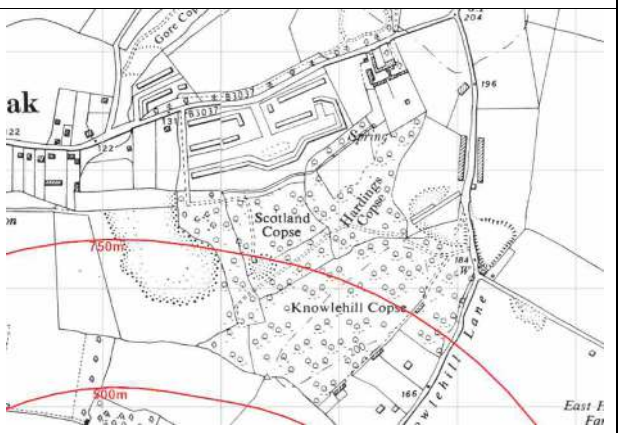
Table 3: Extracts from historic maps with commentary

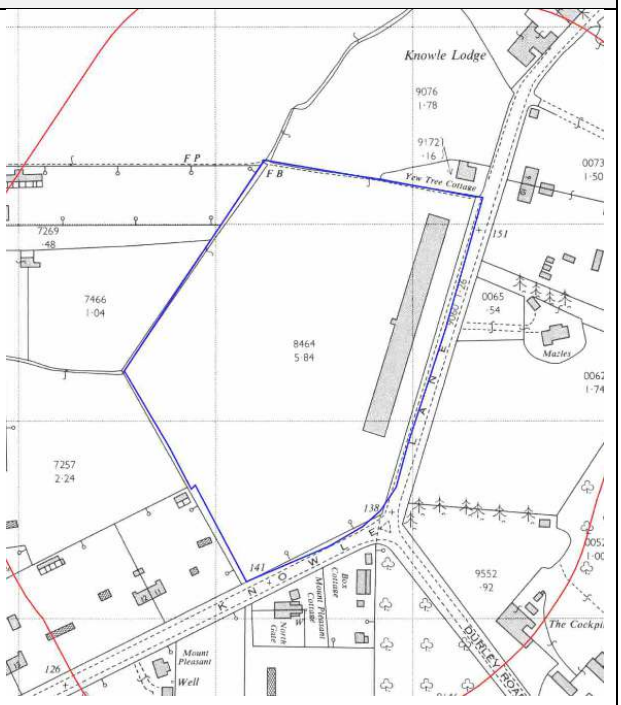
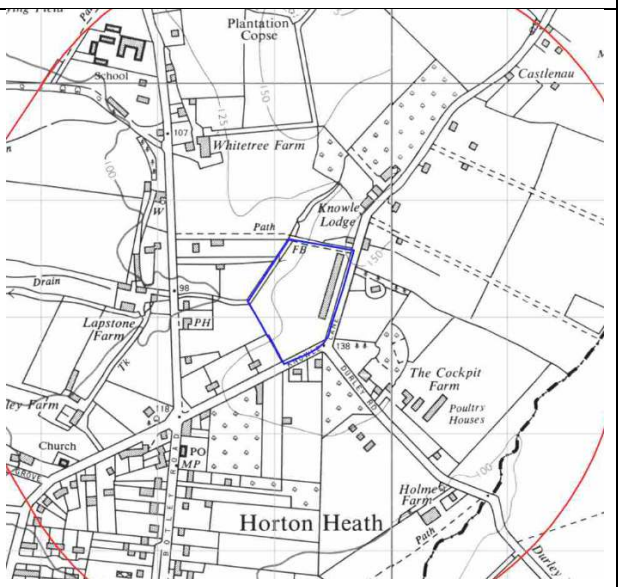
Commentary	Extracts from historic maps
c. 1868 1:10,560 The site is open agricultural, surrounded in the main by open agricultural, with limited development in the vicinity. Knowle Lane (then Knowlehill Lane) is present on its current day route. No indication of potentially contaminative sources/activities with the exception of a Smithy 500m north, and farming.	
c. 1869 1:2,500 Larger scale shows site is clear of any features.	

