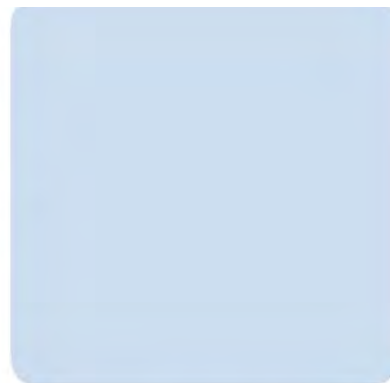


## Appendix 11.1: Ground Conditions Desk Study

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**RPS**

Ground Conditions Desk Top Study  
On Behalf of  
Britania Crest Recycling Ltd



**Date:** November 2016

**Our Ref:** JER6755

**RPS**

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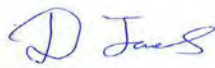

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# Quality Management

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## Amendment Record

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Revision No.	Date	Reason for Change	Authors Initials



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# 1 INTRODUCTION

---

## 1.1 Background

- 1.1.1 RPS Planning and Development (RPS) was commissioned by Britaniacrest Recycling Ltd to provide a Desk Top Study (DTS) and Preliminary Risk Assessment (PRA) report for an area of land located on the former Wealden brickworks, which is currently in use as a Waste Transfer Station / Materials Recycling Facility (this use commenced in February 2015). It is understood that the site is to be redeveloped as a Resource Recovery and Renewable Energy Facility with associated tipping, waste processing, waste storage facilities and offices.
- 1.1.2 A plan detailing the extent of the site is presented on *RPS Drawing NK018074 RPS-ST-XX-A-DR-0100* provided in *Appendix 1*. This area is herein referred to as the 'Assessment Site'. It covers an area of approximately 3.3 hectares (ha) and is located at National Grid Reference (NGR) 517112, 134331. The plan provides an illustration of the proposed layout for the Resource Recovery and Renewable Energy (3Rs) Facility.
- 1.1.3 The purpose of undertaking this assessment is to determine the potential for the presence of ground contamination as a result of former and current land uses at, and in the local vicinity of, the Assessment Site. Within this assessment factors that could affect ground stability have also been considered.
- 1.1.4 It is understood that the Preliminary Risk Assessment is required to support a planning application for the development of the Assessment Site. The assessment has been undertaken in line with the requirements of planning as outlined within the National Planning Policy Framework (NPPF).

## 1.2 Objectives

- 1.2.1 The overarching objectives of this assessment are to:
- Using the available information sources to determine likely existing ground conditions, including geology, hydrogeology and hydrology. This information will be utilised to establish baseline conditions and allow an assessment of environmental sensitivity;
  - Identify the potential contamination sources, both from historical and current activities that may have led to contamination of the Assessment Site;
  - Develop a Preliminary Risk Assessment (PRA) including a Conceptual Site Model (CSM) to support an assessment of the likely risks associated with potential contamination at the Assessment Site; and
  - Outline geotechnical considerations that may affect the redevelopment of the Assessment Site
- 1.2.2 The methodology followed to produce this DTS and PRA is detailed in *Appendix 2*.

### **1.3 Limitations of the Desktop Study**

- 1.3.1 This assessment is limited to the information available at the time of production including Groundsure Insights Report (Ref. 1), published environmental / geological data (Ref. 2 and 3) and previous ground investigation reports produced by others for the Assessment Site (Ref. 5 - 9). This information has been combined with observations made during a site reconnaissance visit undertaken by a consultant from RPS on 7<sup>th</sup> March 2016.
- 1.3.2 A copy of the Groundsure Insights Report is presented within *Appendix 3*.

## 2 PREVIOUS CONTAMINATED LAND INVESTIGATIONS

---

2.1.1 A number of phases of contaminated land investigations have been undertaken at the Assessment Site, including desk top studies and intrusive investigations comprising boreholes and trial pits. The relevant findings of these investigations are summarised in the remainder of this section.

2.1.2 The reports, as reviewed, are included within *Appendix 4*.

### 2.2 Risk Management Ltd, Site Investigation, February 2015 (Ref. 5)

2.2.1 This ground investigation was undertaken under the instruction of Britanniacrest Recycling Ltd, to establish ground conditions at the Assessment Site. The investigation comprised the advancement of four no. drive in samples up to 5.2 meters below ground level (mbgl) and four no. trial pits up to 3.0 mbgl across the Assessment Site. The relevant environmental findings are summarised as follows:

- The geology underlying the Assessment Site comprised Made Ground up to 2.1 mbgl overlying Weald Clay (unproductive stratum). Made Ground was noted to contain a variety of constituents including brick, concrete and clinker;
- No groundwater was encountered during drilling or excavation works, however groundwater was observed within monitoring wells during subsequent monitoring rounds. Risk Management Ltd concluded that this represented a perched water table within the Made Ground material;
- Six no. samples of Made Ground and two no. samples of Weald Clay were sent for chemical analysis. Contaminants were not present at concentrations exceeding relevant Soil Guideline Values or at risk SSVs for commercial land use;
- Ground gas monitoring was undertaken at monitoring wells installed within the four installed boreholes. Three no. gas monitoring rounds were undertaken. A maximum carbon dioxide (CO<sub>2</sub>) concentration of 0.6% volume by volume (v/v) was measured. There were no detectable concentrations of methane or flow rates identified from the monitoring data collected from the four drive in sample locations;
- No evidence of asbestos above laboratory detection was detected in samples that were tested;
- Risk Management Ltd advised that shallow foundations on the Weald Clay may be suitable at the site subject to loadings. Should Made Ground be found to be prohibitively thick, bored piles are likely to be suitable;
- The Weald Clay was identified to have a low shrinkage potential; and
- A concrete design class of DS1 or DS2 applies to buried concrete at the Assessment Site, based on the testing of materials encountered.

## **2.3 SLR Consulting, Desk Top Study, September 2014 (Ref. 6)**

2.3.1 A Desk Top Study (DTS) Preliminary Land Quality Risk Assessment (PRA) was undertaken by consultants SLR on behalf of Britanniacrest Recycling Ltd in connection with the proposed redevelopment of the Assessment Site with a recycling facility. The DTS involved a site inspection and reviewed available environmental data and previous contaminated land reports. The relevant environmental findings are summarised:

- Possible Asbestos Containing Material (ACM) was identified in the building fabric of existing buildings at the Assessment Site. The material was noted to be in a poor state of repair and damaged potential ACM was said to be on the floor surrounding the buildings.
- Historical activities at and around the Assessment Site which may have resulted in contamination or may lead to engineering constraints include excavations / quarrying, rail workings, storage tanks and brickworks.
- Historic landfilling has occurred in an area north of the Assessment Site.
- There is a high potential for Made Ground to be present underlying the Assessment Site.
- A preliminary risk assessment identifies that there is the potential for ground contamination sources to be present from historical land uses and that further ground investigation may be required.

## **2.4 SLR, Environmental Statement Technical Chapter, no date (Ref. 7)**

2.4.1 The Technical Chapter is based on the findings of the SLR 2014 DTS (Ref.6) and includes no further relevant environmental information.

## **2.5 Scott Wilson Ltd, Desk Top Study, December 2009 (Ref. 8)**

2.5.1 A Phase 1 DTS was undertaken by Scott Wilson on behalf of Biffa Waste Services Ltd at the former Wealden Brickworks. The DTS was in support of an outline planning application for the erection of a commercial building at the Assessment Site. The DTS involved a site inspection and a review of the available environmental data and previous contaminated land reports. The area under consideration within the DTS extended beyond the current Assessment Site boundary.

2.5.2 Only the partial report has been available for review as part of the SLR 2014 DTS appendices (Ref. 6). As such we have been unable to provide a review of this report in its entirety.

2.5.3 The Scott Wilson review of available environmental data has provided findings which are generally consistent with those detailed in the SLR 2014 DTS. In addition this report presents a summary of a ground investigation undertaken by Capita Symonds in 2005 (Ref.9) at Wealden Brickworks. The key details are presented below:

- The site investigation identified Total Petroleum Hydrocarbon (TPH) contamination within trial pits TP20, TP21, TP22, TP24, TP26, TP28 and TP29 at concentrations of up to 8,400 mg/kg;

- The site investigation identified visual evidence of hydrocarbon contamination in trial pits and elevated hydrocarbon concentrations in soil samples in an area to the north west of the site below a concrete pad. Contamination is understood to have migrated from an off-site leaking fuel pipe-line;
- A maximum carbon dioxide (CO<sub>2</sub>) concentration of 4.6% v/v and a maximum methane concentration of 0.4% v/v were recorded during the single ground gas monitoring round. It should be noted that these concentrations were recorded from investigative locations that are located outside the current site boundary.
- There was no detectable ground gas flow measured from the investigative positions during monitoring.

2.5.4 As a site plan or borehole location plan is unavailable for review, on this basis we are unable to confirm if the trial pit locations with associated contamination are within the current planning application boundary.

## **2.6 Capita Symonds, Ground Investigation, 2005 (Ref. 9)**

2.6.1 It is understood that an intrusive investigation was undertaken at the Wealden Brickworks Site in 2005 by Capita Symonds. The report for this ground investigation has not been available for review. A summary of the findings are present in the Scott Wilson 2009 DTS (Ref.8) as described above.

## 3 LAND USE / SITE OBSERVATIONS

---

### 3.1 Introduction

- 3.1.1 This section sets out details of the current / historical land use of the Assessment Site and the surrounding area, alongside observations noted during the RPS site inspection. The data presented does not represent full details of all land uses, but those that are considered to have the potential to have led to contamination of the Assessment Site. For further details of the land use, the information presented within *Appendix 3* should be consulted.
- 3.1.2 The site walkover survey, undertaken on 7<sup>th</sup> March 2016 encompassed a summary of the present building structures alongside visual conditions. The Assessment Site consists of 3.3 ha area of land, containing a large metal frame building surrounded by hardstanding, several smaller buildings and patches of vegetation. An access road connects the Assessment Site to Langhurstwood Road to the east. At the time of the site walkover survey the Assessment Site was in use as a Waste Transfer Station/Materials Recycling Facility.

### 3.2 Site Reconnaissance

#### Surrounding Land Use

- 3.2.1 The land immediately to the north, south and east of the Assessment Site is used for industrial purposes, including manufacturing centres. A landfill is also situated to the north. To the west the Assessment Site is bounded by railway lines, beyond which are fields divided by sections of woodland. The Assessment Site is situated within a rural area of West Sussex, with the surrounding landscape mostly comprising arable and pastoral fields. The town of Horsham lies 0.9k m south of the Assessment Site.

#### Building Observations

- 3.2.2 The main building within the Assessment Site is a large steel-framed storage shed measuring 70 x 190 m. The building is open and well-lit, with corrugated metal panelled walls and roof. The southern section of the building is older and in poorer condition than the recently extended northern section. Two small buildings lie to the north of the main storage shed, the first of which is a flat, felt roofed brick building and the second a wooden shed. A disused former reception building is located to the south of the Assessment Site. The reception is brick walled with a pitched asbestos roof. To the centre of the Assessment Site is a former office building of similar construction to the reception building though in a better state of repair. A small, brick building lies to the south-west of the Assessment Site. The building has a flat corrugated metal roof and is in poor condition, with the door and windows removed.



### **Site Surfacing**

- 3.2.3 The majority of the Assessment Site comprises hardstanding and bare ground, vegetation is limited to disused areas at the edges of the Assessment Site and small sections of vegetation around the buildings.

### **Water Features**

- 3.2.4 Two large ponds are located immediately to the north of the Assessment Site boundary and a third pond is located approximately 40 m south-east of the Assessment Site.

## **3.3 Land Use**

- 3.3.1 *Table 3.1* sets out the current and historical land uses of the Assessment Site and adjacent areas that have the potential to have led to contamination of the Assessment Site.

**Table 3.1 - Land Use**

Section	Description / Information		Comments / Potential Contamination Sources
Current Site Description / Layout**^	<p>The Assessment Site is approximately 3.3 ha in size and is accessed via a road that connects to Langhurstwood Road to the south-east. The Assessment Site is currently used as a waste transfer station / materials recycling facility which operates under an Environmental Permit issued by the Environment Agency (reference EPR/CB3308TD).</p> <p>Full details of the current Assessment Site layout are presented within <i>Section 3.2</i>.</p>		<p>Given the Assessment Site contains an active waste transfer station which receives a number of waste streams; there is the potential for several contaminant sources to be present. However these activities only commenced very recently and are regulated under an Environmental Permit with the necessary controls in place to prevent contamination. As such the current use of the Assessment Site is considered unlikely to have led to contamination.</p>
Neighbouring Land Uses**^	<p>Land immediately north, south and east of the Assessment Site is used for industrial purposes, including manufacturing centres. There is also a landfill to the north. To the west the Assessment Site is bounded by railway, beyond which are fields divided by sections of woodland.</p> <p>The site is situated within a rural area of West Sussex, with the surrounding landscape mostly comprising arable and pastoral fields. The town of Horsham lies approximately 0.9km south of the site</p>		<p>Potential off-site sources of contamination are primarily associated with the adjacent industrial activities to the north, south and east, most notably the landfill and the railway line to the west. Whilst these uses would be considered potentially contaminating, the geology underling the Assessment Site is low permeability and therefore significant migration of contaminants on to the Assessment Site is not anticipated.</p>
Site History*	Date	On-site Land Uses	
	From      To		

Section		Description / Information		Comments / Potential Contamination Sources
	1878	1909	Undeveloped agricultural land. The railway forms the western site boundary. Langhurstwood Road forms the eastern boundary whilst agricultural land is present to the north and south of the Assessment Site.	There is potential for contamination at the Assessment Site based on its historical use as a brickworks, including kilns, tanks, engine sheds and associated tramway. Typical contaminants include hydrocarbons, greases and ash / charcoal. The previous ground investigations undertaken at the Assessment Site (see <i>Section 2</i> ) indicate that ground contamination at the Assessment Site is localised and of limited severity.
	1909	1961	The Assessment Site is depicted as a brickworks. Buildings (kilns) are present in the north-west of the Assessment Site and a tramway runs across the Assessment Site. A tank and an engine shed are present. There is evidence of earthworks in the eastern area of the Assessment Site.	
	1961	1974	The tramway is no longer depicted; additional unidentified buildings are present in the centre of the Assessment Site. A kiln is depicted on the south-western boundary of the Assessment Site.	
	1974	1989	The kilns in the north-west of the Assessment Site are replaced with a single unlabelled building. The buildings in the centre of the Assessment Site have been replaced by a single small building.	
	1989	2012	No significant change is depicted in the mapping.	
	Date		Surrounding Land Uses (250 m radius unless otherwise stated)	The identified adjacent past / recent commercial practices represent potential contamination sources
	From	To		
	1876	1909	Railway immediately west of the Assessment Site. Mixed agricultural land surrounds the Assessment	

Section	Description / Information		Comments / Potential Contamination Sources
		Site with Langhurstwood large woodland) 200 m north and 20 m east of the Assessment Site. Warnham train station is located 100 m south of the Assessment Site. Warnham Brick yard is located 100 m south-west of the Assessment Site.	which could impact the Assessment Site. Whilst these uses would be considered potentially contaminating, the geology underling the Assessment Site is low permeability and therefore significant migration of contaminants on to the Assessment Site is not anticipated.
	1909	1932	
		Buildings associated with the brickworks are present immediately to the north of the Assessment Site. Earthworks are depicted to the north of the Assessment Site.	
	1932	1961	
		A sewage works is depicted 300 m to the south-west of the Assessment Site.	
	1961	1974	
		Further development associated with the brickworks appears to the north of the Assessment Site.	
	1974	1978	
		Clay pits are marked to the north of the Assessment Site.	
	1978	2012	
		A large unidentified building is present 50 m south of the Assessment Site. 2 ponds are depicted immediately north of the Assessment Site with 2 ponds depicted 50 m north-east and east of the Assessment Site.	
	2012	present	
		Brookhurst Landfill site is depicted 500 m north of the Assessment Site.	
	Distance & Direction	Details	
Active landfills	127m north & 392 m	Brookhurst Wood landfill site, operated by Biffa, is	

Section	Description / Information		Comments / Potential Contamination Sources
(250 m)*	north	listed twice in the Environment Agency (EA) records.	There is a potential risk from ground gas and ground contamination from the neighbouring landfill site although the potential risks posed are considered to be generally low with regard to human health and groundwater. Gas migration on to the Assessment Site is likely to be limited as a result of the low permeability of the underlying deposits.
Historical landfills (250 m)*	n/a	No historical landfills are recorded in the EA data.	
Waste Treatment, Transfer and Disposal Sites (500 m)*	On-site	<p>Whilst not detailed within the Groundsure report The Assessment Site has recently (February 2016) commenced use as a waste transfer station / materials recycling facility operating under an Environmental Permit (reference EPR/CB3308TD). Under the Environmental Permit the Assessment Site is authorised to process up to 200,000 tonnes a year of commercial, domestic, industrial, construction and demolition wastes. This includes the acceptance of asbestos for segregation and storage (max 10 tonnes at any time).</p> <p>Permitted operations at the facility include physical treatment, manual and mechanical sorting, separation, screening, washing, shredding, crushing and bailing.</p>	The permitted activities only commenced very recently and are regulated under an Environmental Permit with the necessary controls in place to prevent contamination. These activities are therefore considered unlikely to have led to contamination of the Assessment Site.

Section	Description / Information		Comments / Potential Contamination Sources
	268 m north & 405 m north-east	Warnham leachate treatment plant and Warnham brickworks are included in the local authority records.	Given the distance from the Assessment Site and the low permeability nature of the underlying geology it is considered unlikely that these activities will have led to contamination of the Assessment Site.
Current potentially contaminative industrial land use*^ (250 m)	26m south, 61m east, 99m south, 116m north, 135m south, 205m south, 230m north and 246m south	<p>Surrounding potentially contaminative sources include:</p> <ul style="list-style-type: none"> <li>• A waste processing and storage facility;</li> <li>• Storage tanks;</li> <li>• Electricity sub station;</li> <li>• Brick manufacture;</li> <li>• Railway infrastructure; and</li> <li>• Vehicle repair / maintenance operations.</li> </ul>	The adjacent land uses have the potential to generate contamination although based on the findings of the ground investigations at the Assessment Site and adjacent sites, they are considered unlikely to have resulted in any significant ground contamination. The underlying geology (Wealden Clay) is likely to have further limited the migration potential of contamination in the local area.
Petrol and Fuel Sites*	On-Site	None recorded	None recorded
	Off-Site	None recorded	
Authorisations / Licences / IPPC (250 m)*	On-Site	None recorded	None recorded
	Off-site	None recorded within 250 m, but noted that multiple entries are recorded associated with Brookhurst Wood landfill site and anaerobic digester 342 m north.	

Section	Description / Information		Comments / Potential Contamination Sources
Discharge Consents (250 m)*	On-site	Sewage discharge treated final effluent.	
	13 m south, 43 m south, 69m south, 117 m west, 174 m south, 244 m south-east	These are all either trade discharges or sewage effluent related.	
Recorded Pollution Incidents (250m)*	266 m north-east	2001, sulphide odour, air impact category 2 (significant).	This pollution incident is considered unlikely to have significantly impacted the Assessment Site with regard to contamination based on its transitory nature.

\* Based on review of Groundsure reports (Ref.1).

\*\* Based on site reconnaissance and review of Groundsure reports (Ref.1).

^ Based on a review of previous ground investigation reports (Ref. 5-9).

## 4 ENVIRONMENTAL SETTING

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- 4.1.1 This section sets out details of the environmental setting of the Assessment Site and the surrounding areas.



**Table 4.1 - Environmental Sensitivity**

Section	Description / Information				Issues / Comments
Geology & Hydrogeology ** ^	Strata	Description	Aquifer Status	Anticipated Approx. thickness (m)	
	Worked Ground (undivided)	Made Ground consisting of concrete, bricks and clinker. Previous investigations have found perched discontinuous ground water within the Made Ground unit.	Not applicable	Up to 2.10	The perched discontinuous water within the Made Ground is not considered a groundwater receptor.
	Weald Clay Formation	Impermeable clay unit	Non productive	Unknown	The Weald Clay formation is generally classified as unproductive in terms of groundwater.
Groundwater Vulnerability**	Groundwater underlying the Assessment Site has not been given a classification by the Environment Agency. On this basis it can be concluded that groundwater underlying the site is not of strategic importance.				
Geology and Hydrogeology in Surrounding Area	<p>The geology of the surrounding area consists of the Weald Formations, consisting of mudstone bedrock. Further south of the Assessment Site the nearest change in geology is the Horsham Stone formation, Sandstone bedrock located approximately 0.1 km south of the Assessment Site boundary. A band of Superficial geology (Alluvium) is recorded by the BGS as present approximately 50 m west of the Assessment site boundary. The alluvial band trends north south along the approximate orientation of the neighbouring railway line.</p> <p>The Weald Clay formation is generally classified as unproductive in terms of groundwater. However, a more permeable layer within this which crosses 66 m to the south of the site is designated as a Secondary A Aquifer.</p>				

Section	Description / Information		Issues / Comments
SPZs* (500 m)	On-site	None Identified	-
	Off-site	None identified within 500 m of the Assessment Site.	-
Surface Water (250 m)*	On-site	Google mapping and Enviro-insight indicate 2 surface ponds bordering the northern boundary of the Assessment Site.	The surface features verge on to the Assessment Site, and thus could be a potential receptor for contamination. It should however be noted that surface water ponds are unlikely to be in continuity with groundwater.
	Off- site	11 water features are suggested in the Enviro-insight data as not depicted on mapping, 6 watercourses are suggested as being present within 250 m of the Assessment Site, although most of these are undefined, apart from Balding Brook located 100m to the west.. Several ponds are present within 250 m of the Assessment Site.	These surface watercourses are not considered to be a potential receptor for potential contamination from the Assessment Site.
Licensed Water Abstractions (1 km)*	On-site	None identified.	None recorded
	33 m north	An historical abstraction license in relation to the brickworks is recorded.	-
Conservation Areas & Sensitive Land Use (1 km)*	On site	None recorded	-
	Off Site	621 m north-east, Warham SSSI is recorded. 59 records of ancient woodland are identified within 2 km of the Assessment Site.	-

Section	Description / Information		Issues / Comments
Radon*	Yes	The Assessment Site is in a Radon Affected Area, as less between 1% and 3% of properties are above the Action Level.	Radon protective measures are not considered necessary at the Assessment Site.
Coal Mining*	No	The Assessment Site is not in an area that is recorded as being impacted by coal mining. The recorded geology does not include coal deposits.	-
Foundered Strata / Landslide*	On-site	<p>The Groundsure report suggests the following hazard ratings at the Assessment Site:</p> <ul style="list-style-type: none"> <li>• Maximum shrink-swell hazard rating is low;</li> <li>• Maximum landslides hazard rating is very low;</li> <li>• Maximum soluble rocks hazard rating is negligible;</li> <li>• Maximum compressible ground hazard rating is negligible;</li> <li>• Maximum collapsible rocks hazard rating is very low; and</li> <li>• Maximum running sand hazard rating is very low.</li> </ul>	Ground stability hazards at the Assessment Site are considered to be negligible to low.

\* Based on review of Groundsure reports (Ref. 1).

\*\* Based on review of geological and hydrogeological maps and the Groundsure reports (Ref. 1).

^ Based on a review of previous ground investigation reports (Ref. 5-9).

## 5 CONCEPTUAL SITE MODEL AND PRELIMINARY RISK ASSESSMENT

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5.1.1 In line with CLR-11 (Ref. 4) guidance, a conceptual site model and preliminary risk assessment have been developed to qualitatively assess potential contaminant sources, receptors and potential pollutant linkages identified at the Assessment Site. The risk level relevant to each linkage is stated in the context of potential risk to future site users and construction site workers during potential development, as well as controlled water receptors (the underlying groundwater).

5.1.2 The risk assessment is based on the proposed development of the Assessment Site for the proposed end use as Resource Recovery and Renewable Energy facility. The anticipated masterplan within drawing NK018074 RPS-ST-XX-A-DR-0100, indicates that once developed the Assessment Site will contain:

- Waste processing hall;
- Tipping hall;
- Bunker;
- Boiler hall;
- Bottom ash area;
- Workshop;
- Offices;
- Turbine hall;
- Flue gas cleaning;
- Air cooled condenser;
- Sprinkler tanks;
- Transformer;
- Storage recycling area;
- Car parking; and
- Weighbridge.

5.1.3 The assessment is presented in *Table 5-1*.

**Table 5.1 - Summary of Pollutant (Contaminant-Pathway-Receptor) Linkages**

Contaminant	Pathway	Receptor	Risk	Notes
<b>HUMAN HEALTH RECEPTORS</b>				
Chemical contamination in soils relating to current and historical land use (landfill, refuse tip, Made Ground, earth stockpiles, railway and tramway sidings)	Ingestion of soil / dust dermal contact with soils and inhalation of volatiles	Future site users (including construction workers, site staff and visitors)	Low	The proposed end use is considered to be low risk with respects to human health.  The concentrations of contamination identified within investigative reports to date have been found to be relatively low in comparison to commercial end use guidance values, although elevated concentrations of TPH have been identified at isolated locations. The proposed development will largely cap off any potential pathways through the installation of concrete / tarmac hardstanding, thus mitigating the risk of human exposure.

**Table 5.1 - Summary of Pollutant (Contaminant-Pathway-Receptor) Linkages (continued)**

Contaminant	Pathway	Receptor	Risk	Notes
Soil Gas / Landfill Gas (landfill, Made Ground)	Migration of gases through underlying soils and accumulation of gases within the proposed development causing gas hazard, or explosive risk	Future Site Users (including site staff and visitors)	Low	The available investigations and assessments identify low gas concentrations at the Assessment Site suggesting a generally low risk. Landfill gas could be generated from degradable material if present within the Made Ground unit across the Assessment Site or from off-site sources such as the landfill sites to the north, although migration through the underlying Weald Clay will be limited. The main facility is likely to be highly ventilated.

**Table 5.1 - Summary of Pollutant (Contaminant-Pathway-Receptor) Linkages (continued)**

Contaminant	Pathway	Receptor	Risk	Notes
<b>CONTROLLED WATER RECEPTORS</b>				
Known sources of chemical contamination of soils relating to current and historical land use (landfill, Made Ground, railway and tramway sidings).	Shallow perched groundwater	Off-site groundwater	Negligible to Low	The historic ground investigations indicate that there are small pockets of perched water within the Made Ground but no continuous water table. The previous ground investigations have identified that ground contamination is limited in extent and severity.
		Off-site surface water	Negligible to Low	The historic ground investigations indicate that contamination is limited. There are small pockets of perched water within the Made Ground but they are not in hydraulic continuity with surface waters.
	Vertical migration to deep groundwater	Deep groundwater	Low to moderate	The historic investigations indicate that the levels of contamination at the Assessment Site are low. Vertical migration to deep groundwater is limited by the presence of low permeability Weald Clay.

## 6 CONCLUSIONS

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- 6.1.1 RPS Planning and Development (RPS) was commissioned by Britanniacrest Recycling Ltd to provide a Desk Top Study and Preliminary Risk Assessment report for an area of land located on the former Wealden brickworks, which was previously derelict but in February 2015 commenced use as a Waste Transfer Station / Materials recycling facility. It is understood that the intended future use of the site is for a Resource Recovery and Renewable Energy facility.
- 6.1.2 The assessment comprised a review of available records to confirm the potential for contamination and the environmental sensitivity of the Assessment Site and its surrounding areas. This included a review of previous ground investigations relating to the Assessment Site and adjacent areas.
- 6.1.3 The assessment identified the potential for contamination at the Assessment Site relating to the historical use as a brickworks with associated storage tanks, use and storage of chemicals and railway sidings. Whilst the Assessment Site is currently an operational Waste Transfer Station / Materials recycling facility, these activities are highly controlled under an Environmental Permit and are not considered likely to have led to contamination of the Assessment Site.
- 6.1.4 A review of the previous ground investigations has indicated that there are generally low levels of organic and inorganic contamination although elevated concentrations of TPH have been identified at a small number of locations.
- 6.1.5 The review of the available documents has identified that the Assessment Site is underlain by Made Ground, with perched pockets of water, which is in turn underlain by the Weald Clay. The Weald Clay is hydrogeologically classified as Unproductive Strata.
- 6.1.6 A preliminary Conceptual Site Model (CSM) was developed to inform a Preliminary Risk Assessment (PRA) that assesses the potential risks posed from the identified potential contamination sources to controlled waters, human health and the risk from ground gas. The CSM concluded that there was a low or negligible risk to human health and controlled waters from soil contamination and ground gases.
- 6.1.7 Given the low sensitivity of the site setting and proposed end use it is considered that further specific ground investigation and assessment is not required. It is however considered that it would be prudent to develop a discovery strategy and for this to be implemented during the redevelopment works. In the event that this discovery strategy identifies areas of gross contamination, this contamination should be characterised and assessed to determine if mitigation is required.



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## APPENDICES

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## APPENDIX 1

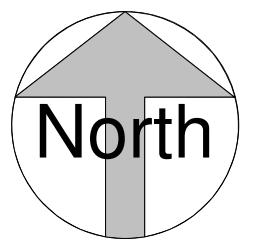
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### Drawings





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- Notes
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  2. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.
  3. This drawing should be read in conjunction with all other relevant drawings and specifications.
  4. Background image taken from 'Google Earth'.



Key:

- Development Boundary
- Ownership Boundary
- Shared right of way
- Concrete Area
- Grass Area
- Gravel Area
- Paved Pedestrian Route
- Paladin Fence

P04	Hoffman Klin added	CB	RJF	17.11.16
P03	Issued for Planning.	JT	RJF	03.11.16
P02	ACC location amended, Boiler Hall Roof revised	KM	RJF	13.10.16
Rev	Description	By	Ckd	Date



Sherwood House, Sherwood Avenue,  
Newark, Nottinghamshire, NG24 1QQ  
T:01636 605 700 E:rpnewark@rpsgroup.com



Project Sussex EfW

Title Proposed Site Plan

Status	Scale	Date Created
Preliminary	1 : 500	@ A1 05/09/16
Project Leader	Drawn By	Checked by
RJF	JT	RJF

Document Number	Revision	Suitability
NK018074 - RPS-ST-XX-A-DR-0100	P04	S0
Project Number	Originator	Zone Level Type Role Drawing Number

rpsgroup.com/uk

Proposed Site Plan  
1 : 500





## APPENDIX 2

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### Desk Study Methodology

## **Introduction**

This report provides available factual data for the site obtained only from the sources described below and related to the site on the basis of the location provided by the client. The desk study information is not necessarily exhaustive and further information relevant to the site may be available from other sources. No responsibility can be accepted by RPS for inaccuracies in the data supplied by any other party.

This report is written in the context of an agreed scope of work and should not be used in a different context. Furthermore, new information and changes in legislation may necessitate a re-interpretation of the report in whole or in part after its original submission. The report is provided for sole use by the client and is confidential to them and their professional advisors. No reliance whatsoever is provided to any party other than the client unless otherwise agreed.

## **Information Sources**

### **Land Use**

This establishes the former and current uses of the site, which could have caused contamination. Details of the site location, the current and proposed site uses have been provided by the client.

Where specified, a site inspection has been carried out by RPS to identify any significant issues associated with current and past activities, neighbouring land uses and other key environmental issues.

Information about the history of the site has been obtained through an inspection of historical maps at 1:10,000, 1:2,500 and 1:1,250 scales (where available). The accuracy of maps cannot be guaranteed and it should be recognised that different conditions on site may have existed between and subsequent to the map survey dates.

Regulatory records including landfills, pollution incidents ('major' and 'significant' only), industry authorisations and licensed water abstractions are derived from information purchased from Groundsure Ltd (unless otherwise specified).

### **Environmental Setting**

It is important to establish the environmental setting because, irrespective of the level of contamination at a site, if its location is not 'sensitive' to this contamination, there is a reduced risk of an environmental liability.

The geological sequence underlying the site and the approximate depths of strata are provided by maps published by the British Geological Survey (BGS) 1:50,000 scale. The hydrogeological classification is obtained from Groundwater Vulnerability mapping on the Environment Agency (EA) website. The vulnerability of groundwater is determined from this mapping and geological information.

The location of surface watercourses is obtained from an inspection of current OS maps. Surface water quality information is taken from the most up-to-date Chemical River Quality General Quality Assessment

(GQA) details published by the EA. Flood risk details and information on groundwater Source Protection Zones are obtained from readily available EA information published on-line.

Details of sensitive ecosystems/habitats and coal mining areas are supplied by English Nature and the Coal Authority respectively via Groundsure Ltd.

Radon is a radioactive gas produced naturally by certain types of geology. This report uses the Indicative Atlas of Radon in England and Wales (2007) produced by the Health Protection Agency (HPA) and the British Geological Survey (BGS) to determine whether the site is located in an area at risk from radon gas. Where potential issues are identified, a site-specific radon report is obtained from the HPA and BGS to provide a more accurate estimate of the probability of the site being affected by radon gas ingress.

## Risk Assessment

The Risk Assessment consists of an appraisal of the contaminant-pathway-receptor 'pollutant linkages' which is central to the approach used to determine the existence of 'contaminated land' according to the definition set out under Part 2A of the Environmental Protection Act 1990. For a risk to exist (under Part 2A), all three of the following components must be present to facilitate a potential 'pollutant linkage'.

- Contaminant which poses the hazard;
- Pathway for the contaminant to move from the source(s) to receptor(s); and
- Receptor (Target) that could be affected by the contaminant(s).

Receptors include human beings, other living organisms, crops, controlled waters and buildings / structures. The mere presence of a contaminant source / hazard at a site does not mean that there will necessarily be attendant risks or that the site will be designated as 'contaminated land'.

The Risk Assessment sections comprise a summary of the land use and environmental sensitivity information demonstrated as the contaminant Source, Pathway and Receptor components. It also incorporates its likelihood of occurrence and commercial impact. It has been classified under three broad categories:

- Low risk - it is considered unlikely that issues assigned to this designation will give rise to significant harm;
- Moderate risk - it is possible, but not certain that issues assigned to this designation may give rise to significant harm or a liability/cost for the owner of the site; and
- High risk - there is a high potential that issues assigned to this designation may give rise to significant harm or a liability/cost for the owner of the site.

In addition the assessment includes consideration of redevelopment constraints i.e. potential for extraordinary environment-related development costs, the site's 'suitability for use' and the perception by any future purchasers regarding the potential impact on investment value/saleability. The assessment of redevelopment constraints should be considered preliminary and does not represent an exhaustive assessment of potential constraints.

## APPENDIX 3

---

### Groundsure Reports





RPS

2420 THE QUADRANT R P S PLANNING &  
DEVELOPMENT, AZTEC WEST,  
BRISTOL/ALMONDSBURY, BS32 4AQ

Groundsure  
Reference:

RPS-3083608

Your Reference: JER6755

Report Date

22 Jun 2016

Report Delivery Method: Email - pdf

## Groundsure Enviro Insight

Address: WEALDON, LANGHURSTWOOD ROAD, HORSHAM, RH12 4QD

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

#BodyContact#

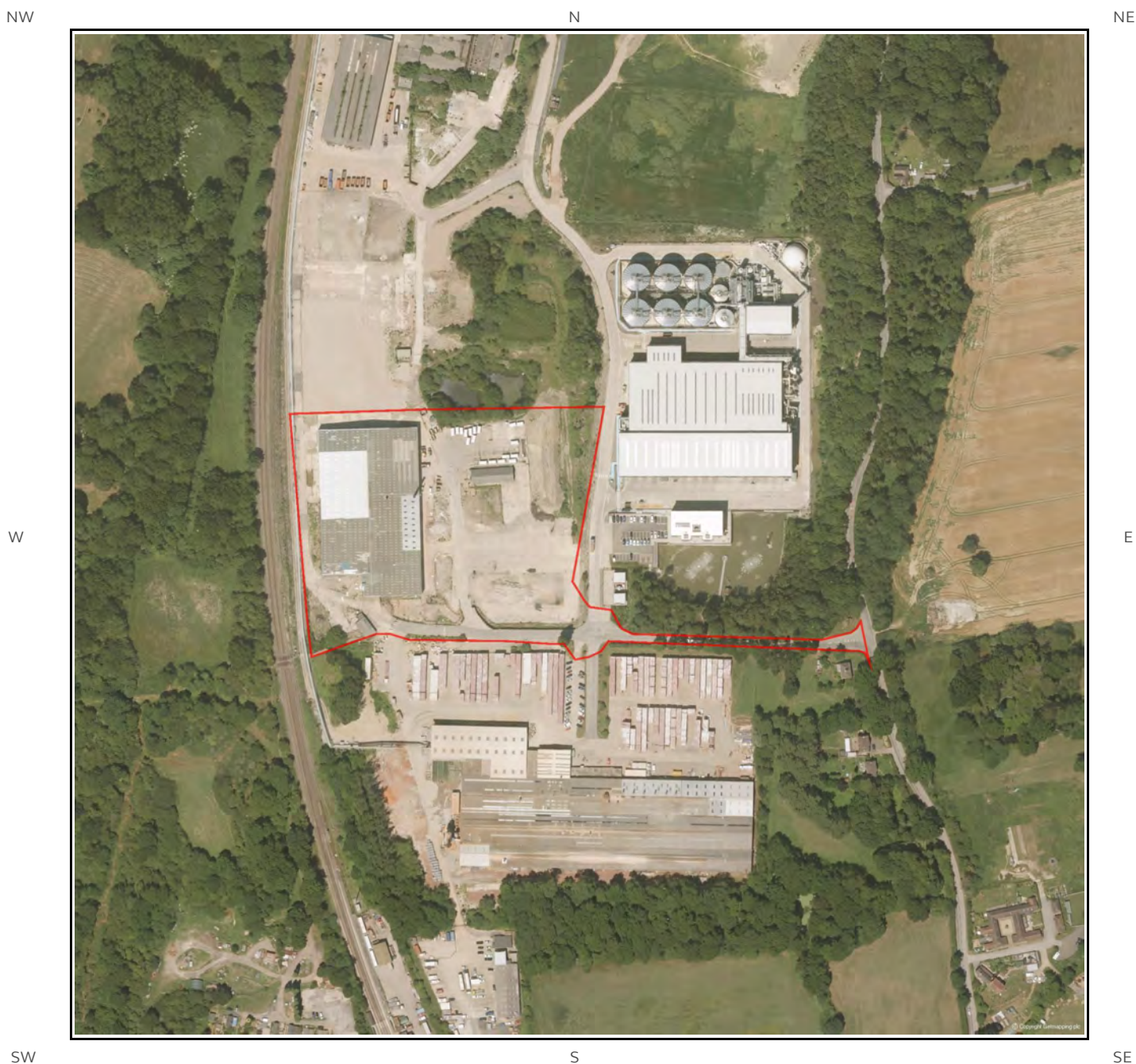
Yours faithfully,

RPS Group

Enc.  
Groundsure Enviroinsight

# Groundsure Enviro Insight

Address: WEALDON, LANGHURSTWOOD ROAD, HORSHAM, RH12 4QD  
Date: 22 Jun 2016  
Reference: RPS-3083608  
Client: RPS



Aerial Photograph Capture date: 31-Aug-2012  
Grid Reference: 517170,134330  
Site Size: 3.48ha

Report Reference: RPS-3083608  
Client Reference: JER6755

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# Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	16	11	51	31
1.2 Additional Information – Historical Tank Database	1	2	9	7
1.3 Additional Information – Historical Energy Features Database	0	2	2	0
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Potentially Infilled Land	16	15	49	25

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	50
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	2	0	1	1
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	1	2	5	24
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	1	0
2.2 Records of COMAH and NIHHS sites	2	0	0	0
2.3 Environment Agency Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	8
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
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3.1 Landfill Sites						
3.1.1 Environment Agency Registered Landfill Sites	0	0	1	1	0	Not searched
3.1.2 Environment Agency Historic Landfill Sites	0	0	0	0	0	0
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	2	1	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	1	0	0	0	Not searched	Not searched
3.2.2 Environment Agency Licensed Waste Sites	2	0	0	8	0	0

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	1	5	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	Yes
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	None
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology	0-500m
---------------------------------------	--------

6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?	Yes
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?	Yes

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	1	0	0	0	0
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	2	0	0	0	1
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	0	0	3	1	Not searched	Not searched
	On-site	0-50m	51-250	251-500	501-1000	1000-1500

## Section 6: Hydrogeology and Hydrology

0-500m

6.9 Is there any Environment Agency information on river quality within 1500m of the study site?	No	No	No	No	No	No
6.10 Detailed River Network entries within 500m of the site	0	0	6	18	Not searched	Not searched
6.11 Surface water features within 250m of the study site	Yes	Yes	Yes	Not searched	Not searched	Not searched

## Section 7: Flooding

7.1 Are there any Environment Agency Zone 2 floodplains within 250m of the study site?	Yes
7.2 Are there any Environment Agency Zone 3 floodplains within 250m of the study site	Yes
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Very Low
7.4 Are there any Flood Defences within 250m of the study site?	No
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Not Prone
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Not Applicable

## Section 8: Designated Environmentally Sensitive Sites

On-site   0-50m   51-250   251-500   501-1000   1000-2000

8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	1	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	2	1	5	18	33
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	1	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0



Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	1	0	0	0	0	1
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards	
9.1 What is the maximum risk of natural ground subsidence?	Low
9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Low
9.1.2 What is the maximum Landslides hazard rating identified on the study site?	Low
9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Negligible
9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	Negligible
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Negligible
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining	
10.1 Are there any coal mining areas within 75m of the study site?	No
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	Yes
10.3 Are there any brine affected areas within 75m of the study site?	No

# Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

## 1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

## 2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

## 3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

## 4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

## 5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

## 6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

## 7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

## 8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

## 9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

## 10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

## 11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

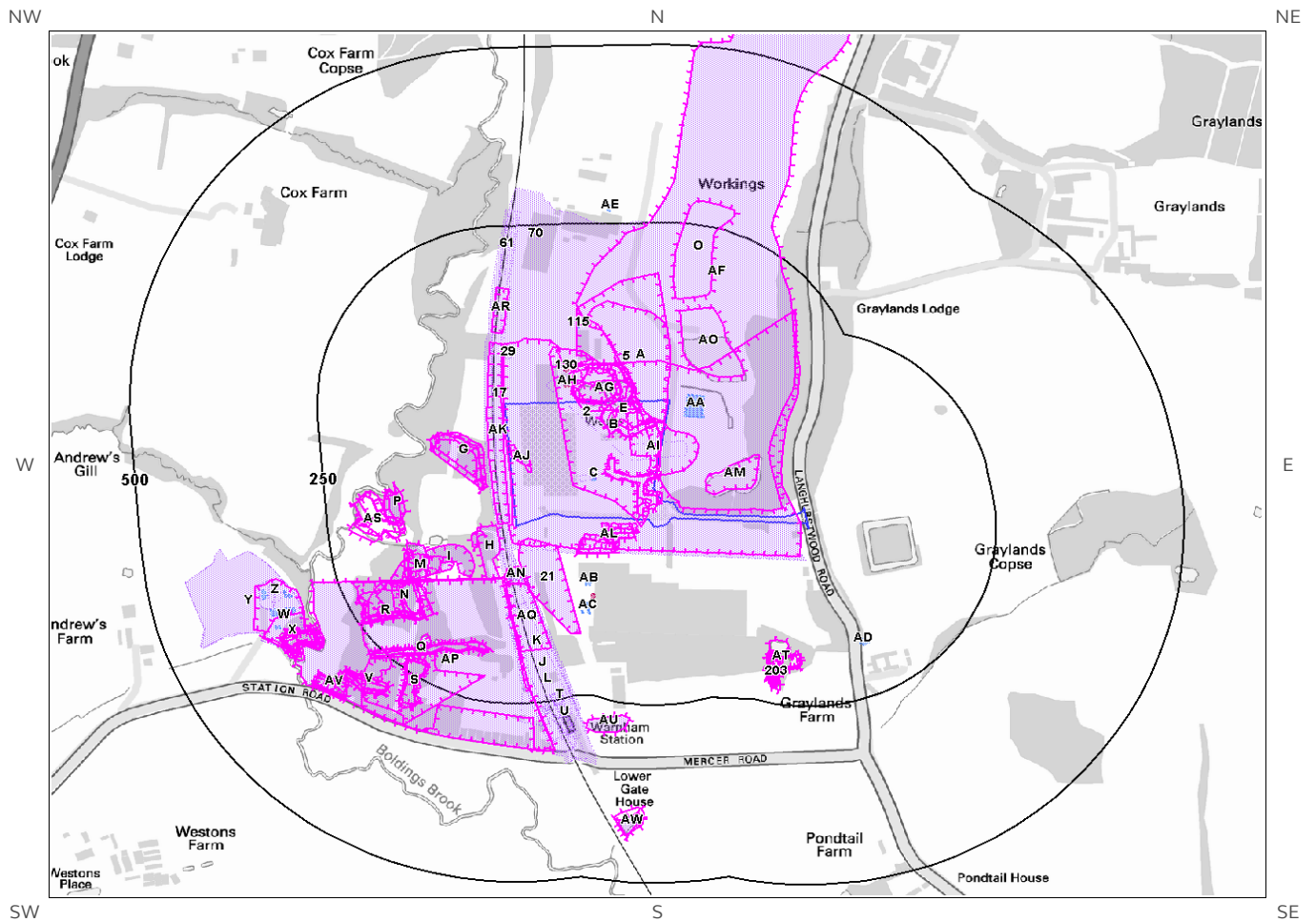
## Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

# 1. Historical Land Use



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# 1. Historical Industrial Sites

## 1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 109

ID	Distance [m]	Direction	Use	Date
1AF	0	On Site	Unspecified Quarry	1961
2	0	On Site	Unspecified Commercial/Industrial	1961
3A	0	On Site	Unspecified Heap	1979
4A	0	On Site	Unspecified Heap	1992
5	0	On Site	Brick Works	1979
6E	0	On Site	Unspecified Ground Workings	1961
7AI	0	On Site	Brick Works	1914
8B	0	On Site	Tramway Sidings	1914
9B	0	On Site	Unspecified Pits	1914
10D	0	On Site	Unspecified Pit	1961
11C	0	On Site	Unspecified Tank	1914
12C	0	On Site	Engine Shed	1914
13AJ	0	On Site	Unspecified Ground Workings	1914
14D	0	On Site	Unspecified Ground Workings	1966
15E	0	On Site	Unspecified Ground Workings	1966
16A	0	On Site	Brick Works	1992
17	1	W	Railway Sidings	1914
18AK	4	W	Cuttings	1876
19F	5	W	Railway Sidings	1961
20F	23	S	Unspecified Heap	1979
21	23	S	Unspecified Heap	1992
22K	23	SW	Railway Sidings	1966
23H	26	W	Refuse Heap	1914
24G	34	W	Unspecified Pit	1914
25G	38	W	Unspecified Ground Workings	1966
26G	39	W	Unspecified Pit	1961
27H	45	W	Refuse Heap	1966
28AN	57	S	Cuttings	1876
29	64	N	Unspecified Tank	1914
30I	72	SW	Unspecified Heap	1992

31I	72	SW	Unspecified Heap	1979
32J	74	S	Railway Sidings	1932
33J	74	S	Railway Sidings	1896
34K	75	S	Railway Sidings	1909
35J	76	S	Railway Sidings	1938
36Q	76	S	Sewage Works	1932
37AP	76	S	Brick Yard	1896
38AQ	81	S	Cuttings	1876
39M	99	SW	Unspecified Pit	1895
40AR	99	N	Cuttings	1876
41L	106	S	Railway Sidings	1876
42L	121	S	Railway Sidings	1966
43M	125	W	Unspecified Pit	1914
44N	138	SW	Unspecified Ground Workings	1966
45N	139	W	Unspecified Ground Workings	1961
46O	142	N	Clay Pit	1992
47O	142	N	Clay Pit	1979
48P	144	W	Unspecified Heap	1914
49N	150	SW	Unspecified Ground Workings	1932
50P	151	W	Unspecified Heap	1966
51P	151	W	Unspecified Heap	1961
52N	153	SW	Unspecified Ground Workings	1938
53N	153	SW	Unspecified Ground Workings	1938
54N	155	SW	Unspecified Heap	1909
55Q	171	S	Unspecified Ground Workings	1909
56Q	171	S	Unspecified Ground Workings	1932
57Q	171	S	Unspecified Ground Workings	1938
58Q	171	S	Unspecified Ground Workings	1938
59R	173	SW	Unspecified Ground Workings	1909
60Q	179	S	Unspecified Ground Workings	1961
61	180	N	Railway Sidings	1966
62R	186	SW	Unspecified Ground Workings	1896
63Q	192	SW	Unspecified Pit	1896
64S	211	SW	Unspecified Pit	1896
65S	224	SW	Unspecified Heap	1909
66S	224	SW	Unspecified Heap	1932
67S	226	SW	Unspecified Heap	1938
68S	226	SW	Unspecified Heap	1938

69S	230	SW	Unspecified Heap	1966
70	230	N	Unspecified Kiln	1914
71S	231	SW	Unspecified Heap	1961
72T	239	S	Railway Building	1896
73T	239	S	Railway Building	1932
74T	239	S	Railway Building	1909
75T	240	S	Railway Building	1961
76T	240	S	Railway Building	1966
77T	240	S	Railway Building	1938
78U	245	S	Railway Buildings	1876
79T	252	S	Railway Building	1909
80U	253	S	Railway Stations	1932
81U	255	S	Railway Station	1961
82T	259	S	Railway Station	1876
83U	263	S	Railway Station	1966
84AU	268	S	Unspecified Ground Workings	1979
85U	272	S	Railway Station	1909
86U	272	S	Railway Station	1938
87U	275	S	Railway Station	1896
88U	276	S	Railway Station	1992
89U	276	S	Railway Station	1979
90V	281	SW	Unspecified Heap	1932
91V	281	SW	Unspecified Heap	1909
92V	282	SW	Unspecified Heap	1938
93V	282	SW	Unspecified Heap	1938
94V	286	SW	Unspecified Heap	1961
95V	286	SW	Unspecified Heap	1966
96W	302	SW	Sewage Works	1992
97W	302	SW	Sewage Works	1979
98X	306	SW	Sewage Works	1938
99X	306	SW	Sewage Works	1938
100X	307	SW	Unspecified Pit	1896
101Y	308	W	Works	1966
102Y	309	W	Unspecified Works	1961
103X	309	SW	Unspecified Pit	1909
104Z	325	W	Unspecified Tanks	1979
105Z	325	W	Unspecified Tanks	1992
106X	329	SW	Sewage Filterbeds	1909
107Y	333	W	Tanks	1966
108Y	333	W	Unspecified Tanks	1961
109AW	401	S	Unspecified Pit	1876

## 1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary:

19

ID	Distance (m)	Direction	Use	Date
110C	0	On Site	Unspecified Tank	1912
111AA	22	E	Tanks	1991
112AA	24	E	Tanks	1974
113AB	85	S	Tanks	1991
114AB	86	S	Tanks	1974
115	102	N	Unspecified Tank	1991
116AC	118	S	Tanks	1991
117AC	120	S	Tanks	1974
118AC	130	S	Tanks	1991
119AC	130	S	Tanks	1974
120AD	171	SE	Tanks	1991
121AD	173	SE	Tanks	1974
122AE	267	N	Unspecified Tank	1974
123AE	267	N	Unspecified Tank	1991
124Z	315	W	Tanks	1974
125W	316	W	Tanks	1974
126Z	320	W	Tanks	1974
127W	344	SW	Tanks	1974
128Z	345	W	Tanks	1974

## 1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary:

4

ID	Distance (m)	Direction	Use	Date
129AH	21	N	Electricity Substation	1974
130	42	N	Electricity Substation	1991
131AC	106	S	Electricity Substation	1991
132AC	107	S	Electricity Substation	1974

## 1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

## 1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 0

Database searched and no data found.