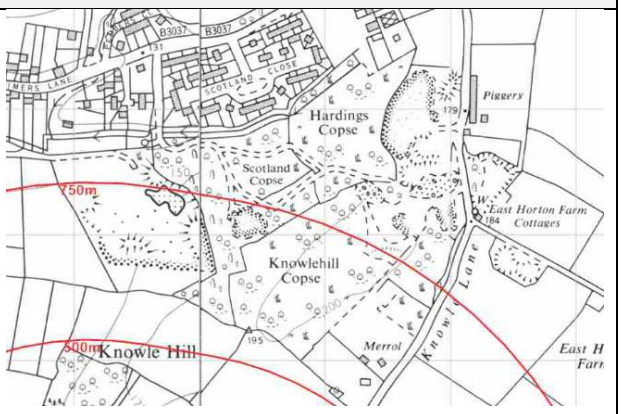
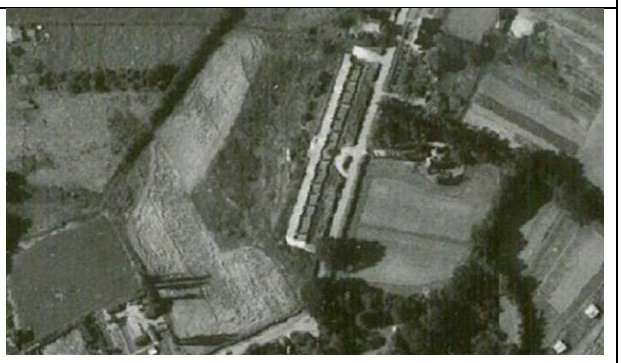
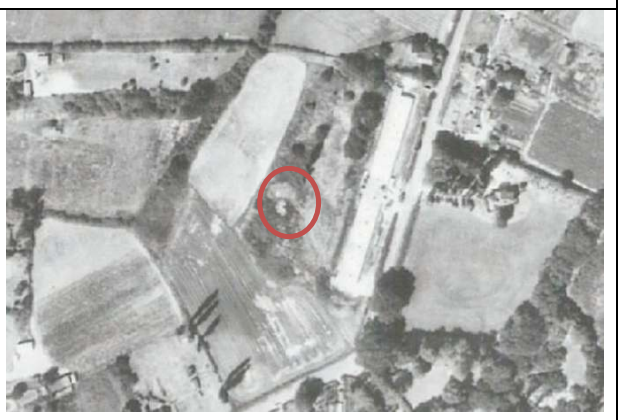
Commentary	Extracts from historic maps
c. 1888 1:10,560 Additional development has occurred to the immediate south of the site in the form of residential and Post Office. The Smithy is no longer shown and the only potentially contaminative usage that can be identified is farming.	
c. 1895 1:10,560 No significant changes	
c. 1897 1:2,500 The site remains clear of any features.	

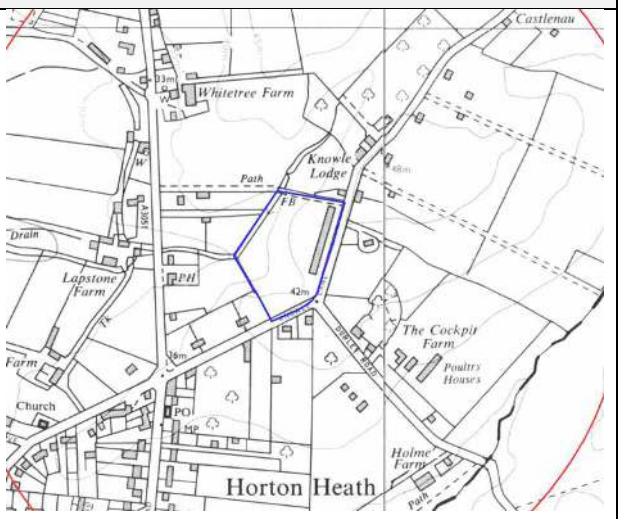
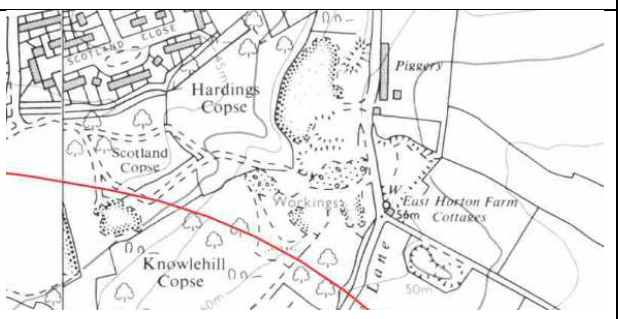
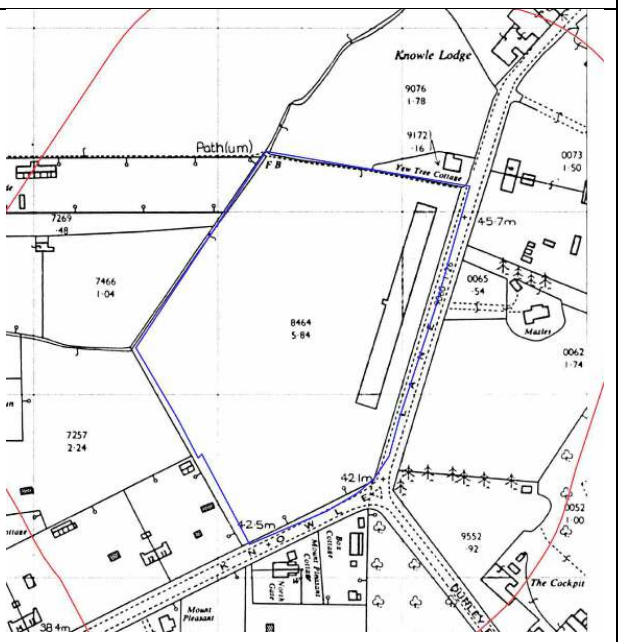
Commentary	Extracts from historic maps
c. 1908 1:10,560 Additional development has occurred in the area, including Cockpit Cottage being added to in the form of Cockpit Dairy. No evidence of potentially contaminative activities with the exception of farming.	
c. 1909 1:2,500 The site remains clear of any features.	