## 1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 105

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
133AF	0	On Site	Unspecified Quarry	1961
134AG	0	On Site	Ponds	1992
135AG	0	On Site	Ponds	1979
136AH	0	On Site	Pond	1914
137E	0	On Site	Unspecified Ground Workings	1961
138D	0	On Site	Unspecified Pit	1961
139A	0	On Site	Unspecified Heap	1992
140A	0	On Site	Brick Works	1979
141A	0	On Site	Unspecified Heap	1979
142E	0	On Site	Unspecified Ground Workings	1966
143D	0	On Site	Unspecified Ground Workings	1966
144AI	0	On Site	Brick Works	1914
145B	0	On Site	Unspecified Pits	1914
146AJ	0	On Site	Unspecified Ground Workings	1914
147A	0	On Site	Brick Works	1992
148AG	0	N	Pond	1961
149AG	1	N	Pond	1966
150AL	4	S	Ponds	1914



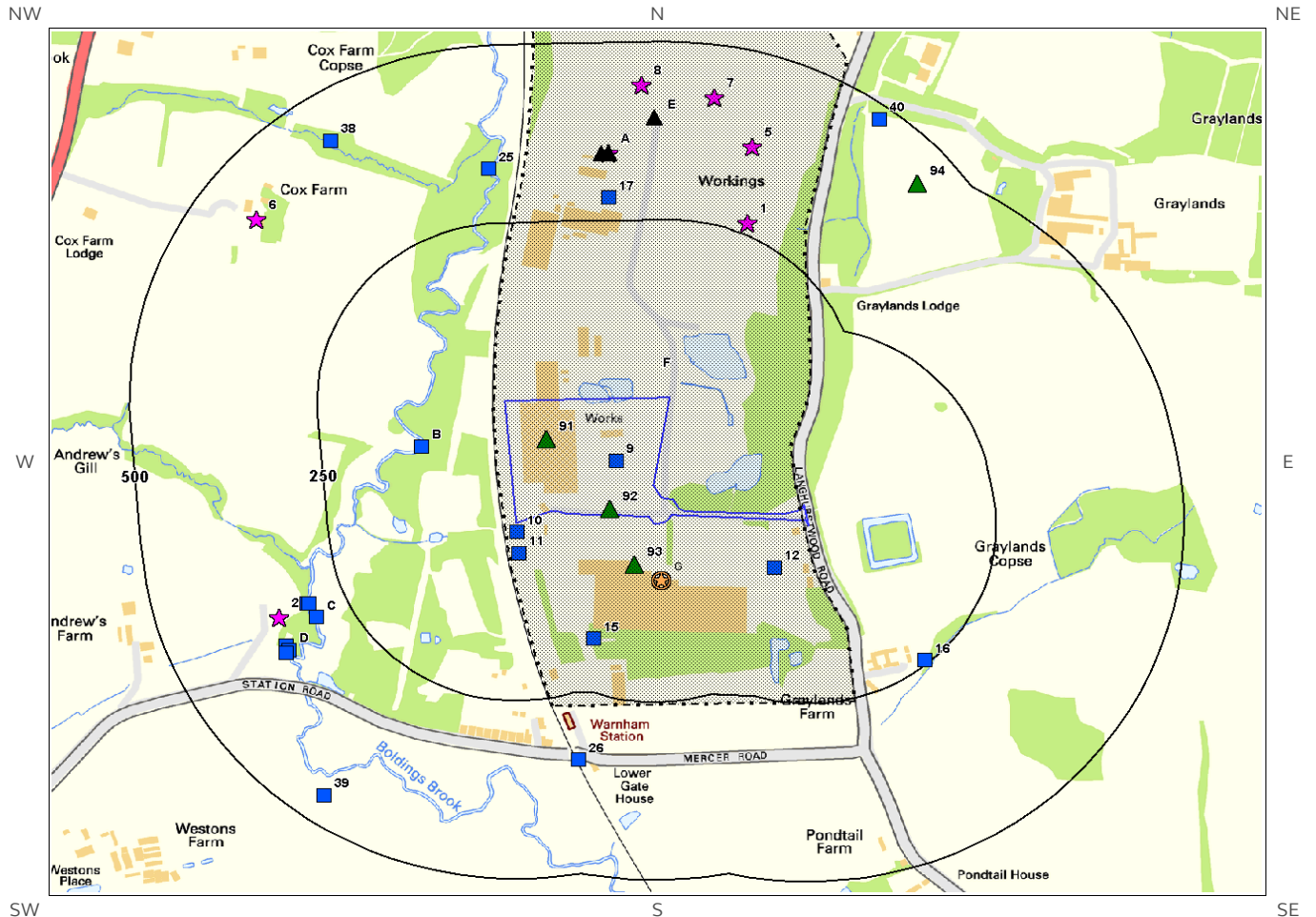
151AK	4	W	Cuttings	1876
152AL	11	S	Ponds	1961
153AL	11	S	Pond	1966
154F	23	S	Unspecified Heap	1992
155F	23	S	Unspecified Heap	1979
156H	26	W	Refuse Heap	1914
157AM	29	N	Pond	1979
158AM	29	N	Pond	1992
159AL	30	S	Pond	1966
160G	34	W	Unspecified Pit	1914
161G	38	W	Unspecified Ground Workings	1966
162G	39	W	Unspecified Pit	1961
163H	45	W	Refuse Heap	1966
164AN	57	S	Cuttings	1876
165AO	59	NE	Pond	1979
166AO	59	NE	Pond	1992
167I	72	SW	Unspecified Heap	1979
168I	72	SW	Unspecified Heap	1992
169Q	76	S	Sewage Works	1932
170AP	76	S	Brick Yard	1896
171AQ	81	S	Cuttings	1876
172M	99	SW	Unspecified Pit	1895
173AR	99	N	Cuttings	1876
174M	125	W	Unspecified Pit	1914
175N	138	SW	Unspecified Ground Workings	1966
176N	139	W	Unspecified Ground Workings	1961
177O	142	N	Clay Pit	1992
178O	142	N	Clay Pit	1979
179P	144	W	Unspecified Heap	1914
180P	148	W	Ponds	1914
181R	150	SW	Unspecified Ground Workings	1932
182P	151	W	Unspecified Heap	1966
183P	151	W	Unspecified Heap	1961
184R	153	SW	Unspecified Ground Workings	1938
185R	153	SW	Unspecified Ground Workings	1938
186AS	154	W	Ponds	1961
187AS	154	W	Ponds	1966
188N	155	SW	Unspecified Heap	1909
189AT	162	S	Ponds	1979
190AT	162	S	Ponds	1992
191AP	171	S	Unspecified Ground Workings	1932

192AP	171	S	Unspecified Ground Workings	1909
193Q	171	S	Unspecified Ground Workings	1938
194Q	171	S	Unspecified Ground Workings	1938
195R	173	SW	Unspecified Ground Workings	1909
196AT	176	S	Ponds	1896
197AT	177	S	Ponds	1909
198AT	177	S	Ponds	1932
199AT	178	S	Ponds	1938
200AP	179	S	Unspecified Ground Workings	1961
201AT	180	S	Ponds	1961
202AT	182	S	Pond	1966
203	183	S	Pond	1876
204R	186	SW	Unspecified Ground Workings	1896
205Q	192	SW	Unspecified Pit	1896
206S	211	SW	Unspecified Pit	1896
207S	224	SW	Unspecified Heap	1932
208S	224	SW	Unspecified Heap	1909
209S	226	SW	Unspecified Heap	1938
210S	226	SW	Unspecified Heap	1938
211S	230	SW	Unspecified Heap	1966
212S	231	SW	Unspecified Heap	1961
213AU	268	S	Unspecified Ground Workings	1979
214V	281	SW	Unspecified Heap	1932
215V	281	SW	Unspecified Heap	1909
216V	282	SW	Unspecified Heap	1938
217V	282	SW	Unspecified Heap	1938
218V	286	SW	Unspecified Heap	1961
219V	286	SW	Unspecified Heap	1966
220W	302	SW	Sewage Works	1979
221W	302	SW	Sewage Works	1992
222X	306	SW	Sewage Works	1938
223X	306	SW	Sewage Works	1938
224X	307	SW	Unspecified Pit	1896
225X	308	SW	Pond	1932
226X	309	SW	Unspecified Pit	1909
227X	311	SW	Pond	1938
228AV	313	SW	Ponds	1932
229AV	313	SW	Ponds	1909
230AV	314	SW	Ponds	1938
231X	315	SW	Ponds	1961
232AV	318	SW	Ponds	1961

233AV	327	SW	Pond	1992
234AV	327	SW	Pond	1979
235X	329	SW	Sewage Filterbeds	1909
236AW	394	S	Pond	1896
237AW	401	S	Unspecified Pit	1876

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## 2. Environmental Permits, Incidents and Registers Map



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## 2. Environmental Permits, Incidents and Registers

### 2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency and Local Authorities reveal the following information:

#### 2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

#### 2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

50

The following Part A(1) and IPPC Authorised Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
98A	342	N	517140 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Anaerobic Digestion Facility Process: COMBUSTION; ANY FUEL =>50MW Permit Number: RP3232UU Original Permit Number: RP3232UU EPR Reference: - Issue Date: 11/2/2009 Effective Date: 11/2/2009 Last date noted as effective: 2016-01-01 Status: Superseded
99A	342	N	517140 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurstwood Landfill Site Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE Permit Number: UP3031SP Original Permit Number: BV9896IY EPR Reference: - Issue Date: 27/9/2005 Effective Date: 11/10/2005 Last date noted as effective: 2016-01-01 Status: Superseded
100A	342	N	517140 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Anaerobic Digestion Facility Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY BIOLOGICAL TREATMENT Permit Number: RP3232UU Original Permit Number: RP3232UU EPR Reference: - Issue Date: 11/2/2009 Effective Date: 11/2/2009 Last date noted as effective: 2016-01-01 Status: Superseded

ID	Distance (m)	Direction	NGR	Details
101A	342	N	517140 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Anaerobic Digestion Facility Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE &gt;50T/D BY BIOLOGICAL TREATMENT</p> <p>Permit Number: VP3037EQ Original Permit Number: RP3232UU EPR Reference: - Issue Date: - Effective Date: 12/2/2014 Last date noted as effective: 2016-01-01 Status: Surrender Effective</p>
102A	342	N	517140 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Anaerobic Digestion Facility Process: ASSOCIATED PROCESS</p> <p>Permit Number: RP3232UU Original Permit Number: RP3232UU EPR Reference: - Issue Date: 11/2/2009 Effective Date: 11/2/2009 Last date noted as effective: 2016-01-01 Status: Superseded</p>
103A	342	N	517140 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Anaerobic Digestion Facility Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE &gt;50T/D BY PHYSICO-CHEMICAL TREATMENT</p> <p>Permit Number: VP3037EQ Original Permit Number: RP3232UU EPR Reference: - Issue Date: - Effective Date: 12/2/2014 Last date noted as effective: 2016-01-01 Status: Surrender Effective</p>
104A	342	N	517140 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Anaerobic Digestion Facility Process: COMBUSTION; ANY FUEL =&gt;50MW</p> <p>Permit Number: VP3037EQ Original Permit Number: RP3232UU EPR Reference: - Issue Date: - Effective Date: 12/2/2014 Last date noted as effective: 2016-01-01 Status: Surrender Effective</p>
105A	342	N	517140 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Anaerobic Digestion Facility Process: ASSOCIATED PROCESS</p> <p>Permit Number: VP3037EQ Original Permit Number: RP3232UU EPR Reference: - Issue Date: - Effective Date: 12/2/2014 Last date noted as effective: 2016-01-01 Status: Surrender Effective</p>
106A	342	N	517140 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Anaerobic Digestion Facility Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE &gt;50T/D BY PHYSICO-CHEMICAL TREATMENT</p> <p>Permit Number: RP3232UU Original Permit Number: RP3232UU EPR Reference: - Issue Date: 11/2/2009 Effective Date: 11/2/2009 Last date noted as effective: 2016-01-01 Status: Superseded</p>
107A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; &gt;10 T/D WITH CAPACITY &gt;25,000T EXCLUDING INERT WASTE</p> <p>Permit Number: NP3837FK Original Permit Number: BV9896IY EPR Reference: - Issue Date: 18/1/2012 Effective Date: 18/1/2012 Last date noted as effective: 2016-01-01 Status: Superseded</p>
108A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; &gt;10 T/D WITH CAPACITY &gt;25,000T EXCLUDING INERT WASTE</p> <p>Permit Number: TP3137TN Original Permit Number: BV9896IY EPR Reference: - Issue Date: 15/7/2010 Effective Date: 15/7/2010 Last date noted as effective: 2016-01-01 Status: Superseded</p>

ID	Distance (m)	Direction	NGR	Details
109A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; &gt;10 T/D WITH CAPACITY &gt;25,000T EXCLUDING INERT WASTE</p> <p>Permit Number: VP3634UY Original Permit Number: BV9896IY EPR Reference: - Issue Date: 9/6/2010 Effective Date: 9/6/2010 Last date noted as effective: 2016-01-01 Status: Superseded</p>
110A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: DISPOSAL OF &gt; 50 T/D NON-HAZARDOUS WASTE (&gt; 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT</p> <p>Permit Number: FP3735NS Original Permit Number: BV9896IY EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2016-01-01 Status: Effective</p>
111A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: COMBUSTION; WASTE DERIVED FUEL =&gt;3MW BUT &lt;50MW</p> <p>Permit Number: TP3137TN Original Permit Number: BV9896IY EPR Reference: - Issue Date: 15/7/2010 Effective Date: 15/7/2010 Last date noted as effective: 2016-01-01 Status: Superseded</p>
112A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE &gt;50T/D BY BIOLOGICAL TREATMENT</p> <p>Permit Number: NP3837FK Original Permit Number: BV9896IY EPR Reference: - Issue Date: 18/1/2012 Effective Date: 18/1/2012 Last date noted as effective: 2016-01-01 Status: Superseded</p>
113A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; &gt;10 T/D WITH CAPACITY &gt;25,000T EXCLUDING INERT WASTE</p> <p>Permit Number: FP3535CF Original Permit Number: BV9896IY EPR Reference: - Issue Date: 3/2/2012 Effective Date: 3/2/2012 Last date noted as effective: 2016-01-01 Status: Superseded</p>
114A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: ASSOCIATED PROCESS</p> <p>Permit Number: NP3837FK Original Permit Number: BV9896IY EPR Reference: - Issue Date: 18/1/2012 Effective Date: 18/1/2012 Last date noted as effective: 2016-01-01 Status: Superseded</p>
115A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; &gt;10 T/D WITH CAPACITY &gt;25,000T EXCLUDING INERT WASTE</p> <p>Permit Number: FP3735NS Original Permit Number: BV9896IY EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2016-01-01 Status: Effective</p>
116A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: ASSOCIATED PROCESS</p> <p>Permit Number: VP3634UY Original Permit Number: BV9896IY EPR Reference: - Issue Date: 9/6/2010 Effective Date: 9/6/2010 Last date noted as effective: 2016-01-01 Status: Superseded</p>

ID	Distance (m)	Direction	NGR	Details	
117A	342	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: TP3137TN Original Permit Number: BV9896IY EPR Reference: - Issue Date: 15/7/2010 Effective Date: 15/7/2010 Last date noted as effective: 2016-01-01 Status: Superseded
118A	342	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: FP3535CF Original Permit Number: BV9896IY EPR Reference: - Issue Date: 3/2/2012 Effective Date: 3/2/2012 Last date noted as effective: 2016-01-01 Status: Superseded
119A	342	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: ASSOCIATED PROCESS	Permit Number: TP3137TN Original Permit Number: BV9896IY EPR Reference: - Issue Date: 15/7/2010 Effective Date: 15/7/2010 Last date noted as effective: 2016-01-01 Status: Superseded
120A	342	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: ASSOCIATED PROCESS	Permit Number: FP3535CF Original Permit Number: BV9896IY EPR Reference: - Issue Date: 3/2/2012 Effective Date: 3/2/2012 Last date noted as effective: 2016-01-01 Status: Superseded
121A	342	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: NP3837FK Original Permit Number: BV9896IY EPR Reference: - Issue Date: 18/1/2012 Effective Date: 18/1/2012 Last date noted as effective: 2016-01-01 Status: Superseded
122A	342	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT	Permit Number: CP3032AN Original Permit Number: BV9896IY EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-01-01 Status: Determination
123A	342	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: CP3032AN Original Permit Number: BV9896IY EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-01-01 Status: Determination
124A	342	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY BIOLOGICAL TREATMENT	Permit Number: VP3634UY Original Permit Number: BV9896IY EPR Reference: - Issue Date: 9/6/2010 Effective Date: 9/6/2010 Last date noted as effective: 2016-01-01 Status: Superseded



ID	Distance (m)	Direction	NGR	Details
125A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: CREATED BY IED - DISPOSAL OF &gt; 50 T/D NON-HAZARDOUS WASTE (&gt; 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT</p> <p>Permit Number: FP3735NS Original Permit Number: BV9896IY EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2013-07-01 Status: Effective</p>
126A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Mbt Facility Process: ASSOCIATED PROCESS</p> <p>Permit Number: BP3835EE Original Permit Number: HP3238GW EPR Reference: - Issue Date: 19/12/2013 Effective Date: 19/12/2013 Last date noted as effective: 2016-01-01 Status: Effective</p>
127A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE &gt;50T/D BY BIOLOGICAL TREATMENT</p> <p>Permit Number: TP3137TN Original Permit Number: BV9896IY EPR Reference: - Issue Date: 15/7/2010 Effective Date: 15/7/2010 Last date noted as effective: 2016-01-01 Status: Superseded</p>
128A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE &gt;50T/D BY BIOLOGICAL TREATMENT</p> <p>Permit Number: FP3535CF Original Permit Number: BV9896IY EPR Reference: - Issue Date: 3/2/2012 Effective Date: 3/2/2012 Last date noted as effective: 2016-01-01 Status: Superseded</p>
129A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Mbt Facility Process: DISPOSAL OF &gt; 50 T/D NON-HAZARDOUS WASTE (&gt; 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT</p> <p>Permit Number: BP3835EE Original Permit Number: HP3238GW EPR Reference: - Issue Date: 19/12/2013 Effective Date: 19/12/2013 Last date noted as effective: 2016-01-01 Status: Effective</p>
130A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; &gt;10 T/D WITH CAPACITY &gt;25,000T EXCLUDING INERT WASTE</p> <p>Permit Number: VP3634UY Original Permit Number: BV9896IY EPR Reference: - Issue Date: 9/6/2010 Effective Date: 9/6/2010 Last date noted as effective: 2016-01-01 Status: Superseded</p>
131A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: COMBUSTION; WASTE DERIVED FUEL =&gt;3MW BUT &lt;50MW</p> <p>Permit Number: NP3837FK Original Permit Number: BV9896IY EPR Reference: - Issue Date: 18/1/2012 Effective Date: 18/1/2012 Last date noted as effective: 2016-01-01 Status: Superseded</p>
132A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: COMBUSTION; WASTE DERIVED FUEL =&gt;3MW BUT &lt;50MW</p> <p>Permit Number: FP3535CF Original Permit Number: BV9896IY EPR Reference: - Issue Date: 3/2/2012 Effective Date: 3/2/2012 Last date noted as effective: 2016-01-01 Status: Superseded</p>

ID	Distance (m)	Direction	NGR	Details
133A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: COMBUSTION; WASTE DERIVED FUEL =&gt;3MW BUT &lt;50MW</p> <p>Permit Number: VP3634UY Original Permit Number: BV9896IY EPR Reference: - Issue Date: 9/6/2010 Effective Date: 9/6/2010 Last date noted as effective: 2016-01-01 Status: Superseded</p>
134A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Mbt Facility Process: DISPOSAL OF &gt; 50 T/D NON-HAZARDOUS WASTE (&gt; 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT</p> <p>Permit Number: BP3835EE Original Permit Number: HP3238GW EPR Reference: - Issue Date: 19/12/2013 Effective Date: 19/12/2013 Last date noted as effective: 2016-01-01 Status: Effective</p>
135A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: ASSOCIATED PROCESS</p> <p>Permit Number: FP3735NS Original Permit Number: BV9896IY EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2016-01-01 Status: Effective</p>
136A	342	N	517130 134750	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: ASSOCIATED PROCESS</p> <p>Permit Number: CP3032AN Original Permit Number: BV9896IY EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-01-01 Status: Determination</p>
137E	391	N	517200 134800	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Waste Recycling &amp; Management Park Facility Epr/hp3238gw/v002 Process: DISPOSAL OF &gt; 50 T/D NON-HAZARDOUS WASTE (&gt; 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT</p> <p>Permit Number: BP3738NM Original Permit Number: HP3238GW EPR Reference: - Issue Date: 28/5/2013 Effective Date: 28/5/2013 Last date noted as effective: 2016-01-01 Status: Superseded</p>
138E	391	N	517200 134800	<p>Operator: Biffa Waste Service Limited Installation Name: Brookhurst Wood Mbt Facility Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE &gt;50T/D BY BIOLOGICAL TREATMENT</p> <p>Permit Number: HP3238GW Original Permit Number: HP3238GW EPR Reference: EA/EPR/HP3238GW/A001 Issue Date: 5/7/2010 Effective Date: 5/7/2010 Last date noted as effective: 2016-01-01 Status: Superseded</p>
139E	391	N	517200 134800	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Waste Recycling &amp; Management Park Facility Epr/hp3238gw/v002 Process: DISPOSAL OF &gt; 50 T/D NON-HAZARDOUS WASTE (&gt; 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT</p> <p>Permit Number: BP3738NM Original Permit Number: HP3238GW EPR Reference: - Issue Date: 28/5/2013 Effective Date: 28/5/2013 Last date noted as effective: 2016-01-01 Status: Superseded</p>
140E	391	N	517200 134800	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Waste Recycling &amp; Management Park Facility Epr/hp3238gw/v002 Process: ASSOCIATED PROCESS</p> <p>Permit Number: BP3738NM Original Permit Number: HP3238GW EPR Reference: - Issue Date: 28/5/2013 Effective Date: 28/5/2013 Last date noted as effective: 2016-01-01 Status: Superseded</p>

ID	Distance (m)	Direction	NGR	Details
141E	391	N	517200 134800	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Waste Recycling &amp; Management Park Facility Epr/hp3238gw/v002 Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE &gt;50T/D BY BIOLOGICAL TREATMENT</p> <p>Permit Number: BP3337CG Original Permit Number: HP3238GW EPR Reference: - Issue Date: 20/12/2012 Effective Date: 20/12/2012 Last date noted as effective: 2016-01-01 Status: Superseded</p>
142E	391	N	517200 134800	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Waste Recycling &amp; Management Park Facility Epr/hp3238gw/v002 Process: CREATED BY IED - DISPOSAL OF &gt; 50 T/D NON-HAZARDOUS WASTE (&gt; 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT</p> <p>Permit Number: BP3738NM Original Permit Number: HP3238GW EPR Reference: - Issue Date: 28/5/2013 Effective Date: 28/5/2013 Last date noted as effective: 2013-07-01 Status: Effective</p>
143E	391	N	517200 134800	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Waste Recycling &amp; Management Park Facility Epr/hp3238gw/v002 Process: CREATED BY IED - DISPOSAL OF &gt; 50 T/D NON-HAZARDOUS WASTE (&gt; 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT</p> <p>Permit Number: BP3738NM Original Permit Number: HP3238GW EPR Reference: - Issue Date: 28/5/2013 Effective Date: 28/5/2013 Last date noted as effective: 2013-07-01 Status: Effective</p>
144E	391	N	517200 134800	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Waste Recycling &amp; Management Park Facility Epr/hp3238gw/v002 Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE &gt;50T/D BY PHYSICO-CHEMICAL TREATMENT</p> <p>Permit Number: BP3337CG Original Permit Number: HP3238GW EPR Reference: - Issue Date: 20/12/2012 Effective Date: 20/12/2012 Last date noted as effective: 2016-01-01 Status: Superseded</p>
145E	391	N	517200 134800	<p>Operator: Biffa Waste Service Limited Installation Name: Brookhurst Wood Mbt Facility Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE &gt;50T/D BY PHYSICO-CHEMICAL TREATMENT</p> <p>Permit Number: HP3238GW Original Permit Number: HP3238GW EPR Reference: EA/EPR/HP3238GW/A001 Issue Date: 5/7/2010 Effective Date: 5/7/2010 Last date noted as effective: 2016-01-01 Status: Superseded</p>
146E	391	N	517200 134800	<p>Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Waste Recycling &amp; Management Park Facility Epr/hp3238gw/v002 Process: COMBUSTION; WASTE OIL =&gt;3MW BUT &lt;50MW</p> <p>Permit Number: BP3337CG Original Permit Number: HP3238GW EPR Reference: - Issue Date: 20/12/2012 Effective Date: 20/12/2012 Last date noted as effective: 2016-01-01 Status: Superseded</p>
147E	391	N	517200 134800	<p>Operator: Biffa Waste Service Limited Installation Name: Brookhurst Wood Mbt Facility Process: COMBUSTION; WASTE OIL =&gt;3MW BUT &lt;50MW</p> <p>Permit Number: HP3238GW Original Permit Number: HP3238GW EPR Reference: EA/EPR/HP3238GW/A001 Issue Date: 5/7/2010 Effective Date: 5/7/2010 Last date noted as effective: 2016-01-01 Status: Superseded</p>

### 2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

### 2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

### 2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

### 2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

4

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
91	0	On Site	517057 134348	Address: Wienerberger Ltd, Warnham Brickworks, Langhurst Wood Road, Horsham, West Sussex, RH12 4QD Process: Brickworks Status: Current Permit Permit Type: Part A2 Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
92	0	On Site	517141 134250	Address: Ambion Bricks (Redland), Warnham Works, Langhurstwood Road, RH12 4QF Process: ceramics/clay/plaster/brick process Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
93	65	SW	517174 134172	Address: Wienerberger Ltd, Warnham Brickworks, Langhurstwood Rd, RH12 4QF Process: ceramics/clay/plaster/brick process Status: Historical Permit Permit Type: Part A2 Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
94	445	NE	517551 134707	Address: Greens Accident Repairs, The Transport Depot, Langhurstwood Road, Horsham, West Sussex, RH12 4QD Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

### 2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

### 2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

32

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
9	0	On Site	517150 134320	<p>Address: WEALDEN SOUTH WORKS, WEALDEN SOUTH WORKS, LANGHURSTWOOD ROAD, HORSHAM, WEST SUSSEX</p> <p>Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY</p> <p>Permit Number: P04022 Permit Version: 1</p> <p>Receiving Water: Status: POST NRA LEGISLATION WHERE ISSUE DATE &gt; 31-AUG-89 (HISTORIC ONLY) Issue date: 13/12/1991 Effective Date: 13-Dec-1991 Revocation Date: -</p>
10	13	S	517017 134220	<p>Address: BROOKHURST WOOD MPMC, WASTE TREATMENT FACILITY, LANGHURSTWOOD ROAD, HORSHAM, WEST SUSSEX, RH12 4QD</p> <p>Effluent Type: TRADE DISCHARGES - SITE DRAINAGE</p> <p>Permit Number: EPRBB3399EE Permit Version: 1</p> <p>Receiving Water: Status: NEW ISSUED UNDER EPR 2010 Issue date: 02/02/2015 Effective Date: 02-Feb-2015 Revocation Date: -</p>
11	43	S	517020 134190	<p>Address: HOLBROOK WORKS, HORSHAM, HOLBROOK WORKS, LANGHURSTWOOD ROAD, HORSHAM, WEST SUSSEX</p> <p>Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY</p> <p>Permit Number: P04098 Permit Version: 1</p> <p>Receiving Water: Status: REVOKED (WRA 91, S88 &amp; SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 12/02/1992 Effective Date: 12-Feb-1992 Revocation Date: 27/04/2007</p>
12	69	S	517360 134170	<p>Address: WARNHAM COTTAGES, HORSHAM, WARNHAM COTTAGES, LANGHURSTWOOD ROAD, HORSHAM, WEST SUSSEX</p> <p>Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY</p> <p>Permit Number: P04047 Permit Version: 1</p> <p>Receiving Water: Status: POST NRA LEGISLATION WHERE ISSUE DATE &gt; 31-AUG-89 (HISTORIC ONLY) Issue date: 02/01/1992 Effective Date: 02-Jan-1992 Revocation Date: -</p>
13B	117	W	516890 134340	<p>Address: WARNHAM BRICK WORKS, WARNHAM BRICK WORKS, WEST SUSSEX</p> <p>Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY</p> <p>Permit Number: S01144 Permit Version: 1</p> <p>Receiving Water: Status: PRE NRA LEGISLATION WHERE ISSUE DATE &lt; 01-SEP-89 (HISTORIC ONLY) Issue date: 29/03/1962 Effective Date: 29-Mar-1962 Revocation Date: 01/07/1991</p>

ID	Distance (m)	Direction	NGR	Details	
14B	117	W	516890 134340	Address: WARNHAM BRICK WORKS, WARNHAM BRICK WORKS, WEST SUSSEX Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: S01144 Permit Version: 1	Receiving Water: Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY) Issue date: 29/03/1962 Effective Date: 29-Mar-1962 Revocation Date: 01/07/1991
15	174	S	517120 134070	Address: TRANSPORT WORKSHOP, TRANSPORT WORKSHOP, LANGHURSTWOOD ROAD, HORSHAM, WEST SUSSEX Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: P04046 Permit Version: 1	Receiving Water: Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 02/01/1992 Effective Date: 02-Jan-1992 Revocation Date: 31/03/1997
16	244	SE	517560 134040	Address: GRAYLANDS FARM BARNS, HORSHAM, GRAYLANDS FARM BARNS, LANGHURSTWOOD ROAD, HORSHAM, WEST SUSSEX, RH12 4QD Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: P12731 Permit Version: 1	Receiving Water: Status: NEW CONSENT (WRA 91, S88 & SCHD 10 AS AMENDED BY ENV ACT 1995) Issue date: 03/04/2006 Effective Date: 03-Apr-2006 Revocation Date: -
17	282	N	517140 134690	Address: WARNHAM LEACHATES, WARNHAM LANDFILL, TREATED TIP LEACHATE Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: P01716 Permit Version: 1	Receiving Water: Status: REVOKED (WRA 91, S88 & SCHD 10 AS AMENDED BY ENV ACT 1995) Issue date: 01/09/1988 Effective Date: 01-Sep-1988 Revocation Date: 10/12/2007
18C	298	SW	516750 134100	Address: WARNHAM S.T.W., WARNHAM S.T.W., STATION ROAD, WARNHAM WEST SUSSEX Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: W00331 Permit Version: 1	Receiving Water: Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: 09/05/1983 Effective Date: 09-May-1983 Revocation Date: 31/03/2004
19C	299	W	516740 134120	Address: WARNHAM WWTW, WARNHAM WWTW, STATION ROAD, WARNHAM, WEST SUSSEX, RH12 3SR Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: A01204 Permit Version: 2	Receiving Water: Status: NEW CONSENT (WRA 91, S88 & SCHD 10 AS AMENDED BY ENV ACT 1995) Issue date: 14/10/2008 Effective Date: 01-Apr-2009 Revocation Date: 23/03/2010
20C	299	W	516740 134120	Address: WARNHAM S.T.W., WARNHAM S.T.W., STATION ROAD,, WARNHAM, WEST SUSSEX Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: W02508 Permit Version: 1	Receiving Water: Status: REVOKED (WRA 91, S88 & SCHD 10 AS AMENDED BY ENV ACT 1995) Issue date: 28/05/1980 Effective Date: 28-May-1980 Revocation Date: 31/03/2004
21C	299	W	516740 134120	Address: WARNHAM WWTW, WARNHAM WWTW, STATION ROAD, WARNHAM, WEST SUSSEX, RH12 3SR Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: A01204 Permit Version: 3	Receiving Water: Status: NEW CONSENT (WRA 91, S88 & SCHD 10 AS AMENDED BY ENV ACT 1995) Issue date: 24/03/2010 Effective Date: 24-Mar-2010 Revocation Date: 21/12/2012

ID	Distance (m)	Direction	NGR	Details	
22C	299	W	516740 134120	Address: WARNHAM WWTW, WARNHAM WWTW, STATION ROAD, WARNHAM, WEST SUSSEX, RH12 3SR Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: A01204 Permit Version: 4	Receiving Water: Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 24/03/2010 Effective Date: 22-Dec-2012 Revocation Date: 10/12/2013
23C	299	W	516740 134120	Address: WARNHAM WWTW, WARNHAM WWTW, STATION ROAD, WARNHAM, WEST SUSSEX, RH12 3SR Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: A01204 Permit Version: 1	Receiving Water: Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 31/03/2004 Effective Date: 31-Mar-2004 Revocation Date: 31/03/2009
24C	301	W	516738 134120	Address: WARNHAM WWTW, WARNHAM WWTW, STATION ROAD, WARNHAM, WEST SUSSEX, RH12 3SR Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: A01204 Permit Version: 5	Receiving Water: Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 11/12/2013 Effective Date: 11-Dec-2013 Revocation Date: -
25	327	N	516980 134730	Address: LANGHURSTWOOD RANGE, LANGHURSTWOOD RANGE, LANGHURSTWOOD ROAD, WARNHAM WEST SUSSEX Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: N01586 Permit Version: 1	Receiving Water: Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY) Issue date: 11/10/1978 Effective Date: 11-Oct-1978 Revocation Date: -
26	343	S	517100 133900	Address: STATION HOUSE, STATION HOUSE, WARNHAM, HORSHAM, WEST SUSSEX Effluent Type: SEWAGE DISCHARGES - UNSPECIFIED - NOT WATER COMPANY Permit Number: P00111 Permit Version: 1	Receiving Water: Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY) Issue date: 22/08/1985 Effective Date: 22-Aug-1985 Revocation Date: -
27D	352	SW	516714 134054	Address: WARNHAM WWTW, WARNHAM WWTW, STATION ROAD, WARNHAM, WEST SUSSEX, RH12 3SR Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: A01204 Permit Version: 5	Receiving Water: Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 11/12/2013 Effective Date: 11-Dec-2013 Revocation Date: -
28D	352	SW	516714 134054	Address: WARNHAM WWTW, WARNHAM WWTW, STATION ROAD, WARNHAM, WEST SUSSEX, RH12 3SR Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: A01204 Permit Version: 5	Receiving Water: Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 11/12/2013 Effective Date: 11-Dec-2013 Revocation Date: -
29D	352	SW	516710 134060	Address: WARNHAM S.T.W., WARNHAM S.T.W., STATION ROAD,, WARNHAM, WEST SUSSEX Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: W02508 Permit Version: 1	Receiving Water: Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 28/05/1980 Effective Date: 28-May-1980 Revocation Date: 31/03/2004



ID	Distance (m)	Direction	NGR	Details	
30D	357	SW	516710 134050	Address: WARNHAM WWTW, WARNHAM WWTW, STATION ROAD, WARNHAM, WEST SUSSEX, RH12 3SR Effluent Type: SEWAGE DISCHARGES - UNSPECIFIED - WATER COMPANY Permit Number: A01204 Permit Version: 1	Receiving Water: Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 31/03/2004 Effective Date: 31-Mar-2004 Revocation Date: 31/03/2009
31D	357	SW	516710 134050	Address: WARNHAM WWTW, WARNHAM WWTW, STATION ROAD, WARNHAM, WEST SUSSEX, RH12 3SR Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: A01204 Permit Version: 2	Receiving Water: Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 14/10/2008 Effective Date: 01-Apr-2009 Revocation Date: 23/03/2010
32D	357	SW	516710 134050	Address: WARNHAM WWTW, WARNHAM WWTW, STATION ROAD, WARNHAM, WEST SUSSEX, RH12 3SR Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: A01204 Permit Version: 1	Receiving Water: Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 31/03/2004 Effective Date: 31-Mar-2004 Revocation Date: 31/03/2009
33D	357	SW	516710 134050	Address: WARNHAM WWTW, WARNHAM WWTW, STATION ROAD, WARNHAM, WEST SUSSEX, RH12 3SR Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: A01204 Permit Version: 3	Receiving Water: Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 24/03/2010 Effective Date: 24-Mar-2010 Revocation Date: 21/12/2012
34D	357	SW	516710 134050	Address: WARNHAM WWTW, WARNHAM WWTW, STATION ROAD, WARNHAM, WEST SUSSEX, RH12 3SR Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: A01204 Permit Version: 4	Receiving Water: Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 24/03/2010 Effective Date: 22-Dec-2012 Revocation Date: 10/12/2013
35D	357	SW	516710 134050	Address: WARNHAM WWTW, WARNHAM WWTW, STATION ROAD, WARNHAM, WEST SUSSEX, RH12 3SR Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: A01204 Permit Version: 4	Receiving Water: Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 24/03/2010 Effective Date: 22-Dec-2012 Revocation Date: 10/12/2013
36D	357	SW	516710 134050	Address: WARNHAM WWTW, WARNHAM WWTW, STATION ROAD, WARNHAM, WEST SUSSEX, RH12 3SR Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: A01204 Permit Version: 3	Receiving Water: Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 24/03/2010 Effective Date: 24-Mar-2010 Revocation Date: 21/12/2012
37D	357	SW	516710 134050	Address: WARNHAM WWTW, WARNHAM WWTW, STATION ROAD, WARNHAM, WEST SUSSEX, RH12 3SR Effluent Type: SEWAGE DISCHARGES - UNSPECIFIED - WATER COMPANY Permit Number: A01204 Permit Version: 2	Receiving Water: Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 14/10/2008 Effective Date: 01-Apr-2009 Revocation Date: 23/03/2010

ID	Distance (m)	Direction	NGR	Details
38	433	NW	516770 134770	<p>Address: COX FARM, COX FARM, DORKING ROAD, WARNHAM, WEST SUSSEX Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: P07954 Permit Version: 1</p> <p>Receiving Water: Status: NEW CONSENT (WRA 91, S88 &amp; SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 26/11/1999 Effective Date: 26-Nov-1999 Revocation Date: -</p>
39	461	SW	516760 133850	<p>Address: WESTON PLACE FARM, WESTON PLACE FARM, WARNHAM WEST SUSSEX Effluent Type: AGRICULTURE - SITE DRAINAGE Permit Number: D01078 Permit Version: 1</p> <p>Receiving Water: Status: PRE NRA LEGISLATION WHERE ISSUE DATE &lt; 01-SEP-89 (HISTORIC ONLY) Issue date: 21/05/1963 Effective Date: 21-May-1963 Revocation Date: -</p>
40	480	NE	517500 134800	<p>Address: REDLAND TECHNOLOGY, REDLAND TECHNOLOGY, GRAYLANDS, LANGHURSTWOOD ROAD, HORSHAM, WEST SUSSEX, RH12 4QG Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: P03886 Permit Version: 1</p> <p>Receiving Water: Status: POST NRA LEGISLATION WHERE ISSUE DATE &gt; 31-AUG-89 (HISTORIC ONLY) Issue date: 22/10/1991 Effective Date: 22-Oct-1991 Revocation Date: -</p>

#### 2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

#### 2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

1

The following records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Application Reference Number	NGR	Application Status	Application Date	Address	Details	Details of Enforcement Action
148G	79	S	NH/119/92	517209 134152	Approved	18/09/1992	Redland Bricks Ltd, formerly Ambion Brick Co Ltd, Holbrook Brickworks, Langhurst Wood Road, Horsham, West Sussex, RH12 4QD	Deemed hazardous substance consent for storage of 600 tonnes of butane Site: Langhurstwood Rd Horsham	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

## 2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site:

2

The following COMAH & NIHHS Authorisation records provided by the Health and Safety Executive are represented as polygons or buffered points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Company	Address	Operational Status	Tier
95F	0	On Site	Redland Bricks Ltd	Redland Bricks Ltd, Warnham, Horsham	Historical COMAH Site	-
96F	0	On Site	Redland Bricks Ltd	Redland Bricks Ltd, Warnham, Horsham	Historical NIHHS Site	-

## 2.3 Environment Agency Recorded Pollution Incidents

### 2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

8

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
1	266	NE	517324 134654	Incident Date: 17-Jun-2001 Incident Identification: 9785 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Sulphide Odour Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)
2	344	SW	516700 134100	Incident Date: 27-Dec-2002 Incident Identification: 127814 Pollutant: Sewage Materials Pollutant Description: Storm Sewage Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
3A	344	N	517139 134752	Incident Date: 11-Jun-2001 Incident Identification: 8627 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
4A	344	N	517139 134752	Incident Date: 11-Jun-2001 Incident Identification: 8627 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
5	368	N	517330 134761	Incident Date: 25-Jun-2001 Incident Identification: 11200 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
6	419	NW	516670 134659	Incident Date: 18-Dec-2002 Incident Identification: 126547 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Landfill Odour Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

ID	Distance (m)	Direction	NGR	Details
7	425	N	517280 134830	Incident Date: 18-Jun-2001 Incident Identification: 10016 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Sulphide Odour Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)
8	440	N	517183 134848	Incident Date: 27-Sep-2002 Incident Identification: 111080 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Effects on Humans Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

### 2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

Database searched and no data found.

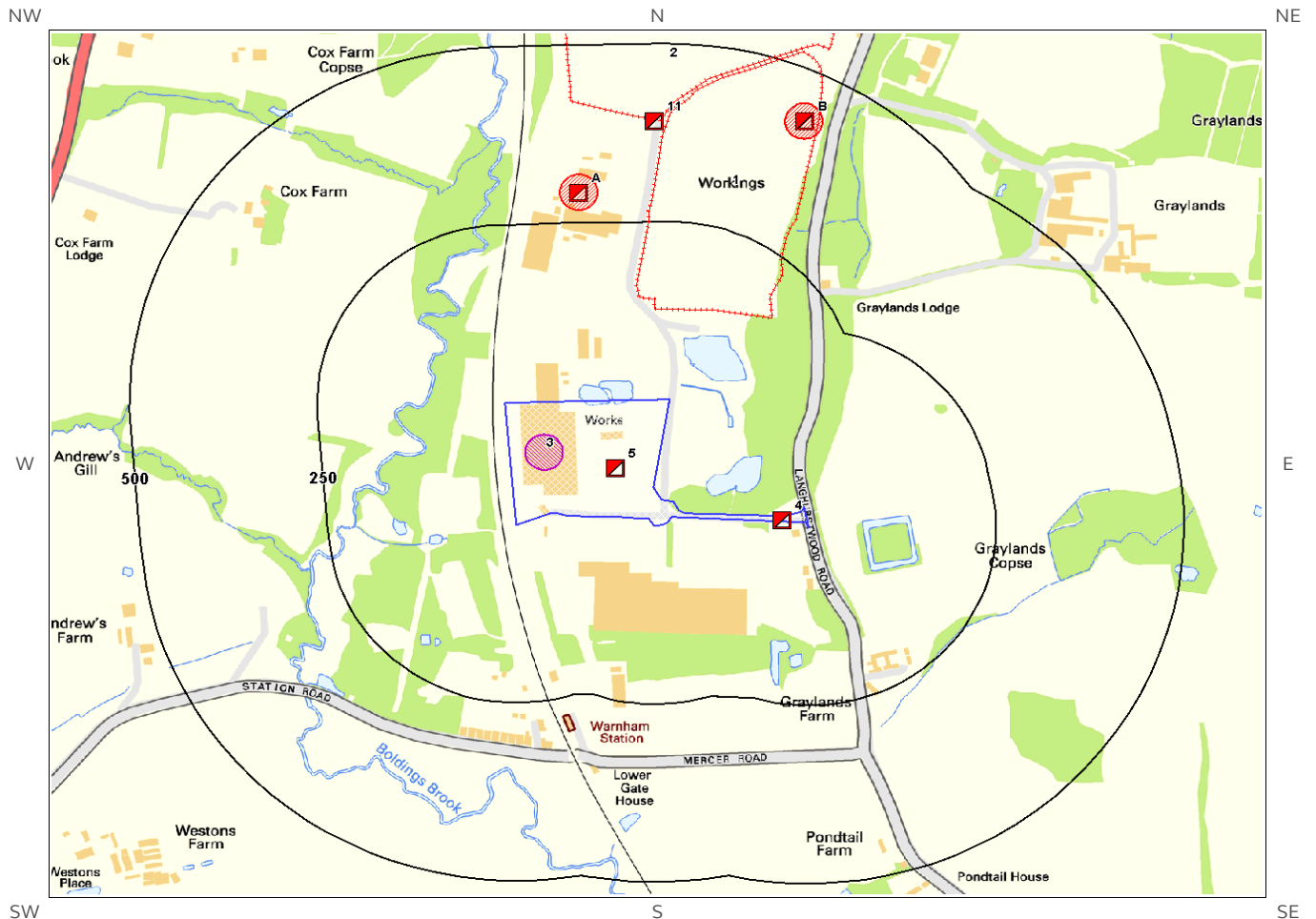
## 2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site?

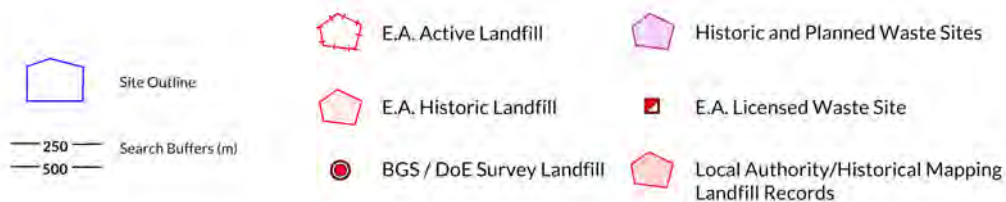
0

Database searched and no data found.

# 3. Landfill and Other Waste Sites Map



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# 3. Landfill and Other Waste Sites

## 3.1 Landfill Sites

### 3.1.1 Records from Environment Agency landfill data within 1000m of the study site:

2

The following Environment Agency landfill records are represented as polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
1	127	N	517130 134750	<p>Address: Brookhurst Wood Landfill Site, Langhurstwood Road, West Sussex, RH12 4QD</p> <p>Landfill Reference: 19660.0</p> <p>Environmental Permitting Regulations (Waste) Reference: BIF093</p> <p>Landfill Type: 5.2 A(1) a) : WASTE LANDFILLING; &gt;10 T/D WITH CAPACITY &gt;25,000T EXCLUDING INERT WASTE</p> <p>Operator: Biffa Waste Services Ltd Status: Effective IPPC Reference: EPR Reference:</p>
2	392	N	517130 134750	<p>Address: Brookhurst Wood Landfill Site, Langhurstwood Road, West Sussex, RH12 4QD</p> <p>Landfill Reference: 19678.0</p> <p>Environmental Permitting Regulations (Waste) Reference: WAS002</p> <p>Landfill Type: 5.2 A(1) a) : WASTE LANDFILLING; &gt;10 T/D WITH CAPACITY &gt;25,000T EXCLUDING INERT WASTE</p> <p>Operator: Biffa Waste Services Ltd Status: Effective IPPC Reference: EPR Reference:</p>

### 3.1.2 Records of Environment Agency historic landfill sites within 1500m of the study site:

0

Database searched and no data found.

### 3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

### 3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

3

The following landfill records are represented as points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
14A	268	N	517100 134700	Cleanaway Limited, Warnham Leachate Treatment Plant, Warham Brickworks, Langhurstwood Road, Warnham, West Sussex	Horsham District Council	Point
15B	405	NE	517400 134800	Warnham Brickworks, Langhurstwood Road, Warnham, West Sussex,	Horsham District Council	Point
Not shown	571	N	517300 135000	Waste Management Limited, Brookhurstwood Landfill Site, Warnham Brickworks, Langhurstwood Road, Warnham, West Sussex, RH12 4Q2	Horsham District Council	Point



## 3.2 Other Waste Sites

### 3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

1

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
3	0	On Site	517054 134334	<p>Further Details: Scheme comprises construction and operation of a materials recycling facility including offices and visitor centre, an anaerobic digestion plant and extension to landfill site. The associated works include access roads, sewer systems, infrastructure, enabling and landscaping. Construction - block, brick walls; raised access floor; double glazed windows; fire, timber doors; air conditioned heating; black top surfacing, fencing, kerbing, planting, Tarmac surfacing, turfing/grass, white lining site works; access controls, bathroom, emergency lighting, energy from waste, fire alarm system, suspended ceilings fittings. An application (ref: DC/06/2919) for detailed planning permission was granted by Horsham D.C. Please see ID 10553068 for the Visitor Centrescheme Please note the addition of LTR as the Lifts Sub Contractor. Data Source: Historic Planning Application Data Type: Point</p> <p>Type of Site: Recycling Facilities &amp; Visitor Centre Site Address: Brookhurst Wood Landfill Site, Langhurstwood Road, HORSHAM, West Sussex, RH12 4QD</p> <p>Planning Application Reference: DC/06/2919 Date: 14/06/2010</p>

### 3.2.2 Records of Environment Agency licensed waste sites within 1500m of the study site:

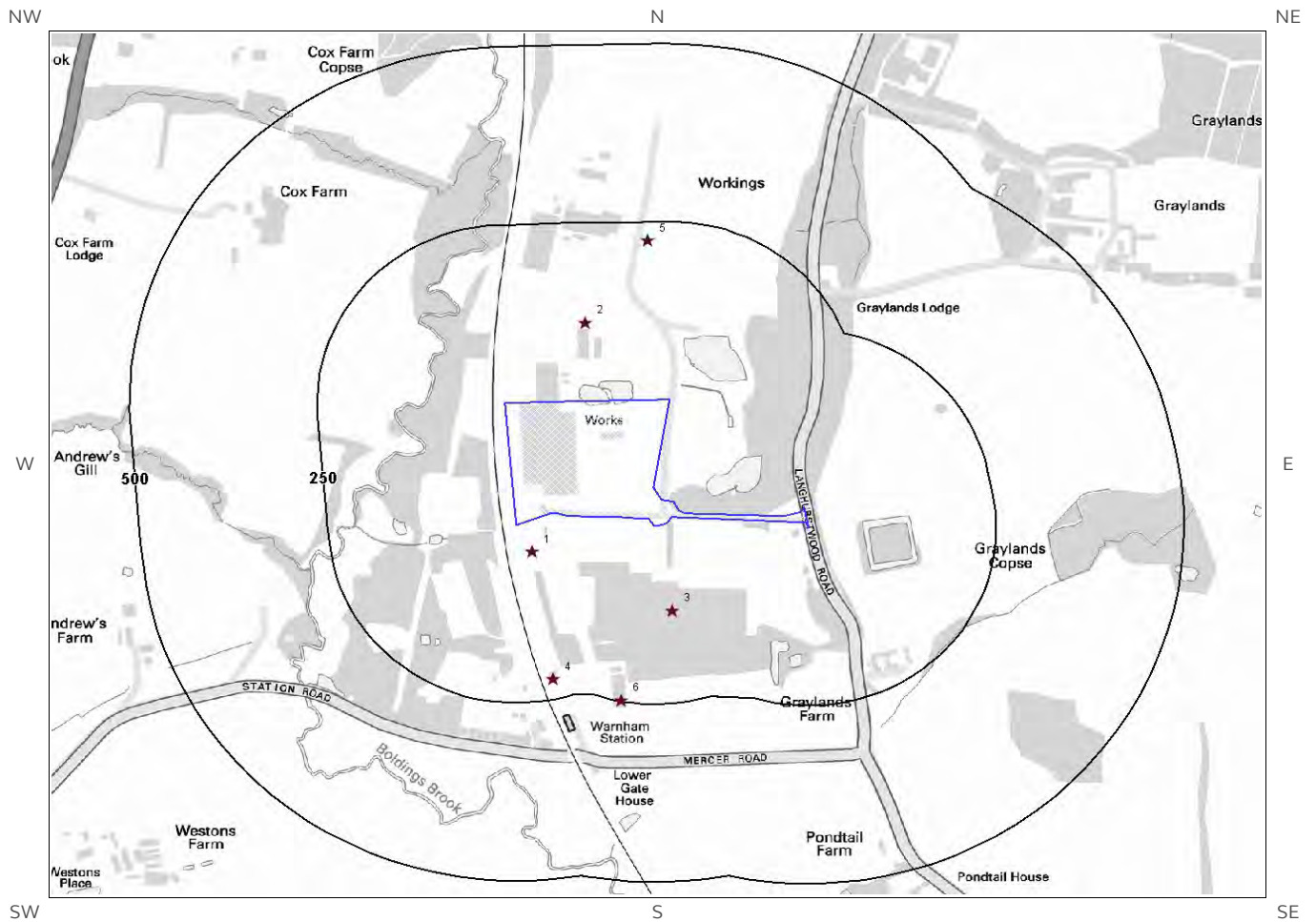
10

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
4	0	On Site	517370 134240	<p>Site Address: Brookhurstwood Landfill, Langhurstwood Road, Warnham, Horsham, West Sussex, RH12 4QD Type: Household, Commercial &amp; Industrial Waste Landfill Size: &gt;= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAS002 EPR reference: EA/EPR/CP3294HF/V002 Operator: Waste Management Ltd Waste Management licence No: 19678 Annual Tonnage: 1000000.0</p> <p>Issue Date: 14/08/1992 Effective Date: - Modified: 03/04/2001 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC Site Name: Brookhurstwood Landfill Site Correspondence Address: -, -</p>
5	0	On Site	517148 134313	<p>Site Address: Langhurst Wood Road, Horsham, West Sussex, RH12 4QD Type: Household, Commercial &amp; Industrial Waste T Stn Size: &gt;= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRI304 EPR reference: EA/EPR/CB3308TD/A001 Operator: Britaniacrest Recycling Limited Waste Management licence No: 401997 Annual Tonnage: 199999.0</p> <p>Issue Date: 03/02/2015 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Former Wealden Brickworks W T S Correspondence Address: -, -</p>
6A	293	N	517100 134700	<p>Site Address: Warham Brickworks, Langhurstwood Road, Warnham, West Sussex, RH12 4QD Type: Biological Treatment Facility Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CLE001 EPR reference: - Operator: Cleanaway Ltd Waste Management licence No: 19659 Annual Tonnage: 18250.0</p> <p>Issue Date: 10/04/1992 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Warnham Leachate Treatment Plant Correspondence Address: -, Cleanaway Limited, The Drive, Warley, Brentwood, Essex, CM13 3BE</p>
7A	293	N	517100 134700	<p>Site Address: Warham Brickworks, Langhurstwood Road, Warnham, West Sussex, RH12 4QD Type: Biological Treatment Facility Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BIF002 EPR reference: HP3694HP/S002 Operator: Biffa Waste Services Limited Waste Management licence No: 19659 Annual Tonnage: 0.0</p> <p>Issue Date: 10/04/1992 Effective Date: 12/01/2007 Modified: - Surrendered Date: 03/01/2008 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Warnham Leachate Treatment Plant Correspondence Address: -, -</p>
8A	293	N	517100 134700	<p>Site Address: Warham Brickworks, Langhurstwood Road, Warnham, West Sussex, RH12 4QD Type: Biological Treatment Facility Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BIF002 EPR reference: EA/EPR/HP3694HP/S002 Operator: Biffa Waste Services Ltd Waste Management licence No: 19659 Annual Tonnage: 0.0</p> <p>Issue Date: 10/04/1992 Effective Date: 12/01/2007 Modified: - Surrendered Date: 03/01/2008 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Warnham Leachate Treatment Plant Correspondence Address: -, -</p>

ID	Distance (m)	Direction	NGR	Details
9A	293	N	517099 134700	<p>Site Address: Brookhurst Wood Landfill Site, Langhurstwood Road, Warnham, West Sussex, RH12 4QD Type: Physical Treatment Facility Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BIF104 EPR reference: EA/EPR/AB3700LS/V002 Operator: Biffa Waste Services Limited Waste Management licence No: 400796 Annual Tonnage: 59999.0</p> <p>Issue Date: 06/03/2014 Effective Date: - Modified: 27/05/2015 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Brookhurst Wood Aggregate Treatment &amp; Recycling Facility Correspondence Address: -, -</p>
10A	293	N	517099 134700	<p>Site Address: Brookhurst Wood Landfill Site, Langhurstwood Road, Warnham, West Sussex, RH12 4QD Type: Physical Treatment Facility Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BIF104 EPR reference: EA/EPR/AB3700LS/V002 Operator: Biffa Waste Services Ltd Waste Management licence No: 400796 Annual Tonnage: 59999.0</p> <p>Issue Date: 06/03/2014 Effective Date: - Modified: 27/05/2015 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Brookhurst Wood Aggregate Treatment &amp; Recycling Facility Correspondence Address: -, -</p>
11	391	N	517200 134800	<p>Site Address: Land / Premises At, Langhurst Wood Road, Horsham, West Sussex, RH12 4QD Type: Material Recycling Treatment Facility Size: &gt;= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BIF003 EPR reference: EA/EPR/VP3190VH/S002 Operator: Biffa Waste Services Ltd Waste Management licence No: 10160 Annual Tonnage: 0.0</p> <p>Issue Date: 11/02/2009 Effective Date: - Modified: - Surrendered Date: 22/03/2011 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Brookhurst Wood Recycling And Waste Management Park Correspondence Address: -, -</p>
12B	430	NE	517400 134800	<p>Site Address: Warnham Brickworks, Langhurstwood Road, Warnham, West Sussex, RH12 4QD Type: Co-Disposal Landfill Site Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CLE002 EPR reference: - Operator: Cleanaway Ltd Waste Management licence No: 19660 Annual Tonnage: 24999.0</p> <p>Issue Date: 03/03/1986 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Closure Site Name: Cleanaway Phase 2 Correspondence Address: -, Cleanaway Limited, The Drive, Warley, Brentwood, Essex, CM13 3BE</p>
13B	430	NE	517400 134800	<p>Site Address: Warnham Brickworks, Langhurstwood Road, Warnham, West Sussex, RH12 4QD Type: Co-Disposal Landfill Site Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BIF093 EPR reference: EA/EPR/EP3796LG/T001 Operator: Biffa Waste Services Ltd Waste Management licence No: 19660 Annual Tonnage: 24999.0</p> <p>Issue Date: 03/03/1986 Effective Date: 28/10/2009 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC Site Name: Warnham Landfill Site (Cleanaway Phase 2) Correspondence Address: -, -</p>

# 4. Current Land Use Map



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## 4. Current Land Uses

### 4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site:

6

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	42	S	Filter Bed	517038 134196	RH12	Waste Storage, Processing and Disposal	Infrastructure and Facilities
2	111	N	Tank	517108 134518	RH12	Tanks (Generic)	Industrial Features
3	120	S	Wienerberger Ltd	517224 134113	Langhurstwood Road, Horsham, RH12 4QD	Bricks, Tiles, Clay and Ceramic Products	Industrial Products
4	221	S	Warnham Rail Station	517066 134017	RH12	Railway Stations, Junctions and Halts	Public Transport, Stations and Infrastructure
5	224	N	Tank	517191 134633	RH12	Tanks (Generic)	Industrial Features
6	248	S	Green's a R C	517155 133987	The Transport Depot, Mercer Road, Warnham, Horsham, RH12 3RL	Vehicle Repair, Testing and Servicing	Repair and Servicing

### 4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site:

0

Database searched and no data found.

### 4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site:

0

Database searched and no data found.

#### 4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

---

## 5. Geology

### 5.1 Artificial Ground and Made Ground

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
WGR-OPEN	WORKED GROUND (UNDIVIDED)	VOID

### 5.2 Superficial Ground and Drift Geology

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

### 5.3 Bedrock and Solid Geology

The database has been searched on site, including a 50m buffer.

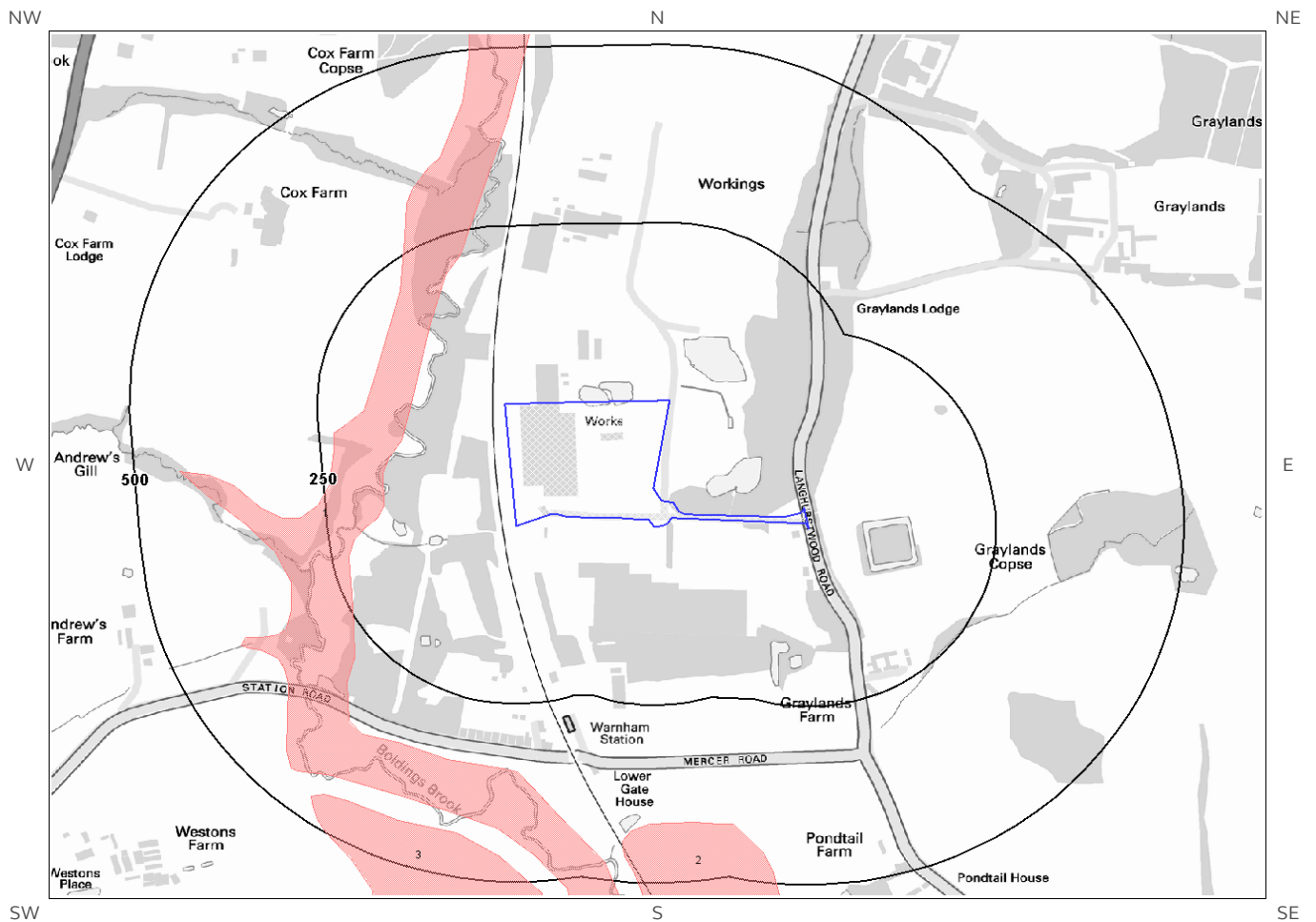
Lex Code	Description	Rock Type
WC-MDST	WEALD CLAY FORMATION	MUDSTONE

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

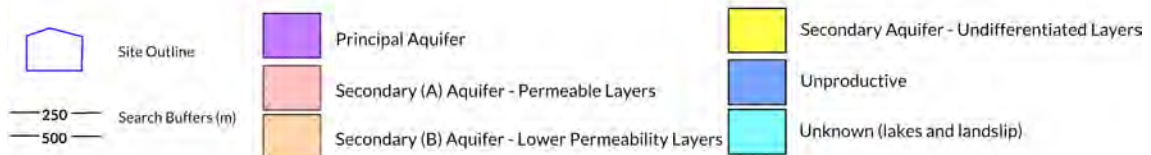


# 6 Hydrogeology and Hydrology

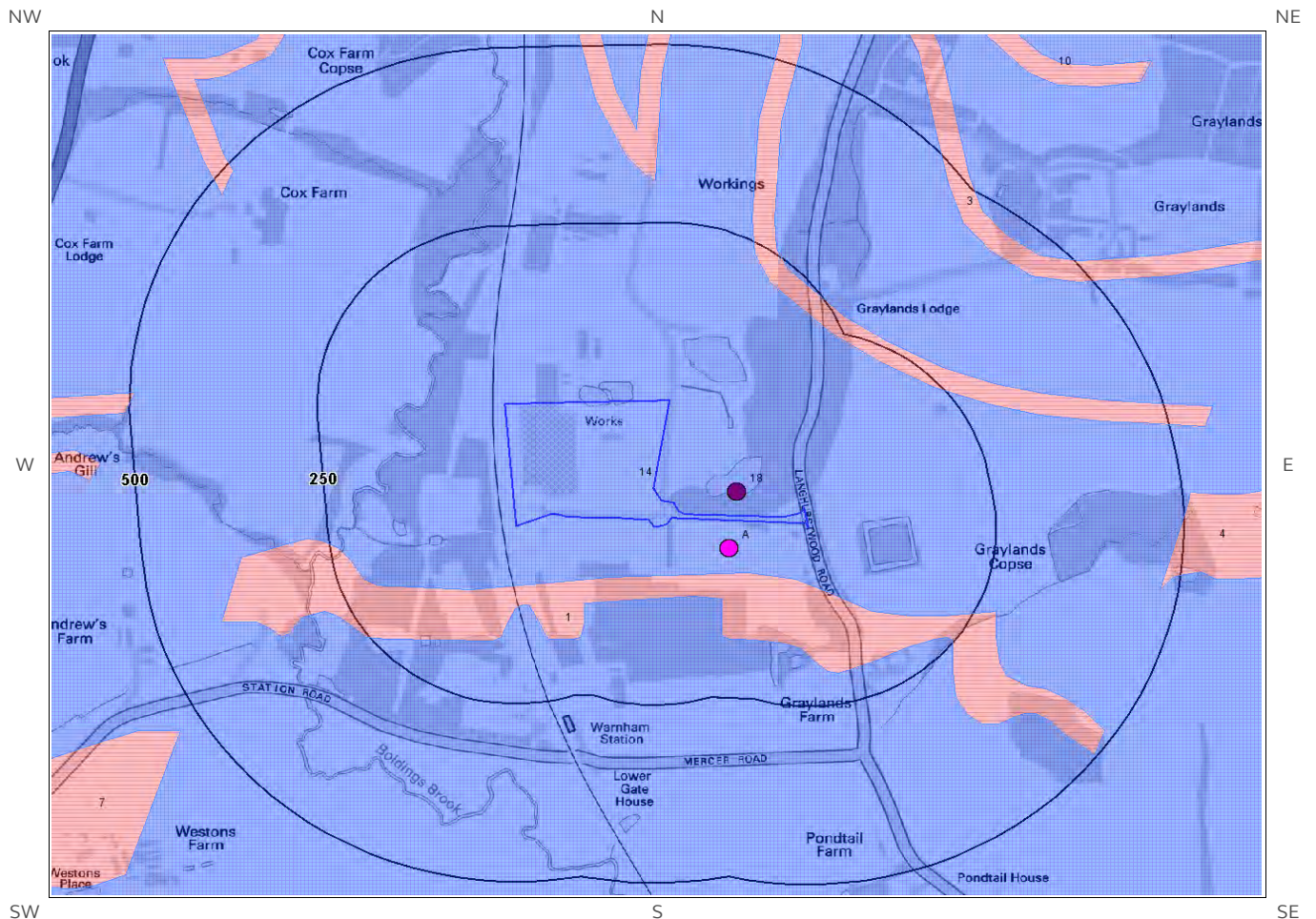
## 6a. Aquifer Within Superficial Geology



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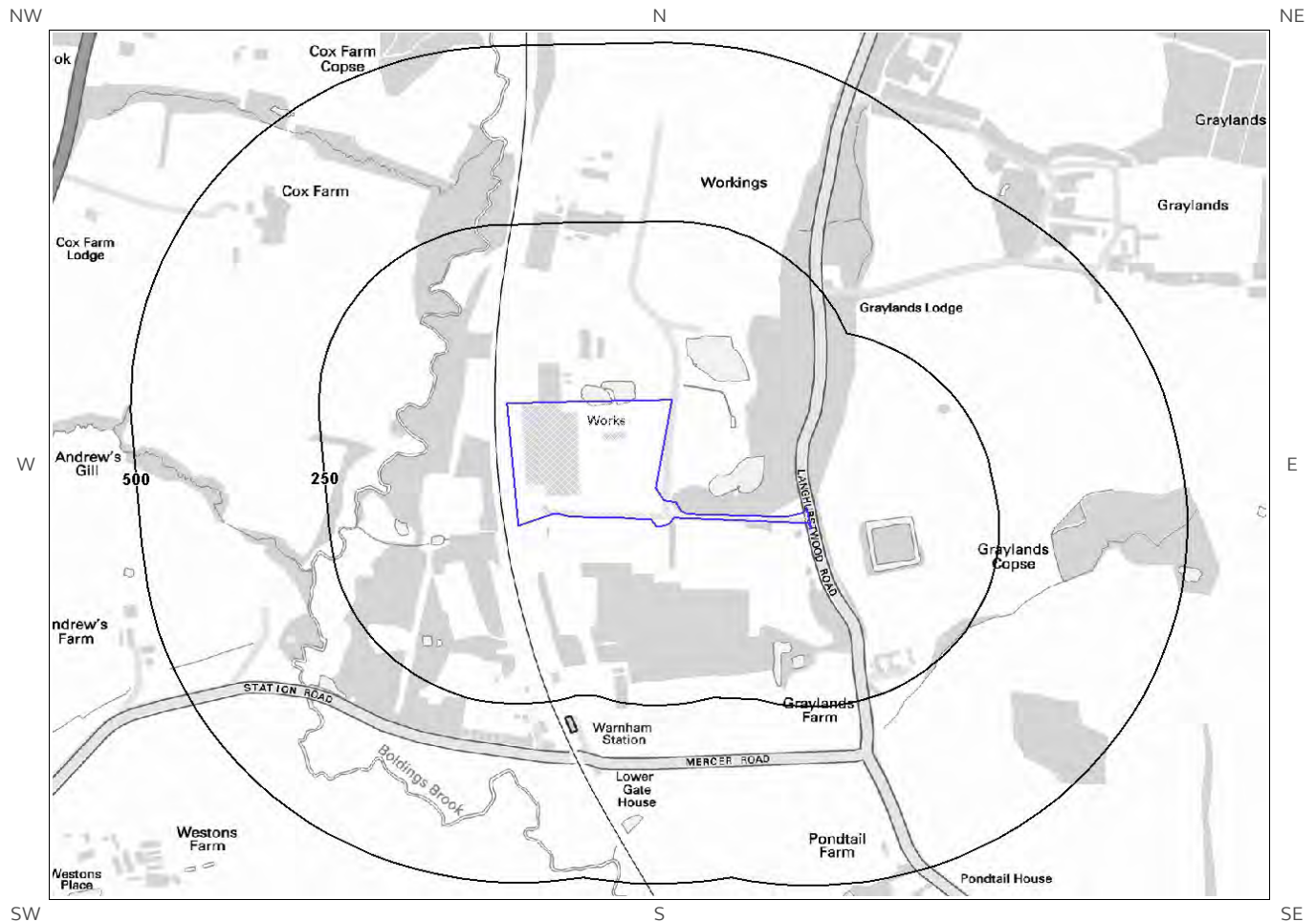


# 6b. Aquifer Within Bedrock Geology and Abstraction Licenses

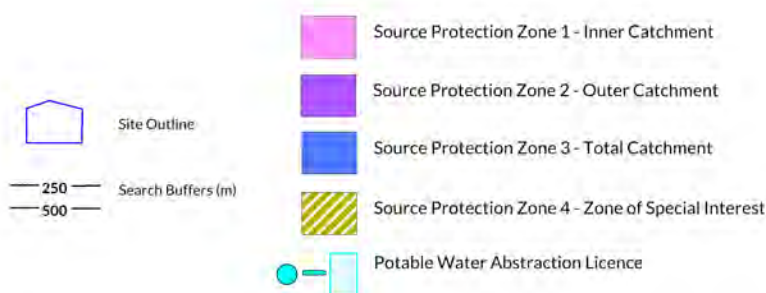


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# 6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses

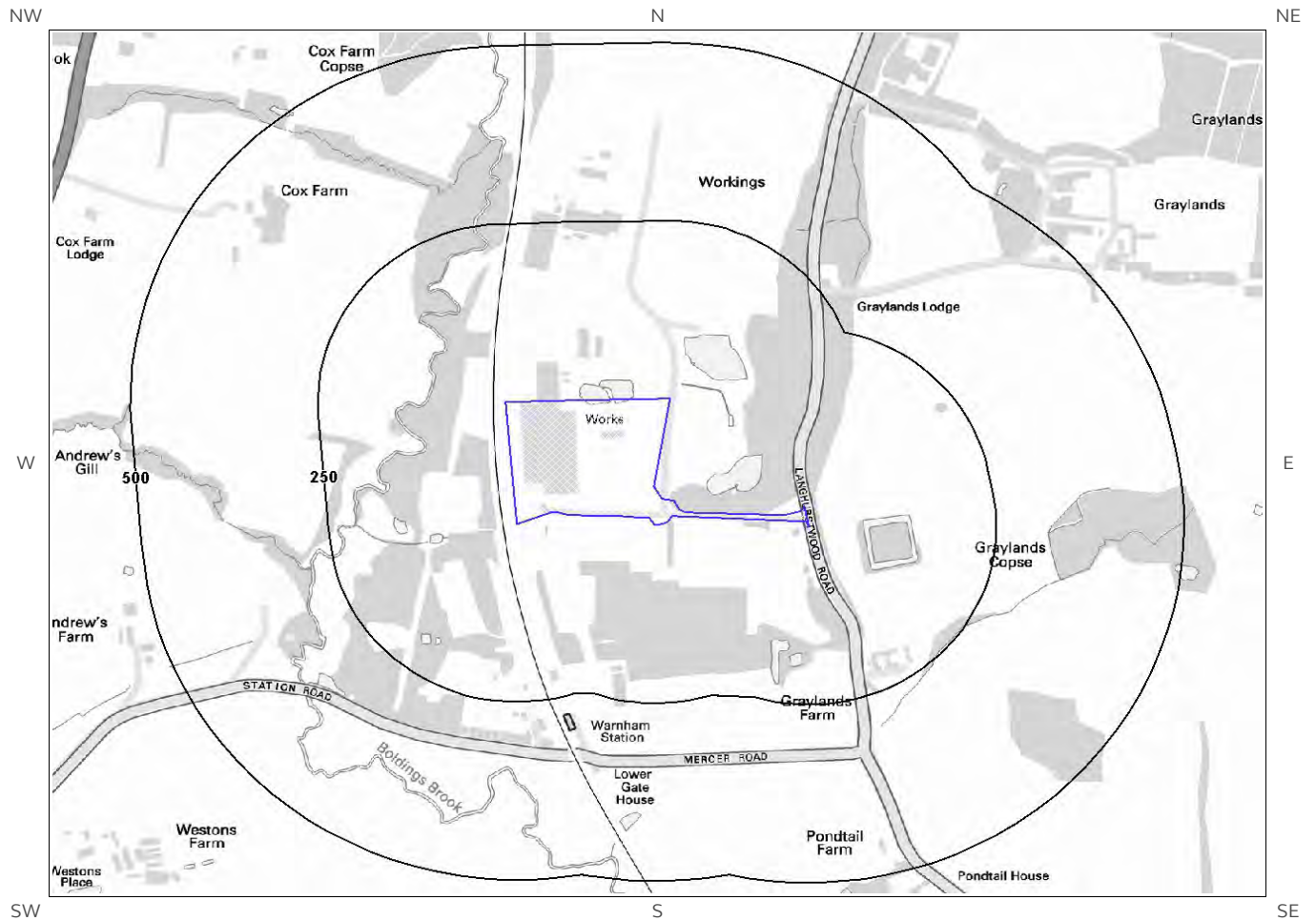


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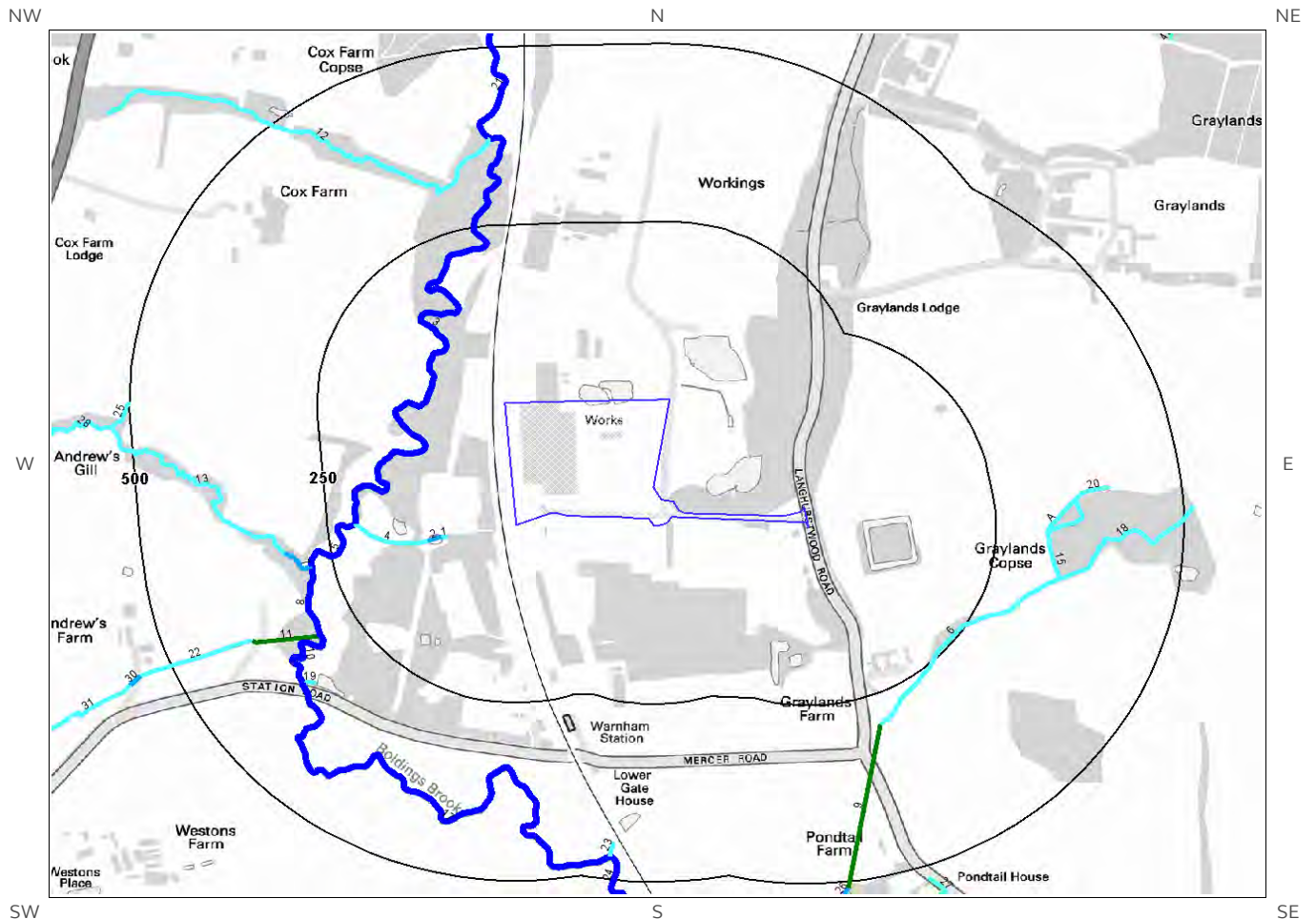
# 6d. Hydrogeology – Source Protection Zones within confined aquifer



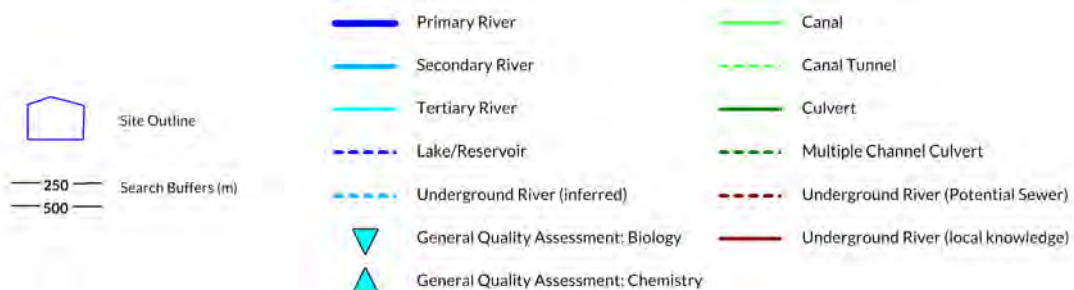
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# 6e. Hydrology – Detailed River Network and River Quality



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# 6. Hydrogeology and Hydrology

## 6.1 Aquifer within Superficial Deposits

Are there records of strata classification within the superficial geology at or in proximity to the property? **Yes**

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
1	122	W	Secondary A	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
2	416	S	Secondary A	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
3	438	S	Secondary A	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

## 6.2 Aquifer within Bedrock Deposits

Are there records of strata classification within the bedrock geology at or in proximity to the property? **Yes**

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
14	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
1	68	S	Secondary A	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
2	213	NE	Secondary A	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
3	439	NE	Secondary A	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
4	475	E	Secondary A	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
5	478	NW	Secondary A	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

ID	Distance (m)	Direction	Designation	Description
6	493	W	Secondary A	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

### 6.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site? Yes

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details
18	33	N	517310 134280	Status: Historical Licence No: 25/088 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Southern Region Groundwater Point: Warnham Brickworks Data Type: Point Name: Ambion Brick Co Ltd Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 169/1383 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 13/10/1997 Version End Date:

### 6.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? Yes

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details
19A	41	S	517300 134200	Status: Historical Licence No: 25/088 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Southern Region Surface Waters Point: Warnham Brickworks Data Type: Point Name: Wienerberger Limited Annual Volume (m³): 18000 Max Daily Volume (m³): 400 Application No: NPS/WR/015656 Original Start Date: - Expiry Date: - Issue No: 103 Version Start Date: 31/3/2014 Version End Date:
20A	41	S	517300 134200	Status: Active Licence No: 25/088 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Southern Region Surface Waters Point: Pond At Warnham Brickworks Data Type: Point Name: Wienerberger Limited Annual Volume (m³): 18000 Max Daily Volume (m³): 400 Application No: NPS/WR/015656 Original Start Date: - Expiry Date: - Issue No: 103 Version Start Date: 31/3/2014 Version End Date:
Not shown	1932	S	516830 132310	Status: Active Licence No: 25/086 Details: Spray Irrigation - Storage Direct Source: Southern Region Surface Waters Point: Warnham Mill Pond Data Type: Point Name: Horsham District Council Annual Volume (m³): 23700 Max Daily Volume (m³): 1200 Application No: 169/1360 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 16/6/2009 Version End Date:



---

## 6.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site?

No

Database searched and no data found.

---

## 6.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site?

No

Database searched and no data found.

---

## 6.7 Source Protection Zones within Confined Aquifer

Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site?

No

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

## 6.8 Groundwater Vulnerability and Soil Leaching Potential

Is there any Environment Agency information on groundwater vulnerability and soil leaching potential within 500m of the study site?

Yes

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
51	S	Minor Aquifer/Intermediate Leaching Potential	I1	Soils which can possibly transmit a wide range of pollutants.
68	NE	Minor Aquifer/Low Leaching Potential	L	Soils in which pollutants are unlikely to penetrate the soil layer because either water movement is largely horizontal, or they have the ability to attenuate diffuse pollutants.
198	W	Minor Aquifer/Low Leaching Potential	L	Soils in which pollutants are unlikely to penetrate the soil layer because either water movement is largely horizontal, or they have the ability to attenuate diffuse pollutants.
395	E	Minor Aquifer/Intermediate Leaching Potential	I1	Soils which can possibly transmit a wide range of pollutants.

## 6.9 River Quality

Is there any Environment Agency information on river quality within 1500m of the study site?

No

### 6.9.1 Biological Quality:

Database searched and no data found.

### 6.9.2 Chemical Quality:

Database searched and no data found.

## 6.10 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site?

Yes

The following Detailed River Network records are represented on the Hydrology Map (6e):

ID	Distance (m)	Direction	Details
1	93	W	River Name: - Welsh River Name: - Alternative Name: - River Type: Tertiary River Main River Status: Currently Undefined
2	100	W	River Name: - Welsh River Name: - Alternative Name: - River Type: Secondary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
3	101	W	River Name: Boldings Brook Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
4	121	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
5	213	W	River Name: Boldings Brook Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
6	245	SE	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
7	278	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
8	278	W	River Name: Boldings Brook Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
9	293	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined
10	303	SW	River Name: Boldings Brook Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
11	303	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined
12	308	N	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
13	311	W	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
14A	318	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
15	319	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
16A	319	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
17	341	S	River Name: Boldings Brook Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
18	342	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
19	347	SW	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
20	359	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
21	373	N	River Name: Boldings Brook Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details
22	388	SW	River Name: - Welsh River Name: - Alternative Name: - River Type: Tertiary River Main River Status: Currently Undefined
23	448	S	River Name: Drain Welsh River Name: - Alternative Name: - River Type: Tertiary River Main River Status: Currently Undefined
24	468	S	River Name: Boldings Brook Welsh River Name: - Alternative Name: - River Type: Primary River Main River Status: Currently Undefined

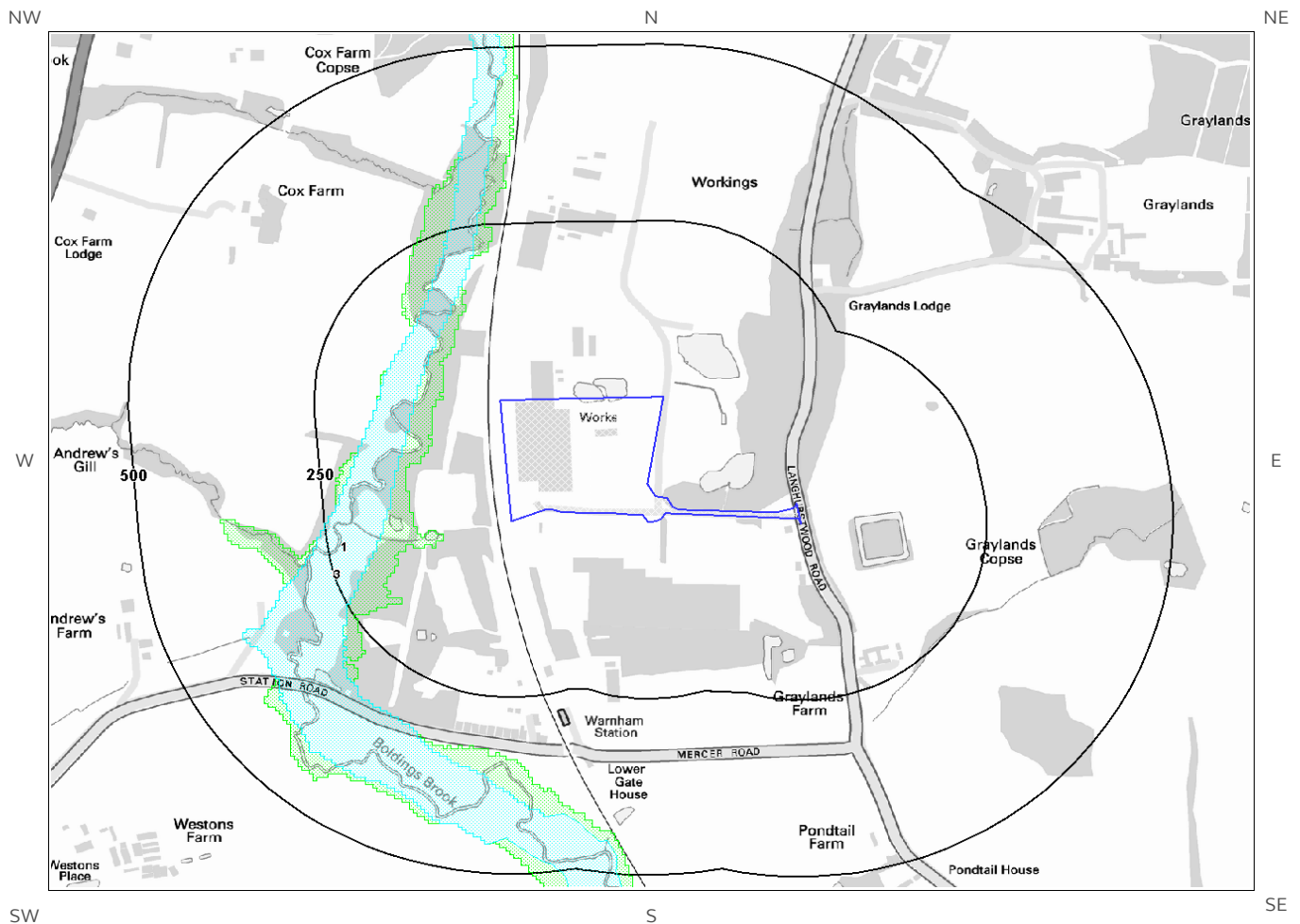
## 6.11 Surface Water Features

Are there any surface water features within 250m of the study site? Yes

The following surface water records are not represented on mapping:

Distance (m)	Direction
0	On Site
0	On Site
28	N
73	E
80	E
99	W
121	W
160	S
175	S
222	W
247	SE

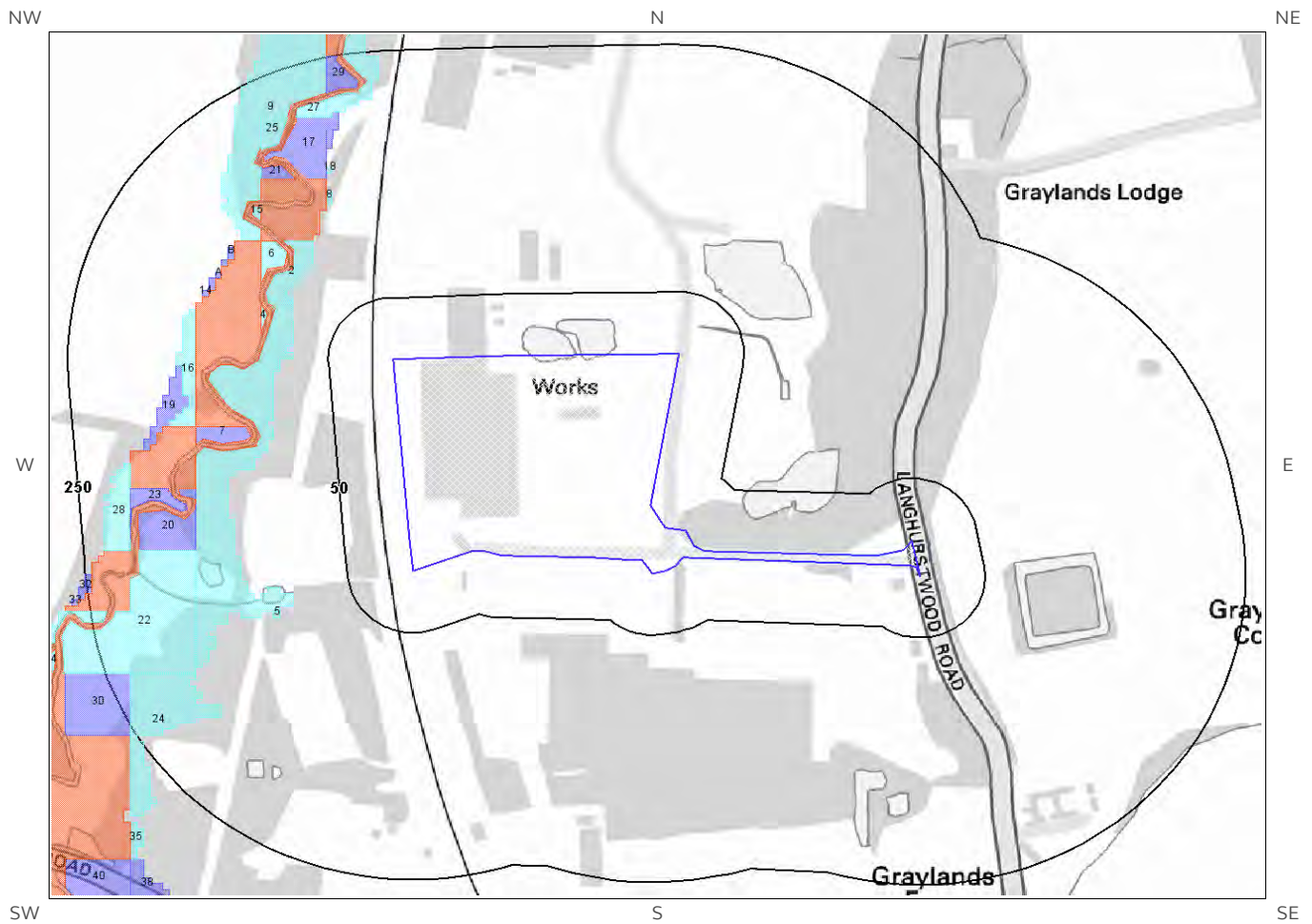
# 7a. Environment Agency Flood Map for Planning (from rivers and the sea)



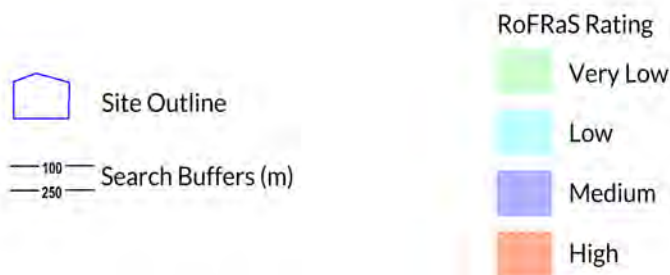
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# 7b. Environment Agency Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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# 7 Flooding

## 7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency Zone 2 floodplain? Yes

Environment Agency Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

ID	Distance (m)	Direction	Update	Type
1	77	W	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)

## 7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency Zone 3 floodplain? Yes

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

ID	Distance (m)	Direction	Update	Type
1	108	W	23-Feb-2016	Zone 3 - (Fluvial Models)

## 7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

What is the highest risk of flooding onsite? Very Low

The Environment Agency RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.



Are there any Flood Defences within 250m of the study site? No  
Database searched and no data found.

---

### 7.5 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? No

---

### 7.6 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site? No

---

### 7.7 Groundwater Flooding Susceptibility Areas

7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? No

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

---

7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?

The area is not considered to be prone to groundwater flooding based on rock type. Not Prone

---

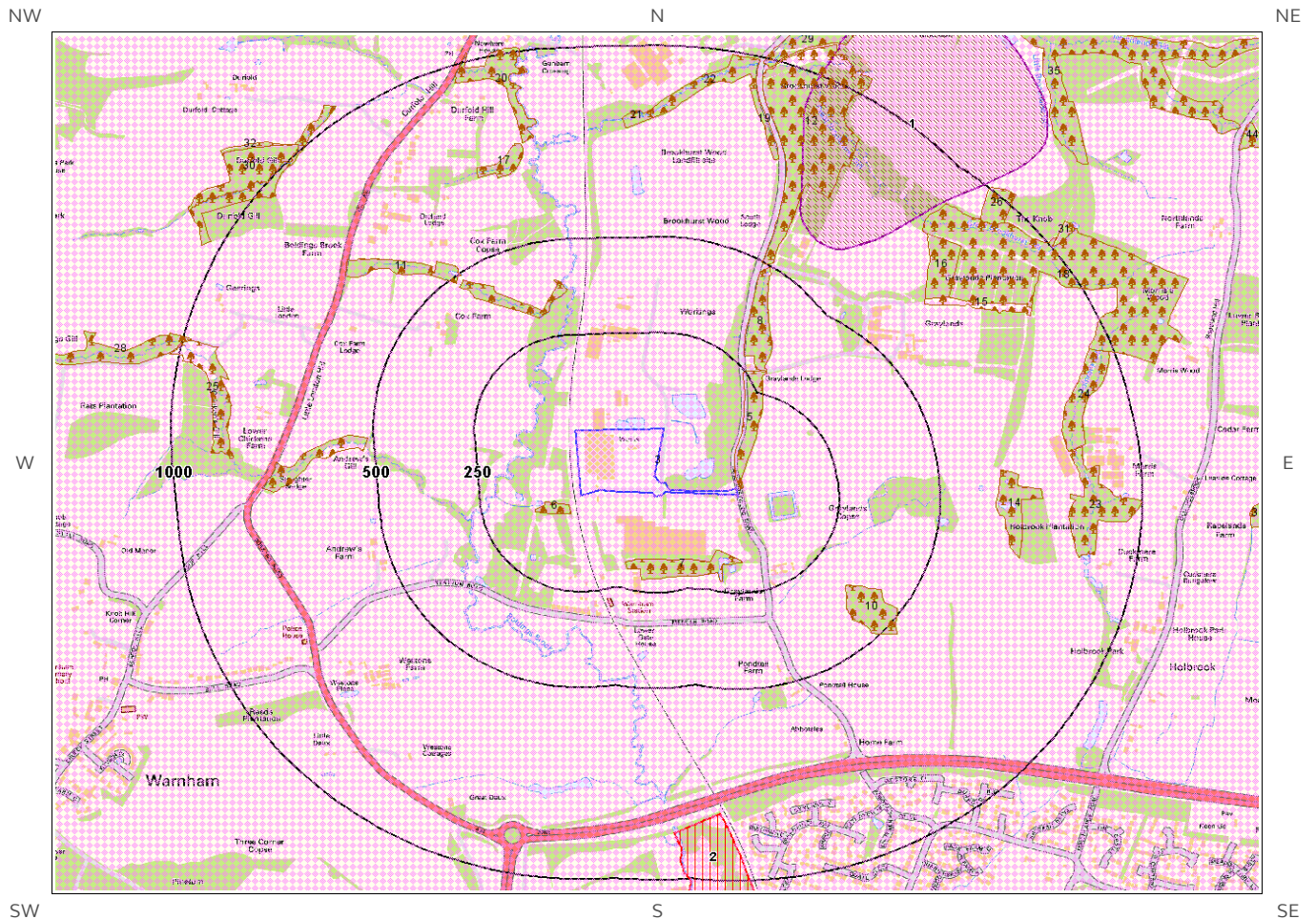
### 7.8 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result? Not Applicable

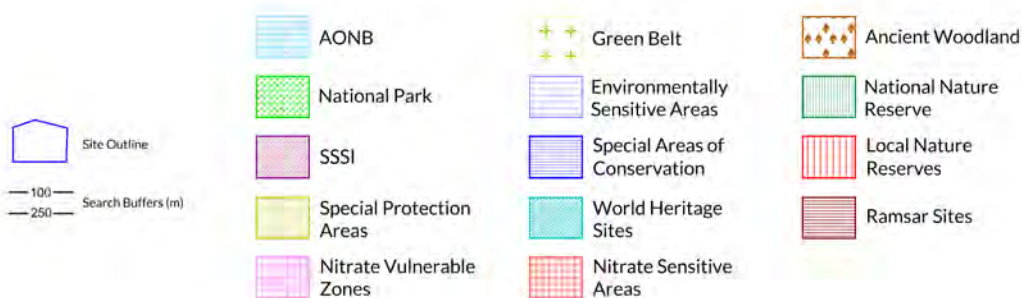
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

# 8. Designated Environmentally Sensitive Sites Map



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## 8. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site?

Yes

### 8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

1

The following Site of Special Scientific Interest (SSSI) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SSSI Name	Data Source
1	621	NE	Warnham	Natural England

### 8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

### 8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

### 8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

### 8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

## 8.6 Records of Ancient Woodland within 2000m of the study site:

59

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
5	7	E	UNKNOWN	Ancient and Semi-Natural Woodland
6	37	SW	UNKNOWN	Ancient and Semi-Natural Woodland
7	145	S	UNKNOWN	Ancient and Semi-Natural Woodland
8	274	NE	UNKNOWN	Ancient and Semi-Natural Woodland
9	308	N	UNKNOWN	Ancient and Semi-Natural Woodland
10	351	SE	UNKNOWN	Ancient and Semi-Natural Woodland
11	485	NW	UNKNOWN	Ancient and Semi-Natural Woodland
12	497	NE	UNKNOWN	Ancient and Semi-Natural Woodland
13	513	W	UNKNOWN	Ancient and Semi-Natural Woodland
14	637	E	UNKNOWN	Ancient and Semi-Natural Woodland
15	667	NE	UNKNOWN	Ancient and Semi-Natural Woodland
16	678	NE	UNKNOWN	Ancient Replanted Woodland
17	687	N	UNKNOWN	Ancient and Semi-Natural Woodland
18	722	NE	UNKNOWN	Ancient and Semi-Natural Woodland
19	753	N	UNKNOWN	Ancient and Semi-Natural Woodland
20	763	N	UNKNOWN	Ancient and Semi-Natural Woodland
21	787	N	UNKNOWN	Ancient and Semi-Natural Woodland
22	812	N	UNKNOWN	Ancient and Semi-Natural Woodland
23	819	E	UNKNOWN	Ancient and Semi-Natural Woodland
24	820	E	UNKNOWN	Ancient and Semi-Natural Woodland
25	849	W	UNKNOWN	Ancient and Semi-Natural Woodland
26	921	NE	UNKNOWN	Ancient and Semi-Natural Woodland
27	962	NW	UNKNOWN	Ancient and Semi-Natural Woodland
28	980	W	UNKNOWN	Ancient and Semi-Natural Woodland
29	980	N	UNKNOWN	Ancient and Semi-Natural Woodland
30	993	NW	UNKNOWN	Ancient and Semi-Natural Woodland
31	1003	NE	UNKNOWN	Ancient and Semi-Natural Woodland

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
32	1033	NW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1143	N	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1179	S	UNKNOWN	Ancient and Semi-Natural Woodland
35	1196	NE	UNKNOWN	Ancient and Semi-Natural Woodland
36	1266	E	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1266	N	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1339	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1342	N	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1364	S	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1364	E	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1381	N	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1405	E	UNKNOWN	Ancient and Semi-Natural Woodland
44	1524	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1542	SW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1576	E	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1599	SE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1600	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1636	NW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1688	E	UNKNOWN	Ancient Replanted Woodland
Not shown	1689	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1700	SE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1708	NE	UNKNOWN	Ancient Replanted Woodland
Not shown	1750	NE	UNKNOWN	Ancient Replanted Woodland
Not shown	1795	W	UNKNOWN	Ancient Replanted Woodland
Not shown	1798	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1813	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1842	E	UNKNOWN	Ancient and Semi-Natural Woodland

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
Not shown	1862	E	UNKNOWN	Ancient Replanted Woodland
Not shown	1918	E	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1947	E	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1953	NW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1972	NW	UNKNOWN	Ancient and Semi-Natural Woodland

## 8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

1

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
2	826	S	Warnham	Natural England

## 8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

## 8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

## 8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.



### 8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

---

### 8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

---

### 8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

2

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
3	0	On Site	Existing	DEFRA
Not shown	1987	NE	Existing	DEFRA

---

### 8.14 Records of Green Belt land within 2000m of the study site:

0

Database searched and no data found.

# 9. Natural Hazards Findings

## 9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a **Groundsure Geo Insight**, available from our **website**. The following information has been found:

### 9.1.1 Shrink Swell

What is the maximum Shrink-Swell\* hazard rating identified on the study site? Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

### 9.1.2 Landslides

What is the maximum Landslide\* hazard rating identified on the study site? Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property <div style="text-align: center;"> <span>Ö</span> no significant increase in insurance risk due to natural slope instability problems. </div>

### 9.1.3 Soluble Rocks

What is the maximum Soluble Rocks\* hazard rating identified on the study site? Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

\* This indicates an automatically generated 50m buffer and site.

#### 9.1.4 Compressible Ground

What is the maximum Compressible Ground\* hazard rating identified on the study site?

Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

#### 9.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks\* hazard rating identified on the study site?

Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

#### 9.1.6 Running Sand

What is the maximum Running Sand\*\* hazard rating identified on the study site?

Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

### 9.2 Radon

#### 9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.

\* This indicates an automatically generated 50m buffer and site.

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? ☐ No radon protective measures are necessary.

# 10. Mining

## 10.1 Coal Mining

Are there any coal mining areas within 75m of the study site? No

Database searched and no data found.

## 10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

Distance (m)	Direction	Name	Commodity	Assessment of likelihood
0.0	On Site	Not available	Iron Ore	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

Past underground mine workings may occur. The rock types present in these areas are such that small mineral veins may be present on which it is possible that small scale mining has been undertaken and/or it is possible that limited underground extraction of other materials may have occurred. All such occurrences are likely to be of minor localised extent and infrequent. It should be noted, however, that there is always the possibility of the existence of other sub-surface excavations, such as wells, cess pits, follies, air raid shelters/bunkers and other military structures etc. that could affect surface ground stability but which are outside the scope of this dataset. However, if in a coalfield area you should still consider a Coal Authority mining search for the area of interest.

## 10.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? No

Guidance: No Guidance Required.

# Contact Details

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DX 716176 Mansfield 5  
[www.coal.gov.uk](http://www.coal.gov.uk)



The Coal  
Authority

**Ordnance Survey**  
Adanac Drive, Southampton  
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Tel: 08456 050505



**Local Authority**

Authority: Horsham District Council  
Phone: 01403 215 100  
Web: <http://www.horsham.gov.uk/>  
Address: Park North, North Street, Horsham, West Sussex, RH12 1RL

**Gemapping PLC**

Virginia Villas, High Street, Hartley Witney,  
Hampshire RG27 8NW  
Tel: 01252 845444



Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England who retain the Copyright and Intellectual Property Rights for the data.

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This report has been prepared in accordance with the Groundsure Ltd standard Terms and Conditions of business for work of this nature.



## Standard Terms and Conditions

### 1 Definitions

In these terms and conditions unless the context otherwise requires:

**“Beneficiary”** means the person or entity for whose benefit the Client has obtained the Services.

**“Client”** means the party or parties entering into a Contract with Groundsure.

**“Commercial”** means any building or property which is not Residential.

**“Confidential Information”** means the contents of this Contract and all information received from the Client as a result of, or in connection with, this Contract other than

(i) information which the Client can prove was rightfully in its possession prior to disclosure by Groundsure and

(ii) any information which is in the public domain (other than by virtue of a breach of this Contract).

**“Support Services”** means Support Services provided by Groundsure including, without limitation, interpreting third party and in-house environmental data, providing environmental support advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

**“Contract”** means the contract between Groundsure and the Client for the provision of the Services, and which shall incorporate these terms and conditions, the Order, and the relevant User Guide.

**“Third Party Data Provider”** means any third party providing Third Party Content to Groundsure.

**“Data Reports”** means reports comprising factual data with no accompanying interpretation.

**“Fees”** has the meaning set out in clause 5.1.

**“Groundsure”** means Groundsure Limited, a company registered in England and Wales under number 03421028.

**“Groundsure Materials”** means all materials prepared by Groundsure and provided as part of the Services, including but not limited to Third Party Content, Data Reports, Mapping, and Risk Screening Reports.

**“Intellectual Property”** means any patent, copyright, design rights, trade or service mark, moral rights, data protection rights, know-how or trade mark in each case whether registered or not and including applications for the same or any other rights of a similar nature anywhere in the world.

**“Mapping”** means a map, map data or a combination of historical maps of various ages, time periods and scales.

**“Order”** means an electronic, written or other order form submitted by the Client requesting Services from Groundsure in respect of a specified Site.

**“Ordnance Survey”** means the Secretary of State for Business, Innovation and Skills, acting through Ordnance Survey, Adanac Drive, Southampton, SO16 0AS, UK.

**“Order Website”** means the online platform through which Orders may be placed by the Client and accepted by Groundsure.

**“Report”** means a Risk Screening Report or Data Report for Commercial or Residential property.

**“Residential”** means any building or property used as or intended to be used as a single dwelling.

**“Risk Screening Report”** means a risk screening report comprising factual data with an accompanying interpretation by Groundsure.

**“Services”** means any Report, Mapping and/or Support Services which Groundsure has agreed to provide by accepting an Order pursuant to clause 2.6.

**“Site”** means the area of land in respect of which the Client has requested Groundsure to provide the Services.

**“Third Party Content”** means data, database information or other information which is provided to Groundsure by a Third Party Data Provider.

**“User Guide”** means the user guide, as amended from time to time, available upon request from Groundsure and on the website ([www.Groundsure.com](http://www.Groundsure.com)) and forming part of this Contract.

### 2 Scope of Services, terms and conditions, requests for insurance and quotations

2.1 Groundsure agrees to provide the Services in accordance with the Contract.

2.2 Groundsure shall exercise reasonable skill and care in the provision of the Services.

2.3 Subject to clause 7.3 the Client acknowledges that it has not relied on any statement or representation made by or on behalf of Groundsure which is not set out and expressly agreed in writing in the Contract and all such statements and representations are hereby excluded to the fullest extent permitted by law.

2.4 The Client acknowledges that terms and conditions appearing on a Client’s order form, printed stationery or other communication, or any terms or conditions implied by custom, practice or course of dealing shall be of no effect, and that this Contract shall prevail over all others in relation to the Order.

2.5 If the Client or Beneficiary requests insurance in conjunction with or as a result of the Services, Groundsure shall use reasonable endeavours to recommend such insurance, but makes no warranty that such insurance shall be available from insurers or that it will be offered on reasonable terms. Any insurance purchased by the Client or Beneficiary shall be subject solely to the terms of the policy issued by insurers and Groundsure will have no liability therefor. In addition you acknowledge and agree that Groundsure does not act as an agent or broker for any insurance providers. The Client should take (and ensure that the Beneficiary takes) independent advice to ensure that the insurance policy requested or offered is suitable for its requirements.

2.6 Groundsure's quotations or proposals are valid for a period of 30 days only unless an alternative period of time is explicitly stipulated by Groundsure. Groundsure reserves the right to withdraw any quotation or proposal at any time before an Order is accepted by Groundsure. Groundsure's acceptance of an Order shall be binding only when made in writing and signed by Groundsure's authorised representative or when accepted through the Order Website.

### 3 The Client’s obligations

3.1 The Client shall comply with the terms of this Contract and

(i) procure that the Beneficiary or any third party relying on the Services complies with and acts as if it is bound by the Contract and

(ii) be liable to Groundsure for the acts and omissions of the Beneficiary or any third party relying on the Services as if such acts and omissions were those of the Client.

3.2 The Client shall be solely responsible for ensuring that the Services are appropriate and suitable for its and/or the Beneficiary’s needs.

3.3 The Client shall supply to Groundsure as soon as practicable and without charge all requisite information (and the Client warrants that such information is accurate, complete and appropriate), including without limitation any environmental information relating to the Site and shall give such assistance as Groundsure shall reasonably require in the provision of the Services including, without limitation, access to the Site, facilities and equipment.

3.4 Where the Client’s approval or decision is required to enable Groundsure to carry out work in order to provide the Services, such approval or decision shall be given or procured in reasonable time and so as not to delay or disrupt the performance of the Services.

3.5 Save as expressly permitted by this Contract the Client shall not, and shall procure that the Beneficiary shall not, re-sell, alter, add to, or amend the Groundsure Materials, or use the Groundsure Materials in a manner for which they were not intended. The Client may make the Groundsure Materials available to a third party who is considering acquiring some or all of, or providing funding in relation to, the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.6 The Client is responsible for maintaining the confidentiality of its user name and password if using the Order Website and the Client acknowledges that Groundsure accepts no liability of any kind for any loss or damage suffered by the Client as a consequence of using the Order Website.

### 4 Reliance

4.1 The Client acknowledges that the Services provided by Groundsure consist of the presentation and analysis of Third Party Content and other content and that information obtained from a Third Party Data Provider cannot be guaranteed or warranted by Groundsure to be reliable.

4.2 In respect of Data Reports, Mapping and Risk Screening Reports, the following classes of person and no other are entitled to rely on their contents;

- (i) the Beneficiary,
- (ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate),
- (iv) the first purchaser or first tenant of the Site, and
- (v) the professional advisers and lenders of the first purchaser or tenant of the Site.

4.3 In respect of Support Services, only the Client, Beneficiary and parties expressly named in a Report and no other parties are entitled to rely on its contents.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise expressly agreed in writing, no other person or entity of any kind is entitled to rely on any Services or Report issued or provided by Groundsure. Any party considering such Reports and Services does so at their own risk.

### 5 Fees and Disbursements

5.1 Groundsure shall charge and the Client shall pay fees at the rate and

frequency specified in the written proposal, Order Website or Order acknowledgement form, plus (in the case of Support Services) all proper disbursements incurred by Groundsure. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services (together "Fees").

5.2 The Client shall pay all outstanding Fees to Groundsure in full without deduction, counterclaim or set off within 30 days of the date of Groundsure's invoice or such other period as may be agreed in writing between Groundsure and the Client ("Payment Date"). Interest on late payments will accrue on a daily basis from the Payment Date until the date of payment (whether before or after judgment) at the rate of 8% per annum.

5.3 The Client shall be deemed to have agreed the amount of any invoice unless an objection is made in writing within 28 days of the date of the invoice. As soon as reasonably practicable after being notified of an objection, without prejudice to clause 5.2 a member of Groundsure's management team will contact the Client and the parties shall then use all reasonable endeavours to resolve the dispute within 15 days.