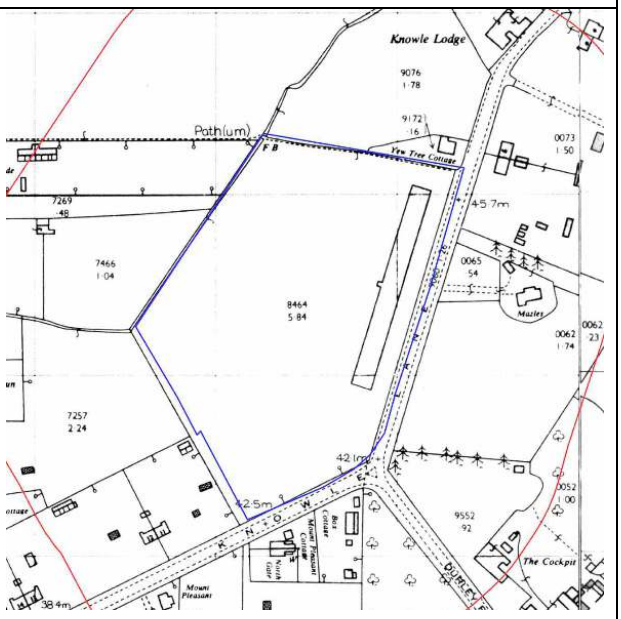
Commentary	Extracts from historic maps
c. 1938 1:10,560 No significant changes.	
c. 1939 1:2,500 The site remains clear of any features.	

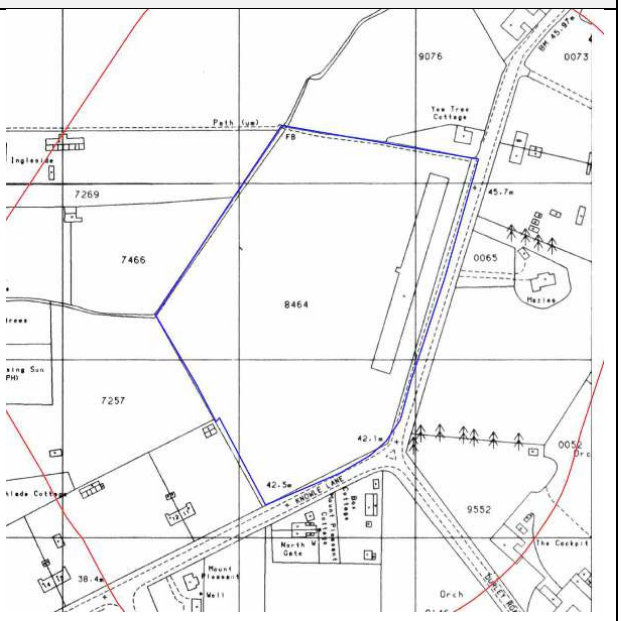
Commentary	Extracts from historic maps
c. 1957 1:10,560 Significant additional development in the vicinity of the site, including residential immediately to the west. Cockpit Dairy is now denoted Cockpit Farm. No evidence of potentially contaminative activities within 500m of the site with the exception of farming.	
c. 1957 1:10,560 700m to the north of the site extensive sand extraction activities are occurring.	

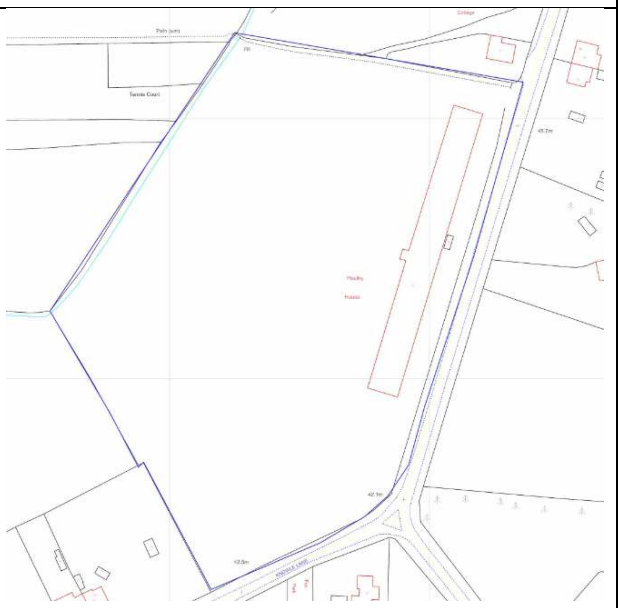
Commentary	Extracts from historic maps
c. 1962 1:2,500 The poultry house has been constructed in its current day layout.	
c. 1968 1:10,560 No significant changes within 500m of the site.	

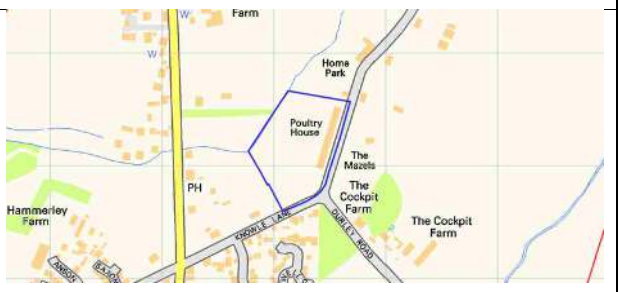
Commentary	Extracts from historic maps
c. 1968 1:10,560 Sand extraction to the north is more extensive, extending to within 650m of the site boundary	
c. 1970s aerial photograph courtesy of EBC It can be seen that the site and ground cover is as it is in the current day. Grassland to the west, the poultry house to the east, and an area of rough vegetation between the two.	
c. 1979-1984 aerial photograph courtesy of EBC As above, with the exception of some potential ground disturbance within the area of rough vegetation.	