## 6 Intellectual Property and Confidentiality

### 6.1 Subject to

(i) full payment of all relevant Fees and

(ii) compliance with this Contract, the Client is granted (and is permitted to sub-licence to the Beneficiary) a royalty-free, worldwide, non-assignable and (save to the extent set out in this Contract) non-transferable licence to make use of the Groundsure Materials.

6.2 All Intellectual Property in the Groundsure Materials are and shall remain owned by Groundsure or Groundsure's licensors (including without limitation the Third Party Data Providers) the Client acknowledges, and shall procure acknowledgement by the Beneficiary of, such ownership. Nothing in this Contract purports to transfer or assign any rights to the Client or the Beneficiary in respect of such Intellectual Property.

6.3 Third Party Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client shall, and shall procure that any recipients of the Groundsure Materials shall:

(i) not remove, suppress or modify any trade mark, copyright or other proprietary marking belonging to Groundsure or any third party from the Services;

(ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;

(iii) not create any product or report which is derived directly or indirectly from the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);

(iv) not combine the Services with or incorporate such Services into any other information data or service;

(v) not reformat or otherwise change (whether by modification, addition or enhancement), the Services (save that those acting for the Beneficiary in a professional capacity shall not be in breach of this clause 6.4(v) where such reformatting is in the normal course of providing advice based upon the Services);

(vi) where a Report and/or Mapping contains material belonging to Ordnance Survey, acknowledge and agree that such content is protected by Crown Copyright and shall not use such content for any purpose outside of receiving the Services; and

(vii) not copy in whole or in part by any means any map prints or run-on copies containing content belonging to Ordnance Survey (other than that contained within Ordnance Survey's OS Street Map) without first being in possession of a valid Paper Map Copying Licence from Ordnance Survey,

6.5 Notwithstanding clause 6.4, the Client may make reasonable use of the Groundsure Materials in order to advise the Beneficiary in a professional capacity. However, Groundsure shall have no liability in respect of any advice, opinion or report given or provided to Beneficiaries by the Client.

6.6 The Client shall procure that any person to whom the Services are made available shall notify Groundsure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.

## 7.Liability: Particular Attention Should Be Paid To This Clause

7.1 This Clause 7 sets out the entire liability of Groundsure, including any liability for the acts or omissions of its employees, agents, consultants, subcontractors and Third Party Content, in respect of:

(i) any breach of contract, including any deliberate breach of the Contract by Groundsure or its employees, agents or

subcontractors;

(ii) any use made of the Reports, Services, Materials or any part of them; and

(iii) any representation, statement or tortious act or omission (including negligence) arising under or in connection with the Contract.

7.2 All warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from the Contract.

7.3 Nothing in the Contract limits or excludes the liability of the Supplier for death or personal injury resulting from negligence, or for any damage or liability incurred by the Client or Beneficiary as a result of fraud or fraudulent misrepresentation.

7.4 Groundsure shall not be liable for

(i) loss of profits;

(ii) loss of business;

(iii) depletion of goodwill and/or similar losses;

(iv) loss of anticipated savings;

(v) loss of goods;

(vi) loss of contract;

(vii) loss of use;

(viii) loss or corruption of data or information;

(ix) business interruption;

(x) any kind of special, indirect, consequential or pure economic loss, costs, damages, charges or expenses;

(xi) loss or damage that arise as a result of the use of all or part of the Groundsure Materials in breach of the Contract;

(xii) loss or damage arising as a result of any error, omission or inaccuracy in any part of the Groundsure Materials where such error, omission or inaccuracy is caused by any Third Party Content or any reasonable interpretation of Third Party Content;

(xiii) loss or damage to a computer, software, modem, telephone or other property; and

(xiv) loss or damage caused by a delay or loss of use of Groundsure's internet ordering service.

7.5 Groundsure's total liability in relation to or under the Contract shall be limited to £10 million for any claim or claims.

7.6 Groundsure shall procure that the Beneficiary shall be bound by limitations and exclusions of liability in favour of Groundsure which accord with those detailed in clauses 7.4 and 7.5 (subject to clause 7.3) in respect of all claims which the Beneficiary may bring against Groundsure in relation to the Services or other matters arising pursuant to the Contract.

## 8 Groundsure's right to suspend or terminate

8.1 If Groundsure reasonably believes that the Client or Beneficiary has not provided the information or assistance required to enable the proper provision of the Services, Groundsure shall be entitled to suspend all further performance of the Services until such time as any such deficiency has been made good.

8.2 Groundsure shall be entitled to terminate the Contract immediately on written notice in the event that:

(i) the Client fails to pay any sum due to Groundsure within 30 days of the Payment Date; or

(ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an administration order made against it or if a receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or

(iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or

(iv) the Client or the Beneficiary breaches any term of the Contract (including, but not limited to, the obligations in clause 4) which is incapable of remedy or if remediable, is not remedied within five days of notice of the breach.

## 9. Client's Right to Terminate and Suspend

9.1 Subject to clause 10.1, the Client may at any time upon written notice terminate or suspend the provision of all or any of the Services.

9.2 In any event, where the Client is a consumer (and not a business) he/she hereby expressly acknowledges and agrees that:

(i) the supply of Services under this Contract (and therefore the performance of this Contract) commences immediately upon Groundsure's acceptance of the Order; and

(ii) the Reports and/or Mapping provided under this Contract are

- (a) supplied to the Client's specification(s) and in any event
- (b) by their nature cannot be returned.

## 10 Consequences of Withdrawal, Termination or Suspension

10.1 Upon termination of the Contract:

(i) Groundsure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client and/or Beneficiary any property of the Client and/or Beneficiary in Groundsure's possession or control; and

(ii) the Client shall pay to Groundsure all and any Fees payable in respect of the performance of the Services up to the date of termination or suspension. In respect of any Support Services provided, the Client shall also pay Groundsure any additional costs incurred in relation to the termination or suspension of the Contract.

## 11 Anti-Bribery

11.1 The Client warrants that it shall:

(i) comply with all applicable laws, statutes and regulations relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010;

(ii) comply with such of Groundsure's anti-bribery and anti-corruption policies as are notified to the Client from time to time; and

(iii) promptly report to Groundsure any request or demand for any undue financial or other advantage of any kind received by or on behalf of the Client in connection with the performance of this Contract.

11.2 Breach of this Clause 11 shall be deemed a material breach of this Contract.

## 12 General

12.1 The Mapping contained in the Services is protected by Crown copyright and must not be used for any purpose other than as part of the Services or as specifically provided in the Contract.

12.2 The Client shall be permitted to make one copy only of each Report or Mapping Order. Thereafter the Client shall be entitled to make unlimited copies of the Report or Mapping Order only in accordance with an Ordnance Survey paper map copy license available through Groundsure.

12.3 Groundsure reserves the right to amend or vary this Contract. No amendment or variation to this Contract shall be valid unless signed by an authorised representative of Groundsure.

12.4 No failure on the part of Groundsure to exercise, and no delay in exercising, any right, power or provision under this Contract shall operate as a waiver thereof.

12.5 Save as expressly provided in this Contract, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.

12.6 The Secretary of State for Business, Innovation and Skills ("BIS") or BIS' successor body, as the case may be, acting through Ordnance Survey may enforce a breach of clause 6.4(vi) and clause 6.4(vii) of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.

12.7 Groundsure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:

(i) the Client or Beneficiary's failure to provide facilities, access or information;

(ii) fire, storm, flood, tempest or epidemic;

(iii) Acts of God or the public enemy;

(iv) riot, civil commotion or war;

(v) strikes, labour disputes or industrial action;

(vi) acts or regulations of any governmental or other agency;

(vii) suspension or delay of services at public registries by Third Party Data Providers;

(viii) changes in law; or

(ix) any other reason beyond Groundsure's reasonable control.

In the event that Groundsure is prevented from performing the Services (or any part thereof) in accordance with this clause 12.6 for a period of not less than 30 days then Groundsure shall be entitled to terminate this Contract immediately on written notice to the Client.

12.8 Any notice provided shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.

12.9 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email (save to the extent such day is not a working day where it shall be deemed to have been delivered on the next working day) and on the second working day after the day of posting if sent by first class post.

12.10 The Contract constitutes the entire agreement between the parties and shall supersede all previous arrangements between the parties relating to the subject matter hereof.

12.11 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.

12.12 This Contract shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with this Contract shall be subject to the exclusive jurisdiction of the English courts.

12.13 Groundsure is an executive member of the Council of Property Search Organisation (CoPSO) and has signed up to the Search Code administered by the Property Codes Compliance Board (PCCB). All Risk Screening Reports shall be supplied in accordance with the provisions of the Search Code.

12.14 If the Client or Beneficiary has a complaint about the Services, written notice should be given to the Compliance Officer at Groundsure who will respond in a timely manner. In the event you are not satisfied with Groundsure's complaints handling process or you are unable to resolve the complaint, at your discretion you may refer the complaint to The Property Ombudsman Scheme at the following URL/email: website [www.tpos.co.uk](http://www.tpos.co.uk) or email: [admin@tpos.co.uk](mailto:admin@tpos.co.uk)

12.15 The Client agrees that it shall, and shall procure that each Beneficiary shall, treat in confidence all Confidential Information and shall not, and shall procure that each Beneficiary shall not (i) disclose any Confidential Information to any third party other than in accordance with the terms of this Contract; and (ii) use Confidential Information for a purpose other than the exercise of its rights and obligations under this Contract. Subject to clause 6.6, nothing shall prevent the Client or any Beneficiary from disclosing Confidential Information to the extent required by law. © Groundsure Limited June 2013

### Previous Investigation Reports

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## INTRODUCTION

- 13.1 This Section considers the environmental sensitivity and setting of the study site. SLR has undertaken a desk-based study of the site, supplemented by a site walkover survey, purchased environmental data and existing environmental reports for the site.
- 13.2 The information obtained from this assessment has been used to develop a preliminary conceptual model of potential risks to human and environmental receptors. This conceptual model examines the potential *contaminant-pathway-receptor* linkages in relation to identified or potential contamination issues at the Site.

## Objectives

- 13.3 The objective of this Preliminary Land Quality Risk Assessment (PLQRA) is to establish if there is any evidence (from a site inspection and review of existing data) of significant subsurface contamination from past or present activities on and adjacent to the Site which could give rise to unacceptable risks given the proposed redevelopment of the site.

## Scope of Works

- 13.4 The scope of works presented herein comprised the following:
- a site walk over inspection to identify and record on and off site land uses, potential areas of concern with respect to soil and groundwater contamination and potential contaminants of concern;
  - a review of geological and hydrogeological data for the property;
  - analysis of historical maps to establish the history of the property as well as past on and off site potentially contaminative activities;
  - a review of a previous Phase 1 Environmental Assessment for the Site;
  - collection and analysis of environmental data from a proprietary database; and
  - reporting.

## Proposed Development

- 13.5 The proposed development is for a Waste Transfer Facility (WTF) to accept construction, commercial, industrial and domestic waste, recycling and processing inert wood and green waste, as well as transfer and bailing operations.

## Data Sources

- 13.6 This report has been produced following consultation with the sources of information summarised in Table 13-1.

**Table 13-1  
Information Sources**

Information Type	Source
General topography and Site setting	Google Earth  www.streetmap.com
Site and background information	GroundSure Historical Ordnance Survey Map Extracts EMS-228947_303749, purchased 28 <sup>th</sup> November 2013 (Appendix A).  GroundSure GeolInsight Report, EMS-228947_303750, purchased 28 <sup>th</sup> November 2013 (Appendix B).  GroundSure EnviroInsight Report, EMS_228947_303751, purchased 28 <sup>th</sup> November 2013 (Appendix C).
Hydrogeology and Geology	Environment Agency (EA) website.  Information supplied by the British Geological Survey (BGS).
Proposed Layout	Please see Volume 1 Drawings
Previous Reports	Phase 1 Desk Study, Former Wealdon Brockworks, Langhurstwood Road, Horsham, West Sussex. Scott Wilson, December 2009.

## SITE DETAILS, SETTING AND HISTORY

### Site Description

- 13.7 Table 13-2 summarises the property details. Information has been derived from Ordnance Survey (OS) mapping and a Site walkover inspection undertaken on 22<sup>nd</sup> November 2013. Selected photographs of the Site are provided in Appendix D.

**Table13- 2:  
Site Details**

Address	Site Hb, The Wealden Brickworks, located off Langhurstwood Road, Horsham, East Sussex, RH12 4QD please see Site Location Plan Volume 1
Site Location	The Site is currently accessed from Langhurstwood Road and is located approximately 4.0km north of Horsham and is situated in a mixed commercial and agricultural setting.
Recent Site Activities	The site comprises a former brickworks. Since closure of the brickworks the site has not been used on a commercial basis and the main building on site has fallen into disrepair.
Site Description	Approximately a third of the area of the site is occupied by the former brickworks building. This is located on the west boundary of the site and comprises a steel framed, single storey building with mezzanine floors/gantries in some areas.  The building is now redundant, however previously housed clay preparation plant, a drying area, gas kilns and various production areas.  The building was not accessed during the site walkover due to risk of falling



debris, however from the outside the building appeared empty and the concrete slab in reasonable condition.

The roof and external walls of the building are believed to be constructed from asbestos containing materials. These are in a very poor condition and fragmented asbestos sheet was noted both within the buildings and around much of the exterior of the building on the surface of the site.

External areas of the site comprise of concrete and asphalt hardstandings. These are in poor condition in many places. Several former structures (probably small buildings) appear to have been removed from the site.

A small structure believed to be a former canteen is located to the rear (north) of the site. The roof of this structure may include asbestos containing materials.

A former security hut is located in the south west corner of the site. This structure also appeared to include asbestos containing materials.

Several small stockpiles of soil and construction waste were noted around the site, predominantly along the southern boundary of the site near the former brickworks building. Other materials (bricks and other construction materials) are located in the south west corner of the site near the security building.

Evidence of the presence of contamination or contaminative activities were largely limited to fragmented asbestos. This is located in significant amounts in some areas of the site, predominantly along site the brickworks building where it has fallen to the floor.

Empty containers of chemicals and lubricants were located along the west flank of the brickworks building although no evidence of ground contamination was observed.

Above Ground and Underground Fuel Storage Tanks	None observed during the site visit but may have been present historically.	
Surrounding Land Use	North	Former Brickworks activities, two ponds associated with the former Brickworks and an area in which a building has recently been demolished. Slightly further north are both active and former landfill.
	West	Railway line and open land.
	South	Wienerberger Brickworks.
	East	A mechanical and biological treatment (MBT) plant operated by Biffa. A pond is also located to the east of the site.

## Site Setting

- 13.8 A summary of the main physical features of the Site are given in Table 13-3. Information has been derived from a variety of sources including the GroundSure reports included as Appendices B and C.

**Table 13-3:  
Summary of Physical Site Features**

<b>Geography and Geology</b>	Gradient	The majority of the site is generally level with a slight fall to the south.
	Elevation	The yard area has an elevation of approximately 57m AOD
	Made Ground	An area of made ground (worked ground (undivided)) is shown in the north east corner of the site.
	Superficial Drift Geology	Superficial deposits are not recorded beneath the Site. Although an area of Alluvium is shown 123m west and Arun Terrace Deposits shown 414m and 420m south.
	Solid Geology	The solid geology beneath the whole Site is recorded as the Weald Clay Formation. Beneath the Weald Clay is the Tunbridge Wells Sand.
	Radon Gas	The Site is classified as being in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level, but no radon protective measures are considered necessary.
	Mining, and Ground Stability Hazards	<p>The whole of the site is indicated as Historic Surface Ground Workings associated with the brick works between 1914 and 1956.</p> <p>Current ground workings are listed for Site Hb, The Wealden Brickworks for the surface mineral workings of clay and shale. These workings are recorded as ceased.</p> <p>No historical underground workings are recorded on or close to the site. Non-coal mining related activities (Iron Ore) are indicated as being highly unlikely on site</p> <p>GroundSure suggests there are low to negligible ground stability hazards from shrinking / swelling clay, landslides, soluble rocks, collapsible rocks and running sands. There is moderate potential for compressible ground.</p>
<b>Hydrology</b>	Surface Water and River Network	<p>Two small ponds associated with the former brickworks are located immediately off-site to the north. An additionally pond is located to the east of the site, directly south of the Biffa-operated MBT plant.</p> <p>The nearest river is indicated as a tertiary river 88m west of the site. Boldings Brook is also located 272m west of the site.</p>
	Flood Risk	The Site lies outside areas indicated to be Zone 2 & 3 Floodplains.
	Surface Water Abstractions	There is one surface water abstraction within 1km of the Site. This is located 39m south for general use relating to secondary category (medium loss). The nearest recorded surface water is 88m to the west of the site.

Hydrogeology	Aquifer	The Weald Clay formation is generally classified as unproductive in terms of groundwater. However, a more permeable layer within this which crosses 66m to the south of the site is designated as a Secondary A Aquifer. Depth to groundwater within the deeper Tunbridge Wells Sands is likely to be in the region of 50mAoD.
	Groundwater Abstractions	There are no groundwater or potable groundwater abstractions within 2km of the Site.
	Source Protection Zones	There are no groundwater source protection zones within 500m of the Site.

## Environmental Search Data

13.9 The Environment Agency web site has been consulted with regard to groundwater abstractions, Source Protection Zones and former landfill sites. The GroundSure EnviroInsight data was also reviewed to gain publicly available environmental data for the Site and its immediate vicinity.

13.10 A copy of the GroundSure information obtained by SLR is contained in Appendices B and C and a summary of the search information is provided below:

- Sites Determined as Contaminated Land – there are no Sites within 500m determined as Contaminated Land under Part 2A EPA 1990;
- Discharge consents – there are twenty eight consents within 500m of the Site, of which thirteen are now revoked. One is located on site (historic only) for sewage discharges;
- Radioactive Substances Licences – there are no licences within 500m of the Site;
- EA recorded pollution incidents – there are no records on the National Incidents Recording System within 500m of the Site;
- Landfill sites – There are two documented landfill sites within 500m of the Site. The closest of which is located 133m north of the Site, at Warnham Brickworks. Brookhurst Woods landfill also lies north of the site and is currently operational;
- Licensed waste management/treatment facilities – There are seven records of operational licensed waste management sites within 500m of the Site. The closest active license is 298m to the north which is related to Cleanaway in relation to leachate treatment. An MBT plant, operated by Biffa, forms the east boundary of the site.
- Ecological Designations – The site is located within a nitrate vulnerable zone (NVZ). A site of special scientific interest (SSSI) is located 0.6km north east of the site at Warnham.

## Review of Previous Environmental Report

### Phase 1 Desk Study

- 13.11 A Phase 1 Desk Study of the Wealden Brickworks was undertaken in 2010 by Scott Wilson on behalf of Biffa Waste Services. The report also included a review of a previous ground investigation undertaken by Capita Symonds in 2005. SLR has not reviewed the latter, however a summary from the Scott Wilson is provided below.
- 13.12 In 2005 18 soil samples were tested from seven exploratory trial pits. The laboratory analysis undertaken included sulphate, sulphur, organic carbon, PAHs, petroleum hydrocarbons and heavy metals.
- 13.13 The Capita Symonds report identified three areas in which contamination was considered elevated. Two of these were within the study area considered by this report and one area was to the north west of the site.
- 13.14 A strip of land in the north east corner of the site was noted to contain elevated concentrations of petroleum hydrocarbons and this was attributed to either imported Made ground or an on-site spillage.
- 13.15 An area of centre of the site was also identified to contain elevated concentrations of petroleum hydrocarbons in soil.
- 13.16 Groundwater samples collected from boreholes did not indicate elevated contaminant concentrations. Slightly elevated concentrations of carbon dioxide were detected.
- 13.17 The Scott Wilson Desk Study recommended that a further phase of site investigation and monitoring was undertaken at the site. SLR is not aware if that occurred at a later date.

### Site History

- 13.18 This section presents a summary of the Site's history from a review of OS map extracts. The age and general type of activity and land use can often be determined from the type and layout of structures depicted on OS maps. However, specific elements of site operations cannot normally be determined from such extracts. Large scale (1:2,500 and 1:10,560) historical map extracts were reviewed for selected years between 1870 and 2012. A summary of the findings is given in Table 13-4, and the OS maps provided by GroundSure are included in Appendix A.

**Table 13-4:  
Site History Summary**

Map Dates	Description
1876-1878	<b>On-site:</b> The Site comprises undeveloped agricultural land with the railway land forming the western boundary. Langhurstwood Lane forms the eastern

Map Dates	Description
	boundary. <b>Off-site:</b> Other than the railway line (London Brighton and South Coast Railway) immediately to the east the surrounding land use is predominantly mixed agricultural and woodland. Warnham Station is located approximately 200m to the south of the Site. Car farm is located approximately 400m north west with Sharps Farm located located approximately 300m south west of the Site.
1895-1897	<b>On-site:</b> No significant changes on Site. <b>Off-site:</b> Warnham Brickworks is now shown approximately 100m to the south west of the Site. There are further farm and residential developments within the vicinity of the Site.
1909-1914	<b>On-site:</b> There is now evidence of earthworks and associated brickworks buildings (kilns) on Site with a tramway running through the north east corner. Tanks and an engine shed are shown in the southern half of the Site. <b>Off-site:</b> Further buildings associated with the brickworks are immediately to the north of the site where a small pond is also depicted. There are no significant changes in the immediate vicinity of the Site, further agricultural and residential development is apparent.
1932-1938	<b>On-site:</b> The maps for this time do not show the Site <b>Off-site:</b> There are no significant changes south of the Site, the area to the north and immediate east and west is not shown.
1955	<b>On-site:</b> The maps for this time do not show the Site <b>Off-site:</b> The maps for this time do not show any area within approximately 600m Site
1961	<b>On-site:</b> The site is shown to be increasingly developed with further buildings constructed on Site in relation to the Brickworks operations. Extensive excavations are shown from the north eastern tip of the site extending approximately 600m to the north. <b>Off-site:</b> Immediately off-site to the south a small pond is shown to the north of the Site is shown to extend along the western boundary of the excavation for approximately 250m. The site comprises further buildings associated with the Brickworks. The wider surrounding area remains largely unchanged, another works site is shown approximately 400m to the south west.
1966	<b>On-site:</b> No significant changes. <b>Off-site:</b> No significant changes.
1974-1979	<b>On-site:</b> The site itself is shown to have two new kilns added with a conveyor. Two previous buildings have been demolished with a single new building in their place. <b>Off-site:</b> Immediately off site two new ponds and a tank system has been constructed in the excavation. To the south a large unspecified industrial building has been erected. Approximately 200m to the south west of the site is now shown as a sewage works. Further development has been carried out in the surrounding with what appears to be three residential properties to the east of the Site on Langhurstwood Lane.
1989-1992	<b>On-site:</b> The multiple kiln buildings on the site have been converted to one building, there is now just two other small buildings on the Site. <b>Off-site:</b> No significant changes
2002	<b>On-site:</b> No significant changes. <b>Off-site:</b> No significant changes.
2012	<b>On-site:</b> No significant changes.

Map Dates	Description
	<b>Off-site:</b> The area to the north of the site in the former brickworks excavation is now shown as Brookhurstwood Landfill Site.

- 13.19 In summary, the Site was undeveloped until around 1910 at which time the Brickworks was constructed. The site has been subject to some excavation/quarrying and has included a number of potential contaminative activities including rail workings, tanks and Brickworks buildings. The most recent structural changes to the site appear to have taken place between 1989 and 1992. Since this time the site has become derelict and is now disused. Several former features have been removed from the site such that currently only the main Brickworks building and two smaller buildings (a security building and a former canteen) remain.
- 13.20 Potentially contaminative activities/features of the site include former Brickworks operations, the presence of storage tanks, use and storage of materials and chemicals, railway sidings and the potential for Made Ground to be present as a result of historic excavations and the re-working of site contours.
- 13.21 The area to the south of the site has also historically been associated with a Brickworks while the area to the north of the site has been subjected to landfilling activities.

## OUTLINE CONCEPTUAL MODEL AND PRELIMINARY CONCEPTUAL MODEL

### Land Quality Risk Assessment

- 13.22 The normal procedure for assessing land dictates that potential contaminants, pathways and receptors should be considered within the context of pollutant linkages. An evaluation of the risks associated with each linkage should drive decisions regarding the status of the land as contaminated, uncontaminated or requiring further investigation.
- 13.23 The information summarised in the previous sections has been used to identify the likely contaminant sources, receptors and pathways present at the Site. The elements of the conceptual model built in the table that follows, are used in subsequent sections to consider the potential pollutant linkages, their significance and acceptability.
- 13.24 The 2012<sup>1</sup> statutory guidance for Part 2A of the Environmental Protection Act 1990 (EPA 1990), defines a contaminant, a pathway and a receptor as follows:

<sup>1</sup> April 2012 - publication of the latest Contaminated Land Statutory Guidance by Defra.

- **Contaminant:** “a substance which is in, on or under the land and which has the potential to cause harm to a relevant receptor, or to cause significant pollution of controlled waters”;
- **Pathway:** “a route by which a receptor is or might be affected by the contaminant”, and
- **Receptor:** “something that could be adversely affected by a contaminant, for example a person, an organism, an ecosystem, property, or controlled waters”.

13.25 The term “contaminant linkage” means the relationship between a contaminant, a pathway and a receptor. All three elements of a contaminant linkage must exist in relation to particular land before the land can be considered potentially to be contaminated land under Part2A, including evidence of the actual presence of contaminants. The term “significant contaminant linkage”, as used in the Guidance, means a contaminant linkage which gives rise to a level of risk sufficient to justify a piece of land being determined as contaminated land. The term “significant contaminant” means the contaminant which forms part of a significant contaminant linkage.

13.26 When considering the contaminants, receptors and pathways relevant to this Site, SLR has been mindful of proposed future use of the site for waste management purposes. This is relevant since certain receptor groups (such as children and residential receptors) and risk pathways (such as contaminant uptake through vegetable growth and consumption) will not be present.

## Preliminary Conceptual Site Model

13.27 The information summarised in the previous sections has been used to identify the likely contaminant sources, receptors and pathways present at the Site. The elements of the conceptual model built into Outline Conceptual Site Model Table 13-5 has been used to consider the potential pollutant linkages (PPL), these appear to be:

### **Harm to Human Health**

**PPL1** Site workers / visitors exposed to contaminants within shallow soils/Made Ground

**PPL2** Neighbours exposed to contaminants within shallow soil/Made Ground

### **Damage to Property**

**PPL3** Buildings / Services exposed to contaminants within the soil

**PPL4** Landscape Planting exposed to contaminants within the soil

**PPL5** Migration/accumulation of land/landfill gases in site buildings

### **Pollution of Controlled Waters**

**PPL6** Controlled Waters exposed to contaminants in soil/groundwater

**Table 13-5**  
**Conceptual Site Model**

Source / AOC <sup>2</sup>	Conceptualisation
---------------------------	-------------------

<sup>2</sup> AOC – Area of Concern



Contaminated Soils/Groundwater	High likelihood of the presence of Made Ground at the site. Potential for a range of contaminants to be present including hydrocarbons and heavy metals. Previous site investigation identified hydrocarbon contamination in soils in two areas of the site.
Solid Phase contaminants including:	Heavy metals within any Made Ground.  Asbestos is present within the construction of the buildings currently located at the site. Numerous areas of the site were observed to be impacted with broken asbestos cement sheet.
Sorbed phase – contaminants sorbed onto soil particles	Potential for a range of organic contaminants to be present including PAHs and hydrocarbons. Petroleum hydrocarbons identified in soils during a previous site investigation.
Free phase – contaminants present in soil and /or porosity as non-aqueous phase liquid (NAPL)	Some potential for hydrocarbons to be present although no free phase hydrocarbons have been reported in previous site investigation.
Gas and vapour phase – contaminants present as gas or vapour in the soil	Hydrocarbons such as diesel, petrol, solvents and polycyclic aromatic hydrocarbons (PAHs). Vapours may be released from volatile hydrocarbons deposited as a result historical operations.  Landfill gas may be generated from degradable materials if present in Made Ground and may also migrate to the site from off-site sources, such as the landfill sites to the north.
Dissolved phase – contaminants dissolved in groundwater	Potential to be present although there is no evidence of contamination from previous site investigation.
Receptor	Description
<b>Future site users</b>	Workers or visitors within the Site are likely to be at reduced risk from contact with contaminated soil due to the predominance of hardstanding under the proposed development. However areas of soft landscaping could result in localised exposure and there is potential for accumulation of hazardous vapours/gases within the proposed buildings. Therefore human beings are considered to be present as a receptor at the Site.  Construction workers and ground workers who may be involved with the project during and post construction could be at risk from contaminated shallow soils/Made Ground, especially in relation to the asbestos contamination observed.
<b>Neighbours</b>	The nearest residential receptors are located approximately 302m south east of the site. Immediate neighbours are commercial/industrial in nature and therefore less sensitive.
<b>Property (Buildings / Services)</b>	The existing Brickworks building is proposed to be retained on site and refurbished.  There is a potential risk of attack on buried concrete structures by contaminants that may be present in the underlying soils for any new structures although this is likely to be simply managed.

<b>Property (Flora / Fauna)</b>	Commercial development with no gardens areas. No crops or produce will be grown on site and no livestock will be kept. Landscaping of the southern and eastern boundaries in particular will form part of the proposed development. This will comprise grassed bunds, trees and shrubs.
<b>Groundwater</b>	The Weald Clay is an unproductive strata and has been proven to a thickness of at least 12m on site in previous site investigation. Groundwater is present at a depth of around 50m AOD in the deeper Tunbridge Wells Sand aquifer and no contamination was recorded during previous site investigation. As a receptor groundwater is therefore of low sensitivity at the site.
<b>Surface waters</b>	Several ponds are located within a short distance of the site. These are associated with former quarrying/brickworks activity.
<b>Ecosystems</b>	No ecological receptors specifically identified.
<b>Potential Pollutant Linkages by Receptor</b>	<b>Assessment</b>
<b>PPL1</b> Site workers / visitors exposed to contaminants within shallow soils/Made Ground	Long term risks are reduced on the basis that the majority of the site will feature hard cover. There are significant soft landscaped areas however and short term risks during construction are present, notably due to asbestos contamination.  Hydrocarbon contamination has been identified during previous site investigation.
<b>PPL2</b> Neighbours exposed to contaminants within shallow soil/Made Ground	Likely to be limited to the construction phase due to the creation of dust. Disturbance of asbestos could result in asbestos fibre release over the boundary of the site.
<b>PPL3</b> Buildings / Services exposed to contaminants within the soil	There is the potential for damage to buildings and services from contamination (e.g. hydrocarbons) present in shallow soil. We note however that the current building will be retained.
<b>PPL4</b> Landscape Planting exposed to contaminants within the soil	Plausible pollution linkage, but only if sensitive species are proposed.
<b>PPL5</b> Migration/accumulation of land/landfill gases in site buildings	Plausible pollution linkage given the likely presence of Made Ground at the site and since active and closed landfill sites are located to the north of the site.
<b>PPL6</b> Controlled Waters exposed to contaminants in soil	Theoretical risk to surface waters and groundwater although in practice the presence of low permeability clay beneath the site reduces risks significantly.

## Preliminary Risk Assessment

- 13.28 In the context of Part 2A inspection, a preliminary risk assessment must focus on whether the land meets the definition of Contaminated Land as laid out the Environmental Protection Act 1990 (EPA 1990) and its statutory

guidance. Within Part 2A of the EPA 1990, Contaminated Land is defined as:

*“any land which appears to the local authority in whose area it is situated to be in such condition by reason of substances in, on or under the land, that:*

*-significant harm is being caused or there is a significant possibility of significant harm being caused; or  
-significant pollution of Controlled Waters is being caused, or there is a significant possibility of such pollution being caused”.*

13.29 When assessing the significance of the identified pollutant linkages against the definition of contaminated land one must also consider the information needed to complete the assessment to the required level of confidence. In this case, the types of uncertainties that affect the evaluation of the Site include, but may not be limited to:

- Lack of evidence to support suspected cases of harm;
- Lack of evidence to support suspected cases of pollution;
- Insufficient knowledge of any contaminant location and distribution;
- Insufficient characterisation of ground conditions;
- Insufficient knowledge of land use and exposure characteristics; and
- Insufficient information to validate pathways.

### Potentially Unacceptable Risks

13.30 Having considered the above criteria including the uncertainties and gaps in the conceptual model, it is apparent that the Preliminary Land Quality Risk Assessment (using desk study information, a site inspection and some factual information from another consultant) has provided a reasonable level of confidence that the subject Site and immediate surrounds have got a history which includes potentially significant sources of contaminants including but not limited to hydrocarbons and asbestos. Potential risks have also been identified with respect to landfill gases.

13.31 It is recommended that further assessment is undertaken at the site to refine the initial conceptual model discussed in this report.

## SUMMARY AND CONCLUSIONS

### Conclusions

- 13.32 The site comprises a former Brickworks, now derelict. Three buildings are present on site, the largest being the former Brickworks building itself which housed processing areas, kilns etc. This building is in very poor condition and broken asbestos containing materials were observed within and around the building. No formal asbestos survey has been undertaken.
- 13.33 External areas of the site comprises concrete and asphalt slabs in moderate to poor condition. Several areas of the site are un-surfaced or appear to be the location of former structures.
- 13.34 The site is proposed for redevelopment as a Waste Transfer Facility to accept construction, commercial, industrial and domestic waste, recycling and processing inert wood and green waste, as well as transfer and bailing operations.
- 13.35 The site is located in a predominantly industrial area. The site is bound to the south by an additional Brickworks, to the north by active and former landfills, to the east by an MBT plant and to the west by a railway line. Residential receptors are few and at a distance in excess of 0.3km from the site.
- 13.36 No specific contaminative processes or activities were observed during the site visit other than the asbestos containing materials discussed above. Empty chemical and lubricant containers were noted, but no evidence of ground contamination. No above ground tanks were observed at the site although they are likely to have been present historically.
- 13.37 As a result of previous activities at the site there is considered potential for the presence of contaminated Made Ground. A site investigation has previously been undertaken at the site. The associated report was not available for SLR to review but the investigation is understood to have identified hydrocarbon contamination in two areas of the site. The significance of this contamination is not known since no risk assessment has been reviewed.
- 13.38 Monitoring of groundwater did not indicate elevated contaminant concentrations and we note that groundwater is located at some considerable depth, below low permeability Weald Clay.
- 13.39 Six potential pollutant linkages have been identified for the site and that may require further assessment:

#### ***Harm to Human Health***

**PPL1** Site workers / visitors exposed to contaminants within shallow soils/Made Ground

**PPL2** Neighbours exposed to contaminants within shallow soil/Made Ground

### ***Damage to Property***

**PPL3** Buildings / Services exposed to contaminants within the soil

**PPL4** Landscape Planting exposed to contaminants within the soil

**PPL5** Migration/accumulation of land/landfill gases in site buildings

### ***Pollution of Controlled Waters***

**PPL6** Controlled Waters exposed to contaminants in soil/groundwater

## **Recommendations**

- 13.40 SLR considers that the Site is likely to be suitable for the proposed use. This desk-based study alone serves to demonstrate that land quality issues are not likely to represent a significant financial constraint to the development. On successful grant of Planning Permission however, and prior to commencement of the development, it is recommended that further assessment is undertaken.
- 13.41 As a minimum it is recommended that the 2005 site investigation results are identified and re-assessed in the context of the proposed development using Generic Quantitative Risk Assessment. These results should be supplemented with gas and ground monitoring from existing wells at the site, if still serviceable.
- 13.42 Depending on the extent to which the above information is available and existing wells usable for monitoring further intrusive site investigation may be required. In either case it is also recommended that a “watching brief” is maintained during the development of the site such that, should unexpected contamination be identified during sub-surface works, the services of a qualified consultant are retained and risks from contaminated soils re-assessed.



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**PROJECT No. RML 5687**

**SITE INVESTIGATION  
AT**

**LANGERHURSTWOOD ROAD, WARNHAM, HORSHAM,  
WEST SUSSEX**

**ON BEHALF OF  
BRITANIACREST RECYCLING LIMITED**



**Risk Management Limited**  
Registered Office: 344 Croydon Road, Beckenham, Kent BR3 4EX Registered in England 3752505

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- 2.0 FIELDWORK
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- 4.0 LABORATORY TESTING
- 5.0 DISCUSSION AND RECOMMENDATIONS

## **APPENDICES**

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- *Dynamic Probe Test Record Sheet (P1)*
- *Trial Pit Records (TP1a, TP1b & TP2-TP4)*
- *Trial Pit Photograph Sheets*
- *Laboratory Test Results*
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- *Proposed Site Layout, Drawing No. 003.1*
- *Sketch Fieldwork Location Plan, Drawing No. RML 5687/1*



## **1.0 INTRODUCTION & SCOPE OF WORKS**

- 1.1 This report has been prepared by Risk Management Limited to the instructions of the Client for the work, Britaniacrest Recycling Limited under cover of their Purchase Order No. CAF/11402.
- 1.2 The current site was The Wealden Brick Works, Langerhurstwood Road, Warnham, Horsham, West Sussex.
- 1.3 It is understood that the proposed development will comprise a new Material Recycling Facility and the currently proposed plan layout of this is indicated on the appended Drawing No. 003.1.
- 1.4 The current *Intrusive* site investigation was commissioned to provide information on the sub-soil conditions at this site, together with laboratory testing, for subsequent foundation design and includes a land-borne gas monitoring survey.
- 1.5 This report presents the work carried out and discusses the findings.

## **2.0 FIELDWORK**

- 2.1 All fieldwork was generally executed in accordance with the recommendations given in British Standard BS 5930:1999, "Code of Practice for Site Investigations", contamination sampling was undertaken in accordance with BS 10175 : 2011, "Code of Practice for the Investigation of Potentially Contaminated Sites".
- 2.2 Borehole, Dynamic Probe and Trial Pit locations are shown on the appended Sketch Fieldwork Location Plan, Drawing No. RML 5687/1.
- 2.3 Fieldwork was undertaken on the 16<sup>th</sup> and 21<sup>st</sup> January 2015 and comprised the following.

### Drive-in-Sampler Boreholes

- 2.4 Four drive-in-sampler boreholes (DIS1-DIS4) were drilled at this site. Boreholes DIS1, DIS3 and DIS4 were drilled to depths of between 4.00m and 5.20m below existing ground level. Borehole DIS2 was terminated at 1.00m depth on a buried obstruction.
- 2.5 The drive-in-sampler comprises a series of 1 and 2 metre long metal tubes, varying in diameter from 80 mm down to 35 mm, driven into the ground using a mini-hydraulic breaker unit. The tubes are subsequently jacked out of the ground and side windows enable the tubes to be cleaned and small, disturbed, samples to be taken at regular intervals within each stratum.
- 2.6 Upon completion of all four boreholes a combined groundwater/gas monitoring standpipe was installed to depths of between 1.00m and 4.50m below existing ground level.
- 2.7 The gas monitoring installations comprised a 1 metre length of plain 19mm diameter HDPE pipe followed by slotted geotextile wrapped HDPE pipe, capped at the base. A cement/bentonite seal was installed from 1.00m to ground level and each installation was finished with a gas valve on top of the pipe and a lockable stopcock cover concreted in flush with ground level.
- 2.8 Full details of the borehole findings are given on the appended drive-in-sampler borehole record sheets.

### Dynamic Probe Test

- 2.9 One Dynamic Probe test (P1) was undertaken at this site to a depth of 6.50m below existing ground level where blow counts in excess of 50 per 100mm penetration were encountered and the test terminated.
- 2.10 The Dynamic Probe employed at this site is classified as 'heavy' (DPH) and comprises a weight of 50 kg dropping through a free-fall height of 500mm in accordance with British Standard BS 1377 : Part 9. The weight drives a solid 90° cone which has a surface area of 15 cm<sup>2</sup> and is attached to 32mm diameter driving rods. The resistance to penetration is recorded as the number of hammer blows required to drive the cone through successive 100mm increments.
- 2.11 Approximate equivalent SPT 'N' values have been determined by dividing the cumulative blow counts for each 300mm of penetration by 1.5 as recommended by Card and Roche.
- 2.12 The results are appended as plots of blow counts versus depth.

### Mechanically Excavated Trial Pits

- 2.13 In addition to the above noted work, four mechanically excavated trial pits (TP1-TP4) were also carried out across the site using a mechanical excavator supplied by the Client.
- 2.14 Trial Pit 1a was unable to penetrate below 0.40m depth and so was moved over and re-named TP1b. In addition, Trial Pit TP2 was terminated after a number of attempts encountered a buried manhole cover and buried brick wall/foundations.
- 2.15 Trial Pits TP1b, TP3 and TP4 were excavated to a depth of 3.00m below existing ground level.
- 2.16 Disturbed samples were taken from the trial pits at regular depth intervals within each stratum and when a change of strata was encountered.

#### MEXE Probe (CBR) Tests

- 2.17 In addition to the above, MEXE Probe tests were undertaken at 0.50m depth in trial pits TP1b, TP3 and TP4 in order to provide California Bearing Ratio (CBR) information for road pavement design.
- 2.18 The MEXE Probe consists of a cast aluminium housing containing a calibrated compression spring, operating shafts and dials with a CBR cone. The instrument is forced into the ground and an average of the readings obtained is considered the CBR value.
- 2.19 The following CBR test values were obtained at 0.50m below existing ground level.

CBR1	(TP1b) -	>14%
CBR2	(TP3) -	>14%
CBR3	(TP4) -	11%

#### Landfill Gas Monitoring

- 2.20 Following the initial site work, the installations installed in boreholes DIS1-DIS4 were monitored on 24<sup>th</sup> January and 9<sup>th</sup> and 16<sup>th</sup> February 2015.
- 2.21 On each visit the barometric pressure was recorded together with the level of Carbon Dioxide, Oxygen and Methane within the borehole. In addition, gas flow measurements were taken and the depth to groundwater recorded.
- 2.22 Full details of the readings are included on the appended Gas/Groundwater Monitoring Record Sheet.

### **3.0 GROUND CONDITIONS**

- 3.1 According to information published by the British Geological Survey (1:50,000 Series Sheet 302, Horsham) the underlying geology at this site is shown as being Weald Clay of the Cretaceous Period.
- 3.2 It is thought that the Weald Clay was probably deposited during a period when the uplands of the London area had been worn down and the rivers of the source area had reached a mature state. The formation consists of shales and mudstones with subordinate siltstones, sandstones, shelly limestones and clay ironstones. The beds are normally dark grey when fresh but weather to mottled yellow and brown clay with occasional red-brown horizons.
- 3.3 Full details of the ground conditions encountered are presented on the borehole and trial pit records appended to this report and can be summarised on the table below:

Depth From (m)	Depth To (m)	Description
0.00	0.20	Concrete (DIS2, DIS3 & DIS4 only)
0.00/0.20	0.40/2.10	MADE GROUND
0.40/2.10	5.20 +	Weald Clay

- 3.4 Groundwater was not noted during boring or excavation of the trial pits.
- 3.5 However, during the return monitoring visits to the standpipes groundwater was found to be as high as 3.40m in borehole DIS1, 2.70m in borehole DIS3 and 1.70m in borehole DIS4. This is considered to represent superficial surface water from the MADE GROUND 'perched' over the relatively impermeable Weald Clay stratum.

## **4.0    LABORATORY TESTING**

- 4.1    The following geotechnical and contamination tests have been carried out on samples recovered from the boreholes at this site.
- 4.2    Unless otherwise stated, the geotechnical tests have generally been carried out in accordance with the recommendations given in British Standard 1377:1990, "Methods of Test for Soils for Civil Engineering Purposes".
- 4.3    The chemical testing was carried out in accordance with standard industry methods in a UKAS approved laboratory which is also currently accredited in accordance with MCERTS for the majority of its testing. Further information regarding this accreditation is available on request together with a full list of test methods if required.

### *4.4    Natural Moisture Content & Atterberg Limit Tests*

The Atterberg Limits have been determined for five samples of the Weald Clay at this site.

The Liquid limit (LL) ranged between 29% and 38%, the plastic limit (PL) between 18% and 28% and the plasticity index (PI) between 6 and 15. The natural moisture content for these five samples ranged between 11% and 16%.

These results indicate that the Weald Clay at this site would be classified as clay or silt of 'low' plasticity (CL/ML) in accordance with the Casagrande geotechnical classification system.

In addition, the clay tested would generally fall into the 'low' potential category for swelling and/or shrinking in accordance with the National House Building Councils (NHBC) classification system given in Part 4 of their Standards. The sample from 2.00m depth in borehole DIS4 would be classified as 'non-shrinkable'.

### *4.5    pH and Sulphate Tests*

The pH and sulphate content has been determined for two samples recovered from the boreholes at depths of 0.50m and 1.50m.

The pH was found to be 7.7 and 11.0 and the sulphate content, on a 2:1 water:soil extract, 0.33 g/l and 0.57 g/l.

#### 4.6 *Chemical Analysis*

Six samples of MADE GROUND and two of the underlying natural ground were selected from across the site and tested for a range of commonly occurring contaminants and indicators of contamination including those given by the Contaminated Land Exposure Assessment (CLEA).

The contamination suite undertaken at this site includes speciated **PolyAromatic Hydrocarbon (PAH)** and speciated **Total Petroleum Hydrocarbon (TPH)**, together with **BTEX**, **B**enzene, **T**oluene, **E**thylbenzene and **X**ylenes.

#### 4.7 *Asbestos Identifications*

The same eight samples, as discussed above, were submitted to a UKAS accredited laboratory for asbestos identification and full details of the results are appended.

No asbestos was identified within the eight samples.



## **5.0 DISCUSSION AND RECOMMENDATIONS**

### **PROPOSED DEVELOPMENT & SCOPE OF WORKS**

- 5.1 As discussed in Section 1 above, it is understood that the proposed development will comprise a new Material Recycling Facility and the currently proposed plan layout of this is indicated on the appended Drawing No. 003.1.
- 5.2 The current report was commissioned to provide information on the underlying ground conditions at this site in order to assist in foundation design to the proposed new facility.

### **SHALLOW FOUNDATIONS**

- 5.3 The current investigation has found MADE GROUND up to 2.10m thick in the area of the proposed main building overlying Weald Clay which was not penetrated at a maximum borehole termination depth of 5.20m below existing ground level.
- 5.4 From the evidence of the boreholes, shallow foundation or service excavations deeper than about 1 metre may require support in the short-term in the MADE GROUND.
- 5.5 Groundwater was not noted during boring but was found to be as high as 1.70m depth during the return monitoring visits to the standpipe installed in borehole DIS4. This is considered to represent superficial surface water 'perched' over the relatively impermeable Weald Clay stratum or surface water. Therefore, where seasonal groundwater or surface water accumulates at the base of shallow service or foundation excavations it is very important that these are kept dry by, for example, pumping from a sump, the foundation base is kept square and that any soft spots are replaced and compacted prior to pouring foundation concrete.
- 5.6 Further, we recommend that where groundwater or surface water flows into foundation excavations, 'blinding' concrete is used at the base of the foundation excavations and that foundation concrete is poured as soon as possible thereafter
- 5.7 For conventional strip or pad foundations, up to 1.25 metres in width, set below any MADE GROUND in the top of the Weald Clay, an allowable bearing pressure of 125 kN/m<sup>2</sup> could be adopted.
- 5.8 Settlement due to the above noted order of loading would not be expected to exceed 20-25mm the majority of which would be "long-term", occurring over a period of some 20-30 years after the construction period.

- 5.9 The results of the Atterberg Limit tests indicate that the Weald Clay at this site would fall into the 'low' shrinkage potential in accordance with the National House Building Councils (NHBC) classification system given in Part 4 of their Standards. Therefore, precautions against foundation sides in the form of compressible material will not be required against foundation sides at this site where they fall within the 'zone of influence' of any past, existing or any proposed trees.
- 5.10 It should be noted that should ground conditions differing significantly from those described in our report be encountered during foundation excavation, then Risk Management Limited should be contacted immediately and that the above noted allowable bearing pressure or recommended foundation type may need to be altered accordingly.

## UTILITIES SEARCH

- 5.11 A Utilities Search was initiated prior to attending site.
- 5.12 There were five affected Utilities:-
- British Telecommunications plc
  - Environment Agency
  - Network Rail
  - Southern Gas Networks (Scotia)
  - UK Power Networks
- 5.13 Full details of the affected Utilities are appended to this report.

## PILED FOUNDATIONS

- 5.14 Should piled foundations at this site be required then these would need to be bored or driven to support foundation loads mainly in adhesion within the underlying Weald Clay.
- 5.15 It is beyond our brief to provide a full and detailed pile design and the advice of a specialist piling contractor should be sought in this respect. However, piles may be relatively short in the Weald Clay as results of the current Dynamic Probe Tests found very high blow counts at 6.50m below existing ground level.
- 5.16 In calculating working loads an adhesion factor of 0.50 is often used in the Weald Clay and a factor of safety of 2.5 on the sum of the skin friction and end bearing. In addition, consideration may need to be given to 'sleeving' the upper 2 to 3 metres of each pile through the MADE GROUND to prevent 'down-drag' forces developing on the shaft during the construction period.

- 5.17 Again, it is recommended that the advice of competent piling contractors is sought as to the most suitable pile type at this site and for confirmation of the order of working load achievable given the ground conditions encountered and the proprietary pile type selected.

## **BURIED CONCRETE**

- 5.18 The results of the chemical tests at this site indicate that the soil would fall into Classes DS-1 and DIS-2 of the Building Research Establishments (BRE) classification system.

## **ROAD PAVEMENT DESIGN**

- 5.19 The results of the current work recorded CBR values at about 0.50m depth varying from 11% to >14%.
- 5.20 We would therefore recommend a CBR value of 8-10% be adopted for road pavement design at this site founding at high level and 3-5% in the underlying Weald Clay.

## **LANDFILL GAS**

- 5.21 During the return gas/groundwater monitoring visits, no methane and carbon dioxide levels of up to 2.1% were found.
- 5.22 CIRIA Publication C665 "*Assessing Risks Posed by Hazardous Ground Gases to Buildings (Revised 2007)*" also includes a risk assessment for commercial development.
- 5.23 Again, in accordance with the CIRIA risk assessment process, we would consider that the current site would be classified as being "Characteristic Situation 1" and no gas remedial measures would be required.

## CONTAMINATION ASSESSMENT

- 5.24 Part IIA of the Environmental Protection Act 1990 contains the legislative framework for the regulation of contaminated land and this was implemented in the Contaminated Land (England) Regulations 2000. This legislation allows for the identification and remediation of land where contamination is causing unacceptable risks to human health or the wider environment. The approach adopted by the UK contaminated land policy is “suitable for use” which implies that the land should be suitable for its current use and made suitable for any known future use.
- 5.25 For this **Contamination Assessment** the site has been modelled using the Source-Pathway-Receptor approach to produce a Conceptual Site Model.

Source	(substances or potential contaminants which may cause harm)
Pathway	(a linkage route between the source and receptor)
Receptor	(something which may be harmed by the source e.g. humans, plant, groundwater etc.)

### 5.26 Source

Six samples of MADE GROUND and two of the near-surface natural ground were selected and tested for a range of commonly occurring contaminants and indicators of contamination including those given by the Contaminated Land Exposure Assessment (CLEA).

### 5.27 Pathways

The pathways needing to be considered, as discussed above, will depend on the land usage, and will include for, example; soil ingestion, inhalation of vapour and dust, and consumption of home-grown vegetables, where this is applicable.

### 5.28 Receptors

From the intended end site use the following potential receptors have been identified.

- Workers on the site likely to come into contact with the soils.
- Future Users of Material Recycling Facility.
- Any proposed additional vegetation.
- Neighbouring areas within Legoland.

5.29 It should be noted that the CLEA software has limited functionality and contains algorithms, which the EA has publicly expressed its intention to update. As a consequence of this, some of the screening values generated by the CLEA software may not adequately reflect specific site conditions and in some instances are unduly conservative. In addition, it should also be noted that the figures given in the appended table are based on a 6% soil organic matter content.

5.30 The DEFRA/EA model has been developed on the basis of many critical assumptions about possible exposure to soil contamination and the development of conceptual exposure models to describe different land uses as follows:

<i>Residential with plant uptake</i>	Mainly refers to residential gardens in which vegetables are grown.
<i>Residential without plant uptake</i>	Refers to areas which have gardens (e.g. blocks of flats) but without vegetable uptake.
<i>Allotments</i>	Areas allocated for Allotment usage.
<i>Commercial/Industrial</i>	Commercial/industrial usage where there are open areas which are not hard surfaced.

5.31 The Contaminated Land Exposure Assessment (CLEA) model was originally published in March 2002 as joint DEFRA/EA publications; Contaminated Land Research (CLR) Report CLR 10, with Reports CLR7, 8 and 9 as supporting documents, providing toxicity data and human tolerable daily intake (TDI) data to be used with this model. This model enabled the derivation of more site-specific values for contaminants present on a site, rather than the use of 'generic' values, which were previously used.

5.32 DEFRA/EA previously published a number of Soil Guideline Values (SGVs) for certain determinands, (common toxic metals), which were generic guideline criteria for assessing the risks to human health from chronic exposure to soil contamination for standard land-use functions. However, these were withdrawn in late 2008 and DEFRA/EA have now issued a new set of guidance documents. With regard to the Risk Management Limited standard suite of tests, currently SGV figures have only been issued for Arsenic, Cadmium, Mercury, Nickel, Phenols and Selenium.

- 5.33 In the absence of currently published SGV values for the remaining contaminants, Messrs. W. S. Atkins have derived ATRISK<sup>soil</sup> Soil Screening Values (SSVs) based on the new 2009 guidance (SC050021/SR3 (the CLEA Report) and SC050021/SR2 (the TOX report)) for commercial/industrial, residential without homegrown produce, residential with homegrown produce and allotment land uses. These have been based on the default assumptions provided in the CLEA report which it is understood will be used in the development of future Soil Guideline Values by DEFRA and the Environment Agency. Atkins SSVs have been derived in line with the new guidance using CLEA model v1.04. As the inhalation of vapour pathway contributes less than ten percent of total exposure, this is unlikely to significantly affect the combined assessment criterion and the SSV values used are the combined assessment criterion given by CLEA if free product is not observed.
- 5.34 Neither CLEA or ATRISK currently publish values for Hexavalent Chromium. Therefore, both Total Chromium and Hexavalent Chromium values have been compared against the Land Quality Management/Chartered Institute of Environmental Health (LQM/CIEH) Generic Assessment Criteria published in 2009 and based on CLEA v1.04 with Total Chromium values based on Chromium III.
- 5.35 The SGV and SSV levels represent “intervention” levels above which the levels of contamination may pose an unacceptable risk to the health of site-users such that further investigation and/or remediation is required.
- 5.36 Total Petroleum Hydrocarbons are considered in accordance with the fractions proposed by The Environment Agency, drawing on the TPHCWG methodology. These are contained in Table 4.2 – Petroleum hydrocarbon fractions for use in UK human health risk assessment, based on Equivalent Carbon (EC) number, contained in Science Report P5-080/TR3, *The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils*.
- 5.37 At this site the contamination results have been compared against the **Commercial/Industrial** criteria.

## ASSESSMENT OF RESULTS

- 5.38 From the samples tested at this site, no determinands exceeded the CLEA Soil Guideline Values (SGV) or ATRISK Contaminated Land Screening Values (SSV) for **Commercial/Industrial** usage. In addition, no asbestos was identified within the samples tested.

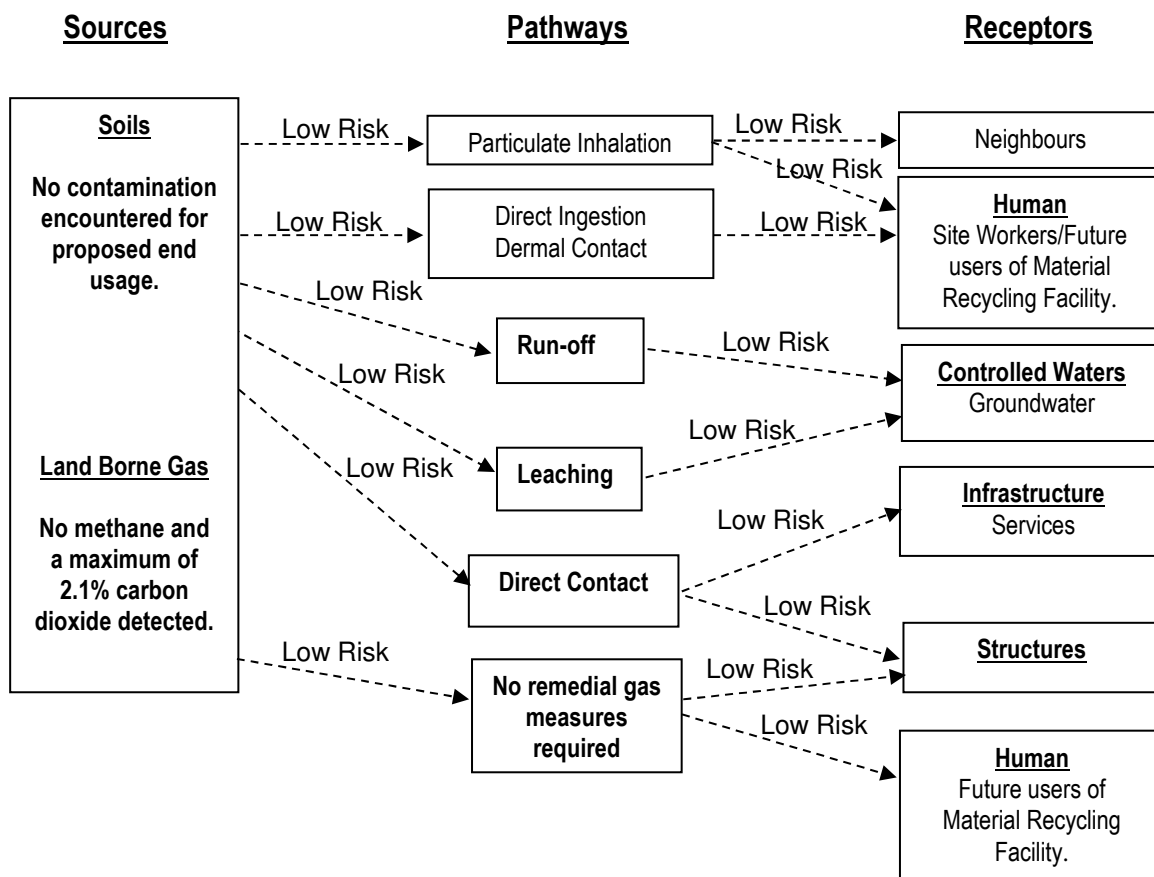
### Discussion

*No contamination was therefore encountered for the proposed end usage as a Materials recycling Facility.*

*Notwithstanding this, standard Health and Safety precautions should be taken with regard to ground workers at this site and these should include PPE equipment such as gloves, overalls etc. and normal washing facilities available on-site.*

## CONCEPTUAL SITE MODEL

- 5.39 The following diagram summaries the potential pollution linkages identified for this site in the form of a diagrammatic Conceptual Site Model (CSM).





- 5.40 As always, the above recommendations are based on a selected number of representative samples and further testing may be required if any significant contamination is suspected or encountered during ground works.

## **SOIL SAMPLES**

- 5.41 All soil samples will be kept for a period of 28 days after the date of the invoice for this project unless otherwise notified to Risk Management Limited in writing. Should samples be required to be stored for longer than 28 days then a storage charge will be levied.

**Prepared By :**

Malcolm S. Price B.Sc., M.Sc., M.I.C.E., C.Eng.  
Director

**Distribution :**

Britaniacrest Recycling Limited - 1 copy + pdf

*The recommendations made and the opinions expressed in this report are based on the borehole records, examination of samples and the results of site and laboratory tests.*

*The report is issued on the condition that Risk Management Limited will under no circumstances be liable for any loss arising directly or indirectly from ground conditions between the boreholes or trial pits which have not been shown by the boreholes, trial pits or other tests carried out during the investigation.*

*In addition, Risk Management Limited will not be liable for any loss whatsoever arising directly or indirectly from any opinion given on the possible configuration of strata both between the borehole and/or trial pit positions and/or below the maximum depth of the investigation. Such opinions, where given, are for guidance only.*

*Groundwater levels may also vary with time from those reported during our site investigation due to factors such as tidal conditions, heavy pumping from nearby wells or seasonal changes.*

*No person other than the client to whom this report is addressed, shall rely on it in any respect and no duty of care shall be owed to any such third party.*

*Copyright of this Report remains with Risk Management Limited and in addition we will not accept any responsibility for the report and recommendations given until our invoice is settled in full.*



# BOREHOLE NO. DIS1

**Site** : Langerhurstwood Road, Warnham.

**Job No.** : RML 5687

**Diameter** : 75mm/40mm

**Date** : 16th January 2015

**Method** : Drive-in-Sampler

## Sheet 1 of 1

(m)	Description	Strata Depth (m)	Legend	Ground water	Sample Depth (m)	Sample Type	Test	Remarks
0	Ground Level							
	<b>MADE GROUND</b> (crushed roadstone gravel and stone)	0.40			0.15	D1		
					0.50	D2		
1	<b>MADE GROUND</b> (fine to coarse sub-angular to rounded gravel with a little fine to coarse orange-brown sand).	1.30			1.00	D3		
					1.50	D4		
2	<b>MADE GROUND</b> (brick, brick fragments, crushed concrete and clinker)	2.10			2.00	D5		
					2.50	D6		
3	<b>Weald Clay</b> Firm to stiff, grey and orange-brown mottled silty sandy CLAY with siltstone gravel.	4.00			3.00	D7		
					3.50	D8		
4					4.00	D9		
	<b>Weald Clay</b> Firm, dark grey silty sandy CLAY with siltstone gravel.				4.50	D10		
5					5.00	D11		
	End of Borehole	5.20						

**Remarks** : Groundwater not noted during boring.  
: Standpipe installed to 4.50m depth

**Key:**

D - Disturbed sample  
W - Water sample  
B - Bulk sample

V - Vane test  
PP - pocket penetrometer  
U - 38mm undisturbed sample



## BOREHOLE NO. DIS2

**Site** : Langerhurstwood Road, Warnham.

**Job No.** : RML 5687

**Diameter** : 75mm

**Date** : 21st January 2015

**Method** : Drive-in-Sampler

### Sheet 1 of 1

(m)	Description	Strata Depth (m)	Legend	Ground water	Sample Depth (m)	Sample Type	Test	Remarks
0	Ground Level							
	<b>Concrete</b> (with 8mm and 12mm re-bar)	0.20			0.15	D1		
	<b>MADE GROUND</b> (fine to coarse sub-angular to rounded gravel with a little fine to coarse orange-brown sand).	0.30			0.50	D2		
1	<b>MADE GROUND</b> (brick and brick fragments).	1.00			1.00	D3		Borehole unable to penetrate deeper than 1.00m.
	End of Borehole							
2								
3								
4								
5								

**Remarks** : Groundwater not noted during boring.  
: Standpipe installed to 1.00m depth.

**Key:**

D - Disturbed sample  
W - Water sample  
B - Bulk sample

V - Vane test  
PP - pocket penetrometer  
U - 38mm undisturbed sample



# BOREHOLE NO. DIS3

**Site** : Langerhurstwood Road, Warnham.

**Job No.** : RML 5687

**Diameter** : 75mm/40mm

**Date** : 21st January 2015

**Method** : Drive-in-Sampler

## Sheet 1 of 1

(m)	Description	Strata Depth (m)	Legend	Ground water	Sample Depth (m)	Sample Type	Test	Remarks
0	Ground Level							
	<b>Concrete</b>				0.15	D1		
	<b>MADE GROUND</b> (compacted sand and gravel over type 1 roadstone and crushed brick)	0.20			0.50	D2		
1		1.10			1.00	D3		
	<b>Weald Clay</b> Firm to stiff, red-brown and brown silty CLAY with fragments of siltstone.				1.50	D4		
2		1.80			2.00	D5		
	<b>Weald Clay</b> Firm to stiff, light brown and yellow-brown mottled silty sandy CLAY with siltstone gravel.				2.50	D6		
3					3.00	D7		
					3.50	D8		
4	End of Borehole	4.00			4.00	D9		
5								

**Remarks** : Groundwater not noted during boring.  
: Standpipe installed to 3.00m depth

**Key:**

D - Disturbed sample  
W - Water sample  
B - Bulk sample

V - Vane test  
PP - pocket penetrometer  
U - 38mm undisturbed sample



# BOREHOLE NO. DIS4

**Site** : Langerhurstwood Road, Warnham.

**Job No.** : RML 5687

**Diameter** : 75mm/50mm

**Date** : 21st January 2015

**Method** : Drive-in-Sampler

## Sheet 1 of 1

(m)	Description	Strata Depth (m)	Legend	Ground water	Sample Depth (m)	Sample Type	Test	Remarks
0	Ground Level							
	<b>Concrete</b>				0.15	D1		
	<b>MADE GROUND</b> (compacted sand and gravel over type 1 roadstone and crushed brick)	0.20 0.40			0.50	D2		
1					1.00	D3		
					1.50	D4		
2	<b>Weald Clay</b> Firm to stiff, light brown and yellow-brown mottled silty sandy CLAY with siltstone gravel and bands of sandy silt.				2.00	D5		
					2.50	D6		
3					3.00	D7		
					3.50	D8		
4	End of Borehole	4.00			4.00	D9		
5								

**Remarks** : Groundwater not noted during boring.  
: Standpipe installed to 3.00m depth.

**Key:**

D - Disturbed sample  
W - Water sample  
B - Bulk sample

V - Vane test  
PP - pocket penetrometer  
U - 38mm undisturbed sample



# DYNAMIC PROBE PENETRATION TEST

Location : Langerhurstwood Road, Warnham, Horsham

Date : 16th January 2015

Job No : RML 5687

Standard : BS 1377 : 1990

Sheet 1 of 2

Probe No.

**P1**

Depth (m)	Probe Blow Counts	Equiv. SPT 'N' value	Blow Counts versus depth Profile.	Equivalent SPT 'N' value versus depth Profile.
0.00				
0.10	7			
0.20	5	12		
0.30	6	19		
0.40	18	32		
0.50	24	43		
0.60	23	37		
0.70	8	23		
0.80	4	10		
0.90	3	6		
1.00	2	5		
1.10	2	3		
1.20	1	3		
1.30	1	3		
1.40	2	3		
1.50	1	3		
1.60	1	1		
1.70	0	1		
1.80	1	1		
1.90	1	2		
2.00	1	2		
2.10	1	2		
2.20	1	3		
2.30	2	6		
2.40	6	11		
2.50	8	17		
2.60	12	23		
2.70	14	27		
2.80	15	29		
2.90	14	29		
3.00	14	28		
3.10	14	26		
3.20	11	24		
3.30	11	23		
3.40	12	24		
3.50	13	24		
3.60	11	23		
3.70	11	21		
3.80	10	19		
3.90	8	16		
4.00	6	13		
4.10	6	11		
4.20	5	11		
4.30	6	15		
4.40	11	18		
4.50	10	20		
4.60	9	17		
4.70	7	17		
4.80	9	17		
4.90	10	20		
5.00	11	21		
5.10	10			

Remarks : N = DPH(300)/1.5 (Card & Roche)





# DYNAMIC PROBE PENETRATION TEST

Location : Langerhurstwood Road, Warnham, Horsham

Date : 16th January 2015

Job No : RML 5687

Standard : BS 1377 : 1990

Sheet 2 of 2

Probe No.

**P1**

Depth (m)	Probe Blow Counts	Equiv. SPT 'N' value	Blow Counts versus depth Profile.	Equivalent SPT 'N' value versus depth Profile.
4.90	10			
5.00	11	21		
5.10	10	21		
5.20	10	20		
5.30	10	22		
5.40	13	23		
5.50	12	23		
5.60	9	21		
5.70	11	32		
5.80	28	36		
5.90	15	38		
6.00	14	27		
6.10	12	27		
6.20	15	33		
6.30	23	46		
6.40	31	69		
6.50	50			
6.60				
6.70				
6.80				
6.90				
7.00				
7.10				
7.20				
7.30				
7.40				
7.50				
7.60				
7.70				
7.80				
7.90				
8.00				
8.10				
8.20				
8.30				
8.40				
8.50				
8.60				
8.70				
8.80				
8.90				
9.00				
9.10				
9.20				
9.30				
9.40				
9.50				
9.60				
9.70				
9.80				
9.90				
10.00				
10.10				

Remarks : N = DPH(300)/1.5 (Card & Roche)



# TRIAL PIT NO. TP1A

**Site** : Langerhurstwood Road, Warnham.

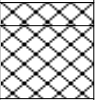
**Job No.** : RML 5687

**Dimensions** : 0.60m x 1.20m

**Date** : 21st January 2015

**Equipment** : Mechanical Excavator

Sheet 1 of 1

(m)	Description	Strata Depth (m)	Legend	Depth (m)	Type	Test	Remarks
0	Ground Level						
	<b>MADE GROUND</b> (grey roadstone gravel with brick fragments).	0.10		0.15	D1		Trial pit unable to penetrate below 1.40m depth.
	<b>MADE GROUND</b> (brick fragments, crushed concrete and roadstone gravel)	0.40					
	End of Trial Pit						
1							
2							
3							

Remarks : Groundwater not noted during excavation

Key:

- D - Disturbed sample
- J - Jar sample
- B - Bulk sample
- W - water sample
- V - vane test
- PP - Pocket Penetrometer



# TRIAL PIT NO. TP1B

**Site** : Langerhurstwood Road, Warnham.

**Job No.** : RML 5687

**Dimensions** : 0.60m x 2.00m

**Date** : 21st January 2015

**Equipment** : Mechanical Excavator

Sheet 1 of 1

(m)	Description	Strata Depth (m)	Legend	Depth (m)	Type	Test	Remarks
0	Ground Level						
	<b>MADE GROUND</b> (crushed roadstone gravel and stone)	0.10		0.15	D1		
	<b>MADE GROUND</b> (brick fragments and fine to coarse sub-angular to rounded gravel in a red-brown silty clay matrix)	0.50		0.50	D2	CBR1	CBR >14%
1				1.00	D3		
	<b>Weald Clay</b> Firm to stiff, grey, yellow-brown and orange-brown mottled silty sandy CLAY with siltstone gravel.			1.50	D4		
2	..... more coarse siltstone gravel from 1.40m depth.			2.00	D5		
				2.50	D6		
3	End of Trial Pit	3.00		3.00	D7		

Remarks : Groundwater not noted during excavation

:  
:  
:  
:

Key: D - Disturbed sample  
J - Jar sample  
B - Bulk sample  
W - water sample  
V - vane test  
PP - Pocket Penetrometer



# TRIAL PIT NO. TP2

**Site** : Langerhurstwood Road, Warnham.

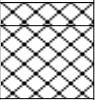
**Job No.** : RML 5687

**Dimensions** : 0.60m x 1.20m

**Date** : 21st January 2015

**Equipment** : Mechanical Excavator

Sheet 1 of 1

(m)	Description	Strata Depth (m)	Legend	Depth (m)	Type	Test	Remarks
0	Ground Level						
	<b>MADE GROUND</b> (crushed roadstone gravel).	0.10		0.15	D1		Trial pit terminated after encountering buried brick wall/foundation and a buried manhole.
	<b>MADE GROUND</b> (brick and brick fragments in a red-brown and orange-brown silty clay matrix)	0.40					
	End of Trial Pit						
1							
2							
3							

Remarks : Groundwater not noted during excavation

Key:

- D - Disturbed sample
- J - Jar sample
- B - Bulk sample
- W - water sample
- V - vane test
- PP - Pocket Penetrometer



# TRIAL PIT NO. TP3

**Site** : Langerhurstwood Road, Warnham.

**Job No.** : RML 5687

**Dimensions** : 1.50m x 2.00m

**Date** : 21st January 2015

**Equipment** : Mechanical Excavator

Sheet 1 of 1

(m)	Description	Strata Depth (m)	Legend	Depth (m)	Type	Test	Remarks
0	Ground Level						
	<b>MADE GROUND</b> (crushed roadstone gravel and stone)	0.15		0.15	D1		
	<b>MADE GROUND</b> (brick and brick fragments in a red-brown silty clay matrix)	0.70		0.50	D2	CBR2	CBR >14%
1				1.00	D3		
	<b>Weald Clay</b> Firm to stiff, grey, yellow-brown and orange-brown mottled silty sandy CLAY with siltstone gravel.			1.50	D4		
2	..... becoming dark brown from 1.40m depth.			2.00	D5		
	..... becoming grey from 1.90m depth.			2.50	D6		
3	End of Trial Pit	3.00		3.00	D7		

Remarks : Groundwater not noted during excavation  
: Trial pit enlarged owing to presence  
: of buried brick wall/foundation.  
:  
:

Key: D - Disturbed sample  
J - Jar sample  
B - Bulk sample  
W - water sample  
V - vane test  
PP - Pocket Penetrometer



# TRIAL PIT NO. TP4

**Site** : Langerhurstwood Road, Warnham.

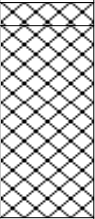
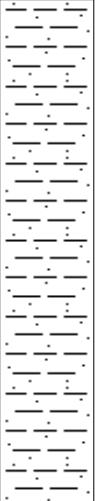
**Job No.** : RML 5687

**Dimensions** : 0.60m x 2.00m

**Date** : 21st January 2015

**Equipment** : Mechanical Excavator

Sheet 1 of 1

(m)	Description	Strata Depth (m)	Legend	Depth (m)	Type	Test	Remarks
0	Ground Level <b>MADE GROUND</b> (crushed roadstone gravel, metal and broken slate)	0.10		0.15	D1	CBR3	CBR = 11%
	<b>MADE GROUND</b> (brick and brick fragments in a red-brown and orange-brown silty clay matrix)			0.50	D2		
1		0.90		1.00	D3		
				1.50	D4		
2	<b>Weald Clay</b> Firm to stiff, grey, yellow-brown and orange-brown mottled silty sandy CLAY with siltstone gravel.  ..... becoming blue grey from 1.50m depth.			2.00	D5		
				2.50	D6		
3	End of Trial Pit	3.00		3.00	D7		

Remarks : Groundwater not noted during excavation

Key: D - Disturbed sample  
J - Jar sample  
B - Bulk sample  
W - water sample  
V - vane test  
PP - Pocket Penetrometer

<b>PROJECT NAME :</b> <b>PROJECT NO:</b>	<b>Langerhurstwood Road, Warnham, Horsham</b> <b>RML 5687</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"><b>Date</b></td> <td><b>February 2015</b></td> </tr> <tr> <td><b>Page</b></td> <td><b>1 of 1</b></td> </tr> </table>	<b>Date</b>	<b>February 2015</b>	<b>Page</b>	<b>1 of 1</b>
<b>Date</b>	<b>February 2015</b>					
<b>Page</b>	<b>1 of 1</b>					

Sample Details			Description	Classification Tests					Chemical Tests				Other tests and comments
BH No.	Depth (m)	No.		MC (%)	LL (%)	PL (%)	PI (%)	<425 mic (%)	pH	W/S S <sub>04</sub> (g/l)	Total S <sub>04</sub> (%)	Water S <sub>04</sub> (g/l)	
DIS1	1.50	D4							7.7	0.33			
	2.50	D6	Grey and orange-brown mottled friable silty sandy CLAY with siltstone gravel.	13	30	18	12	74					Class CL
	3.00	D7	Grey and orange-brown mottled friable silty sandy CLAY with siltstone gravel.	14	30	18	12	63					Class CL
	5.00	D11	Dark grey silty sandy CLAY with siltstone gravel.	16	38	23	15	81					Class CL
DIS2	0.50	D2							11.0	0.57			
DIS3	2.00	D5	Light brown and yellow-brown mottled silty sandy CLAY with siltstone gravel.	11	29	18	11	77					Class CL
DIS4	2.00	D5	Light brown and yellow-brown mottled clayey sandy SILT with siltstone gravel.	16	34	28	6	72					Class ML





## Contamination Test Results on Soil Samples

Date : February 2015

Job No. : RML 5687

Sheet 1 of 2

Location: Langerhurstwood Road, Warnham, Horsham.

Location		DIS1	DIS2	DIS3	DIS4		<b>ATRISK Contaminated Land Screening Values (SSV) derived using CLEA v1.04 for 6% SOM</b>			
Sample No.		D3	D2	D4	D2					
Depth (m)		1.00	0.50	1.50	0.50					
Material Type	Units	MADE GROUND	MADE GROUND	Natural Ground	Natural Ground		Residential with plant uptake	Residential without plant uptake	Allotments	Commercial / Industrial
Aliphatic Hydrocarbons (mg/kg)	>C8-C10	<1.0	<1.0	<1.0	<1.0		14.5	14.5	476	476
	>C10-C12	<1.0	<1.0	<1.0	<1.0		87.7	87.8	297	297
	>C12-C16	<1.0	<1.0	<1.0	<1.0		126	126	126	126
	>C16-C35	<1.0	17.1	<1.0	1.3		88200	88900	281000	1000000
Aromatic Hydrocarbons (mg/kg)	>C8-C10	<1.0	<1.0	<1.0	<1.0		23.7	24.1	53.2	2700
	>C10-C12	<1.0	<1.0	<1.0	<1.0		132	147	71.3	2190
	>C12-C16	1.3	<1.0	1.3	1.3		452	700	132	925
	>C16-C21	1.7	<1.0	1.5	1.6		804	1330	288	28400
	>C21-C35	<1.0	11.2	<1.0	<1.0		1220	1330	1550	28400
<b>TOTAL TPH</b>		3.0	28.3	2.8	4.2					
Naphthalene	mg/kg	<0.5	<0.5	<0.5	<0.5		8.71	9.22	23.4	22700
Acenaphthylene	mg/kg	<0.5	<0.5	<0.5	<0.5		-	-	-	-
Acenaphthene	mg/kg	<0.5	<0.5	<0.5	<0.5		2130	4770	612	106000
Fluorene	mg/kg	<0.5	<0.5	<0.5	<0.5		1930	3100	725	72100
Phenanthrene	mg/kg	<0.5	<0.5	<0.5	<0.5		-	-	-	-
Anthracene	mg/kg	<0.5	<0.5	<0.5	<0.5		18300	24000	10400	545000
Fluoranthene	mg/kg	<0.5	<0.5	<0.5	<0.5		2160	3210	924	72700
Pyrene	mg/kg	<0.5	<0.5	<0.5	<0.5		1550	2400	620	54500
Benz(a)anthracene	mg/kg	<0.5	<0.5	<0.5	<0.5		8.54	9.04	15.1	142
Chrysene	mg/kg	<0.5	<0.5	<0.5	<0.5		927	1010	1170	14300
Benzo(b)fluoranthene	mg/kg	<0.5	<0.5	<0.5	<0.5		9.86	10.3	18.6	144
Benzo(k)fluoranthene	mg/kg	<0.5	<0.5	<0.5	<0.5		100	104	227	1440
Benzo(a)pyrene	mg/kg	<0.5	<0.5	<0.5	<0.5		0.998	1.04	2.1	14.4
Indeno(123-cd)pyrene	mg/kg	<0.5	<0.5	<0.5	<0.5		9.75	10.3	16.6	144
Dibenz(ah)anthracene	mg/kg	<0.5	<0.5	<0.5	<0.5		1	1.03	2.57	14.4
Benzo(ghi)perylene	mg/kg	<0.5	<0.5	<0.5	<0.5		103	104	342	1450
<b>TOTAL PAH</b>		<0.5	<0.5	<0.5	<0.5					
Cyanide (Free)	mg/kg	<1.0	<1.0	<1.0	<1.0		34	34	34	34
pH	unit	7.7	11.0	5.2	7.0		-	-	-	-
Copper (Total)	mg/kg	39.5	81.9	26.6	31.7		4020	8370	1110	109000
Lead (Total)	mg/kg	41	93	20	22		342	383	361	6490
Zinc (Total)	mg/kg	69	128	79	89		17200	46800	3990	917000
							<b>LQM/CIEH Generic Assessment Criteria</b>			
Chromium (Total)	mg/kg	28.3	22.0	38.9	41.3		627	627	15300	8840
Chromium (Hexavalent)	mg/kg	<0.8	<0.8	<0.8	<0.8		4.3	4.3	2.1	35
							<b>CLEA Soil Guideline Values (SGV)</b>			
Benzene	mg/kg	<0.01	<0.01	<0.01	<0.01		0.33	0.33	0.07	95
Toluene	mg/kg	<0.01	0.02	<0.01	<0.01		610	610	120	4400
Ethylbenzene	mg/kg	<0.01	<0.01	<0.01	<0.01		350	350	90	2800
Xylenes	mg/kg	<0.01	0.03	<0.01	<0.01		230	230	160	2600
Arsenic (Total)	mg/kg	18.1	18.8	10.2	13.9		32	32	43	640
Cadmium (Total)	mg/kg	<0.5	0.5	<0.5	<0.5		10	10	1.8	230
Mercury (Total)	mg/kg	<0.5	<0.5	<0.5	<0.5		170	170	80	3600
Nickel (Total)	mg/kg	31.2	22.2	30.9	36.4		130	130	230	1800
Phenols (Total)	mg/kg	<5	<5	<5	<5		420	420	280	3200
Selenium (Total)	mg/kg	1.2	<1.0	<1.0	<1.0		350	350	120	13000
<b>Key</b>										
PAH - Polyaromatic Hydrocarbons										
TPH - Total Petroleum Hydrocarbons										
- Not determined										
							<b>Result exceeds ATRISK screening value</b> <b>Result exceeds EQS/CIEH generic assessment criteria</b> <b>Result exceeds CLEA Soil Guideline Value (SGV)</b>			
Moisture Content	%	18.1	17.0	13.0	12.0		-	-	-	-
Stones	%	28.4	26.8	10.7	<0.1		-	-	-	-



## Contamination Test Results on Soil Samples

Date : February 2015

Job No. : RML 5687

Sheet 2 of 2

Location: Langerhurstwood Road, Warnham, Horsham.

Location		TP1b	TP2	TP3	TP4		<b>ATRISK Contaminated Land Screening Values (SSV) derived using CLEA v1.04 for 6% SOM</b>  <i>Residential with plant uptake</i> <i>Residential without plant uptake</i> <i>Allotments</i> <i>Commercial / Industrial</i>			
Sample No.		D2	D1	D2	D1					
Depth (m)	Units	0.50	0.15	0.50	0.15					
Material Type		MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND					
Aliphatic Hydrocarbons (mg/kg)	>C8-C10	<1.0	<1.0	<1.0	<1.0		14.5	14.5	476	476
	>C10-C12	<1.0	<1.0	<1.0	<1.0		87.7	87.8	297	297
	>C12-C16	<1.0	<1.0	<1.0	<1.0		126	126	126	126
	>C16-C35	1.2	1.3	<1.0	1.7		88200	88900	281000	1000000
Aromatic Hydrocarbons (mg/kg)	>C8-C10	<1.0	<1.0	<1.0	<1.0		23.7	24.1	53.2	2700
	>C10-C12	<1.0	<1.0	<1.0	<1.0		132	147	71.3	2190
	>C12-C16	1.4	1.2	1.3	1.5		452	700	132	925
	>C16-C21	1.7	1.6	1.7	1.8		804	1330	288	28400
	>C21-C35	<1.0	<1.0	<1.0	1.4		1220	1330	1550	28400
<b>TOTAL TPH</b>		4.3	4.1	3.0	6.4					
Naphthalene	mg/kg	<0.5	<0.5	<0.5	<0.5		8.71	9.22	23.4	22700
Acenaphthylene	mg/kg	<0.5	<0.5	<0.5	<0.5		-	-	-	-
Acenaphthene	mg/kg	<0.5	<0.5	<0.5	<0.5		2130	4770	612	106000
Fluorene	mg/kg	<0.5	<0.5	<0.5	<0.5		1930	3100	725	72100
Phenanthrene	mg/kg	<0.5	<0.5	<0.5	<0.5		-	-	-	-
Anthracene	mg/kg	<0.5	<0.5	<0.5	<0.5		18300	24000	10400	545000
Fluoranthene	mg/kg	<0.5	<0.5	<0.5	<0.5		2160	3210	924	72700
Pyrene	mg/kg	<0.5	<0.5	<0.5	<0.5		1550	2400	620	54500
Benz(a)anthracene	mg/kg	<0.5	<0.5	<0.5	<0.5		8.54	9.04	15.1	142
Chrysene	mg/kg	<0.5	<0.5	<0.5	<0.5		927	1010	1170	14300
Benzo(b)fluoranthene	mg/kg	<0.5	<0.5	<0.5	<0.5		9.86	10.3	18.6	144
Benzo(k)fluoranthene	mg/kg	<0.5	<0.5	<0.5	<0.5		100	104	227	1440
Benzo(a)pyrene	mg/kg	<0.5	<0.5	<0.5	<0.5		0.998	1.04	2.1	14.4
Indeno(123-cd)pyrene	mg/kg	<0.5	<0.5	<0.5	<0.5		9.75	10.3	16.6	144
Dibenz(ah)anthracene	mg/kg	<0.5	<0.5	<0.5	<0.5		1	1.03	2.57	14.4
Benzo(ghi)perylene	mg/kg	<0.5	<0.5	<0.5	<0.5		103	104	342	1450
<b>TOTAL PAH</b>		<0.5	<0.5	<0.5	<0.5					
Cyanide (Free)	mg/kg	<1.0	<1.0	<1.0	<1.0		34	34	34	34
pH	unit	7.3	7.6	6.7	7.4		-	-	-	-
Copper (Total)	mg/kg	25.4	11.5	26.0	33.6		4020	8370	1110	109000
Lead (Total)	mg/kg	16.9	23.3	22.6	25.3		342	383	361	6490
Zinc (Total)	mg/kg	79.5	76.4	80.3	88.4		17200	46800	3990	917000
							<b>LQM/CIEH Generic Assessment Criteria</b>			
Chromium (Total)	mg/kg	30.6	26.9	44.0	43.8		627	627	15300	8840
Chromium (Hexavalent)	mg/kg	<0.8	<0.8	<0.8	<0.8		4.3	4.3	2.1	35
							<b>CLEA Soil Guideline Values (SGV)</b>			
Benzene	mg/kg	<0.01	<0.01	<0.01	<0.01		0.33	0.33	0.07	95
Toluene	mg/kg	<0.01	<0.01	<0.01	<0.01		610	610	120	4400
Ethylbenzene	mg/kg	<0.01	<0.01	<0.01	<0.01		350	350	90	2800
Xylenes	mg/kg	<0.01	<0.01	<0.01	<0.01		230	230	160	2600
Arsenic (Total)	mg/kg	23.2	16.1	12.6	19.4		32	32	43	640
Cadmium (Total)	mg/kg	<0.5	0.6	<0.5	<0.5		10	10	1.8	230
Mercury (Total)	mg/kg	<0.5	<0.5	<0.5	<0.5		170	170	80	3600
Nickel (Total)	mg/kg	35.9	26.0	36.6	38.5		130	130	230	1800
Phenols (Total)	mg/kg	<5	<5	<5	<5		420	420	280	3200
Selenium (Total)	mg/kg	<1.0	<1.0	<1.0	<1.0		350	350	120	13000
<b>Key</b>		<b>Result exceeds ATRISK screening value</b> <b>Result exceeds EQS/CIEH generic assessment criteria</b> <b>Result exceeds CLEA Soil Guideline Value (SGV)</b>								
PAH - Polyaromatic Hydrocarbons										
TPH - Total Petroleum Hydrocarbons										
- Not determined										
Moisture Content	%	12.4	9.9	16.4	25.3		-	-	-	-
Stones	%	<0.1	35.0	11.3	<0.1		-	-	-	-



Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards on Sea, East Sussex, TN38 9BY

Tel: +44 (0)1424 718618, Email: info@elab-uk.co.uk, Web: www.elab-uk.co.uk

## Results Summary

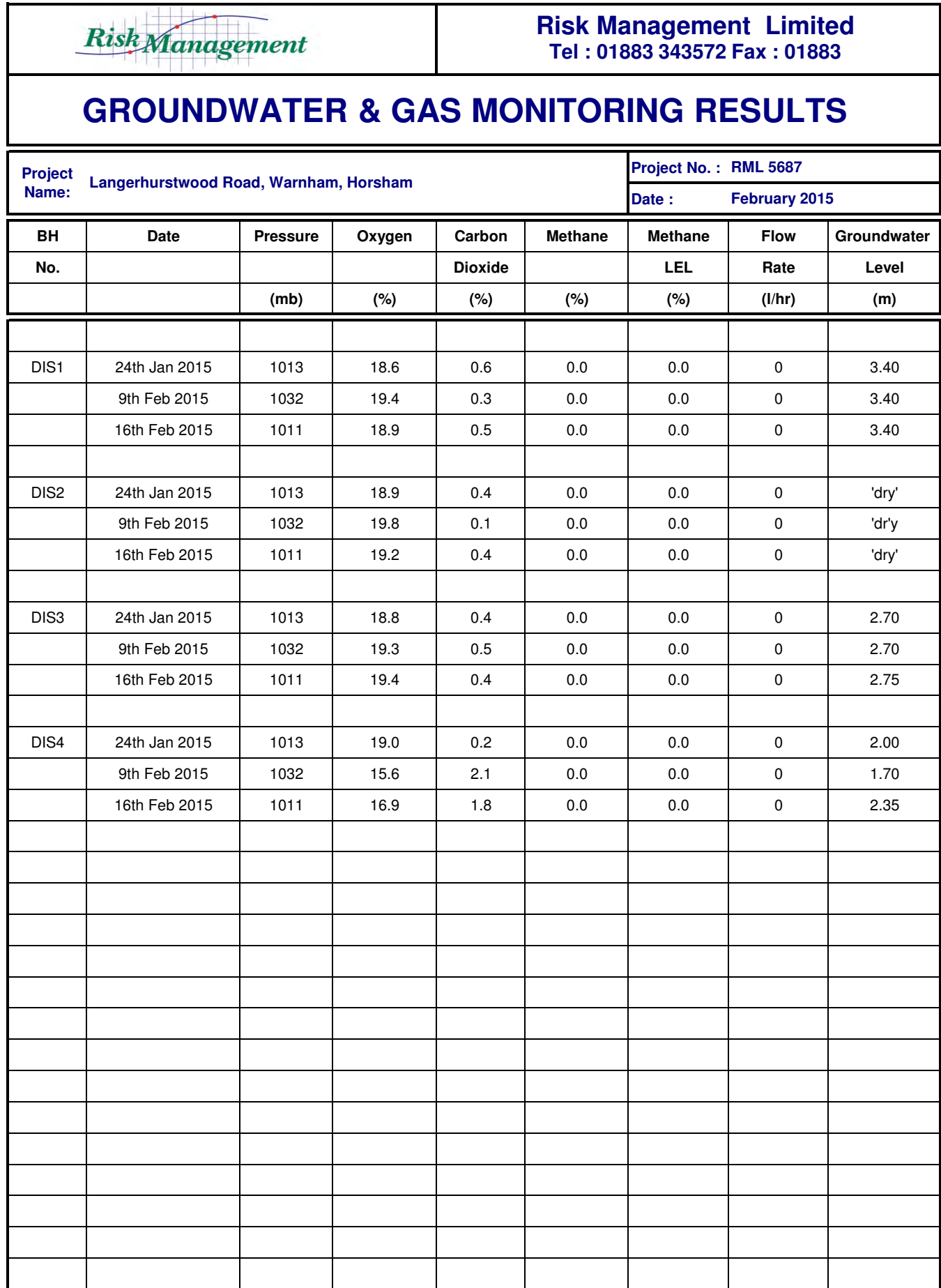
**Report No.:** 15-00249

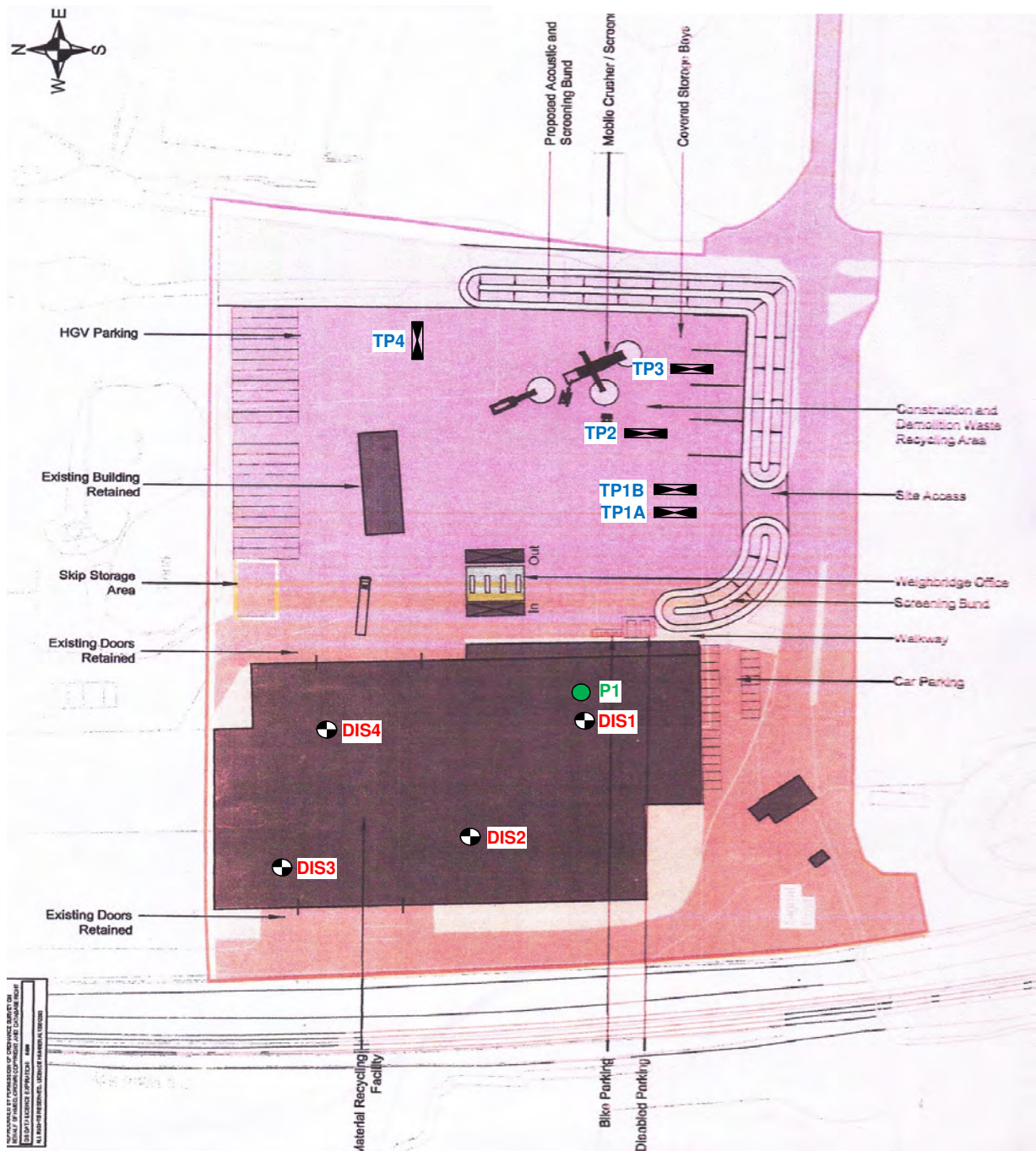
Langhurstwood Road, Warnham, Horsham

### Asbestos Qualitative Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Result
14382	1.50	DIS1 D4	Silty loam	No asbestos detected
14383	0.50	DIS2 D2	Silty loam	No asbestos detected
14384	1.50	DIS3 D4	Silty loam	No asbestos detected
14385	0.50	DIS4 D2	Silty loam	No asbestos detected
14386	0.50	TP1 D2	Silty loam	No asbestos detected
14387	0.15	TP2 D1	Silty loam	No asbestos detected
14388	0.50	TP3 D2	Silty loam	No asbestos detected
14389	0.15	TP4 D1	Silty loam	No asbestos detected





**RISK MANAGEMENT LIMITED**

Tel : 01883 343572  
Fax : 01883 344060

Title : **SKETCH FIELDWORK LOCATION PLAN**

Project Location : Langerhurstwood Road, Warnham, Horsham

Report Date : February 2015


Scale : NTS

Drawn By : MSP

Drg. No. RML 5687 /1






 <p><b>RISK MANAGEMENT LIMITED</b></p> <p>Tel : 01883 343572 Fax : 01883 344060</p>	<p>Title :</p> <p><b>TRIAL PIT PHOTOGRAPHS</b></p>	<p>Job No : RML 5687</p>
		<p>Date : Feb 2015</p>
	<p>Project Location :</p> <p>Warnham Brickworks.</p>	<p>Drawn by : MSP</p>
		<p>TRIAL PIT <b>TP1a</b></p>






	Title :  <b>TRIAL PIT PHOTOGRAPHS</b>	Job No : RML 5687
		Date : Feb 2015
<b>RISK MANAGEMENT LIMITED</b>  Tel : 01883 343572 Fax : 01883 344060	Project Location : Warnham Brickworks.	Drawn by : MSP
		<b>TRIAL PIT TP1b</b>






	Title :  <b>TRIAL PIT PHOTOGRAPHS</b>	Job No : RML 5687
		Date : Feb 2015
<b>RISK MANAGEMENT LIMITED</b>  Tel : 01883 343572 Fax : 01883 344060	Project Location : Warnham Brickworks.	Drawn by : MSP
		<b>TRIAL PIT TP2</b>






 <b>RISK MANAGEMENT LIMITED</b> Tel : 01883 343572 Fax : 01883 344060	Title : <b>TRIAL PIT PHOTOGRAPHS</b>	Job No : RML 5687
		Date : Feb 2015
	Project Location : Warnham Brickworks.	Drawn by : MSP
		<b>TRIAL PIT TP3</b>





	Title :  <b>TRIAL PIT PHOTOGRAPHS</b>	Job No : RML 5687
		Date : Feb 2015
<b>RISK MANAGEMENT LIMITED</b>  Tel : 01883 343572 Fax : 01883 344060	Project Location : Warnham Brickworks.	Drawn by : MSP
		<b>TRIAL PIT TP4</b>

CHECKED



## Openreach Plant Maps Requested

NewSite Office (addresses can be located from [here](#))  
National Freephone: 0800 616 866

Dear Sir/Madam,

Thank you for your request to: [www.openreach.co.uk/networkinfo/](http://www.openreach.co.uk/networkinfo/)

You have downloaded copies of our drawings marked up to show the approximate location of Openreach apparatus, which is present in the immediate vicinity of your works. It is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works made near to Openreach apparatus, which may, exist at various depths and may deviate, from the marked route.

To avoid damage it is recommended that mechanical excavators or borers are not used within 600mm of Openreach plant. Please ensure that our equipment is not enclosed, blocked, covered or otherwise obstructed by your plant. In the event of clearance not being adequate we anticipate that your plant is either resited, or an order is placed with Openreach for rearrangements of its plant. If there are any difficulties with the Map please ring 0800 616866.

---

Please contact our Network Protection Service if required by dialling 0800 917 3993 or by Email on [DBYD@openreach.co.uk](mailto:DBYD@openreach.co.uk) giving seven days notice of your commencement date. This will provide you with on-site advice and a check of location for any Openreach apparatus.

---

Further to this, I hope the following points will assist you at the new development: -

Openreach has a licence obligation to provide service to any end customer requiring a connection. A Developer would not normally be charged for provision of service, our standard connection charges would apply to the end user when orders are placed with the communication provider of choice. However, should a Developer insist on an underground service in an area where Openreach plant is provided overhead, charges may be incurred.

When the Developer has obtained contract and planning permission Openreach would request a 'Clean', scaled Site Layout, Location Map and a covering letter be sent to the relevant newSite Office. We would particularly request that you give details of your programmed site start date and likely first occupancy date where possible. To obtain contact details of the newSite office covering the development area click on the URL below.

<http://www.openreach.co.uk/orpg/networkinfo/developnetwork/regionalcontacts.do>

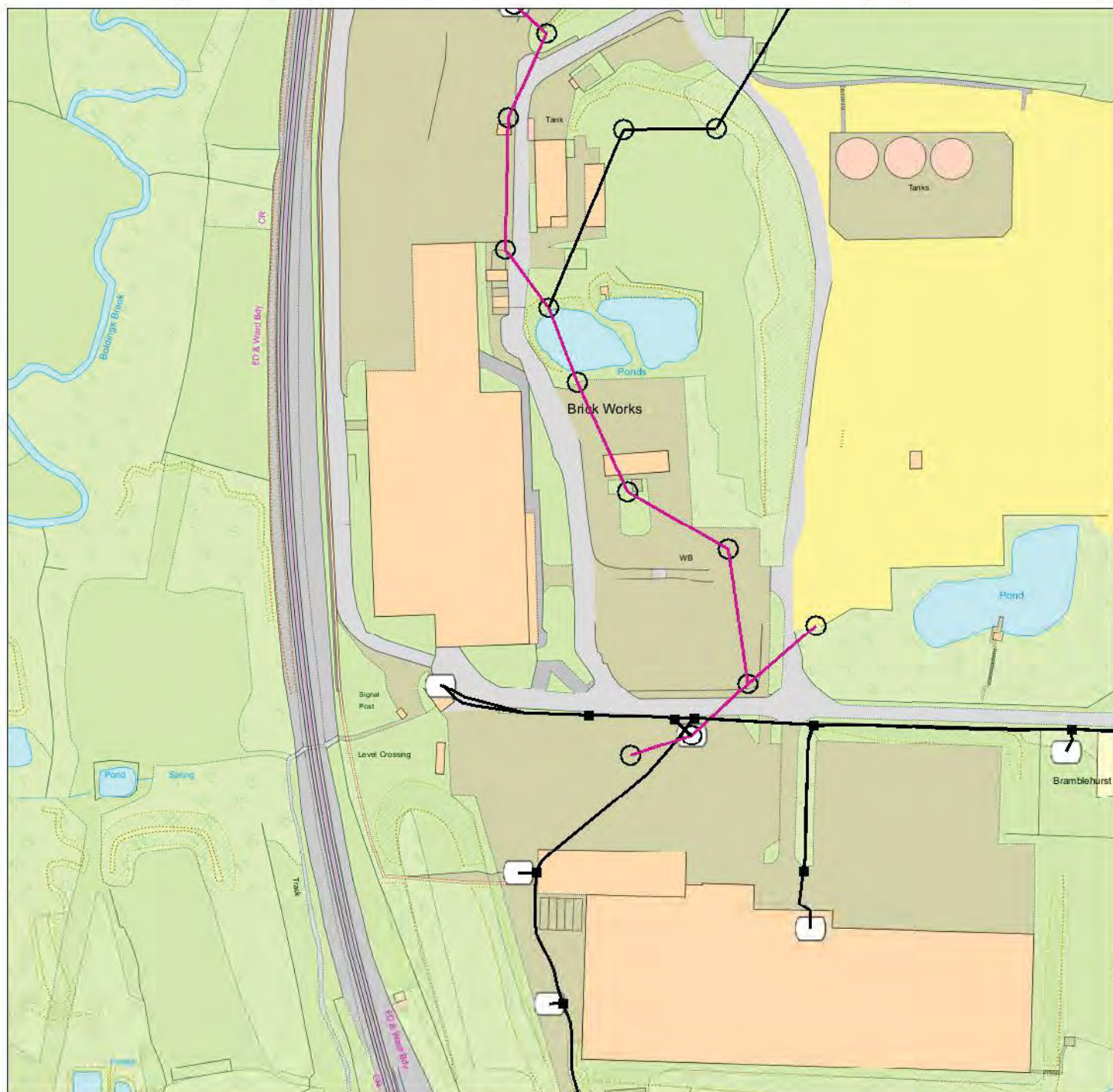
Where a development affects existing Openreach apparatus in the public highway, the cost of any necessary protection or diversionary works must be borne by the Developer. In this case where a budget estimate is required a Site Plan, Location Map and a covering letter should be forwarded to the Repayments Project Office. Please visit <http://www.openreach.co.uk/orpg/networkinfo/alternetwork/alterationcontacts.do> for contact details of the Repayments Office covering the development area.

Yours faithfully,

## Openreach newSites



# Maps by email Plant Information Reply



## IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy.

It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.

## DIAL BEFORE YOU DIG

FOR PROFESSIONAL ON SITE ASSISTANCE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS

ADVANCE NOTICE REQUIRED  
(Office hours: Monday-Friday 08.00 to 17.00)

Tel: 0800 9173993  
E-mail: [dbyd@openreach.co.uk](mailto:dbyd@openreach.co.uk)  
Website: [www.dialbeforeyoudig.com](http://www.dialbeforeyoudig.com)

Reproduced from the Ordnance Survey map by BT by permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationary Office  
(C) Crown Copyright British Telecommunications plc 100028040

## KEY TO BT SYMBOLS

	UNDERGROUND PLANT		POLE
	OVERHEAD PLANT		CABINET
	JOINT BOX		BURIED JOINT
	DISTRIBUTION POINT		JOINTING POST
	MANHOLE		PROPOSED U/G
	DP BOUNDARY		PROPOSED O/H
	OTHER BT BOUNDARY		PROPOSED BOX

Other proposed plant is shown using dashed lines. BT symbols not listed above may be disregarded. Existing BT plant may not be recorded. Information valid at the time of preparation.

**openreach**  
a BT group business

BT Ref : UOX09497N

Map Reference : (centre) TQ1711034320

Easting/Northing : (centre) 517110,134320

Issued : 30/12/2014 09:49:44

**FOOTNOTE: WARNING IT IS ESSENTIAL THAT YOU CONTACT NATIONAL NETWORK HANDLING CENTRE BY EMAIL [nnhc@openreach.co.uk](mailto:nnhc@openreach.co.uk) BEFORE PROCEEDING WITH ANY WORK IN THE HATCHED AREA**

## Agadi, Praful

---

**From:** SSD Enquiries [SSDEnquiries@environment-agency.gov.uk]  
**Sent:** 30 December 2014 20:13  
**To:** Statutory Enquiries; Shankar, Naveen  
**Subject:** FW: 141230/SW07 RE: Urgent:PLANT ENQUIRY:- LM 35321/NVS - Langhurstwood Road, Horsham  
**Attachments:** LM 35321-Map.pdf

Dear Sirs

Thank you for your recent consultation regarding the above site.

Although the Environment Agency is classed as a statutory undertaker for certain purposes we do not generally have plant equipment or pipelines situated in the public highway. Our consent as a regulator may be required if you are intending to carry out work within 8 metres of a Main River as defined in the Water Resources Act 1991.

This reply has been drafted without conducting a specific search of our records. If you have reason to think that your proposal will affect land or equipment which we own please resubmit your enquiry making this clear.

I hope that we have correctly interpreted your request.

Should you have any further queries, please do not hesitate to contact our office.

Kind regards

Customers & Engagement  
Solent and South Downs  
The Environment Agency - South East

External: 01903 703831  
Internal: 723 3831  
email: [ssdenquiries@environment-agency.gov.uk](mailto:ssdenquiries@environment-agency.gov.uk)

**ARE YOU PREPARED?**



[www.gov.uk/floodsdestroy](http://www.gov.uk/floodsdestroy)

---

**From:** Enquiries, Unit  
**Sent:** 30 December 2014 10:31  
**To:** Statutory Enquiries  
**Subject:** 141230/SW07 RE: Urgent:PLANT ENQUIRY:- LM 35321/NVS - Langhurstwood Road, Horsham

Good Morning Naveen

Thank you for your enquiry regarding plant enquiry:- LM 35321/NVS - Langhurstwood Road, Horsham.

I have passed your enquiry to our customer team for the relevant area and they will be in touch with you shortly.

The Freedom of Information Act and Environmental Information Regulations state that a public authority must respond to requests for information within 20 working days, but we aim to respond to all enquiries as quickly as we can.

You can find more information about our service commitment by clicking on the link below:

<https://www.gov.uk/government/publications/environment-agency-customer-service-commitment>

Should you wish to contact the customer team directly, please use the contact details below. Please quote your Enquiry Reference 141230/SW07 in any correspondence with us regarding this matter.

Customers and Engagement  
Environment Planning & Engagement  
Environment Agency  
Solent & South Downs Area  
Guildbourne House  
Chatsworth Road  
Worthing  
West Sussex  
BN11 1LD

Tel: 03708 506506

Regards

Steve Whittingslow  
Customer Service Advisor  
Environment Agency  
National Customer Contact Centre  
Part of National Operations  
03708 506 506

Click an icon to keep in touch with us:-



☎ Tel: 03708 506 506

📠 Fax 0114 2626697

🌐 Web Site: [www.gov.uk/environment-agency](http://www.gov.uk/environment-agency)

Environment Agency, Quadrant 2, 99 Parkway Ave, Parkway Business Park, Sheffield, S9 4WF

We would really like to know what you think of our customer service.

Please can you spare five minutes to complete our short survey; your feedback will help us identify where we need to improve.

<http://feedback.environmentagency.uk.com/s/HZwQiDVgYzGSx3Z>

---

**From:** Shankar, Naveen [<mailto:Naveen.Shankar@atkinsglobal.com>] **On Behalf Of** Statutory Enquiries

**Sent:** 30 December 2014 05:14

**To:** National Plant Enquiry's; [nrsua@bskyb.com](mailto:nrsua@bskyb.com); Enquiries, Unit; 'Interoute'; 'McNic'; 'Global Crossing New'; 'Networkrail'; 'Telenttelia.Plantenquiries@telent.com'; 'verizonbusiness'; 'plantenquiries@energetics-uk.com'; 'plantenquiries@cityfibreholdings.com'; 'plantenquiries@catelecomuk.com'; [street.works@westsussex.gov.uk](mailto:street.works@westsussex.gov.uk)

**Subject:** Urgent:PLANT ENQUIRY:- LM 35321/NVS - Langhurstwood Road, Horsham

**Importance:** High

**Urgent- It would be greatly appreciated if you could reply ASAP, where possible by 02/01/2015.**  
**Thanks in advance.**

To whom it may concern,

**Please reply to this Email id: - [AtkinsStatutory.Enquiries@atkinsglobal.com](mailto:AtkinsStatutory.Enquiries@atkinsglobal.com);**

McNicholas - Please reply for KPN & TATA.