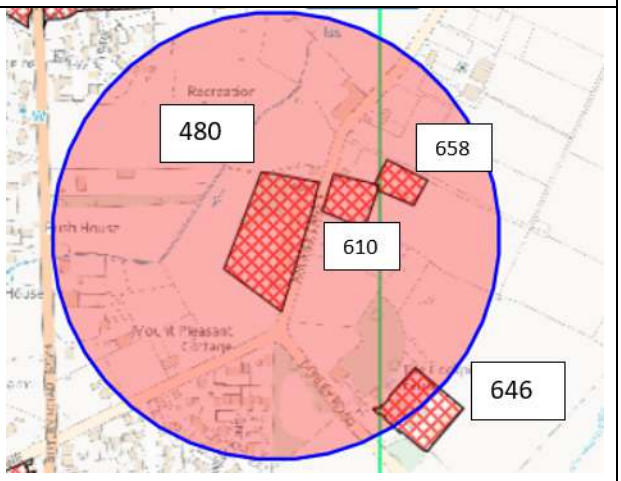
Commentary	Extracts from historic maps
c. 1985 1:10,000 No significant changes.	
c. 1985 1:10,000 Some evidence of continued works to the far north of the site	
c. 1985 1:2,500 No significant changes.	

Commentary	Extracts from historic maps
c. 1989 aerial photograph courtesy of EBC No significant changes. Some additional structures on the eastern face of the poultry house.	
c.1989 1:2,500 No significant changes.	

Commentary	Extracts from historic maps
c. 1992 1:2,500 No significant changes.	
c. 1996 aerial photograph courtesy of EBC No significant changes.	
c. 1999 aerial photograph courtesy of EBC No significant changes with the exception of an area of potentially disturbed ground in the central southern part of the rough ground.	

Commentary	Extracts from historic maps
c. 2001 1:10,000 No significant changes.	
c. 2003 1:1,250 No significant changes.	

Commentary	Extracts from historic maps
c. 2005 aerial photograph courtesy of EBC No significant changes. The area of potential disturbed ground is reduced in size.	
c. 2010 1:10,000 No significant changes.	
c. 2013 aerial photograph courtesy of EBC No significant changes.	

Commentary	Extracts from historic maps
c. 2021 1:10,000 No significant changes.	
Extract from Eastleigh Borough Council Environmental Services geographical information service 480 – the site - identified 'of interest' due to application to convert poultry house to residential usage in 2008 610 – land at 10 Knowle Lane – identified 'of interest' due to the presence of multiple vehicles 658 – land to the rear of 10 Knowle Lane – identified 'of interest' due to of the presence of multiple vehicles 646 – Cockpit Farm – identified 'of interest' due to farm usage	

The area of sand extraction identified 700m to the north is described in detail within a desk study report and a subsequent intrusive investigation report provided by Eastleigh Borough Council as follows:

- *Review of archival information The Fair Oak Landfill Complex.* Bournemouth University, May 2005; and
- *Fair Oak Landfill Study final interpretative report revision 1*. Card Geotechnics Limited, June 2012.

The reports identify that the area to the north was subjected to significant sand extraction and subsequent landfilling activities. An extract from the desk study report presented below as Figure 4 identifies that the area of landfilling closest to the site (approximately 650m to the north) was backfilled by the early 1990s.

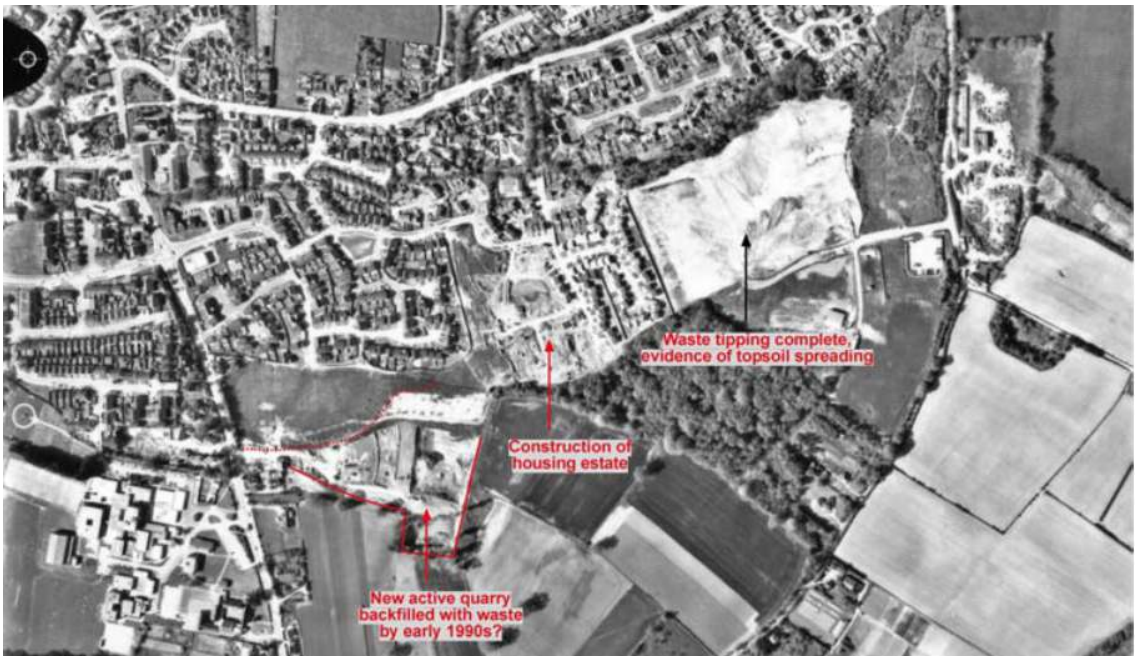


Figure 4: Extract from Review of archival information Fair Oak Landfill Complex

2.2 Additional information sources

The Groundsure report identifies two refuse heaps on the 1868 edition map to the east and southeast of the site at distances of 10m and 76m respectively. The location of these features as presented within the Groundsure report is shown in Figure 5 below, with an extract from the 1869 larger scale map for comparison.

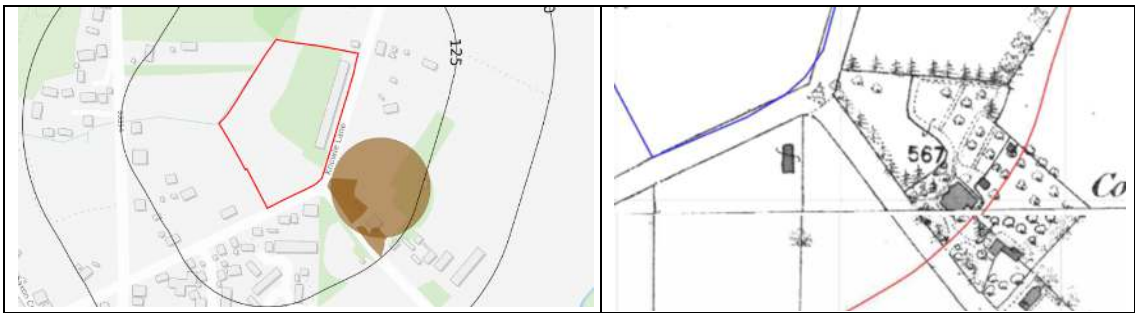


Figure 5: Extract from Groundsure report identifying two potential refuse heaps identified on 1868 map

It is evident that there are no such features present, and as such this will not be considered further within this report.

2.3 Additional information

Discussions with the current site owner have identified the following:

- The level platform on which the poultry house stands was created by cut and fill techniques, with no material imported from off-site.
- Waste in the form of manure and wood shavings generated within the poultry house was poured down the slope within Zone A until the late 1960s. Subsequent manure/bedding was removed from site.
- Use of the poultry house ended in 2018.
- An area of land adjacent to the poultry house was levelled in anticipation of construction of a second poultry house in the 1970s however this was never constructed.
- It is thought that the bulk fuel oil tank was removed in 2006 when the cooling/heating system switched to mains electricity.

2.4 Natural geology

Geological maps identify bedrock comprising the Wittering Formation overlying the London Clay Formation across the site. No superficial deposits are identified in the area. The overall dip of strata across the site is to the southwest, and the underlying Upper Chalk is at around 100m BGL (British Geological Survey 1:50,000 series *England and Wales sheet 315 – Southampton*).

The Wittering Formation is described as sands interspersed with clay bands. Within the Southampton area, the London Clay Formation consists predominantly of interbedded silty sandy clay.

2.5 Groundwater

The overall dip of strata across the site is to the southwest. Based on natural geology only, it is considered likely that the sandy elements of the London Clay Formation will contain groundwater perched upon the less- or non-permeable clay elements. The prevalent direction of flow of the perched waters will be locally dependent on the extent and dip of the underlying clay surface. A risk of groundwater flooding has been identified on the site within the Groundsure report, relating to the western boundary, however the area of the proposed development on the site of the existing poultry house has been identified as having a low risk of groundwater flooding. The underlying geology is identified as a Secondary A aquifer.

2.6 Hydrology

A stream is located along the western boundary of the site.

2.7 Radon

The site is not located within an area where radon protection measures are required.

2.8 Discussion

It can be seen from the historic maps and aerial photographs that the site and the surrounding area have remained predominantly open agricultural land since the earliest available map edition of c.1868. With the exception of farming activities, there are no indications of potentially contaminative activities taking place within 500m of the site boundary. Eastleigh Borough Council have identified the site as 'of interest' due to a planning enquiry submitted in 2008, and three other premises within 500m are identified as 'of interest' due to farming activities or the presence of multiple vehicles.