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CHECKED

Underground Services Team  
National Records Centre  
Audax Road  
YORK

YO30 4GS

Tel:

Date: 09 January 2015

NRSWA Asset Enquiries

Your Reference **2014\_17158**

Our Reference: **SET127313 AX5**

Dear NRSWA,

**Re: Underground Services Search: \*\*OP\*\* Langhurstwood Road, Horsham**

**Please find information available as per the checklist.**

The information contained herein is based on Network Rail's records and, where appropriate, third parties such as utility companies. The search enclosed does not cover a search of local council records. Also, schematic Signal and Telecom (S&T) cables plans are not provided as part of the search results, therefore you must assume S&T cables are present until proven otherwise.

Although at the date of this letter the information is as up to date as possible, it is **NOT** a statement of validity, accuracy or completeness as to any of the enclosed search information and must not be relied on as such.

Your risk assessment **MUST** take into account:

- That the information supplied, including the services shown on the map from the Geographical Information Portal (GIP), does not provide any guarantee as to the accuracy of the actual location of services on site and **MUST** be considered as for guidance purposes only.
- That new/unrecorded services are likely to be present
- That the enclosed Underground Services search information has been collated only for the ELR and Mileage boundaries as stated on the original request form

Included in your underground services search is a list of local engineers and managers you **MUST** contact before any ground disturbance is carried out, to check whether further information is held locally.

Further guidance can be obtained from the Health and Safety Executive publication HSG47 "Avoiding Danger from Underground Services" and the Network Rail Publication NR/L2/BUS/1030

Should you become aware of any additional underground services or assets within the locality during your investigations and/or works, including redundant assets, please identify them as a matter of urgency to the site manager. Records of the location of these assets should be kept for onward transmission to the Hazard Editor for entry into the Hazard Directory.

Yours sincerely

**Alexis Xoufarides**

Distribution Co-ordinator



## GUIDELINES TO BE READ IN CONJUNCTION WITH THE ENCLOSED INFORMATION

The information contained herein is based on Network Rail's records and, where appropriate, third parties such as utility companies. The search enclosed does not cover a search of local council records. Also, schematic Signal and Telecom (S&T) cables plans are not provided as part of the search results, therefore you must assume S&T cables are present until proven otherwise.

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## UNDERGROUND SERVICES INFORMATION CHECKLIST



**YOUR REF** 2014\_17158

**OUR REF** SET127313

**LOCATION** \*\*OP\*\* Langhurstwood Road, Horsham

**ELR** BTH3

**MILEAGE FROM** 33.0474

**MILEAGE TO** 33.0810

Utility Company/Internal Source	Category	Enc	Notes
GI Portal	Marlin	Yes	
Hazard Directory	Hazard	Yes	
Civils SE	NRG	Yes	
eBrowser	NRG	Yes	

**NIL RETURN:** After interrogating the information made available to us, no records containing underground services information have been returned for this worksite.

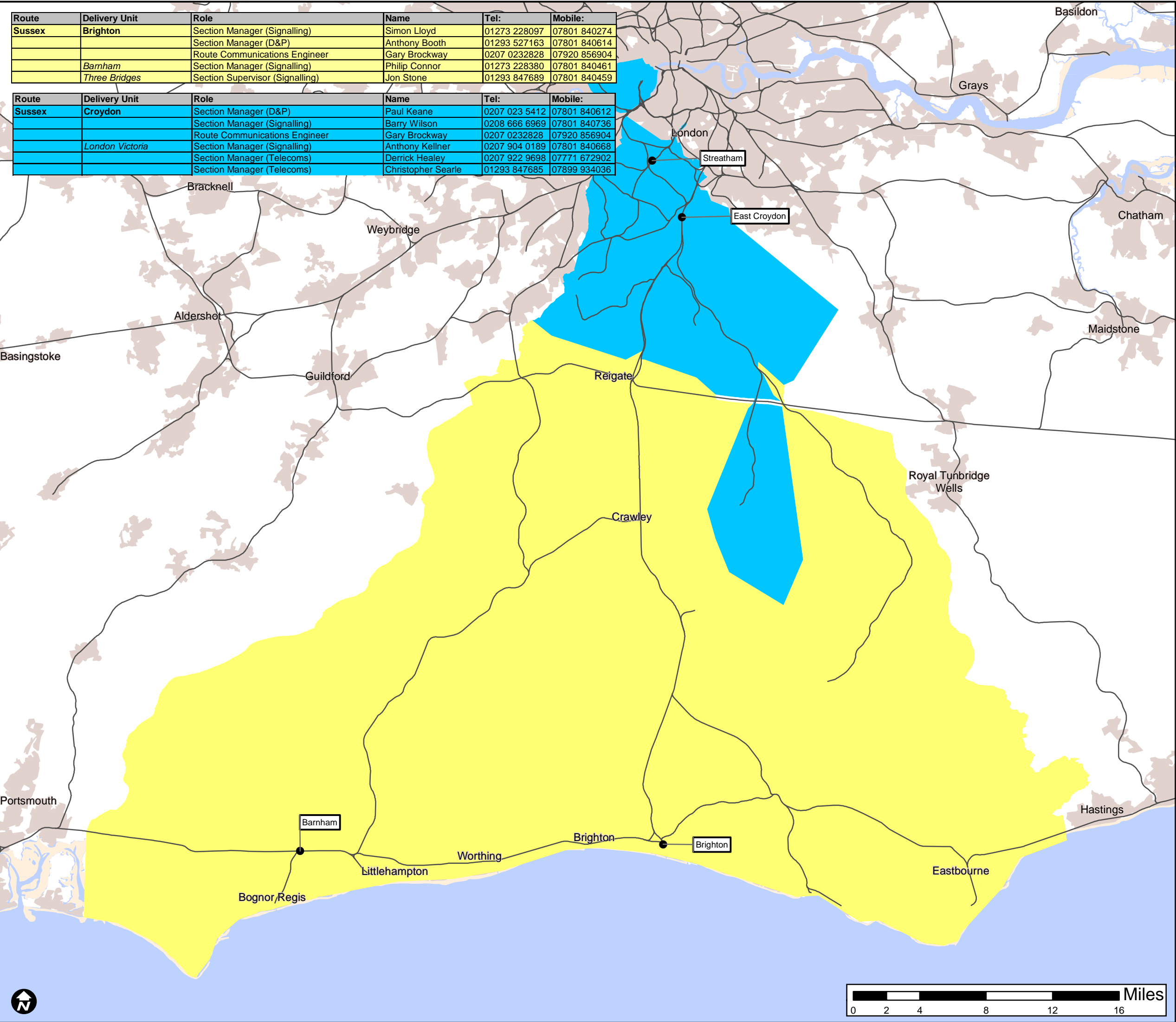
However, reference must be made to the guidelines supplied with this underground services search, which contain important information on safe working practices.

Upon receipt can you please check that the information provided agrees with this listing and if there are any discrepancies please contact the Underground Services Team at:

National Records Centre, Audax Road, York. YO30 4GS

[buriedservicesnst@networkrail.co.uk](mailto:buriedservicesnst@networkrail.co.uk)

Checklist printed on: 09/01/15



Asset Information - Analysis & Reporting  
[GeospatialReportingAnalysis@NetworkRail.co.uk](mailto:GeospatialReportingAnalysis@NetworkRail.co.uk)

LEGEND

- Stations
- Rail Network

**IMDM Boundaries**

- IMDM Brighton
- IMDM Croydon

Local Contacts List - Sussex IMDMs

Client: Buried Services  
Job No: 5519

Scale : 1 : 340 000

Date : 22/10/2014

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# GI Portal















This material is a guide only and although every effort will be made to ensure that the information is correct you should be aware that the information may be incomplete, inaccurate or out of date. Network Rail shall not be liable for any loss or damage, which may arise from the use of any information, contained.

### Company Ownership






-  Bridge (Rail over River)
-  Bridge (Rail over Road)
-  Bridge (Road over Rail)
-  Bridge (Rail over Rail)
-  Level Crossing
-  Tunnel
-  Contracted for Sale
-  Leasehold Ownership
-  Freehold Ownership
-  Prohibitive Interest

### Annotation







### Points














-  Bench Mark
-  Boundary Post or Stone
-  Historic Site
-  Disused Feature
-  General Feature
-  Positioned Boulder
-  Positioned Coniferous Tree
-  Positioned Nonconiferous Tree
-  Railway Structure
-  Roadside
-  Spot Height
-  Tidal Water
-  Inland Water
-  Inland Water

### Symbols

-  Bench Mark
-  Boundary Half Mereing
-  Direction of Flow
-  Switch
-  Road Related Flow

### Line Features

-  Building
-  Building
-  Building Overhead
-  General Feature Edge
-  General Feature
-  General Feature Underground

-  Top of Slope
-  Top of Slope
-  Bottom of Slope
-  Bottom of Slope
-  Narrow Gauge Railway
-  Standard Gauge Railway
-  Overhead Construction
-  validate General Feature
-  Mean High Water
-  Mean High Water
-  Mean Low Water
-  Mean Low Water
-  Historic Cable Route

### Miscellaneous

-  Business Space
-  Miscellaneous Asset Portfolio
-  Easements Wayleaves Telecoms

### Utilities

-  Business Space
-  Miscellaneous Asset Portfolio
-  Easements Wayleaves Telecoms





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Centre of Map Window (E,N): 516993 , 134338

<b>Company Ownership</b>  Bridge (Rail over River) Bridge (Rail over Road) Bridge (Road over Rail) Bridge (Rail over Rail) Level Crossing Tunnel Contracted for Sale Leasehold Ownership	<b>Freehold Ownership</b>	<b>Positioned Coniferous Tree</b>	<b>Boundary Half Merging</b>	<b>General Feature Underground</b>
	<b>Prohibitive Interest</b>	<b>Positioned Nonconiferous Tree</b>	<b>Direction of Flow</b>	<b>Top of Slope</b>
	<b>Annotation</b>	<b>Railway Structure</b>	<b>Switch</b>	<b>Bottom of Slope</b>
	<b>Points</b>	<b>Roadside</b>	<b>Road Related Flow</b>	<b>Bottom of Slope</b>
	<b>Bench Mark</b>	<b>Spot Height</b>	<b>Building</b>	<b>Narrow Gauge Railway</b>
	<b>Boundary Post or Stone</b>	<b>Tidal Water</b>	<b>Building Overhead</b>	<b>Standard Gauge Railway</b>
	<b>Historic Site</b>	<b>Inland Water</b>	<b>General Feature Edge</b>	<b>Overhead Construction</b>
	<b>Disused Feature</b>	<b>Inland Water</b>	<b>General Feature</b>	<b>validate General Feature</b>
	<b>General Feature</b>	<b>Symbols</b>		<b>Mean High Water</b>
	<b>Positioned Boulder</b>	<b>Bench Mark</b>		

**SET127313**  
Langhurstwood Road,  
Horsham

Plot Scale	1:2500
Plot Date	9/1/2015

Output Created from the GI Portal – A3 Portrait



## National Hazard Directory

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### Terms and Conditions

The National Hazard Directory (NHD) is issued by Network Rail to provide information on those hazards recorded as present on Network Rail's infrastructure. Its' purpose is to alert user(s) to the typical hazards that may be encountered on or around the Infrastructure during works . The NHD is made available to Network Rail employees and Network Rail contractors in order to assist in the identification and design of appropriate safety measures.

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## National Hazard Directory

### Customised Report

Search Criteria: ELR(s) = BTH3; Mileage From = 33.0474; Mileage To = 33.0810

Date: 09/01/2015

5 Hazards found.

ELR	ELR Name	Mileage From	Mileage To	Hazard Code	Hazard Description	Local Name	Track ID	Free Text
BTH3	EPSOM JN - HORSHAM JN	32.0015	35.0924	HBE	Buried Electrical Cables	KINGFOLD SUB STN TO END OF ELR @ HORSHAM JN	All/Multiple Tracks	
BTH3	EPSOM JN - HORSHAM JN	33.0660	33.0660	HBW	Buried Water Main	Warnham	All/Multiple Tracks	Water Main. Info on underground/overhead services <gas, water, electricity> has not been validated.
BTH3	EPSOM JN - HORSHAM JN	33.0726	33.0726	HBT	Buried Telecommunication Cables	Warnham	All/Multiple Tracks	CABLE LAID IN CULVERT. Info on underground/overhead services <gas, water, electricity> has not been validated.
BTH3	EPSOM JN - HORSHAM JN	33.0726	33.0726	HXE	Buried & Overhead Electric Cable	Warnham	All/Multiple Tracks	Elect. Line under Rly. Info on underground/overhead services <gas, water, electricity> has not been validated.
BTH3	EPSOM JN - HORSHAM JN	33.0750	33.0750	MAP	Authorised Access Point - Pedestrian	BRICKYARD Lxing	All/Multiple Tracks	Risk Rating 3, Hazard Rating 4, Score 12

## Xoufarides Alexis

---

**From:** Fitzpatrick Anna-Marie

**Sent:** 06 January 2015 14:46

**To:** BS\_Transmittals

**Subject:** Underground Services search: NRS \*\*OP\*\* Langhurstwood Road, Horsham (SET127313)

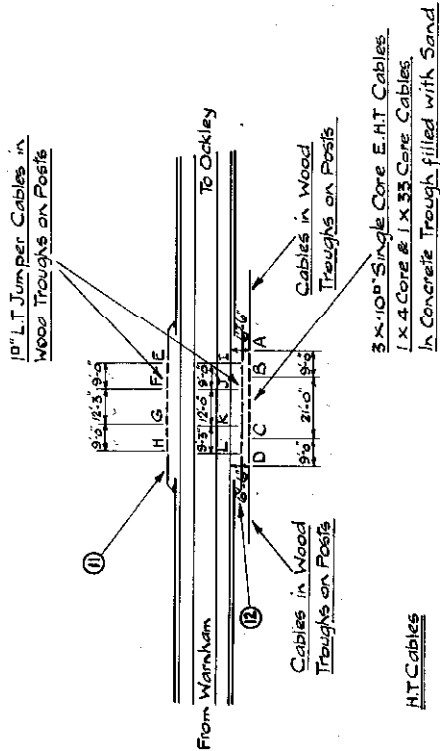
Action taken by NRG:

No records found

NST Ref: SET127313

National Records Group

# KINGSFOLD OCCUPATION CROSSING



**NOTE**  
**HT Cables**  
 A - B : Falls from 1'-6\" above to Ground Level  
 B - C : In built-up Ground. Depth 1'-6\"  
 C - D : Rises from Ground Level to 1'-6\" above

**L.T. Cables**  
 E - F : Falls from Ground Level to 2'-9\" below  
 F - G : 2'-9\" below Ground Level  
 G - H : Rises from 2'-9\" below to Ground Level  
 H - I : Falls from Ground Level to 2'-9\" below  
 I - J : 2'-9\" below Ground Level  
 J - K : Rises from 2'-9\" below to Ground Level  
 K - L : Rises from 2'-9\" below to Ground Level

**Amount of Pitching**  
 Item 11 : 30'-3\"  
 Item 12 : 30'-3\"

**Distance from Rail at points**  
 E 3'-3\" F 4'-0\" G 4'-0\" H 3'-3\"  
 I 3'-3\" J 4'-0\" K 4'-3\" L 5'-3\"

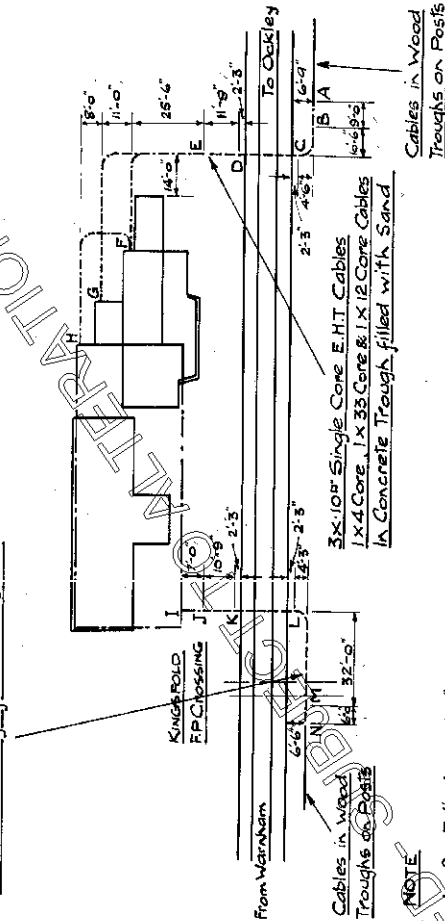
CHART PH5Z

Date:	3. 3. 39	Drawn by:	W. J. 2. 7. 39
Checked:	W. J. 2. 7. 39	Applied by:	

Chart No. 114 46 447

# KINGSFOLD SUBSTATION

3 x 100' Single Core E.H.T. Cables  
 1 x 4 Core & 1 x 33 Core Cables  
 In Concrete Trough filled with Sand



**NOTE**  
 A - B : Falls from 1'-6\" above to Ground Level  
 B - C : Falls from Ground Level to 2'-4\" below top of Sleeper Level  
 C - D : 5\" Fibre Tubes 2'-6\" below top of Sleepers  
 D - E : Rises from 2'-4\" below top of Sleeper Level to Ground Level  
 E - F : Surface Concrete Trough  
 F - H :  
 I - J :  
 J - K : Falls from Ground Level to 2'-4\" below top of Sleeper Level  
 K - L : 5\" Fibre Tubes 2'-6\" below top of Sleepers  
 L - M : Rises from 2'-4\" below top of Sleeper Level to Ground Level  
 M - N : Rises from Ground Level to 1'-6\" above

SOUTHERN RAILWAY  
 CHIEF ELECTRICAL ENGINEER  
 DRAWING OFFICE  
 LONDON BRIDGE

CHART PH5G

KINGSFOLD OCCUPATION CROSSING &  
 KINGSFOLD SUBSTATION  
 E.M.T. L.T. & PILOT CABLES  
 BURIED CABLE CHART

B-2340

Scale: 1\" to 40'-0\"

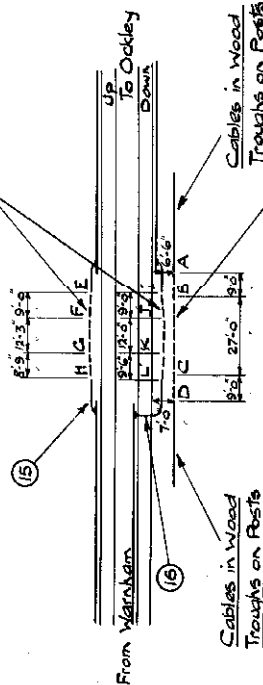
Dwg No. 114 46 447

1656

# GUN BARN OCCUPATION CROSSING

32 M. 55C.

10" LT Jumper Cables in Wood Troughs filled with Pitch



3 x 100" Single Core E.H.T. Cables  
1 x 4 Core & 1 x 33 Core Cables  
In Concrete Trough filled with Sand

## NOTE

- A - B : Falls from 1'-6" above to Ground Level
- B - C : In Built-up Ground. Depth 3'-0"
- C - D : Rises from Ground Level to 1'-6" above

## L.T. Cables

- E - F : Falls from Ground Level to 2'-9" below
- F - G : 2'-9" below Ground Level
- G - H : Rises from 2'-9" below to Ground Level
- I - J : Falls from Ground Level to 2'-9" below
- J - K : 2'-9" below Ground Level
- K - L : Rises from 2'-9" below to Ground Level

## Amount of Pitching

- Item 15 :- 30'-0"
- Item 16 :- 30'-6"

## Distance from Rail at points :-

- E : 3'-3" F : 3'-9" G : 3'-9" H : 3'-3"
- I : 3'-3" J : 4'-0" K : 4'-3" L : 3'-3"

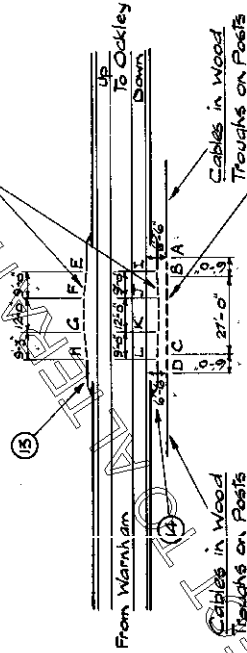
Date:	3. 3. 1949
Checked:	W. J. 2.
Drawn by:	W. J. 2.
Appd. by:	

Chart No. 19 were P.H. 48 (49)

# LITTLE SPARS OCCUPATION CROSSING

32 M. 51 1/2 C.

10" LT Jumper Cables in Wood Troughs filled with Pitch



3 x 100" Single Core E.H.T. Cables  
1 x 4 Core & 1 x 33 Core Cables  
In Concrete Trough filled with Sand

## NOTE

- A - B : Falls from 1'-6" above to Ground Level
- B - C : In Built-up Ground. Depth 2'-6"
- C - D : Rises from Ground Level to 1'-6" above

## L.T. Cables

- E - F : Falls from Ground Level to 2'-9" below
- F - G : 2'-9" below Ground Level
- G - H : Rises from 2'-9" below to Ground Level
- I - J : Falls from Ground Level to 2'-9" below
- J - K : 2'-9" below Ground Level
- K - L : Rises from 2'-9" below to Ground Level

## Amount of Pitching

- Item 15 :- 30'-3"
- Item 14 :- 30'-0"

## Distance from Rail at points :-

- E : 3'-0" F : 4'-3" G : 4'-3" H : 3'-3"
- I : 3'-0" J : 4'-0" K : 4'-0" L : 3'-0"

Date:	3. 3. 1949
Checked:	W. J. 2.
Drawn by:	W. J. 2.
Appd. by:	

B - 2341

## CHART PH58

SOUTHERN RAILWAY

CHIEF ELECTRICAL ENGINEER

DRAWING OFFICE

LONDON BRIDGE

GUN BARN OCCUPATION CROSSING

& LITTLE SPARS OCCUPATION CROSSING

E.H.T. LT & PILOT CABLES

BURIED CABLE CHART

Scale: 1" to 40'-0"

Drq No. 2341

## CHART PH59

1657

Our Ref: SO/0050309  
Your Ref: LM 35321/NVS

Date: 30/12/2014

CHECKED



Naveen Shankar M R, .  
Atkins  
The Hub  
500 Park Avenue  
Aztec West  
Almondsbury

Plant Location  
95 Kilbirnie Street  
Glasgow  
G5 8JD

Phone: 0141 418 4093  
Phone: 0845 070 3497  
Fax: 0141 429 6432  
Email: plantlocation@sgn.co.uk

Dear Customer,

**Re: Enquiry at: Langhurstwood Road, Horsham RH12 3SR.**

#### **Searches - Important Information**

Thank you for your enquiry regarding the above location. If your client plans to carry out any on site works they **must** contact ourselves directly so that a full safety and engineering risk assessment can be carried out **prior** to any work starting.

Listed below is the **minimum** information we would require from your client and our contact details:

- Full contact details (name, company name, address, telephone number and e-mail address)
- Full site address, post code and easting/northing grid reference.
- Plan showing the site boundary.
- Details of the work to be carried out.
- The proposed start date (please specify if work is at the planning stage).

Our contact information is:

Address - Scotia Gas Networks, Plant Location Dept, 95 Kilbirnie Street, Glasgow, G5 8JD.

E Mail - plantlocation@sgn.co.uk

Fax - 0141 429 6432

It must be stressed that both direct and consequential damage to gas plant can be dangerous both for your client's employees and the general public, repairs to any such damage will incur a charge. Your client's works should be carried out in such a manner that we are able to gain access to our apparatus throughout the duration of your client's operations.

**24 hour gas escape number 0800 111 999\***  
**\*Calls will be recorded and may be monitored**

Southern Gas Networks plc is part of the Scotia Gas Networks Group  
Registered Office: St Lawrence House Station Approach Horley  
Surrey RH6 9HJ  
Registered in England & Wales No. 05167021  
<http://www.sgn.co.uk>



**Please note that the information supplied by Scotia Gas Networks is given without warranty. Whilst we understand the information supplied to be correct, no reliance should be given in respect of the location of our apparatus. We can locate apparatus on site at your client's request prior to any development works to be carried out in the vicinity of our pipelines.**

If you require any further information please contact the number below.

Yours faithfully,

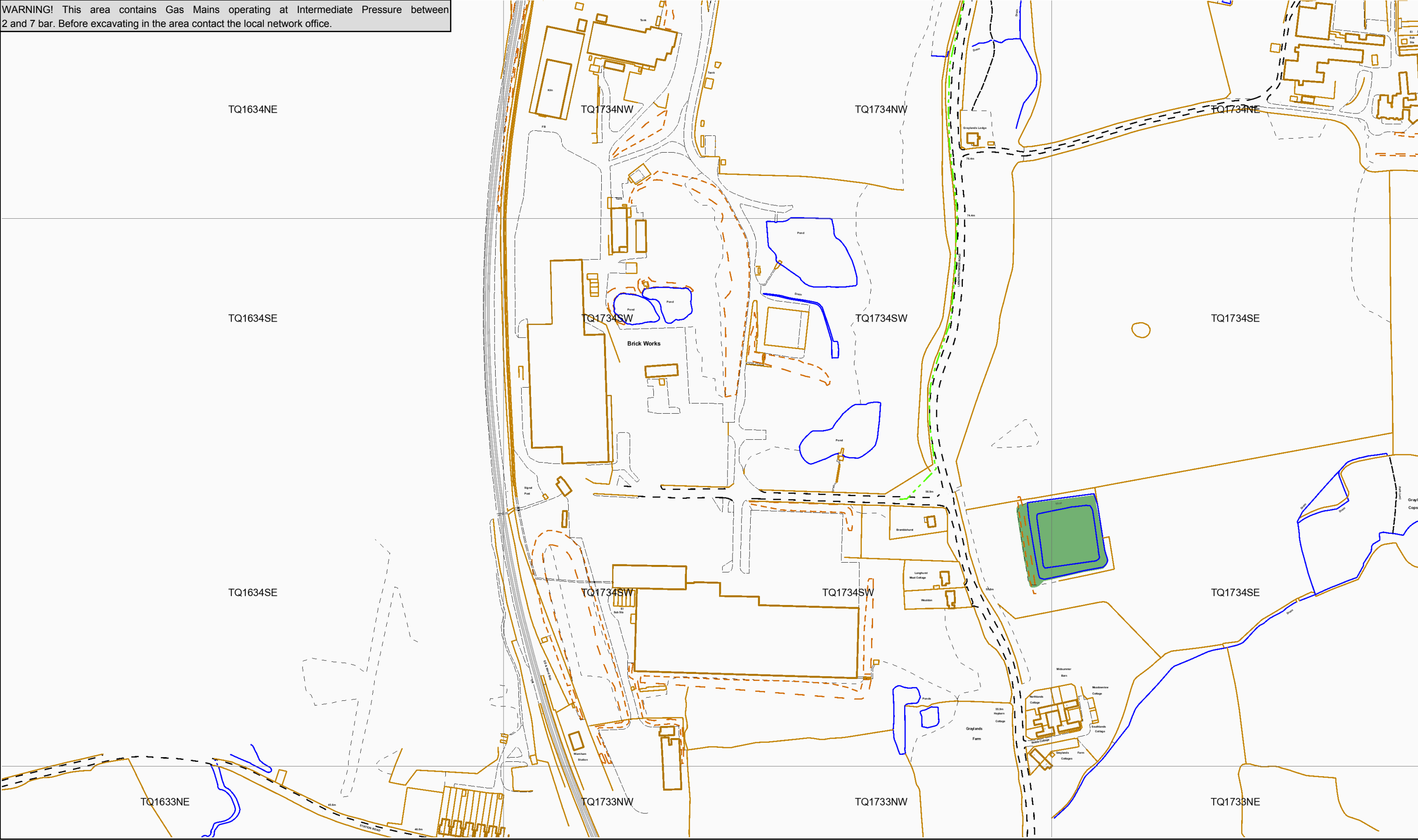
Alison Mair

0141 418 4093

**24 hour gas escape number 0800 111 999\***  
**\*Calls will be recorded and may be monitored**

Southern Gas Networks plc is part of the Scotia Gas Networks Group  
Registered Office: St Lawrence House Station Approach Horley  
Surrey RH6 9HJ  
Registered in England & Wales No. 05167021  
<http://www.sgn.co.uk>


WARNING! This area contains Gas Mains operating at Intermediate Pressure between 2 and 7 bar. Before excavating in the area contact the local network office.



SCALE : 1 : 3214	LP MAINS	—	<p>This plan shows the location of those pipes owned by Scotia Gas Networks (SGN) by virtue of being a licensed Gas Transporter (GT). Gas pipes owned by other GTs or third parties may also be present in this area but are not shown on this plan. Information with regard to such pipes should be obtained from the relevant owners. No warranties are given with regard to the accuracy of the information shown on this plan. Service pipes, valves, siphons, sub-connections etc are not shown but their presence should be anticipated. You should be aware that a small percentage of our pipes/assets may be undergoing review and will temporarily be highlighted in yellow. If your proposed works are close to one of these pipes, you should contact the SGN Plant Protection Team on 08450703497 for advice. No liability of any kind whatsoever is accepted by SGN or its agents, servants or sub-contractors for any error or omission contained herein. Safe digging practices, in accordance with HS (G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that plant location information is provided to all persons (whether direct labour or sub-contractors) working for you on or near gas apparatus. Information included on this plan should not be referred to beyond a period of 28 days from the date of issue.</p>	Intranet WebGIS 2.1	
USER ID : am54938	MP MAINS	- - -			West Sussex County Area
DATE : 30/12/2014	IP MAINS	- . - . -			
INTERNAL USE ONLY	LHP MAINS	- . - . -			
GRID REFERENCE : E517189,N134317,TQ 17 34	HISTORY DATA	—			
Some examples of Plant Items	LAs	—	<p>This plan is reproduced from or based on the OS map by Scotia Gas Networks plc, with the sanction of the controller of HM Stationery Office. Crown Copyright Reserved.</p>		
Valve	GTs	SSSIs			
Syphon	Depth of Cover	Diameter Change	Material Change		

**Caution.**

For safety reasons reproduction of the maps attached should be printed by a coloured printer at a legible scale.



# **General safety measures to avoid injury and damage to gas plant**



**Southern  
Gas Networks**  
A Scotia Gas Networks Company

# The following protective and precautionary measures **MUST** be taken when working/excavating in the vicinity of our plant.

To avoid injury to yourself, your employees, colleagues and the general public you **MUST** verify the details provided on our plans by tracing, hand-digging, trial holes and suitably marking its position on site.

You **MUST** ensure current full colour copies of our plans are issued and the presence and location of our plant, prior to excavation, is understood by all relevant personnel on site.

## In an emergency

If you cause a gas leak or suspect a pipe or equipment is leaking, you **MUST** take the following emergency actions immediately:

- a. Get everyone away from the immediate vicinity of the gas escape;
- b. Inform us immediately by calling the National Gas Emergency Number on **0800 111 999\***;
- c. Do not attempt to repair the escape or stop the leakage;
- d. Ask occupants of buildings adjacent to the escape to leave until it is safe for them to return;
- e. Damage to a service supplying a building may result in gas entering the building. Do not attempt to operate any valves;
- f. Prevent any approach to the immediate vicinity of the gas escape;
- g. Prohibit smoking and extinguish all naked flames. Do not use mobile phones or other sources of ignition within 15m from the leakage; and
- h. Assist our representatives, and other emergency services for example police, fire and ambulance as requested.

### Additional reference material;

- HSE Guidance Note; HSG47 “Avoiding Danger from Underground Services” at [www.hse.gov.uk](http://www.hse.gov.uk) and
- NJUG “Utilities Guidance on Positioning and Colour Coding of Apparatus” at [www.njug.org.uk](http://www.njug.org.uk)









## Safe System of Work

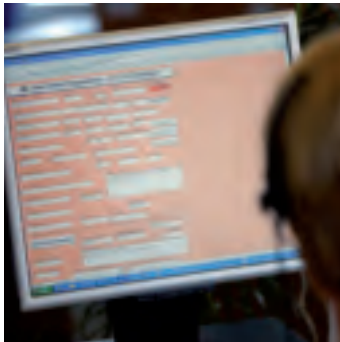
We may request the production of Risk Assessments and Method Statements for any works deemed to have the potential to affect, cause risk to or pose a hazard to the safety and/or integrity of our plant. Where CDM legislation applies reference MUST be made to our plant within the site 'Health and Safety File'.

## Financial

Every reasonable precaution MUST be taken to avoid personal injury or damage to our plant during the progress of the planned works. Any cost incurred by us for the repair of direct or consequential damage and the diversion of any affected plant will be recharged in full.

## HSE

Any damage to our apparatus will be subject to legislative reporting responsibilities to the Health and Safety Executive under Reporting of Injuries, Diseases & Dangerous Occurrences Regulations (RIDDOR) and Gas Safety Management Regulations (GSMR).









## Minimum safe working distances

If you are carrying out explosions, piling, splitting, boring and deep excavations, please contact us for further guidance. Trial holes **MUST** be dug by hand to determine the exact location of mains and service pipes in advance of mechanical excavation or thrust boring. Be aware of the potential for the presence of protruding objects from gas plant in the form of standpipes, test points and valve bodies.

## Mechanical excavation

Mechanical excavators (including breaker attachments) **MUST NOT** be used within the following distances from the confirmed location of our gas mains and services (as depicted on our gas maps), without prior agreement:



Type of Mains and Services	GAS MAP Identification	Hand Excavation required inside	Pipe pressure indication shown on MAP
Low Pressure (LP)	0 – 75mbar	0.5 metres	
Medium Pressure (MP)	75mbar to 2 bar	0.5 metres	
Intermediate Pressure (IP)	2 – 7 bar	3.0 metres	
High Pressure (HP)	Above 7 bar	3.0 metres	

Note: We MUST be consulted prior to any planned excavation works within 10m of Pressure Reduction Equipment and may consider issuing a Permit to Work, if appropriate.

## High pressures

In addition to receiving a copy of our ‘Safe working in the vicinity of Southern Gas Networks high pressure pipelines and associated installations’, if any activities proposed are closer than the minimum distances listed below you **MUST** discuss with us to agree your site specific requirements.

Power Excavators in easements	>3 metres
Power Excavators in highway	>3 metres
Pressure testing	>8 metres
Piling	>15 metres
Demolition	>150 metres
Blasting	>250 metres
No-dig techniques	Method Statement required
Crossing easement with plant	Written Consent required

## Clearance requirements

No plant is to be laid over and along the line of a gas pipe irrespective of clearance. To allow the future repair and maintenance of gas plant, a minimum clearance of 250mm for low and medium pressure pipelines and 600mm for intermediate and high pressure pipelines, or 1.5 times the external diameter of the gas pipe, which ever is the greater, should be maintained between the gas plant and any new plant. Where this minimum clearance cannot be achieved, site discussions should be held with us or our representatives to agree a suitable clearance. Explosives shall not be used within 30m of our plant (400m for Pressure Reduction Equipment) without prior agreement. No piling or boring shall be carried out within 15m of our plant without prior consultation and agreement.











## Surface boxes/Manholes

Do not bury or move our surface boxes. Access **MUST** be maintained both during and after your works. No manhole cover or other structure is to be built over, around or under a gas pipe and no work is to be carried out which results in a reduction or increase in cover or protection without prior written agreement.

## Deep excavations

Where excavations adjacent to any of our potentially affects its security and integrity, adequate protection (approved by us) **MUST** be applied to such plant. Ground movement around gas **MUST** be prevented. If a sewer trench or any other water authority is to be constructed at greater than 1.5 metres deep near to a buried gas main or service pipe, we **MUST** be contacted. We should be provided with detailed drawings showing the line and width of the proposed sewer or other trench, together with the soil group classifications of the area concerned.

## Crossing our plant

The placing of heavy construction plant, equipment, materials or the passage of heavy vehicles over our plant is prohibited unless specially agreed protective measures (i.e. the construction of reinforced crossing points) have been carried out. This is particularly important where reductions in side support or ground cover are planned.

Working in easements should not be undertaken without our prior written consent.

## Exposed plant

Where excavations adjacent to gas plant affect its support, the plant **MUST** be adequately supported and protected in consultation with us and to our satisfaction. It **MUST** be protected from impact and restraints, thrust blocks and supports **MUST** not be removed without our agreement.



## Hot works

The potential exists for heat damage to plastic pipelines/coatings. Where welding or other hot works involving naked flames is to be carried out in proximity to our plant, our representative should be present.

## Backfilling

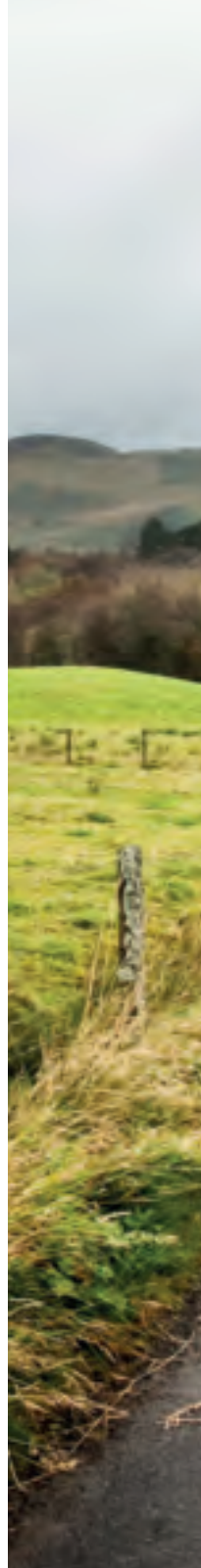
Concrete backfill should not be placed closer than 300mm to our plant. No concrete or hard material should be placed under or adjacent to any of our plant. Shuttering **MUST** be constructed so as to prevent fresh concrete encasing our plant and to maintain the stated clearances. Material used for the surround backfill of our plant **MUST** conform to the following requirements:

- If sand, it **MUST** be well-graded in accordance with BS EN 12620: 2002;
- It **MUST** not contain any sharp particles; stones, bricks, lumps or corrosive materials;
- Foamed concrete should not be used; and
- It **MUST** be laid to a minimum depth of 250mm above the crown of the pipe.

**Note:** Power ramming should not take place until a 300mm hand rammed layer has been completed over the crown of the pipe.

## Access

Access to sites and our plant **MUST** be provided at all times. This includes temporary structures and spoil heaps over our pipes.









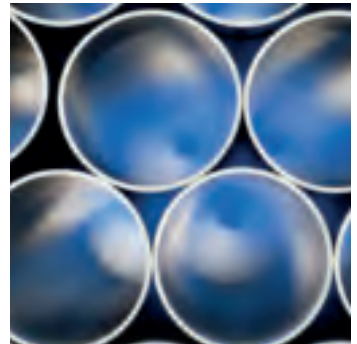
## Tree planting

If trees or shrubs are to be planted adjacent to our plant, the selection of the type of tree or shrub and its planting **MUST** be considered so that root damage to buried mains or services will be avoided and that damage to trees or shrubs will not be caused by any subsequent excavations for repair and maintenance.

Before any tree planting is carried out on the easement, our written approval **MUST** be obtained. Any approval we grant to plant trees on the easement shall be subjecting to retaining the rights to remove, at any time in the future, all trees which in our opinion might become a danger to the pipe.

The written consent to plant trees will state what area may be planted and also the type of tree.

See over for specific species and the distances they **MUST** be planted from the pipeline.



The following trees and those of similar size, which may be deciduous or evergreen, shall not be planted within six metres of the centre line of the pipe e.g. Ash, Beech, Birch, most Conifers, Elm, Maple, Lime, Horse Chestnut, Oak, and Sycamore. Apple and Pear trees are also included in this category.

Dwarf Apple Stocks may be planted up to three metres of the centre line of the pipe.



In cases where screening is required, the following are shallow rooting and may be planted close to the pipeline; Blackthorn, Broom, Cottoneaster, Elder, Hazel, Laurel, Quickthorn, Privet, Snowberry and most ornamental shrubs.

## PIPELINE CENTRE

---

Raspberries, Gooseberries and Blackcurrants may be planted on the pipe, but a four metre strip, centred on the pipe, **MUST** be left clear at all times.

Poplar and Willow trees shall not be planted within 10 metres of the centre line of the pipe.



10m

6m - 9m



These types of trees may only be planted as individual specimens or as a single row in the area between six and 10 metres of the pipe.

**Dense mass planting may only be carried out at distances greater than 10 metres from the pipe.**

3m - 6m

0m - 3m



Christmas Trees (Picea Abies) may be planted up to three metres of the pipeline. However, permission is given on the strict understanding that Christmas trees are clear-felled at intervals not exceeding seven years.

## PIPELINE CENTRE

The only hardwood plants which can be planted directly across a pipe are hedge plants such as Quickthorn, Blackthorn etc and these shall only be planted where hedge is necessary either for screening purposes or to indicate a field boundary.

**Note: For further guidance refer to NJUG 10.**



## Notes

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

## This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

**Southern Gas Networks provides a  
free plant location enquiry service  
during office hours.**

**Contact:**

**Tel: 0845 0703 497 or 0141 418 4093**

**Fax: 0141 429 6432**

**Email: [plantlocation@sgn.co.uk](mailto:plantlocation@sgn.co.uk)**

**Southern Gas Networks, Plant Location Team,  
Tradeston, 95 Kilbirnie Street, Glasgow, G5 8JD**

**[www.sgn.co.uk](http://www.sgn.co.uk)**

We regret that information cannot be supplied by telephone. Requests **MUST** be made in writing (via letter, email or fax). For **ALL** enquiries please include the following information:

1. Full contact details (name, company name, address, telephone number and e-mail address).
2. Full site address, postcode and easting/northing grid reference.
3. Plan showing the site boundary.
4. Details of the work to be carried out.
5. The proposed start date (please specify if work is planning only).

Ms. Sarah Generalski-Sparling  
Atkins Telecoms  
Stats Enquiries Team  
The Hub  
500 Park Avenue  
Bristol  
BS32 4RZ

CHECKED

Our Ref: 2015/2176336  
Your Ref: 35321  
05/01/2015

Dear Sir/Madam

**LANGHURSTWOOD ROAD, HORSHAM, RH12 3SR**

Thank you for your letter of 30/12/2015 in which you asked if there are any electric lines and/or electrical plant belonging to UK Power Networks (SEPN) plc ("UK Power Networks") within the land identified by your enquiry.

I enclose a copy of UK Power Networks record of its electric lines and/or electrical plant at the site identified by your enquiry. If the records provided do not relate to the land to which you had intended to refer please resubmit your enquiry.

This information is made available to you on the terms set out below.

- 1. UK Power Networks does not warrant that the information provided to you is correct. You rely upon it at your own risk.**
2. UK Power Networks does not exclude or limit its liability if it causes the death of any person or causes personal injury to a person where such death or personal injury is caused by its negligence.
3. **Subject to paragraph 2 UK Power Networks has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise how for any loss, damage, costs, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.**
4. The information about UK Power Networks electrical plant and/or electric lines provided to you belongs to and remains the property of UK Power Networks. You must not alter it in any respect.
5. **The information provided to you about the electrical plant and/or electric lines depicted on the plans may NOT be a complete record of such apparatus belonging to UK Power Networks. The information provided relates to electric lines and/or electrical plant belonging to UK Power Networks that it believes to be present but the plans are NOT definitive: other electric lines and/or electrical plant may be present and that may or may not belong to UK Power Networks.**

IF YOU DO **NOT** ACCEPT AND/OR **DO NOT** UNDERSTAND THE TERMS OF USE SET OUT IN PARAGRAPHS 1 TO 12 INCLUSIVE ABOVE YOU MUST NOT USE THE PLANS AND RETURN THEM TO ME.

I would remind you that work adjacent to electric lines and/or electrical plant represents a serious risk to health and safety and as such should feature amongst the items you have assessed in your workplace risk assessment and method statement.

I shall be pleased to supply you with further assistance if you require it.

Yours sincerely

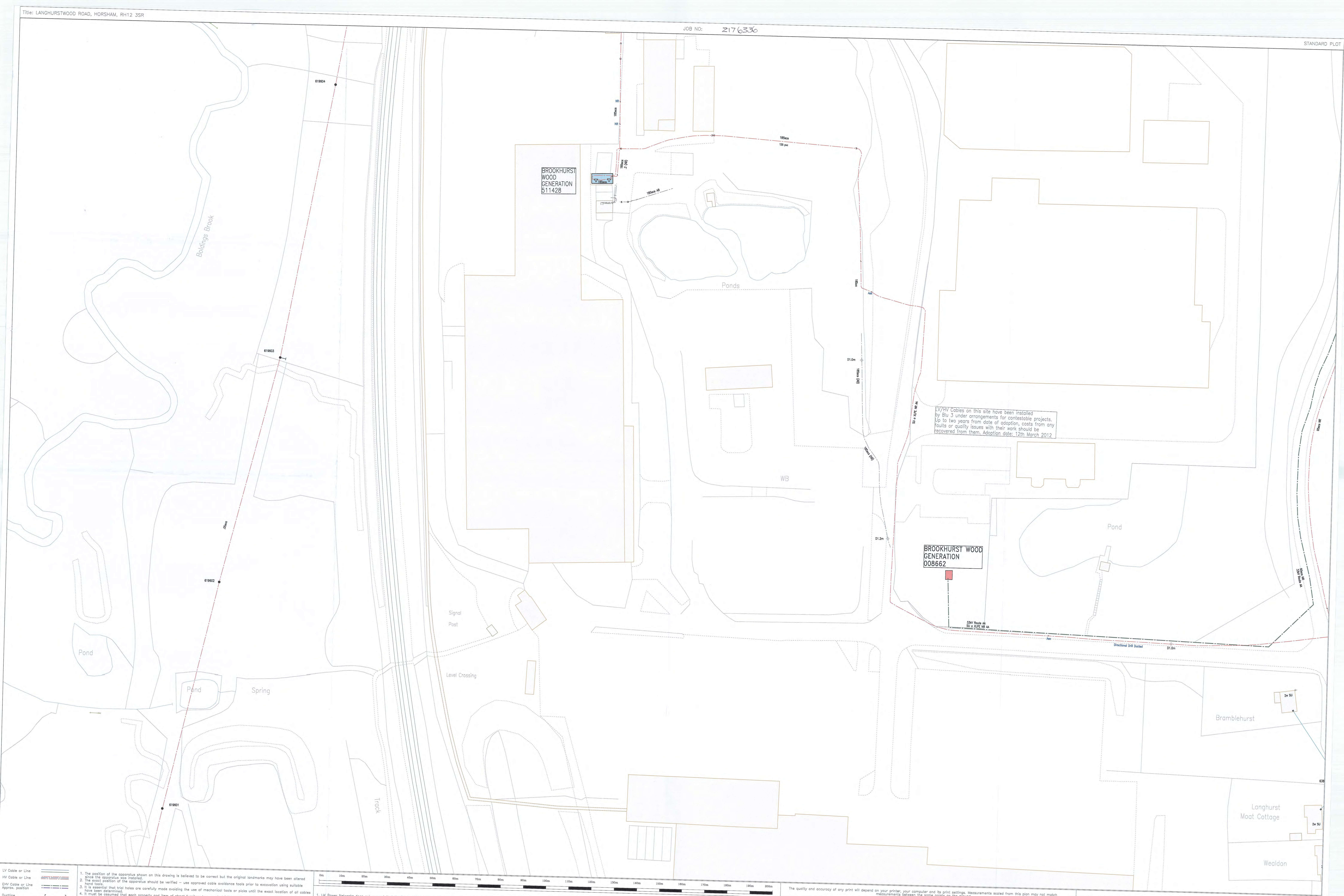
*C Greenwood*

Carmella Greenwood - Telephone: 0800 0565 866  
Plan Provision

**UK Power Networks, Plan Provision, Fore Hamlet, Ipswich, IP3 8AA. Tel: 0800 0565866. Fax: 0870 1963782.**

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LV Cable or Line

HV Cable or Line

EHV Cable or Line

Aerial position

Ductline

Pole & Street Furniture

Substation & Link Box

1. The position of the apparatus shown on this drawing is believed to be correct but the original landmarks may have been altered since the apparatus was installed.

2. The exact position of the apparatus should be verified – use approved cable avoidance tools prior to excavation using suitable hand tools.

3. It is essential that trial holes are carefully made avoiding the use of mechanical tools or picks until the exact location of all cables have been determined.

4. It must be assumed that each property and item of street furniture has an electricity supply. Service cables shown only where known.

5. All cables must be treated as being live unless proved otherwise by UK Power Networks.

6. The information provided must be given to all people working near UK Power Networks plant & equipment. Do not use plans more than 3 months after the issue date for excavation purposes.

7. Please be aware that electric cables/wires belonging to other owners of licensed electricity distribution systems may be present and it is your responsibility to identify their location.

0m 10m 20m 30m 40m 50m 60m 70m 80m 90m 100m 110m 120m 130m 140m 150m 160m 170m 180m 190m 200m

1. UK Power Networks does not warrant that the information provided to you is correct. You rely upon it at your own risk.

2. UK Power Networks does not exclude or limit its liability if it causes the death of any person or causes personal injury to a person where such death or personal injury is caused by its negligence.

3. Subject to paragraph 2 UK Power Networks has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise for any loss, damage, cost, claims, demands or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss.

4. This plan has been provided to you on the basis of the terms of use set out in the covering letter that accompanies this plan. If you do not accept and/or do not understand the terms of use set out in the covering letter you must not use the plan and you must return it to the sender of the letter.

5. You are responsible for the security of the information provided to you. It must not be given, sold or made available upon payment of a fee to a third party.

The quality and accuracy of any print will depend on your printer, your computer and its print settings. Measurements scaled from this plan may not match measurements taken between the same points on the ground.

VISITING AN OPEN POINT? Please mark on this plan all locations visited and open points as found, then return updated map to your Business Unit – Thank You.

Contact UK Power Networks on 0800 056 5866 for details of EHV Cable routes before commencing work.

Map produced at 1:2500 scale are LV Geo-Schematics which show LV mainline cables and overhead lines (in some cases all voltages). Prior to carrying out excavations you must refer to the 1:500 records to determine the location of all known underground plant and equipment!

CHECK IT OUT BEFORE YOU DO IT OUT  
DISREGARD! DRUG USE 3365  
IF YOU DAMAGE A CABLE  
OR 11kV 5795 (24hrs)  
URGENTLY

Plan Provision

ALWAYS LOOK UP BEFORE YOU START WORK  
Refer to HSE guidance  
NOTE G8

Grid Ref: TQ 17115 34325

Map Centre: TQ1734SW

Scale: 1:500

(When Plotted at A0)

Plotted on: 05/01/2015

Plotted by: Carmela Greenwood



Site Hb, The Wealden Brickworks

Preliminary Land Quality Risk Assessment

SLR Ref: 416-01258-00002

September 2014



Version: Rev 1

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## APPENDICES

<b>Appendix A</b>	<b>Current Proposed Site Layout</b>
<b>Appendix B</b>	<b>GroundSure Historical Map Extracts</b>
<b>Appendix C</b>	<b>GroundSure GeoInsight Report</b>
<b>Appendix D</b>	<b>GroundSure EnviroInsight Report</b>
<b>Appendix E</b>	<b>Extracts from Scott Wilson Report</b>
<b>Appendix F</b>	<b>Site Photographs</b>

## **1.0 INTRODUCTION**

### **1.1 Background**

SLR Consulting Ltd (SLR) was commissioned Britaniacrest Recycling in July 2014 to undertake a Preliminary Land Quality Risk Assessment (PLQRA) of the site known as Site Hb, The Wealden Brickworks, located off Langhurstwood Road, Horsham, East Sussex, RH12 4QD

SLR understands that the PLQRA is required in connection with the proposed development is for a Waste Transfer Facility (WTF) to accept construction, commercial, industrial and domestic waste, recycling and processing inert wood and green waste, as well as transfer and bailing operations.

The information obtained from this assessment has been used to develop a preliminary conceptual model of potential risks to human and environmental receptors. This conceptual model examines the potential *contaminant-pathway-receptor* linkages in relation to identified or potential contamination issues at the Site.

### **1.2 Objectives**

The objective of this PLQRA is to establish if there is any evidence (from a site inspection and review of existing data) of significant subsurface contamination from past or present activities on and adjacent to the Site which could give rise to unacceptable risks given the proposed redevelopment.

### 1.3 Scope of Work

The scope of work for the PLQRA was devised by SLR, it included:

- a site walk over inspection to identify and record on and off site land uses, potential areas of concern with respect to soil and groundwater contamination and potential contaminants of concern;
- a review of geological and hydrogeological data for the property;
- analysis of historical maps to establish the history of the property as well as past on and off site potentially contaminative activities;
- a review of a previous Phase 1 Environmental Assessment;
- collection and analysis of environmental data from a proprietary database; and
- reporting.

### 1.4 Data Sources

This report has been produced following consultation with the sources of information summarised in Table 1-1.

**Table 1-1:  
Information Sources**

Information Type	Source
General topography and Site setting	Google Earth  www.streetmap.com
Site and background information	GroundSure Historical Ordnance Survey Map Extracts EMS-228947_303749, purchased 28 <sup>th</sup> November 2013 (Appendix B).  GroundSure GeolInsight Report, EMS-228947_303750, purchased 28 <sup>th</sup> November 2013 (Appendix C).  GroundSure EnviroInsight Report, EMS_228947_303751, purchased 28 <sup>th</sup> November 2013 (Appendix D).
Hydrogeology and Geology	Environment Agency (EA) website.  Information supplied by the British Geological Society (BGS).
Proposed Layout	The current proposed layout is shown on SLR Drawing referenced 01258.00002 18 003 2 Proposed Site Layout
Previous Reports	Former Wealden brickworks, Langhurstwood Road, Horsham, West Sussex – Phase 1 Desk Study. Prepared by Scott Wilson for Biffa Waste Services Ltd. December 2009

## 2.0 SITE DETAILS, SETTING AND HISTORY

### 2.1 Site Vicinity Description

Table 2-1 summarises the property details. Information has been derived from Ordnance Survey (OS) mapping and a Site walkover inspection undertaken on 22<sup>th</sup> September 2014. Selected photographs of the Site are provided in Appendix F.

**Table 2-1:  
Site Details**

Address	Site Hb, The Wealden Brickworks, located off Langhurstwood Road, Horsham, East Sussex, RH12 4QD
Site Location	The Site is currently accessed from Langhurstwood Road and is located approximately 4.0km north of Horsham and is situated in a mixed commercial and agricultural setting.
Recent Site Activities	The site comprises a former brickworks. Since closure of the brickworks the site has not been used on a commercial basis. The northern section of the main building has been partially renovated with the southern section remaining in a state of disrepair. An area to the north east of the site is currently being used for storage of waste collection skips.
Site Description	Approximately a third of the area of the site is occupied by the former brickworks building. This is located on the west boundary of the site and comprises a steel framed, single storey building with mezzanine floors/gantries in some areas.

The building is now redundant, however previously housed clay preparation plant, a drying area, gas kilns and various production areas. The northern section of the building has undergone renovation but remains empty.