A review of the reports relating to the area of complex quarrying and landfilling to the north of the site identifies that the majority of the landfilling was complete by the mid to late 1970s. The area in closest proximity to the site (some 600+m north) is identified as Area F in the Card Geotechnics report. The report advises that Area F was '*quarried in the 1970s and was later restored with waste. Landfilling ceased and the surface levels were restored by the late 1980s.*' The report also identifies that a gas management and extraction system is incorporated within the landfill in this area. The intrusive investigation included the analysis of a groundwater (leachate) sample taken from within Area F, where '*inspection of the results indicates that the concentrations of dissolved contaminants within this area are below the corresponding EQS and DWV standards. Therefore, it is considered that the risk to controlled waters in minimal.*' Based on this information it can be confidently concluded that the landfill to the north of the site does not represent a potential risk to the site from mobile contaminants in gaseous or dissolved phase.

Based on all of the above, it is not considered that external potential sources of contamination should be considered further within this report, and the focus will therefore be on the actual site usage. The site remained open agricultural land until the development of the poultry house between 1957 and 1962. This required a cut and fill exercise to create a level platform within the eastern area of Zone A. Subsequently Zone B has remained open agricultural land, and as no development works are proposed in this area it can be concluded that no further consideration of Zone B in terms of contaminated land is required. Should additional information become available, or should intrusive investigation works identify an area of potential concern within the direct vicinity of Zone B, then this may change.

As such, the remainder of this report will focus on the use of the site for poultry farming and associated potential contaminants.

3 CONTAMINANTS ASSOCIATED WITH POULTRY FARMING

It is evident from the site walkover that contaminants associated with the construction and general running of the site have the potential to be present, in the form of fuel oil and potential asbestos containing roofing material. and the use of bulk chemicals such as disinfectants and antibiotics. In addition, there are a number of contaminants associated directly with poultry farming. These take the form of:

- The use of bulk chemicals such as disinfectants, antibiotics and pesticides;
- Arsenic in poultry waste as the result of the use of organic arsenic compounds in poultry feed for growth promotion; and
- Pathogens such as bacteria, fungi, mites and viruses.

Pesticides and disinfectants:

Some pesticides in the form of insecticides and fungicides are used to kill parasites on poultry and flies within the poultry house. The incorrect storage and poor management of pesticides can lead to contamination issues as chemical compounds build up in the soil. The most common active ingredient in fungicides is sulphur, whilst pesticides historically contained chlorine compounds or hydrocabons. Any residue will be detected by detailed analysis of soils to include volatile organic compounds (VOCs), semi-volatile organic compounds (sVOCs) and polyaromatic hydrocabons (PAH). There is also the potential for heavy metals to be present. This broad spectrum analysis will also detect the active ingredients in residual disinfectants such as formaldehyde and chlorinated compounds.

Pathogens:

The majority of the pathogens related to poultry farming are not zoontic in nature (transferable to humans), and of the remainder many are only transferrable by direct contact with infected birds (alive or dead) or ingestion of contaminated poultry meat or eggs. The exception is fungi, or mould, which can be transmitted via the inhalation of or contact with spores present in soil contaminated by bird droppings. These fungi are present throughout the environment and not solely related to poultry farming, however they are particularly prevalent in areas where lots of bird or bat droppings are present. The fungi can remain in the soil for many years and can easily become airborne if the soil is disturbed through activities such as construction or gardening. Soil analysis for the presence of specific fungi is complicated and not generally effective, and as such the removal of soils containing bulk manure from the area of proposed redevelopment is recommended. During any works that involve the disturbance of these soils (during site investigation or subsequent development works) must be undertaken using appropriate PPE and soil damping works. It should be noted, however, that it is legal and common

practice to spread poultry manure on farmland as an agricultural fertiliser to improve soil quality and crop production.

Antibiotics:

Antibiotics are used within poultry farming to promote growth and reduce disease. They are generally added to the water supply, and a significant proportion of the administered antibiotics are passed directly into the manure. Although there is a high level of concern within the scientific community about the release of antibiotics into the environment due to its effects on the ecosystem and long half-life, the concern is over the development of antibiotic resistant microorganisms, and there is no evidence that the presence of antibiotics within soils represents a direct risk to human health.

3.1 Discussion

Based on the information presented in sections 2 and 3 it is evident that the long-term use of Zone A for the management of a poultry house is likely to have left residual contamination in the form of chemical compounds (including fuel oil) and potential asbestos containing material.

Initially the manure/bedding was spread on the slope leading down towards Zone B, however this practice ceased in the late 1960s since which time the manure has been disposed of off-site. Based on the information presented above, and the generic use of poultry manure as fertilizer in agriculture it is considered that the risk of pathogens that are hazardous to human health remaining in the soils after 50+ years is minimal.

It is considered unlikely that any contamination not related to the direct use of Zone B as an agricultural field will be present across Zone B.

4 PRELIMINARY RISK ASSESSMENT

Current UK guidance identifies the first steps of the contaminated land risk assessment process as follows:

Step 1: Define conceptual site model

Step 2: Develop risk model and qualitative assessment

Step 3: Pollutant linkage identified?

The risk model develops the conceptual model to identify potential sources of contamination, receptors that could be affected, and possible pathways by which the contaminant could reach the receptors and cause harm.

4.1 Sources

The information presented above has identified the potential for contaminants to be present within Zone A in the form of chemical compounds, fuel oil and potential asbestos containing materials.

4.2 Pathways

It is proposed to redevelop Zone A for residential use, to include areas of garden and soft landscaping. As such the potential contaminants identified above can affect receptors through direct contact, inhalation or ingestion. In addition, there is the potential for chemical compounds to have entered the underlying groundwater, however unless bulk contamination is identified within the soils, given that the site is located within area where farming has been prevalent it will likely to be impossible to prove the source of any groundwater contamination. The underlying strata (Wittering Formation over London Clay Formation) have variable permeability, including layers of impermeable or low permeability clays. As such, the potential for mobilised contaminants reaching the more vulnerable strata of the underlying Upper Chalk is considered negligible.

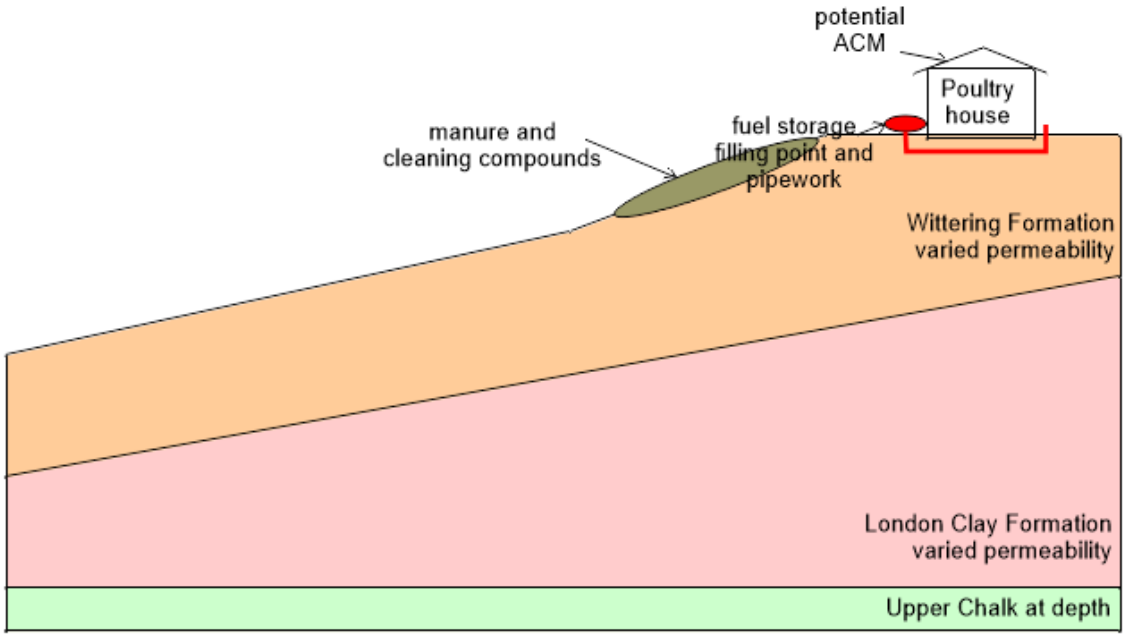
4.3 Receptors

Receptors at risk from contamination include:

- Construction workers (during development);
- Off-site third parties (during development);
- Occupants of the new buildings; and
- Groundwater.

4.4 Conceptual site model

A simplistic ground model of the site based on the information presented above is illustrated in Figure 6 below.



Potential sources: manure and cleaning waste, potential ACM, fuel storage, filling point and pipework, various solid waste material localised around the site.
Potential receptors: end users, construction workers, off-site third parties during development works, groundwater

Figure 6: Simplistic ground model

In summary, potential sources of contamination have been identified in the form of potentially contaminated shallow soils, representative of an unknown risk to construction workers, off-site third parties and end users via direct contact, inhalation or ingestion. In addition, there is the potential for shallow groundwater within the underlying soils (variable permeability) to have been impacted.

5 RECOMMENDATIONS

It is recommended that an intrusive site investigation is undertaken comprising trial pitting to achieve general coverage and to target potential contaminated soils. Approximate locations are presented in Figure 7 below, and the recommended depth/location choice presented in Table 4.