The roof and external walls of the un renovated section of the building are believed to be constructed from asbestos containing materials. These are in a very poor condition and fragmented asbestos sheet was noted both within the buildings and around much of the exterior of the building on the surface of the site. The newly renovated section of the building had been stripped of suspected asbestos containing materials and re clad in with metal sheeting.

External areas of the site comprise of concrete and asphalt hardstandings. These are in poor condition in many places. Several former structures (probably small buildings) appear to have been removed from the site.

A small structure believed to be a former canteen is located to the rear (north) of the site. The roof of this structure may include asbestos containing materials.

A former security hut is located in the south west corner of the site. This structure also appeared to include asbestos containing materials.

An area of concrete hardstanding to the north east of the site was being used for storage of waste collection skips. A brown/black leachate was observed on the hardstanding in sections of this area.

Several small stockpiles of soil and construction waste were noted around the site, predominantly along the southern boundary of the site near the former brickworks building. Other materials (bricks and other construction materials) are located in the south west corner of the site near the security building.

Evidence of the presence of contamination or contaminative activities were largely limited to fragmented asbestos. This is located in significant amounts in some areas of the site; predominantly along site the brickworks building where it has

		fallen to the floor. Possible contamination could arise from the areas of unknown leachate in the area where the skips are stored.
		Empty containers of chemicals and lubricants were located along the west flank of the brickworks building although no evidence of ground contamination was observed.
Above Ground and Underground Fuel Storage Tanks		None observed during the site visit but may have been present historically.
Surrounding Land Use	North	Former Brickworks activities, two ponds associated with the former Brickworks and an area in which a building has recently been demolished. Slightly further north are both active and former landfill.
	West	Railway line and open land.
	South	Wienerberger Brickworks.
	East	A mechanical and biological treatment (MBT) plant operated by Biffa. A pond is also located to the east of the site.

## 2.2 Physical Site Setting

A summary of the main physical features of the Site are given in Table 2-2. Information has been derived from the GroundSure reports.

**Table 2-2:  
Summary of Physical Site Features**

<b>Geography and Geology</b>	Gradient	The whole site is generally level, having been 'cut' to create a Brick works.
	Elevation	The yard area has an elevation of approximately 57m AOD
	Made Ground	An area of made ground (worked ground (undivided)) is shown in the north east corner of the site.
	Superficial Drift Geology	Superficial deposits are not recorded beneath the Site. Although an area of Alluvium is shown 123m west and Arun Terrace Deposits shown 414m and 420m south.
	Solid Geology	The solid geology beneath the whole Site is recorded as the Weald Clay Formation.
	Radon Gas	The Site is classified as being in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level, but no radon protective measures are necessary.
	Mining, and Ground Stability Hazards	<p>The whole of the site is indicated as Historic Surface Ground Workings associated with the brick works between 1914 and 1956.</p> <p>Current ground workings are listed for Site Hb, The Wealden Brickworks for the surface mineral workings of clay and shale. These workings are recorded as ceased.</p> <p>No historical underground workings are recorded on or close to the site. Non-coal mining related activities (Iron Ore) are indicated as being highly unlikely on site</p> <p>GroundSure suggests there are low to negligible ground stability hazards from shrinking / swelling clay, landslides, soluble rocks, collapsible rocks and running sands. There is moderate potential for compressible ground.</p>



Hydrology	Surface Water and River Network	Two small ponds associated with the former brickworks are located immediately off-site to the north. An additionally pond is located to the east of the site, directly south of the Biffa-operated MBT plant. The nearest off site surface water is indicated as a tertiary river 88m west of the site. Boldings Brook is also located 272m west of the site.
	Flood Risk	The Site lies outside areas indicated to be Zone 2 & 3 Floodplains.
	Surface Water Abstractions	There is one surface water abstractions within 1km of the Site. The surface water abstraction is located 39m south for general use relating to secondary category (medium loss). The nearest recorded surface water is 88m to the west of the site.
Hydrogeology	Aquifer	The Weald Clay formation is generally classified as unproductive in terms of groundwater. However, a more permeable layer within this which crosses 66m to the south of the site is designated as a Secondary A Aquifer.
	Groundwater Abstractions	There are no groundwater or potable groundwater abstractions within 2km of the Site.
	Source Protection Zones	There are no groundwater source protection zones within 500m of the Site.

### 2.3 Environmental Search Data

The Environment Agency web site has been consulted with regard to groundwater abstractions, Source Protection Zones and former landfill sites. The GroundSure EnviroInsight data was also reviewed to gain publicly available environmental data for the Site and its immediate vicinity. The MAGIC website (Multi-Agency Geographic Information for the Countryside) was also consulted regarding any ecologically designated sites within 2km of the subject property.

A copy of the GroundSure information obtained by SLR is contained in Appendix D and a summary of the search information is provided below:

- Sites Determined as Contaminated Land – there are no Sites within 500m determined as Contaminated Land under Part 2A EPA 1990;
- Discharge consents – there are twenty eight consents within 500m of the Site, of which thirteen are now revoked. One of which is located on site (historic only) for sewage discharges.
- Radioactive Substances Licences – there are no licences within 500m of the Site;
- EA recorded pollution incidents – there are no records on the National Incidents Recording System within 500m of the Site;
- Landfill sites – There are two documented landfill sites within 500m of the Site. The closest of which is located 133m north of the Site, at Warnham Brickworks;
- Licensed waste management/treatment facilities – There are seven records of operational licensed waste management sites within 500m of the Site. The closest active license is 298m to the north which is related to Cleanaway in relation to leachate treatment.
- Ecological Designations – Other than a nitrate vulnerable zone (NVZ) on-site, there are ecologically designated sites within 2Km of the Site. There is one SSSI and fifty eight records of ancient woodlands. It is understood that the site has been subject to an ecological survey.

## **2.4 Review of Previous Environmental Report**

### **2.4.1 Background**

A Phase 1 Desk Study of the Wealden Brickworks was undertaken in 2010 by Scott Wilson on behalf of Biffa Waste Services.

Extracts from the Scott Wilson report are presented in Appendix E.

### **2.4.2 Scope of Work**

Scott Wilsons' scope of work comprised:

- Site walkover,
- review of historical site data,
- reviewing previous Capita Symonds 2005 Ground investigation,
- Development of a conceptual site model,
- Preliminary Risk Assessment reporting.

### **2.4.3 Preliminary Risk Assessment**

The site was in a similar condition as it is today, principally consisting of a series of disused commercial buildings with the areas of concrete and asphalt hardstanding in poor condition. Suspected asbestos containing materials were identified as the main source of contamination during the site walkover. Other potential sources of contamination were identified from review of the historic maps and reveal

### **2.4.4 Previous Intrusive investigations 2005**

In 2005 18 soil samples were tested from seven exploratory trial pits. The laboratory analysis undertaken included sulphate, sulphur, organic carbon, PAHs, petroleum hydrocarbons and heavy metals.

The Capita Symonds report identified three areas in which contamination was considered elevated. Two of these were within the study area considered by this report and one area was to the north west of the site.

A strip of land in the north east corner of the site was noted to contain elevated concentrations of petroleum hydrocarbons and this was attributed to either imported Made ground or an on-site spillage.

An area of centre of the site was also identified to contain elevated concentrations of petroleum hydrocarbons in soil.

SLR have not reviewed the Captia Symonds Report.

### **2.4.5 Groundwater and Ground Gas**

Groundwater samples collected from boreholes did not indicate elevated contaminant concentrations. Slightly elevated concentrations of carbon dioxide were detected.

### **2.4.6 Scott Wilson Recommendations**

The Scott Wilson Desk Study recommended that a further phase of site investigation and monitoring was undertaken at the site. SLR is not aware if that occurred at a later date.

## 2.5 Site History

This section presents a summary of the Site's history from a review of OS map extracts. The age and general type of activity and land use can often be determined from the type and layout of structures depicted on OS maps. However, specific elements of site operations cannot normally be determined from such extracts. Large scale (1:2,500 and 1:10,560) historical map extracts were reviewed for selected years between 1876 and 2012. A summary of the findings is given in Table 2-3, overleaf, and the OS maps provided by GroundSure are included in Appendix B.

**Table 2-3:  
 Site History Summary**

Map Dates	Description
1876-1878	<p><b>On-site:</b> The Site comprises undeveloped agricultural land with the railway land forming the western boundary. Langhurstwood Lane forms the eastern boundary.</p> <p><b>Off-site:</b> Other than the railway line (London Brighton and South Coast Railway) immediately to the east the surrounding land use is predominantly mixed agricultural land woodland. Warnham Station is located approximately 200m to the south of the Site. Car farm is located approximately 400m north west with Sharps Farm located located approximately 300m south west of the Site.</p>
1895-1897	<p><b>On-site:</b> No significant changes on Site.</p> <p><b>Off-site:</b> Warnham Brickworks is now shown approximately 100m to the south west of the Site. There are further farm and residential developments within the vicinity of the Site.</p>
1909-1914	<p><b>On-site:</b> There is now evidence of earthworks and associated brickworks buildings (kilns) on Site with a tramway running through the north east corner. A tanks and an engine shed are shown in the southern half of the Site.</p> <p><b>Off-site:</b> Further buildings associated with the brickworks are immediately to the north of the site where a small pond is also depicted. There are no significant changes in the immediate vicinity of the Site, further agricultural and residential development is apparent.</p>
1932-1938	<p><b>On-site:</b> The maps for this time do not show the Site</p> <p><b>Off-site:</b> There are no significant changes south of the Site, the area to the north and immediate east and west is not shown.</p>
1955	<p><b>On-site:</b> The maps for this time do not show the Site</p> <p><b>Off-site:</b> The maps for this time do not show any area within approximately 600m Site</p>
1961	<p><b>On-site:</b> The site is shown to be increasingly developed with further buildings constructed on Site in relation to the Brickwork operations. Extensive excavations are shown from the north eastern tip of the site extending approximately 600m to the north.</p> <p><b>Off-site:</b> Immediately off-site to the south a small pond is shown to the north of the Site is shown to extend along the western boundary of the excavation for approximately 250m. The site comprises further buildings associated with the Brickworks. The wider surrounding area remains largely unchanged, another works site is shown approximately 400m to the south west.</p>
1966	<p><b>On-site:</b> No significant changes.</p> <p><b>Off-site:</b> No significant changes.</p>
1974-1979	<p><b>On-site:</b> The site itself is shown to have two new kilns added with a conveyor. Two previous buildings have been demolished with a single new building in their place.</p> <p><b>Off-site:</b> Immediately off site two new ponds and a tank system has been constructed in the excavation. To the south a large unspecified industrial building has been</p>

Map Dates	Description
	erected. Approximately 200m to the south west of the site is now shown as a sewage works. Further development has been carried out in the surrounding with what appears to be three residential properties to the east of the Site on Langhurstwood Lane.
1989-1992	<b>On-site:</b> The multiple kiln buildings on the site have been converted to one building, there is now just two other small buildings on the Site. <b>Off-site:</b> No significant changes
2002	<b>On-site:</b> No significant changes. <b>Off-site:</b> No significant changes.
2012	<b>On-site:</b> No significant changes. <b>Off-site:</b> The area to the north of the site in the former brickworks excavation is now shown as Brookhurstwood Landfill Site.

In summary, the Site was undeveloped until around 1910 at which time the Brickworks was constructed. The site has been subject to some excavation/quarrying and has included a number of potential contaminative activities including rail workings, tanks and Brickworks buildings. The most recent structural changes to the site appear to have taken place between 1989 and 1992. Since this time the site has become derelict and is now disused. Several former features have been removed from the site such that currently only the main Brickworks building and two smaller buildings (a security building and a former canteen) remain.

Potentially contaminative activities/features of the site include former Brickworks operations, the presence of storage tanks, use and storage of materials and chemicals, railway sidings and the potential for Made Ground to be present as a result of historic excavations and the re-working of site contours.

The area to the south of the site has also historically been associated with a Brickworks while the area to the north of the site has been subjected to landfilling activities.

### 3.0 OUTLINE CONCEPTUAL MODEL AND PRELIMINARY RISK ASSESSMENT

#### 3.1 Land Quality Risk Assessment

The normal procedure for assessing land dictates that potential contaminants, pathways and receptors should be considered within the context of pollutant linkages. An evaluation of the risks associated with each linkage should drive decisions regarding the status of the land as contaminated, uncontaminated or requiring further investigation.

The information summarised in the previous sections has been used to identify the likely contaminant sources, receptors and pathways present at the Site. The elements of the conceptual model built in the table that follows, are used in Sections 3.3, 3.4 and 3.5 to consider the potential pollutant linkages, their significance and acceptability.

The 2012<sup>1</sup> statutory guidance for Part 2A of the Environmental Protection Act 1990 (EPA 1990), defines a contaminant, a pathway and a receptor as follows:

- **Contaminant:** *“a substance which is in, on or under the land and which has the potential to cause harm to a relevant receptor, or to cause significant pollution of controlled waters”;*
- **Pathway:** *“a route by which a receptor is or might be affected by the contaminant”, and*
- **Receptor:** *“something that could be adversely affected by a contaminant, for example a person, an organism, an ecosystem, property, or controlled waters”.*

The term “contaminant linkage” means the relationship between a contaminant, a pathway and a receptor. All three elements of a contaminant linkage must exist in relation to particular land before the land can be considered potentially to be contaminated land under Part2A, including evidence of the actual presence of contaminants. The term “significant contaminant linkage”, as used in the Guidance, means a contaminant linkage which gives rise to a level of risk sufficient to justify a piece of land being determined as contaminated land. The term “significant contaminant” means the contaminant which forms part of a significant contaminant linkage.

When considering the contaminants, receptors and pathways relevant to this Site, SLR has been mindful of the ongoing and proposed use of the Site as a commercial development.

#### 3.2 Preliminary Conceptual Site Model

The information summarised in the previous sections has been used to identify the likely contaminant sources, receptors and pathways present at the Site. The elements of the conceptual model built into Outline Conceptual Site Model Table 3-1, overleaf, has been used to consider the potential pollutant linkages (PPL), these appear to be:

##### ***Harm to Human Health***

**PPL1** Site workers / visitors exposed to contaminants within the soil/Made Ground

**PPL2** Neighbours exposed to contaminants within the soil/Made Ground

##### ***Damage to Property***

**PPL3** Buildings / Services exposed to contaminants within the soil

**PPL4** Landscape Planting exposed to contaminants within the soil

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<sup>1</sup> April 2012 - publication of the latest Contaminated Land Statutory Guidance by Defra.

**PPL5 Migration/accumulation of land/landfill gases in site buildings**

**Pollution of Controlled Waters**

**PPL6 Controlled Waters exposed to contaminants in soil/groundwater**

**Table 3-1  
Conceptual Site Model**

Source / AOC <sup>2</sup>	Conceptualisation
Contaminated Soils/Groundwater	High likelihood of the presence of Made Ground at the site. Potential for a range of contaminants to be present including hydrocarbons and heavy metals. Previous site investigation identified hydrocarbon contamination in soils in two areas of the site.
Solid Phase contaminants including:	Heavy metals within any Made Ground.  Asbestos is present within the construction of the buildings currently located at the site. Numerous areas of the site were observed to be impacted with broken asbestos cement sheet.
Sorbed phase – contaminants sorbed onto soil particles	Potential for a range of organic contaminants to be present including PAHs and hydrocarbons. Petroleum hydrocarbons identified in soils during a previous site investigation.
Free phase – contaminants present in soil and /or porosity as non-aqueous phase liquid (NAPL)	Some potential for hydrocarbons to be present although no free phase hydrocarbons have been reported in previous site investigation.
Gas and vapour phase – contaminants present as gas or vapour in the soil	Hydrocarbons such as diesel, petrol, solvents and polycyclic aromatic hydrocarbons (PAHs). Vapours may be released from volatile hydrocarbons deposited as a result historical operations.  Landfill gas may be generated from degradable materials if present in Made Ground and may also migrate to the site from off-site sources, such as the landfill sites to the north.
Dissolved phase – contaminants dissolved in groundwater	Potential to be present although there is no evidence of contamination from previous site investigation.
Receptor	Description
<b>Future site users</b>	Workers or visitors within the Site are likely to be at reduced risk from contact with contaminated soil due to the predominance of hardstanding under the proposed development. However areas of soft landscaping are proposed and there is potential for accumulation of hazardous vapours within the proposed buildings. Therefore human beings are considered to be present as a receptor at the Site.  Construction workers and ground workers who may be involved with the project during and post construction could be at risk from contaminated shallow soils/Made Ground, especially in relation to the asbestos contamination observed.
<b>Neighbours</b>	The nearest residential receptors are located approximately 302m south east of the site. Immediate neighbours are commercial/industrial in nature and therefore less sensitive.
<b>Property (Buildings / Services)</b>	The existing Brickworks building is proposed to be retained on site and refurbished.  There is a potential risk of attack on buried concrete structures by contaminants that may be present in the underlying soils for

<sup>2</sup> AOC – Area of Concern



	any new structures although this is likely to be simply managed.
Property (Flora / Fauna)	Commercial development with no gardens areas. No crops or produce will be grown on site and no livestock will be kept. Landscaping of the southern and eastern boundaries in particular will form part of the proposed development. This will comprise grassed bunds, trees and shrubs.
<b>Groundwater</b>	The Weald Clay is an unproductive strata and has been proven to a thickness of at least 12m on site in previous site investigation. Groundwater is present at a depth of around 50m AOD in the deeper Tunbridge Wells Sand aquifer and no contamination was recorded during previous site investigation. As a receptor groundwater is therefore of low sensitivity at the site.
<b>Surface waters</b>	Several ponds are located within a short distance of the site. These are associated with former quarrying/brickworks activity.
<b>Ecosystems</b>	No ecological receptors specifically identified.
Potential Pollutant Linkages by Receptor	Assessment
<b>PPL1</b> Site workers / visitors exposed to contaminants within the soil	Long term risks are reduced on the basis that the majority of the site will feature hard cover. There are significant soft landscaped areas however and short term risks during construction are present, notably due to asbestos contamination.
	Hydrocarbon contamination has been identified during previous site investigation.
<b>PPL2</b> Neighbours exposed to contaminants within the soil	Likely to be limited to the construction phase due to the creation of dust. Disturbance of asbestos could result in asbestos fibre release over the boundary of the site.
<b>PPL3</b> Buildings / Services exposed to contaminants within the soil	There is the potential for damage to buildings and services from contamination (e.g. hydrocarbons) present in shallow soil. We note however that the current building will be retained.
<b>PPL4</b> Landscape Planting exposed to contaminants within the soil	Plausible pollution linkage, but only if sensitive species are proposed.
<b>PPL5</b> Migration/accumulation of land/landfill gases in site buildings	Plausible pollution linkage given the likely presence of Made Ground at the site and since active and closed landfill sites are located to the north of the site.
<b>PPL6</b> Controlled Waters exposed to contaminants in soil	Theoretical risk to surface waters and groundwater although in practice the presence of low permeability clay beneath the site reduces risks significantly.

### 3.3 Preliminary Risk Assessment

In the context of Part 2A inspection, a preliminary risk assessment must focus on whether the land meets the definition of Contaminated Land as laid out the Environmental Protection Act 1990 (EPA 1990) and its statutory guidance. Within Part 2A of the EPA 1990, Contaminated Land is defined as:

*“any land which appears to the local authority in whose area it is situated to be in such condition by reason of substances in, on or under the land, that:*

*-significant harm is being caused or there is a significant possibility of significant harm being caused; or*

*-significant pollution of Controlled Waters is being caused, or there is a significant possibility of such pollution being caused”.*

When assessing the significance of the identified pollutant linkages against the definition of contaminated land one must also consider the information needed to complete the assessment to the required level of confidence. In this case, the types of uncertainties that affect the evaluation of the Site include, but may not be limited to:

- Lack of evidence to support suspected cases of harm;
- Lack of evidence to support suspected cases of pollution;
- Insufficient knowledge of any contaminant location and distribution;
- Insufficient characterisation of ground conditions;
- Insufficient knowledge of land use and exposure characteristics; and
- Insufficient information to validate pathways.

### **3.4 Potentially Unacceptable Risks**

Having considered the above criteria including the uncertainties and gaps in the conceptual model, it is apparent that the Preliminary Land Quality Risk Assessment (using desk study information, a site inspection and some factual information from another consultant) has provided a reasonable level of confidence that the subject Site and immediate surrounds have got a history which includes potentially significant sources of contaminants including but not limited to hydrocarbons and asbestos. Potential risks have also been identified with respect to landfill gases.

It is recommended that further assessment is undertaken at the site to refine the initial conceptual model discussed in this report.

## 4.0 SUMMARY AND CONCLUSIONS

The site comprises a former Brickwork, now derelict. Three buildings are present on site, the largest being the former Brickworks building itself which housed processing areas, kilns etc. The northern section of the building has been renovated, however the southern section of the building remains in very poor condition and broken asbestos containing materials were observed within and around the building. SLR is not aware if a formal asbestos survey has been undertaken.

External areas of the site comprise concrete and asphalt slabs in moderate to poor condition. Several areas of the site are un-surfaced or appear to be the location of former structures.

The site is proposed for redevelopment as a Waste Transfer Facility to accept construction, commercial, industrial and domestic waste, recycling and processing inert wood and green waste, as well as transfer and bailing operations.

The site is located in a predominantly industrial area. The site is bound to the south by an additional Brickworks, to the north by active and former landfills, to the east by an MBT plant and to the west by a railway line. Residential receptors are few and at a distance in excess of 0.3km from the site.

No specific contaminative processes or activities were observed during the site visit other than the asbestos containing materials discussed above. Empty chemical and lubricant containers were noted, but no evidence of ground contamination. No above ground tanks were observed at the site although they are likely to have been present historically.

As a result of previous activities at the site there is considered potential for the presence of contaminated Made Ground. A site investigation has previously been undertaken at the site. The associated report was not available for SLR to review but the investigation is understood to have identified hydrocarbon contamination in two areas of the site. The significance of this contamination is not known since no risk assessment has been reviewed.

Monitoring of groundwater did not indicate elevated contaminant concentrations and we note that groundwater is located at some considerable depth, below low permeability Weald Clay.

Six potential pollutant linkages have been identified for the site and that may require further assessment:

### ***Harm to Human Health***

**PPL1** Site workers / visitors exposed to contaminants within the soil/Made Ground

**PPL2** Neighbours exposed to contaminants within the soil/Made Ground

### ***Damage to Property***

**PPL3** Buildings / Services exposed to contaminants within the soil

**PPL4** Landscape Planting exposed to contaminants within the soil

**PPL5** Migration/accumulation of land/landfill gases in site buildings

### ***Pollution of Controlled Waters***

**PPL6** Controlled Waters exposed to contaminants in soil/groundwater

## **4.1 Recommendations**

The environmental setting of the Site and surrounding area is considered to be of moderate to low sensitivity. This is generally due to the current and historic commercial land use at the Site and in much of the surrounding area.

SLR considers that the Site is likely to be suitable for continued commercial use. However, given that contamination was identified during the 2005 site investigation works further works are considered necessary to confirm that contamination at the Site does not pose a risk to human health or Controlled Waters under the proposed development. It was noted in the Scott Wilson report that testing techniques employed at the time were not in line with current best practise and would therefore need to be reassessed. Furthermore during the site walkover no serviceable boreholes were located, and these will need to be redrilled.

This further work would comprise an intrusive ground investigation made up of the following elements:

- Investigation of the shallow soil and groundwater (if present) across the site, concentrating in areas of previously identified contamination.
- laboratory analysis of selected soil and groundwater samples;
- return site visits for groundwater and landfill gas monitoring;
- laboratory analysis of soil/groundwater samples;
- preparation of written report summarising the works and including a Generic Quantitative Risk Assessment of any risks identified.

## **5.0 CLOSURE**

This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client.

Information reported herein is based on the interpretation of data collected from various sources which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of Britaniacrest Recycling.; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

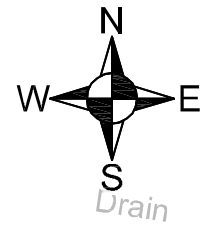
SLR disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

## **Appendix A – Current Proposed Layout**

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NOTES

LEGEND



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SITE Hb, THE WEALDEN BRICKWORKS  
SITE, HORSHAM, WEST SUSSEX

PLANNING APPLICATION

PROPOSED SITE LAYOUT

003 Rev 1

Scale  
1:1,000 @ A3

Date  
NOVEMBER 2013

## **Appendix B – GroundSure Historical Map Extracts**

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# County Series 1:10,560 scale

## VEGETATION



Fir Wood



Deciduous Wood



Mixed Wood



Brushwood



Orchard



Reeds



Rough Pasture



Furze



Marsh



Osiers

## ROADS



Railway over Road



Road over Railway



Road over River or Canal



Level Crossing



Railway over River



Road over Stream



Road over Stream



Sunken Road

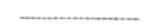


Raised Road

## RAILWAYS



Double Lines of Railway



Single Lines of Railway and Tramway

## GENERAL FEATURES



Gravel Pit



Sand Pit



Quarry



Shingle



Other Pits



Antiquities, Site of



Arrow, showing direction of flow of water



Trigonometrical Station

## BOUNDARIES



County Boundary



Parish Boundary



Contours



Parliamentary Division Boundary



Union Boundary



Rural District Boundary

# National Grid 1:10,000 scale

## HEIGHTS (METRES)

Values are given in metres above mean sea level at Newlyn.

Surface heights determined by ground survey 163m  
air survey 163m

Bench marks and their values are shown on large scale maps, and bench mark lists containing fuller and possibly later levelling information are obtainable from the Director General, Ordnance Survey.

Contours are at 5 metres vertical interval.

## ROCK FEATURES

Loose rock

Boulders

Outcrop

Scree

Vertical face

## CONVERSION SCALE

Metres - Feet

2000 Metres 6500 Feet

6000

5000

4000

## ABBREVIATIONS

BP,BS Boundary Post or Stone

Ch Church

CH Club House

F Sta Fire Station

FB Foot Bridge

Fn Fountain

GP Guide Post

MP,MS Mile Post or Stone

P Pole or Post

Pol Sta Police Station

PO Post Office

PC Public Convenience

PH Public House

S Stone

Spr Spring

TCB Telephone Call Box

TCP Telephone Call Post

TH Town Hall

W Well

Y Youth hostel

## ROADS

Road

Track

Where unfenced shown by pecked lines.

Path

## RAILWAYS

Cutting Embankment

Road over

Level crossing

Foot Bridge

Road under

Multiple track

Single track

Siding, tramway or mineral line

Narrow gauge

## GENERAL FEATURES

Antiquity, (site of)

Boulders

Building

Pylon

Pole

Electricity transmission line

Glasshouse

Triangulation station

Lake, loch or pond

Sloping masonry

Chalk pit, clay pit or quarry

Gravel pit

Sand pit

Refuse or slag heap

Direction of flow of water

Shingle

Sand

## VEGETATION

Bracken, rough grassland

Scrub

Heath

Marsh

Saltings

Reeds

Coppice

Orchard

Coniferous trees

Non-coniferous trees

In some areas bracken ( ) and rough grassland ( ) are shown separately.



GroundSure

# Historical Map Pack Legend

## County Series & National Grid

## 1:10,560 scale & 1:10,000 scale

Information present on these legends is sourced from the same Ordnance Survey mapping as the maps used in this product.

If you have a query regarding any of the maps provided please contact GroundSure's technical helpline. We will endeavour to answer any queries you may have.

Technical Helpline

Tel:01273 819 700

[maps&data@groundsurre.com](mailto:maps&data@groundsurre.com)

[www.groundsure.com](http://www.groundsure.com)

County Series 1:2,500 scale

National Grid 1:2,500 / 1:1,250 scale



Historical Map Pack Legend

# GENERAL FEATURES

Trigonometrical Station

507

Altitude at Trigonometrical Station

B.M. 325-9

Bench Mark

342

Surface Level

Permanent Traverse Station

Antiquities (site of)

SL

Sluice

Tr

Trough

Sp.

Spring

W

Well

M.R

Mooring Ring

M.P

Mooring Post

B.S

Boundary Stone

B.P


































Boundary Post

Arrow denotes flow of water

ROADS	
	Road over single stream
	Road crossing railway
	Road over River or Canal
RAILWAYS	
	Railway crossing River or Canal
	Railway crossing Road
	Level Crossing
	Embankment
	Cutting

ABBREVIATIONS

	Trigonometrical Station		Sl. Sluice
	507 Altitude at Trigonometrical Station		Tr. Trough
	B.M. 325-9 Bench Mark		Sp. Spring
	342 Surface Level		W. Well
	Permanent Traverse Station		M.R. Mooring Ring
	Antiquities (site of)		M.P. Mooring Post
	Arrow denotes flow of water		B.S. Boundary Stone
			B.P. Boundary Post

GENERAL FEATURES					
	Non-coniferous Trees		Slopes		Antiquity (site of)
	Coniferous Trees		Cliff		Culvert
	Surveyed Trees		Cave Entrance		Direction of water flow
	Orchard Trees		Rock		Electricity Pylon
	Coppice, Osier		Boulders		Electricity Transmission Line
	Scrub		Sloping Masonry		Triangulation Station
	Bracken		Roofed Building		Traverse Station (permanent)
	Heath		Glasshouse		Bench Mark
	Rough Grassland		Archway		Surface Level
	Marsh, Saltings		Change of boundary mereing		Revision Point (instrumentally fixed)
	Reeds		see AREAS notes		Revision Point & Bench Mark coincident

	Top		Slopes		Quarry		Refuse Heap		Sloping Masonry Top
	Flat Rock		Sand		Sand Pit		Culvert		Archway
	Shingle		Boulders		Gravel Pit		Cliff Face		Glazed Roof Building

BOUNDARIES

England & Wales	
	County Boundary (geographical)
	County & Civil Parish Boundary coterminous
	Admin County or County Borough Boundary
	London Borough Boundary
	County District Boundaries based on civil parish
	Civil Parish Boundary
	Parly & Ward Boundaries based on civil parish
	Parly & Ward Boundaries not based on civil parish
Scotland	
	County Boundary (geographical)
	County Council Boundary
	County of the City Boundary
	Burgh Boundary
	District Council Boundary
	Not with parish
	Coincident with parish

ABBREVIATIONS

	Beer House		Fire Station		Mail Pick-up		Signal Light
	Bench Mark		Guide Post		Mile Stone		Sluice
	Boundary Post		Gas Valve Compound		National Trust		Signal Post
	Boundary Stone		Hydrant or Hydraulic		Normal Tidal Limit		Spring
	Crane		Hectares		National Trust for Scotland		Signal Station
	Club House		Letter Box		Pillar, Pole or Post		Telephone Call Box
	Chimney		Lifeboat Station		Public Convenience		Telephone Call Post
	Capstan		Level Crossing		Police Call Box		Tank or Track
	Drinking Fountain		Loading Gauge		Public House		Trough
	Dock		Lighthouse		Post Office		Traverse Station
	Electricity Pillar or Post		Lighting Tower		Pump		Well
	Electricity Transmission Line		Metres		Police Telephone Pillar		Weighbridge
	Fire Alarm		Mean High Water		Reservoir		Wind Pump
	Fire Alarm Pillar		Mean High Water Springs		Road House		Works
	Filter Bed, Foot Bridge		Mean Low Water		Revision Point		Water Point
	Fundamental Bench Mark		Mean Low Water Springs		Stone		Water Tap
	Flagstaff		Mile or Mooring Post		Signal Box		

County Series

1:1,250 scale



County Series & National Grid

1:2,500 scale

Information present on these legends is sourced from the same Ordnance Survey mapping as the maps used in this product.

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Tel:01273 819 700  
[maps&data@groundsurre.com](mailto:maps&data@groundsurre.com)  
[www.groundsure.com](http://www.groundsure.com)



## Site Details:

The Wealden  
Brickworks, Horsham, West  
Sussex, RH12 4QD,

**Client Ref:** EMS\_228947\_303749

**Report Ref:** EMS-228947\_303749

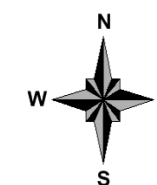
**Grid Ref:** 517125, 134316

**Map Name:** MasterMap

**Map date:** 2012

**Scale:** 1:1,250

**Printed at:** 1:2,500



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Client Ref: EMS\_228947\_303749

Report Ref: EMS-228947\_303749

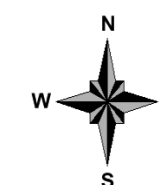
Grid Ref: 517125, 134316

Map Name: National Grid

Map date: 1991

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1973  
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Edition N/A  
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Levelled 1973



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Client Ref: EMS\_228947\_303749

Report Ref: EMS-228947\_303749

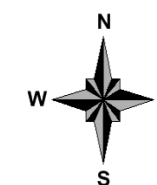
Grid Ref: 517125, 134316

Map Name: National Grid

Map date: 1974

Scale: 1:2,500

Printed at: 1:2,500



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Edition N/A  
Copyright 1976  
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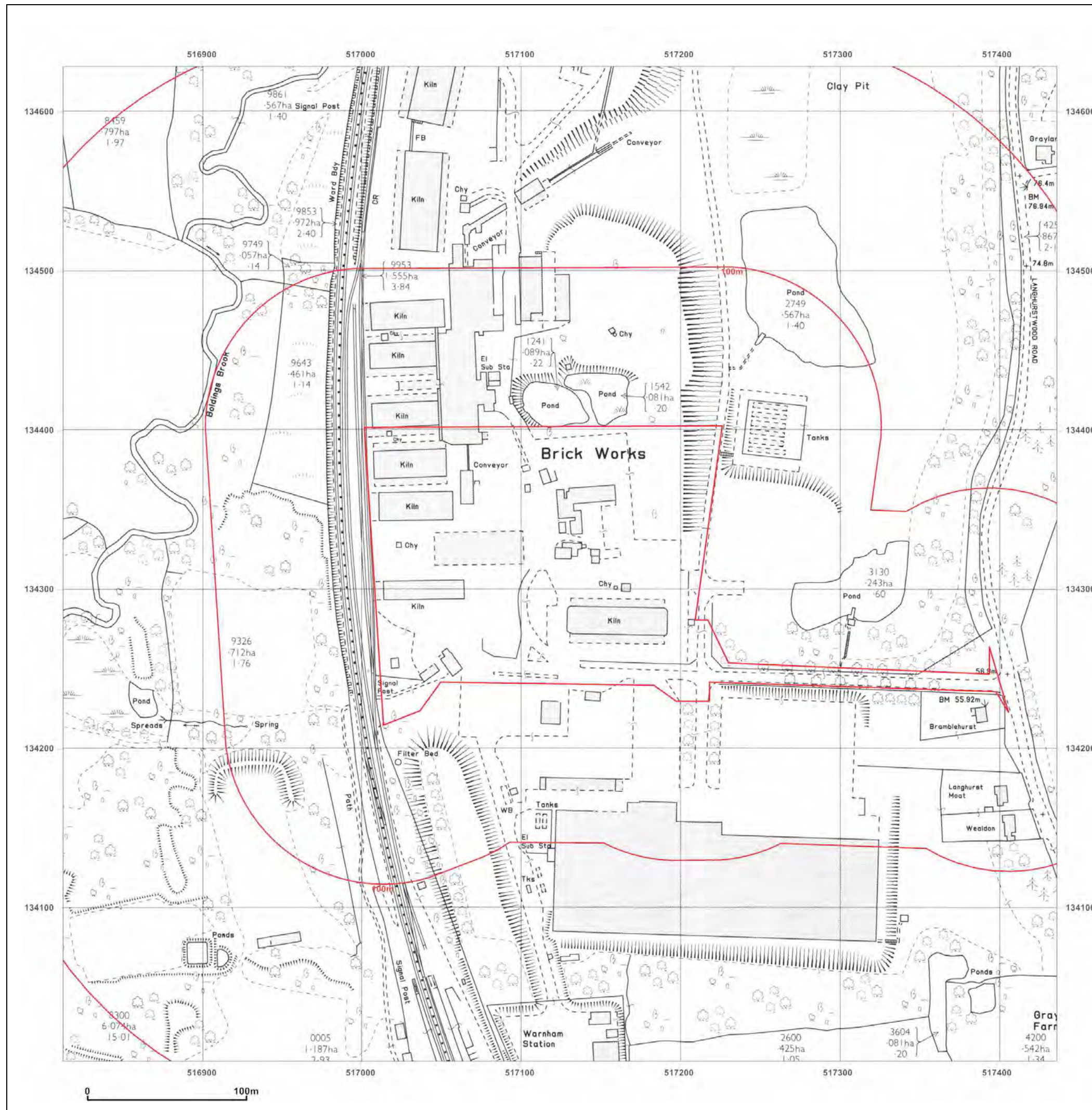


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**Client Ref:** EMS\_228947\_303749

**Report Ref:** EMS-228947\_303749

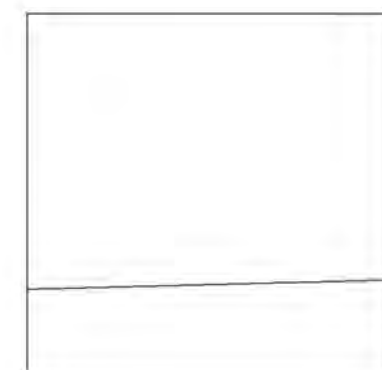
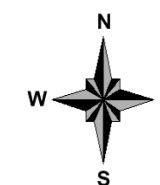
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**Map Name:** County Series

**Map date:** 1932

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1932  
Revised 1932  
Edition N/A  
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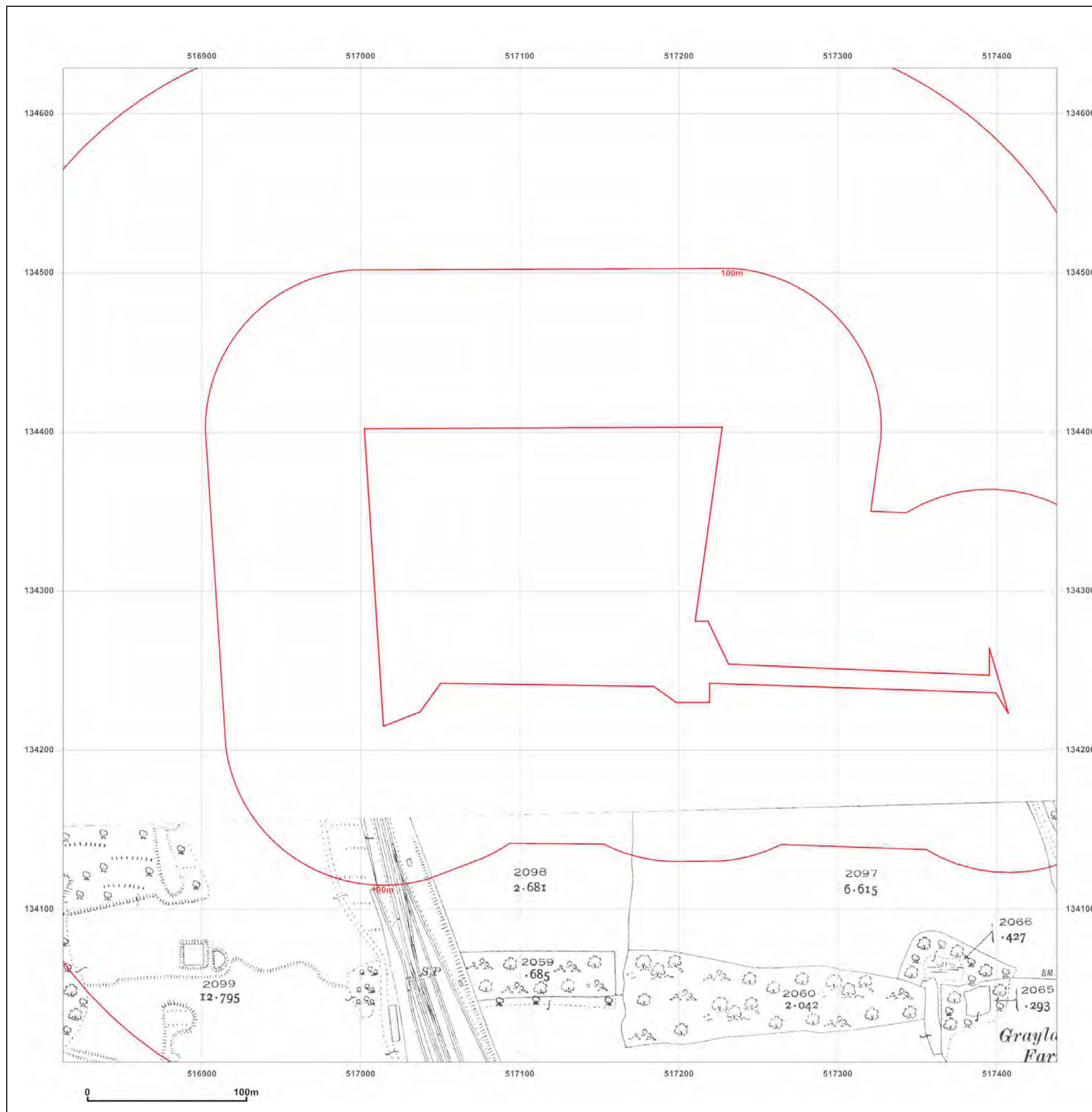


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Client Ref: EMS\_228947\_303749

Report Ref: EMS-228947\_303749

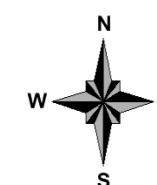
Grid Ref: 517125, 134316

Map Name: County Series

Map date: 1912

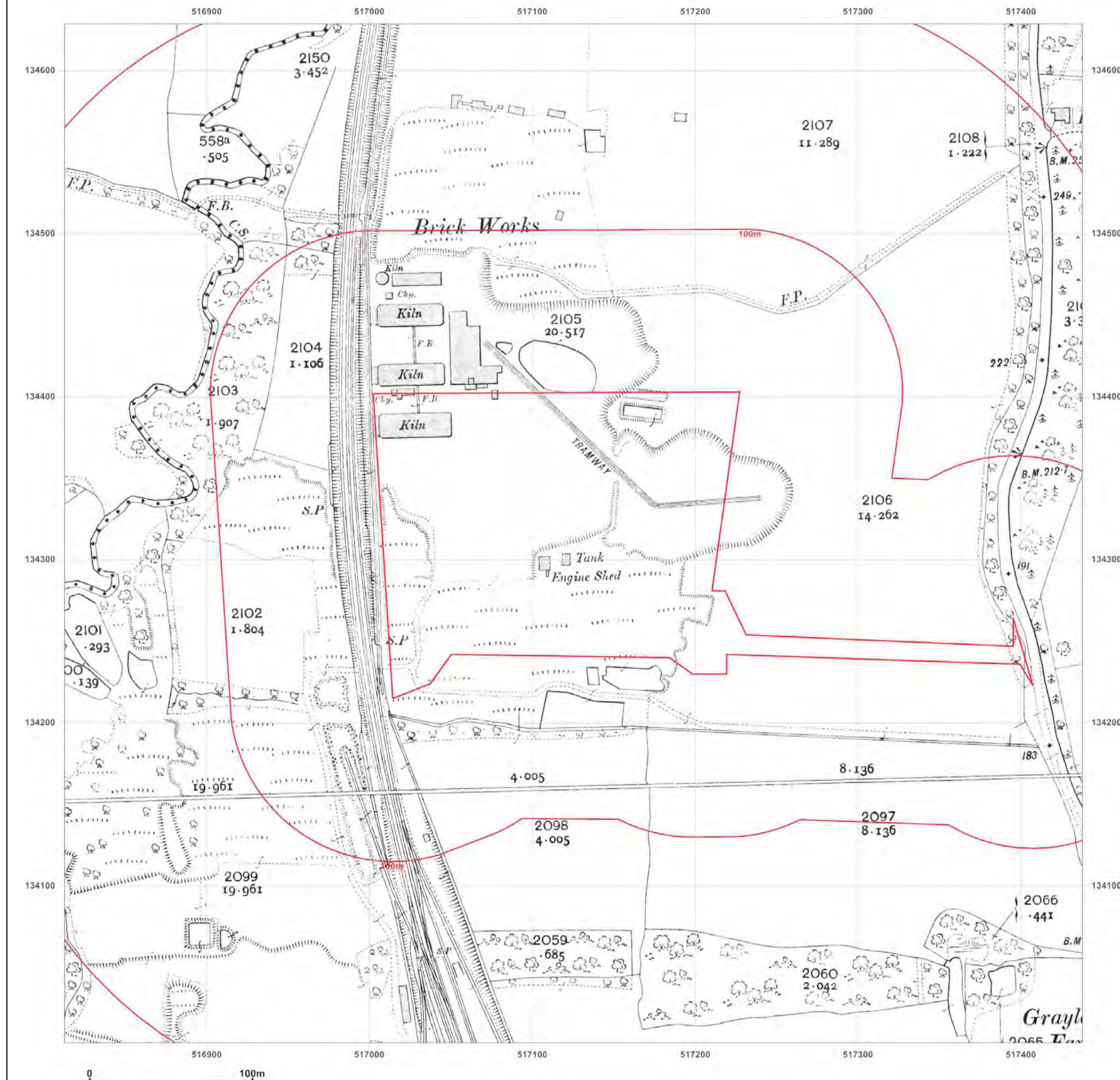
Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1912  
Revised 1912  
Edition N/A  
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**Client Ref:** EMS\_228947\_303749

**Report Ref:** EMS-228947\_303749

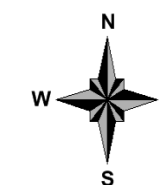
**Grid Ref:** 517125, 134316

**Map Name:** County Series

**Map date:** 1897

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1897  
Revised 1897  
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**Client Ref:** EMS\_228947\_303749

**Report Ref:** EMS-228947\_303749

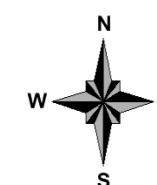
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**Map Name:** County Series

**Map date:** 1876-1878

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1878  
Revised 1878  
Edition N/A  
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Revised 1876  
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Sussex, RH12 4QD,

Client Ref: EMS\_228947\_303749

Report Ref: EMS-228947\_303749

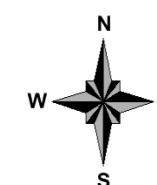
Grid Ref: 517125, 134316

Map Name: National Grid

Map date: 2012

Scale: 1:10,000

Printed at: 1:10,000



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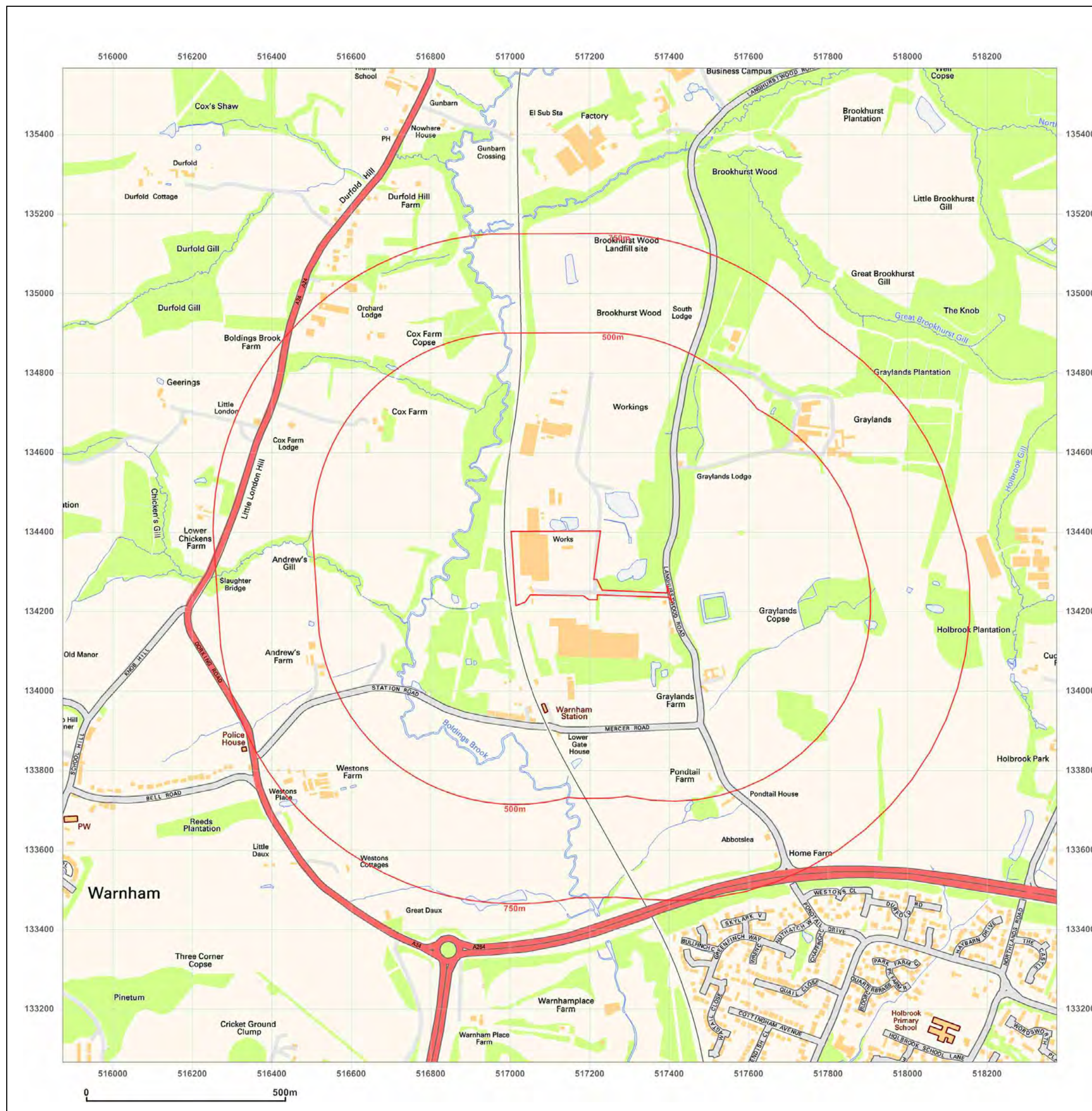


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Client Ref: EMS\_228947\_303749

Report Ref: EMS-228947\_303749

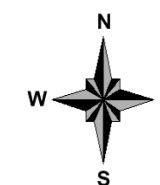
Grid Ref: 517125, 134316

Map Name: 1:10,000 Raster

Map date: 2002

Scale: 1:10,000

Printed at: 1:10,000



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Sussex, RH12 4QD,

**Client Ref:** EMS\_228947\_303749

**Report Ref:** EMS-228947\_303749

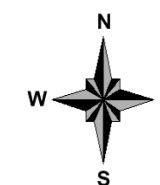
**Grid Ref:** 517125, 134316

**Map Name:** National Grid

**Map date:** 1989-1992

**Scale:** 1:10,000

**Printed at:** 1:10,000



Surveyed 1974  
Revised 1989  
Edition N/A  
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Surveyed 1991  
Revised 1992  
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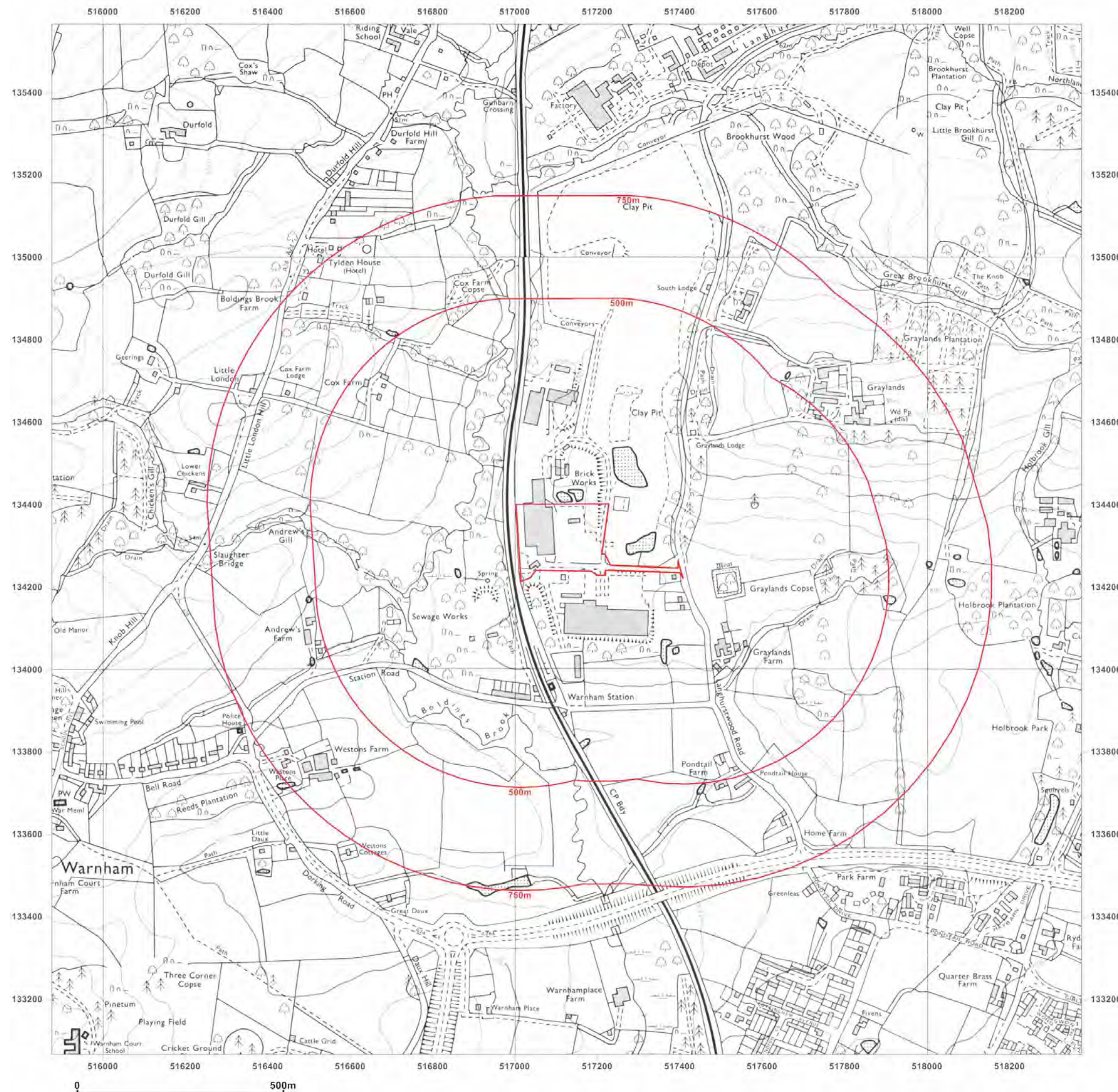


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Client Ref: EMS\_228947\_303749