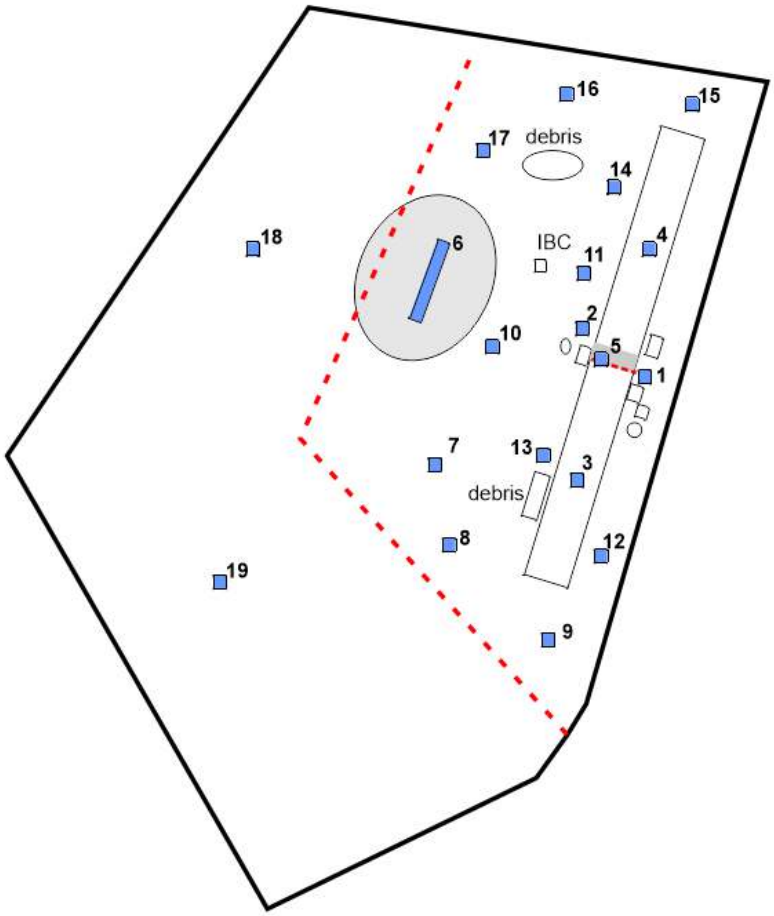


Figure 7: Approximate recommended locations for trial pits

Table 4: Trial pit location choice and recommended depth

Pit	Reason for location and details
1	Targeting fuel filler location, to base of made ground plus 1m, if evidence of fuel identified in soils, chase to full depth if possible
2	Targeting fuel storage shed, to base of made ground plus 1m. If evidence of fuel identified in soils, chase to full depth if possible
3	Targeting base of poultry shed to identify sub-base materials, to base of made ground
4	Targeting base of poultry shed to identify sub-base materials, to base of made ground
5	Targeting below ground fuel line, to base of made ground plus 1m if possible
6	Targeting likely area of manure disposal, shallow trench to base of made ground

Pit	Reason for location and details
7	Targeting area of disturbed ground identified in aerial photographs, to base of made ground
8	General coverage – to base of made ground
9	General coverage – to base of made ground
10	General coverage – to base of made ground
11	General coverage – to base of made ground
12	General coverage – to base of made ground
13	General coverage – to base of made ground
14	General coverage – to base of made ground
15	General coverage – to base of made ground
16	General coverage – to base of made ground
17	General coverage – to base of made ground
18	General coverage – to base of made ground
19	General coverage – to base of made ground
Debris	To base of made ground
Fire	To base of made ground

It is also recommended that the identified stacks of debris and bonfire residue are removed, and the locations clearly marked. Shallow soil samples should be obtained from these locations.

Soil samples should be taken as appears appropriate by the supervising engineer (to be appropriately qualified and experienced), with at least one sample being obtained from made ground within each trial pit. Analysis should be undertaken on all samples to include the following parameters:

- General suite to include metals, sulphur and total organic carbon
- Speciated polyaromatic hydrocarbons
- Speciated volatile and semi-volatile organic compounds
- Asbestos screening.

It should be noted that this scope represents a preliminary intrusive investigation, and that subsequent investigation works may be required should the results indicate the necessity. Appropriate PPE should be worn during the site investigation based on the findings of the preliminary risk assessment presented above.

Appendix A

ENVIROCHEM
Analytical Laboratories Ltd.
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Hampshire
PO16 8SS

Our Ref: J202604 FI: 1
Your Ref: CP
Date: 10/02/2021

UKAS TESTING 1227

Tel: (01329) 287777
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www.envirochem.co.uk
office@envirochem.co.uk

Asbestos Fibre Identification Report

Client:	Alderbury Homes Unit 1 Long Barn, Wangfield Lane, Curdridge, SO32 2DA
Site Address:	Cockpit Farm Barn, Knowle Lane, Fair Oak, SO50 7DZ
Sampled By:	Alderbury Homes (Construction Materials Southern)
Date sampled/received:	5th February 2021
Date analysed:	9th February 2021
Analyst/s:	Raphael Mirzaians
Analysis Location:	12 The Gardens, Broadcut, Fareham, Hampshire, PO16 8SS

ANALYTICAL PROCEDURE

Fibre identification was carried out in accordance with the documented `in-house' method (2.01) based on the HSE Guidance Note HSG 248. These employed stereo microscopy, polarized microscopy and dispersion staining techniques.

RESULTS

Sample No.	Sample Ref.	Location	Asbestos Detected	Asbestos Type
1	BS654273	Roof Sheet	Yes	Chrysotile Crocidolite

NOTES:
1. Sample(s) were examined for the presence of 6 types of asbestos fibres: crocidolite (blue), amosite (brown), chrysotile (white), anthophyllite, actinolite and tremolite.
2. The results shown in this test report specifically refer to the sample(s) tested as received unless otherwise stated and samples collected by the client are evaluated using information provided by the client. For samples collected by the client the date of receipt is deemed to be the same as the date sampled.
3. Envirochem is a UKAS accredited laboratory for sampling and identification of asbestos containing materials.
4. Comments, observations and opinions are outside the scope of UKAS accreditation.
5. The analytical method in the HSG248 does not quantify the amount of asbestos present, therefore UKAS accreditation does not permit quantification.
6. If, during fibre identification, only 1 or 2 fibres are seen and identified as asbestos, then the term 'trace asbestos identified' is used.
7. This report shall not be reproduced except in full, without written approval of Envirochem.

SIGNATURE: Authorised signatory PRINT NAME: Raphael Mirzaians