Report Ref: EMS-228947\_303749

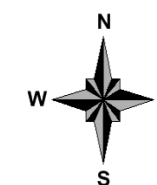
Grid Ref: 517125, 134316

Map Name: National Grid

Map date: 1978-1979

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1974  
Revised 1978  
Edition N/A  
Copyright N/A  
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Surveyed 1979  
Revised 1979  
Edition N/A  
Copyright N/A  
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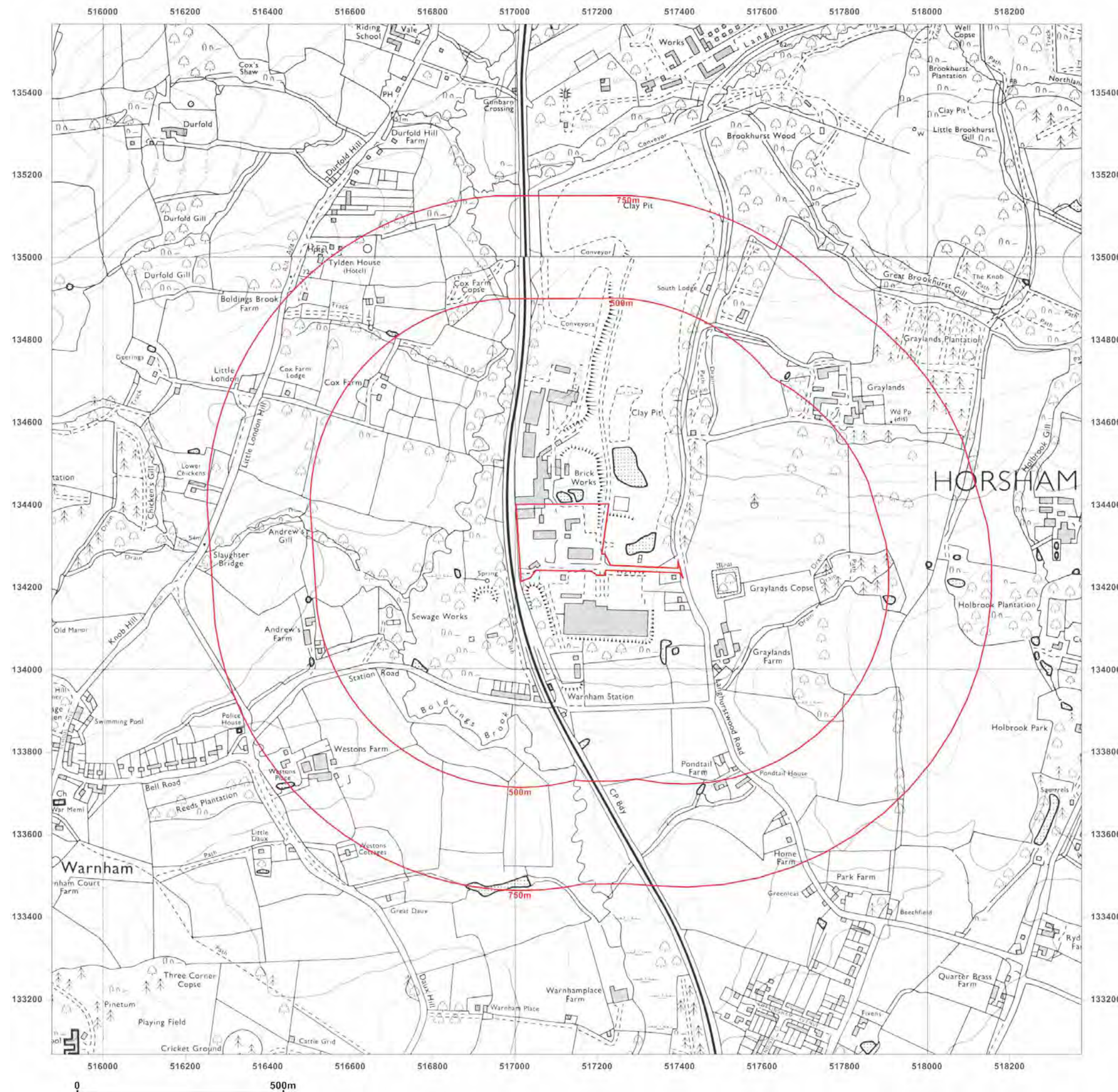


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Sussex, RH12 4QD,

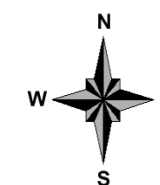
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Report Ref: EMS-228947\_303749  
Grid Ref: 517125, 134316

Map Name: Provisional

Map date: 1966

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1956  
Revised 1956  
Edition N/A  
Copyright N/A  
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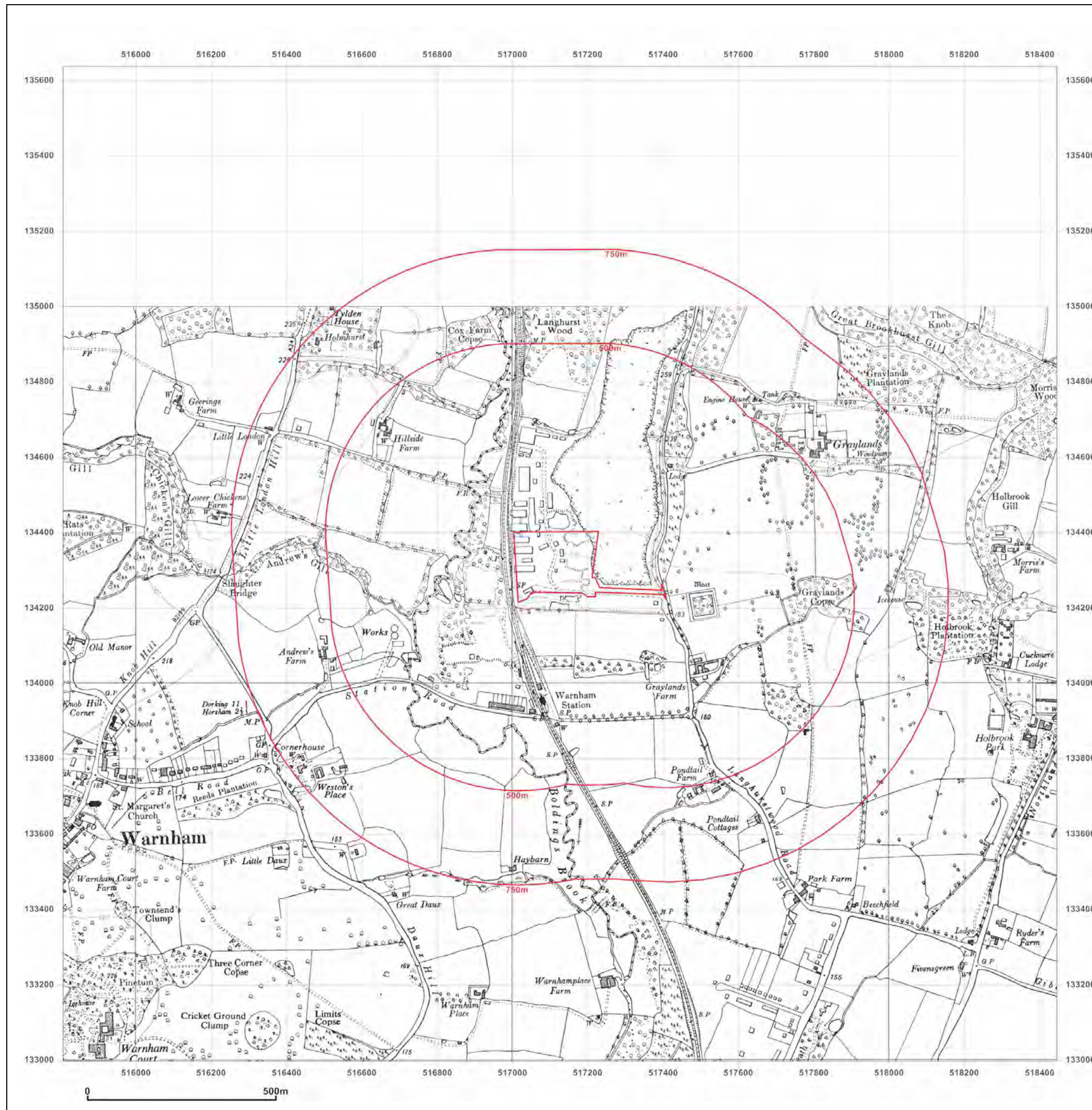


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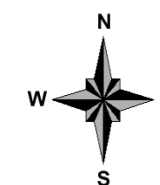
Client Ref: EMS\_228947\_303749  
Report Ref: EMS-228947\_303749  
Grid Ref: 517125, 134316

Map Name: Provisional

Map date: 1961

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1956  
Revised 1956  
Edition N/A  
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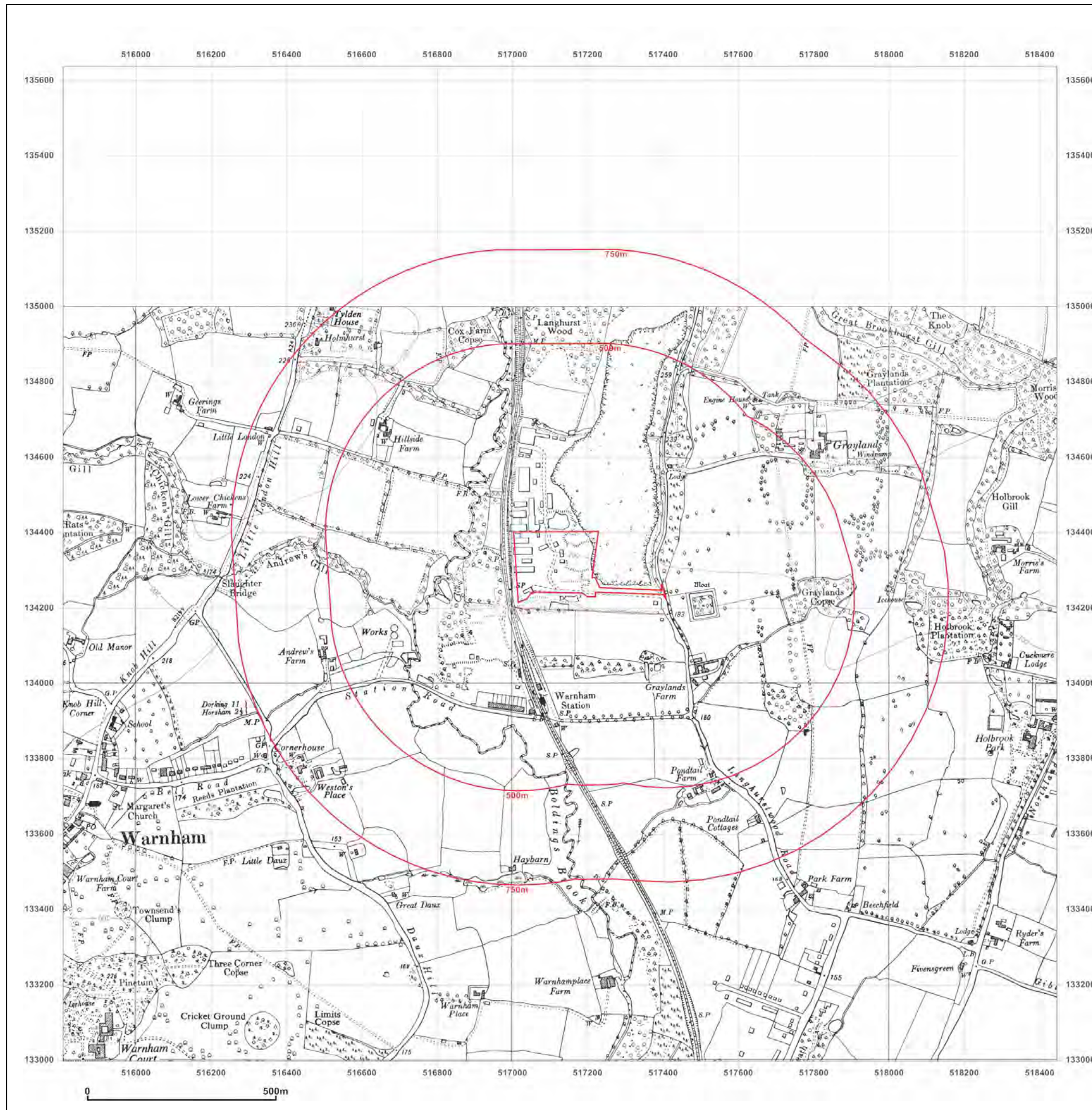


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Client Ref: EMS\_228947\_303749

Report Ref: EMS-228947\_303749

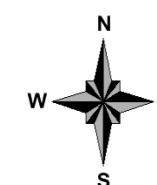
Grid Ref: 517125, 134316

Map Name: Provisional

Map date: 1955

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1955  
Revised 1955  
Edition N/A  
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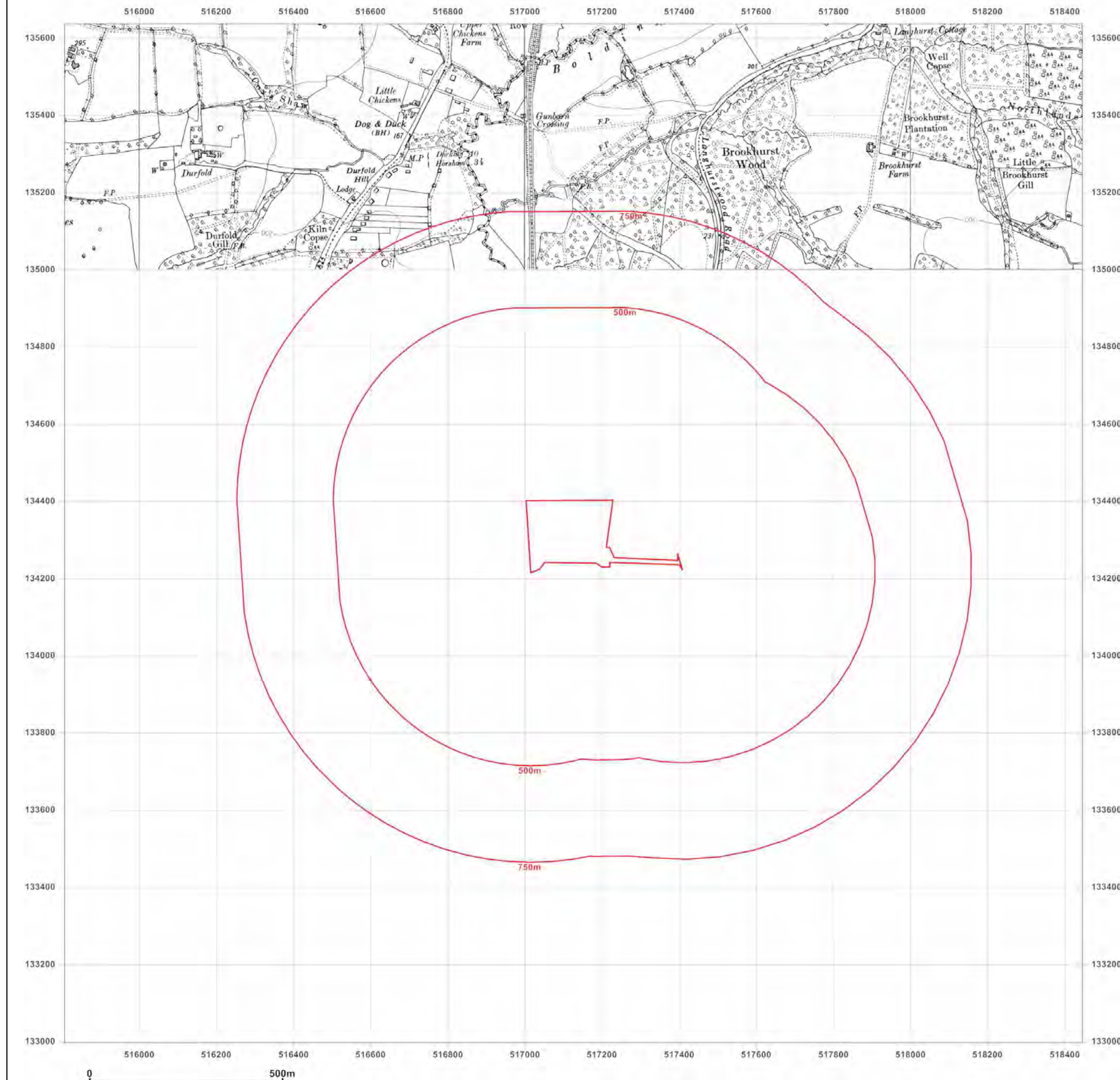


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Client Ref: EMS\_228947\_303749

Report Ref: EMS-228947\_303749

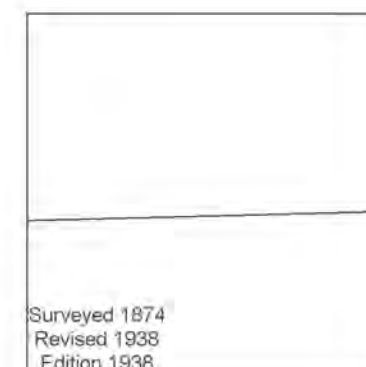
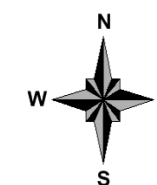
Grid Ref: 517125, 134316

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1874  
Revised 1938  
Edition 1938  
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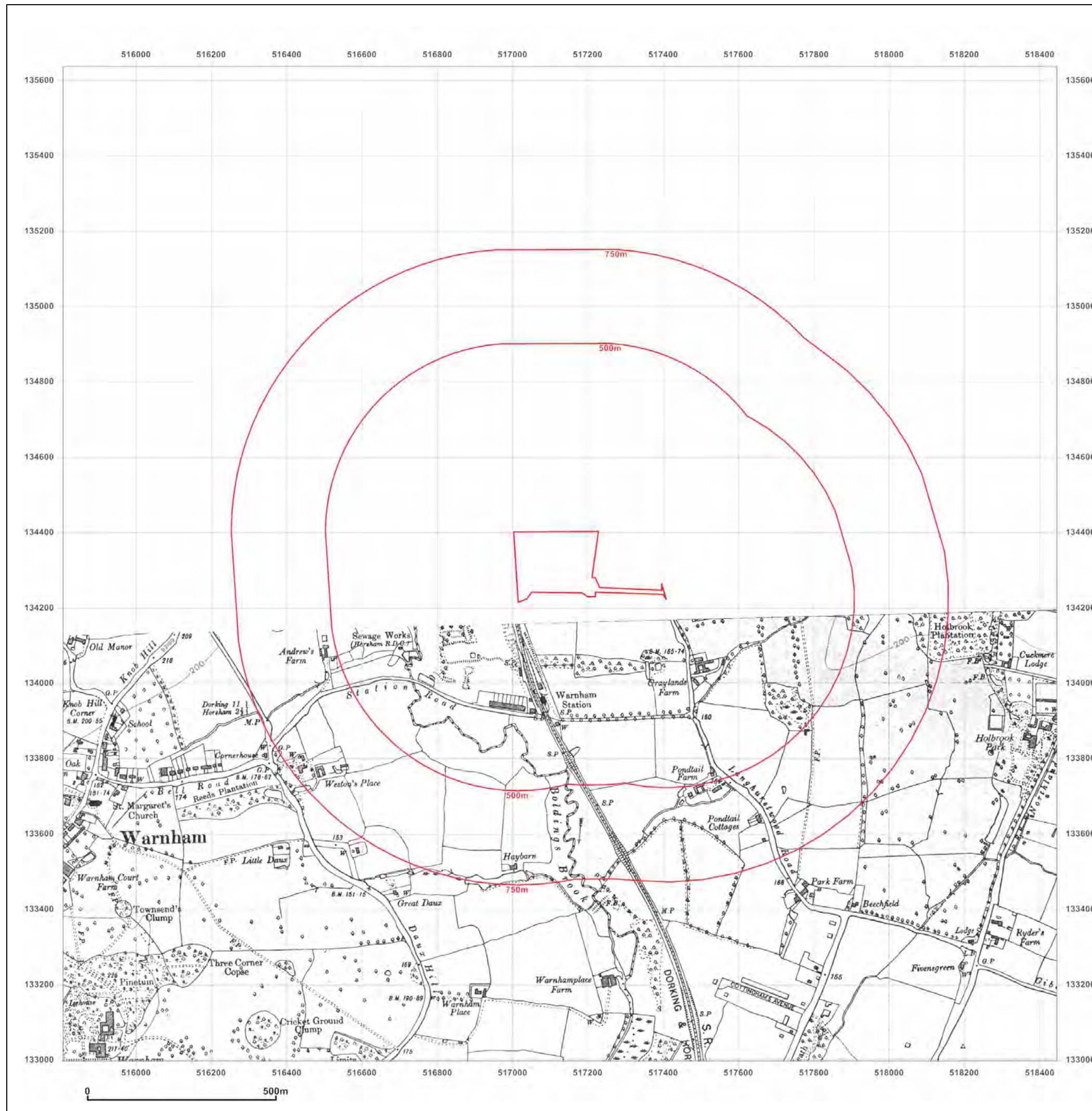


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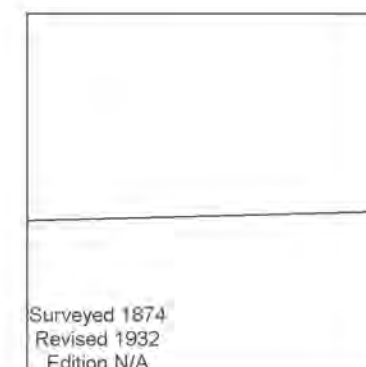
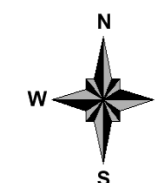
Client Ref: EMS\_228947\_303749  
Report Ref: EMS-228947\_303749  
Grid Ref: 517125, 134316

Map Name: County Series

Map date: 1932

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1932  
Edition N/A  
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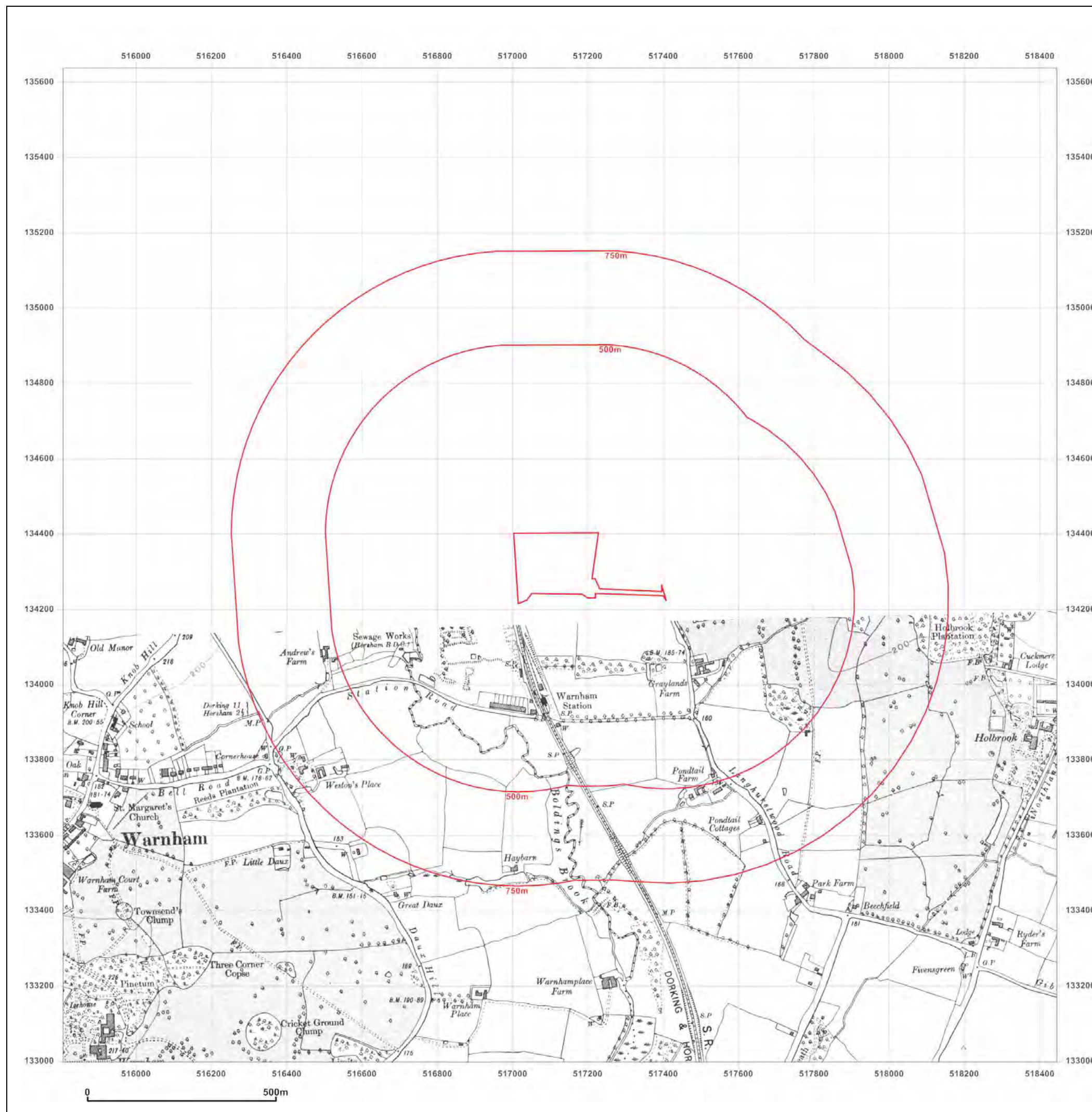


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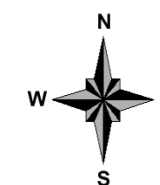
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Report Ref: EMS-228947\_303749  
Grid Ref: 517125, 134316

Map Name: County Series

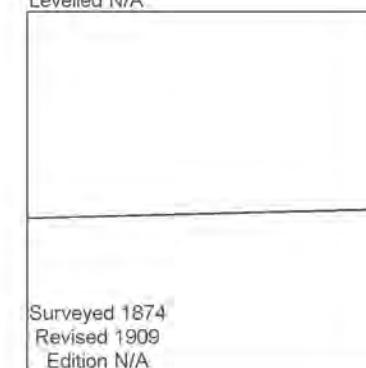
Map date: 1909-1914

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1874  
Revised 1914  
Edition N/A  
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Surveyed 1874  
Revised 1909  
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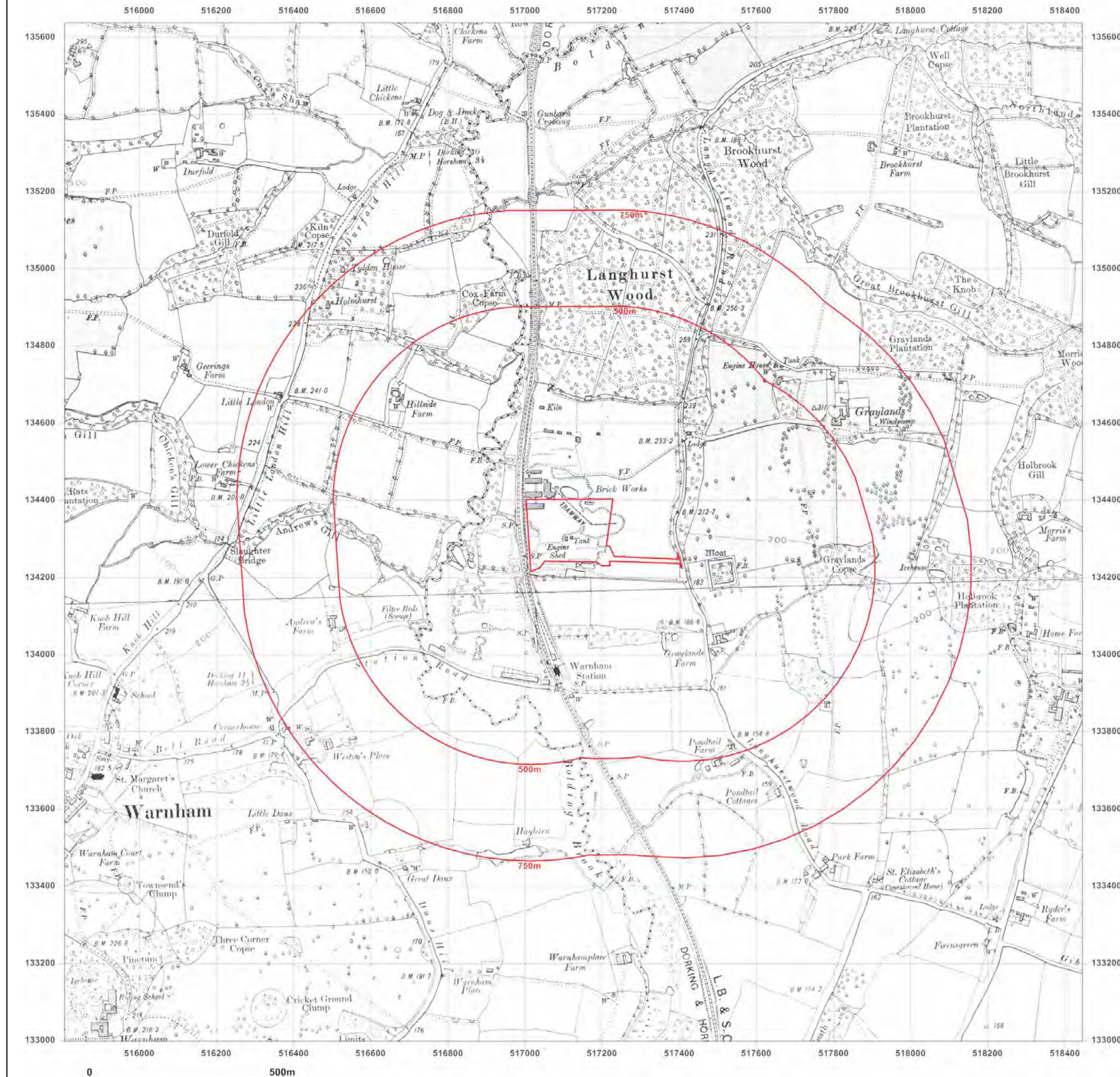


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Client Ref: EMS\_228947\_303749

Report Ref: EMS-228947\_303749

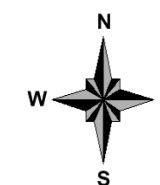
Grid Ref: 517125, 134316

Map Name: County Series

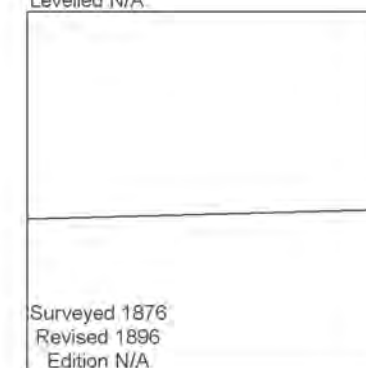
Map date: 1895-1896

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1875  
Revised 1895  
Edition N/A  
Copyright N/A  
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Surveyed 1876  
Revised 1896  
Edition N/A  
Copyright N/A  
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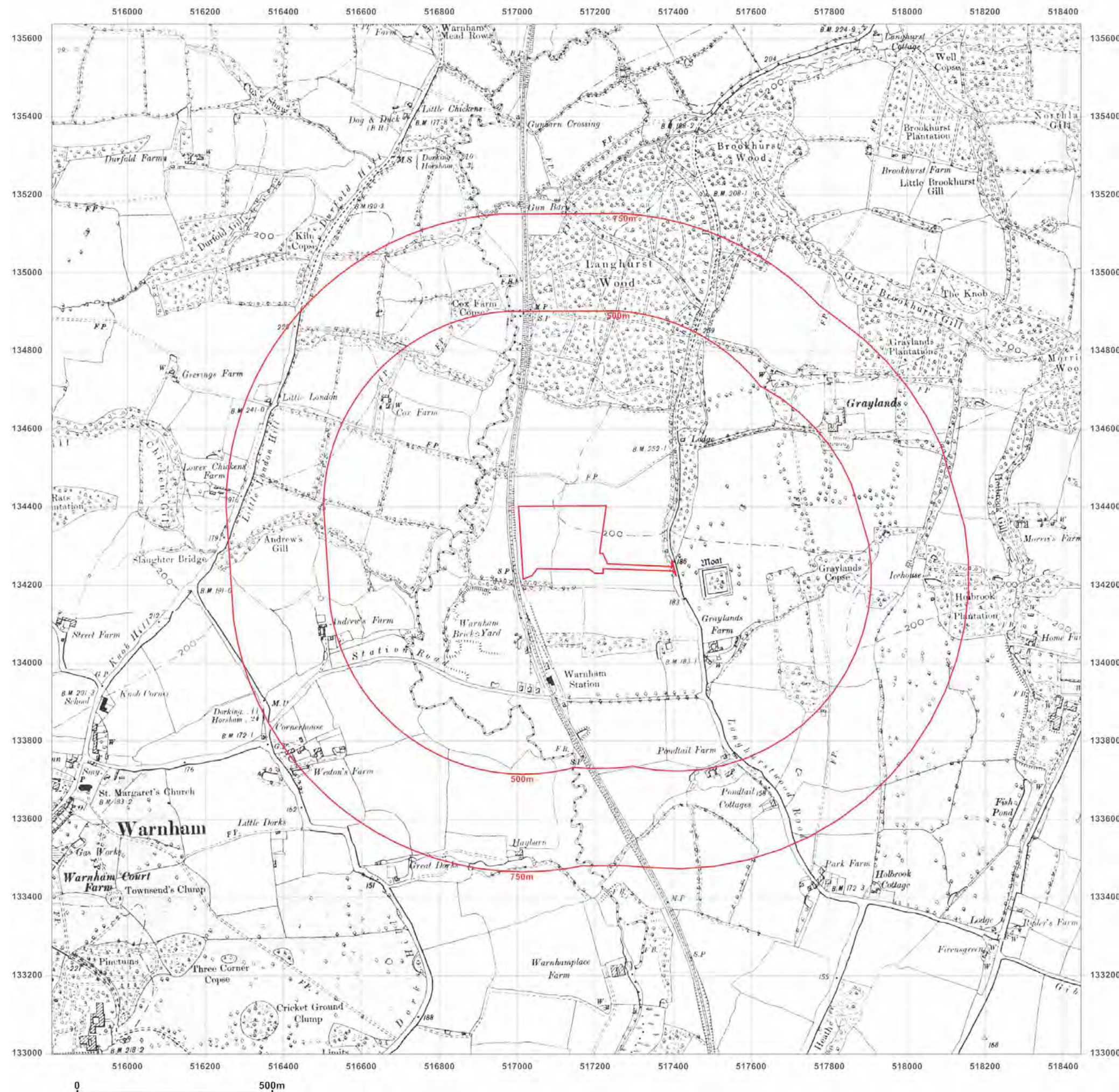


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Client Ref: EMS\_228947\_303749

Report Ref: EMS-228947\_303749

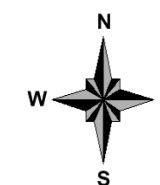
Grid Ref: 517125, 134316

Map Name: County Series

Map date: 1876

Scale: 1:10,560

Printed at: 1:10,560



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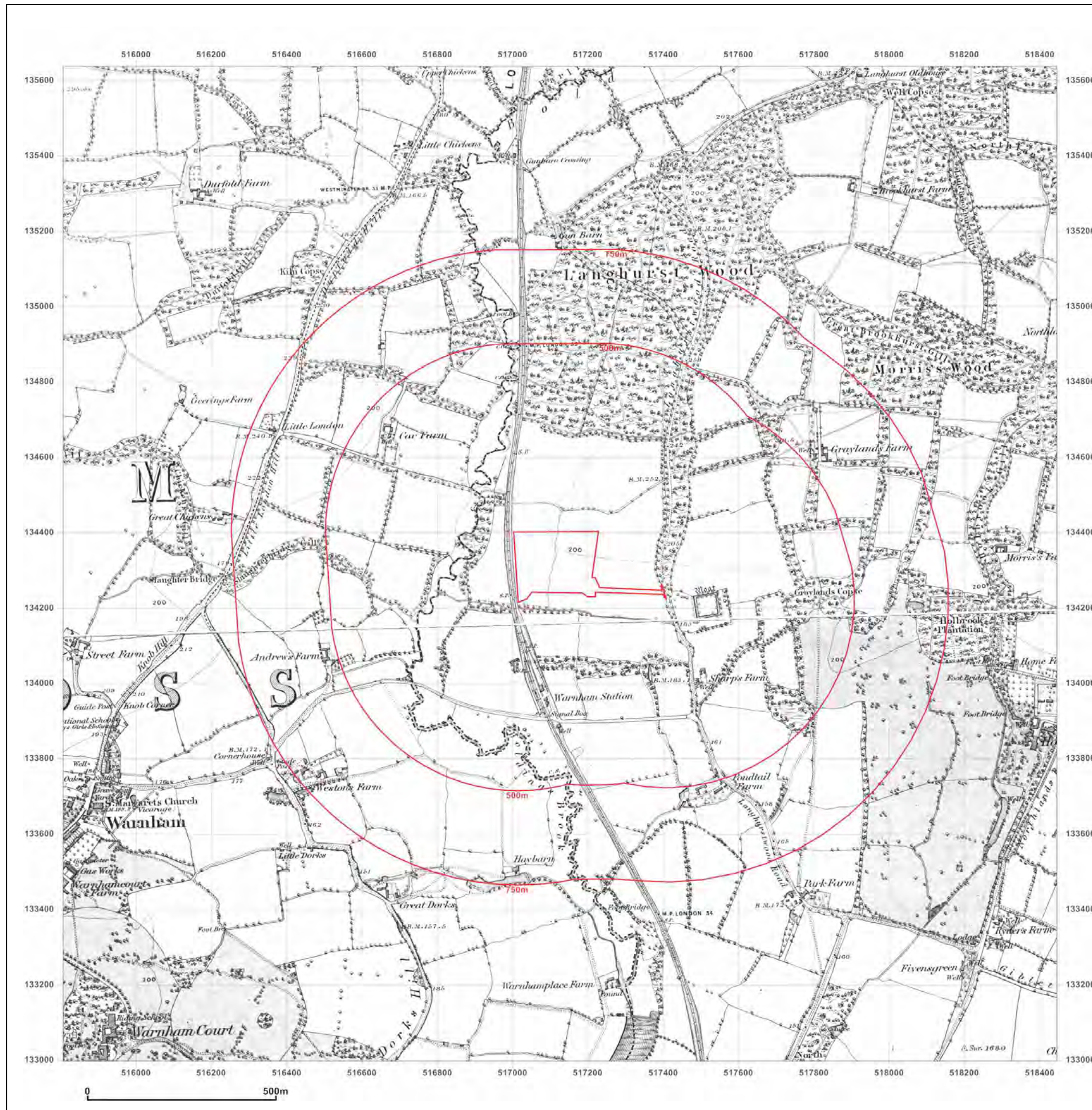


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Production date: 28 November 2013

To view map legend click here [Legend](#)









EmapSite

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Eversley, RG27 0RP

Report Reference: EMS-228947\_303750

Your Reference: EMS\_228947\_303750

Report Date 28 Nov 2013

Report Delivery Email - pdf  
Method:

## GroundSure Geoinsight

Address: The Wealden Brickworks, Horsham, West Sussex, RH12 4QD,

Dear Sir/ Madam,

Thank you for placing your order with GroundSure. Please find enclosed the **GroundSure GeoInsight** as requested.

If you would like further assistance regarding this report then please contact the emapsite customer services team on 0118 9736883 quoting the above report reference number.

Yours faithfully,

emapsite customer services team

Enc.  
GroundSure GeoInsight



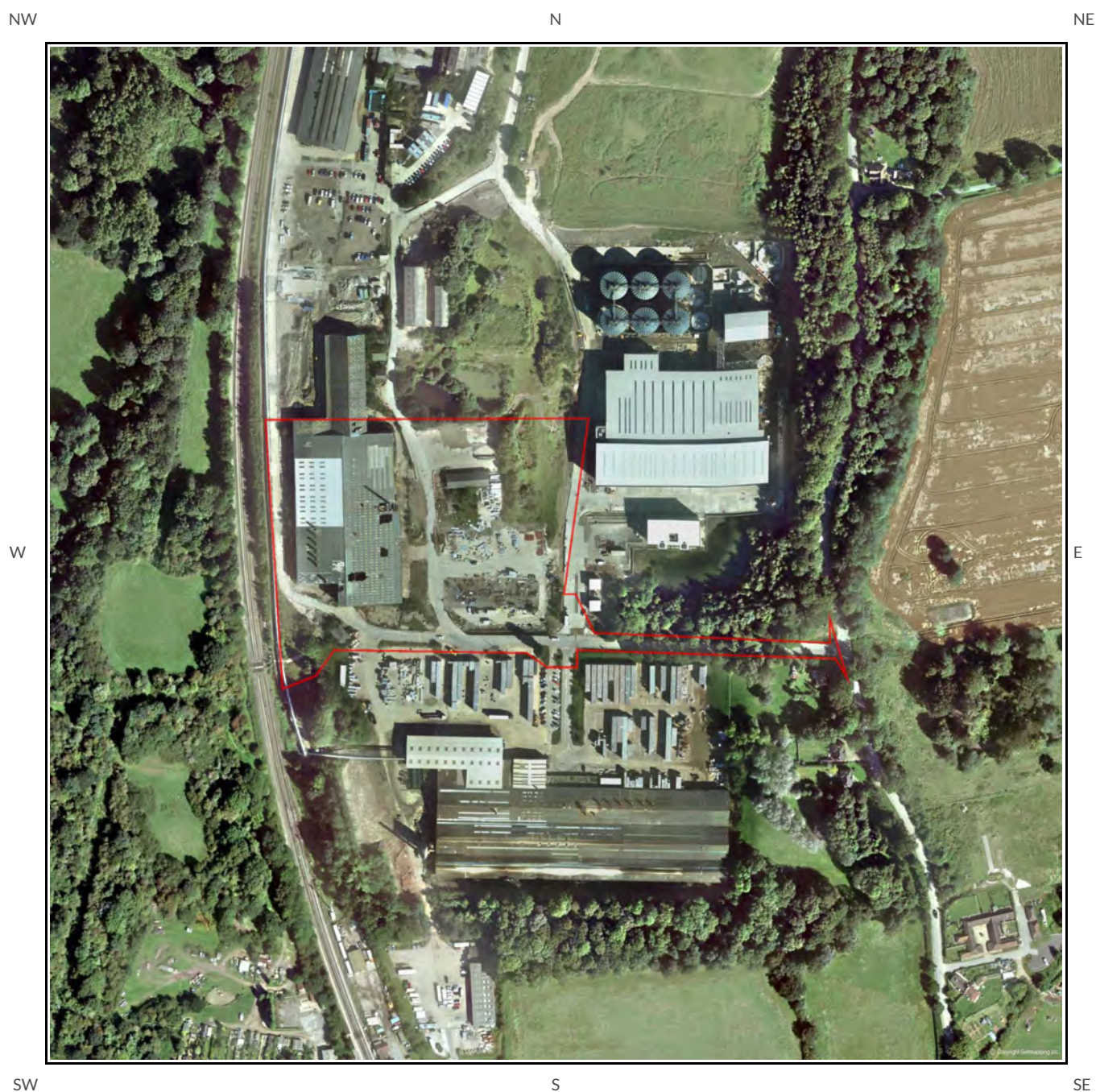
# GroundSure GeoInsight

Address: The Wealden Brickworks, Horsham, West Sussex, RH12 4QD,

Date: 28 Nov 2013

Reference: EMS-228947\_303750

Client: EmapSite



Grid Reference: 517125,134316

Aerial Photograph Capture date: 31-Aug-2012  
Site Size: 3.73ha



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# Overview of Findings

The GroundSure GeoInsight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Shallow Mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and GroundSure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

## Section 1:Geology

1.1 Artificial Ground	1.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	Yes
	1.1.2 Are there any records relating to permeability of artificial ground within the study site boundary?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?	No
	1.2.2 Are there any records relating to permeability of superficial geology within the study site boundary?	No
	1.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	1.2.4 Are there any records relating to permeability of landslips within the study site boundary?	No
1.3 Bedrock, Solid Geology & Faults	1.3.1 Are there any records of Bedrock/ Solid Geology within 500m of the study site boundary	No
	1.3.2 Are there any records relating to permeability of bedrock within the study site boundary?	Yes
	1.3.3 Are there any records of faults within 500m of the study site boundary?	Yes
	1.3.4 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level
	1.3.5 Is the property in an area where Radon Protection Measures are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary

## Section 2:Ground Workings

	On-site	0-50m	51-250	251-500	501-1000
2.1 Historical Surface Ground Working Features from Small Scale Mapping	10	17	39	Not Searched	Not Searched
2.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
2.3 Current Ground Workings	1	0	1	0	2

\* This includes an automatically generated 50m buffer zone around the site

Section 3: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
3.1 Historical Mining	0	0	0	0	0
3.2 Coal Mining	0	0	0	0	0
3.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
3.4 Non-Coal Mining	1	0	0	0	1
3.5 Non-Coal Mining Cavities	0	0	1	0	0
3.6 Natural Cavities	0	0	0	0	0
3.7 Brine Extraction	0	0	0	0	0
3.8 Gypsum Extraction	0	0	0	0	0
3.9 Tin Mining	0	0	0	0	0
3.10 Clay Mining	0	0	0	0	0

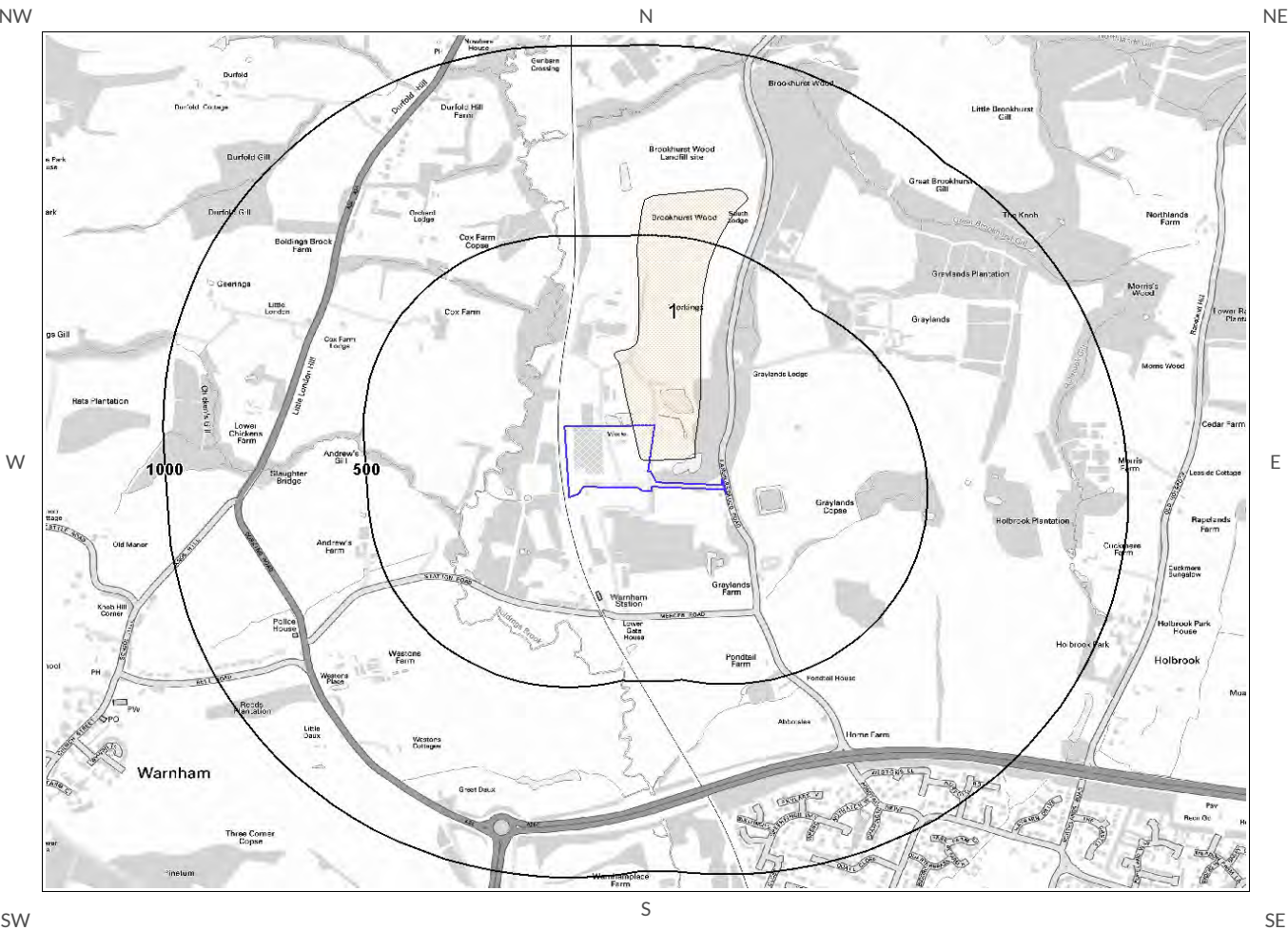
Section 4: Natural Ground Subsidence	On-site
4.1 Shrink Swell Clay	Low
4.2 Landslides	Very Low
4.3 Ground Dissolution of Soluble Rocks	Null
4.4 Compressible Deposits	Negligible
4.5 Collapsible Deposits	Very Low
4.6 Running Sand	Very Low

Section 5: Borehole Records	On-site	0-50m	51-250
5 BGS Recorded Boreholes	1	1	10

Section 6: Estimated Background Soil Chemistry	On-site	0-50m	51-250
6 Records of Background Soil Chemistry	1	1	12

# 1 Geology

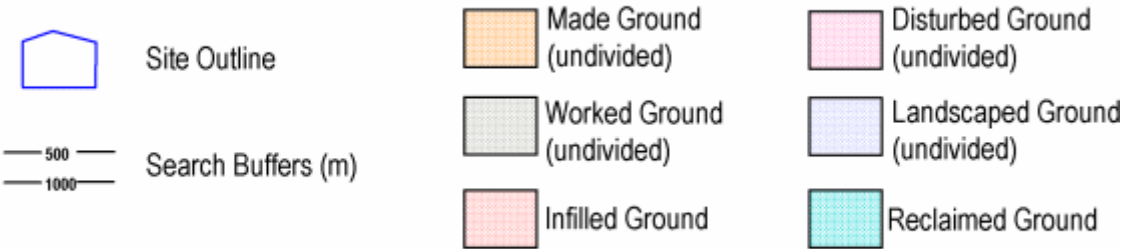
## 1.1 Artificial Ground Map



Artificial Ground Legend



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# 1 Geology

## 1.1 Artificial Ground

### 1.1.1 Artificial/ Made Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:302

Are there any records of Artificial/Made Ground within 500m of the study site boundary? Yes

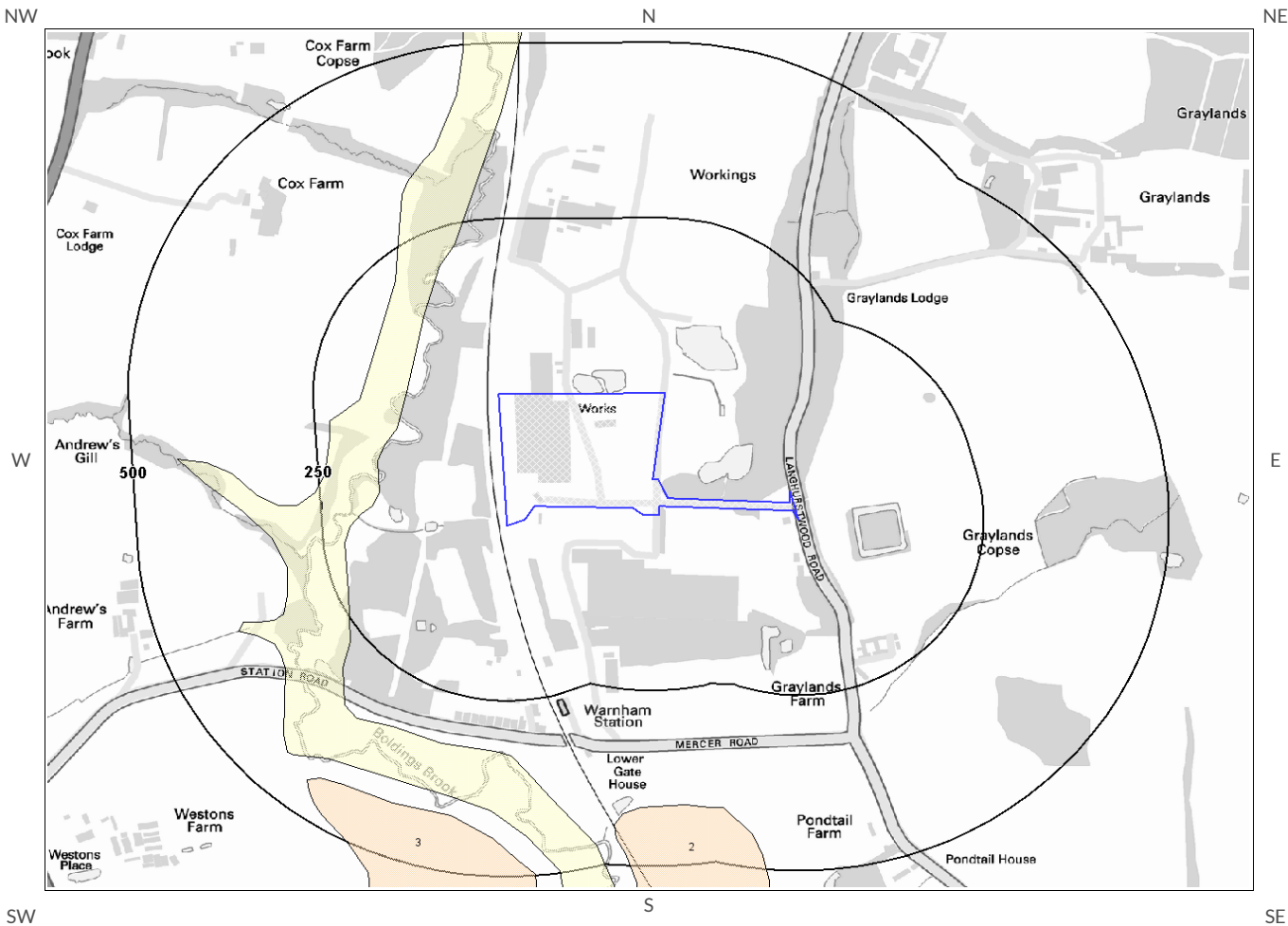
ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	WGR-OPEN	WORKED GROUND (UNDIVIDED)	VOID

### 1.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.



# 1.2 Superficial Deposits and Landslips Map



Superficial Deposits and Landslips  
Legend



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-  Site Outline
-  Search Buffers (m)

# 1.2 Superficial Deposits and Landslips

## 1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	123.0	W	ALV-CSSG	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
2	414.0	S	AR4-SAGR	ARUN TERRACE DEPOSITS, 4 MEMBER	SAND AND GRAVEL
3	420.0	S	AR4-SAGR	ARUN TERRACE DEPOSITS, 4 MEMBER	SAND AND GRAVEL

## 1.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? No

Database searched and no data found.

## 1.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

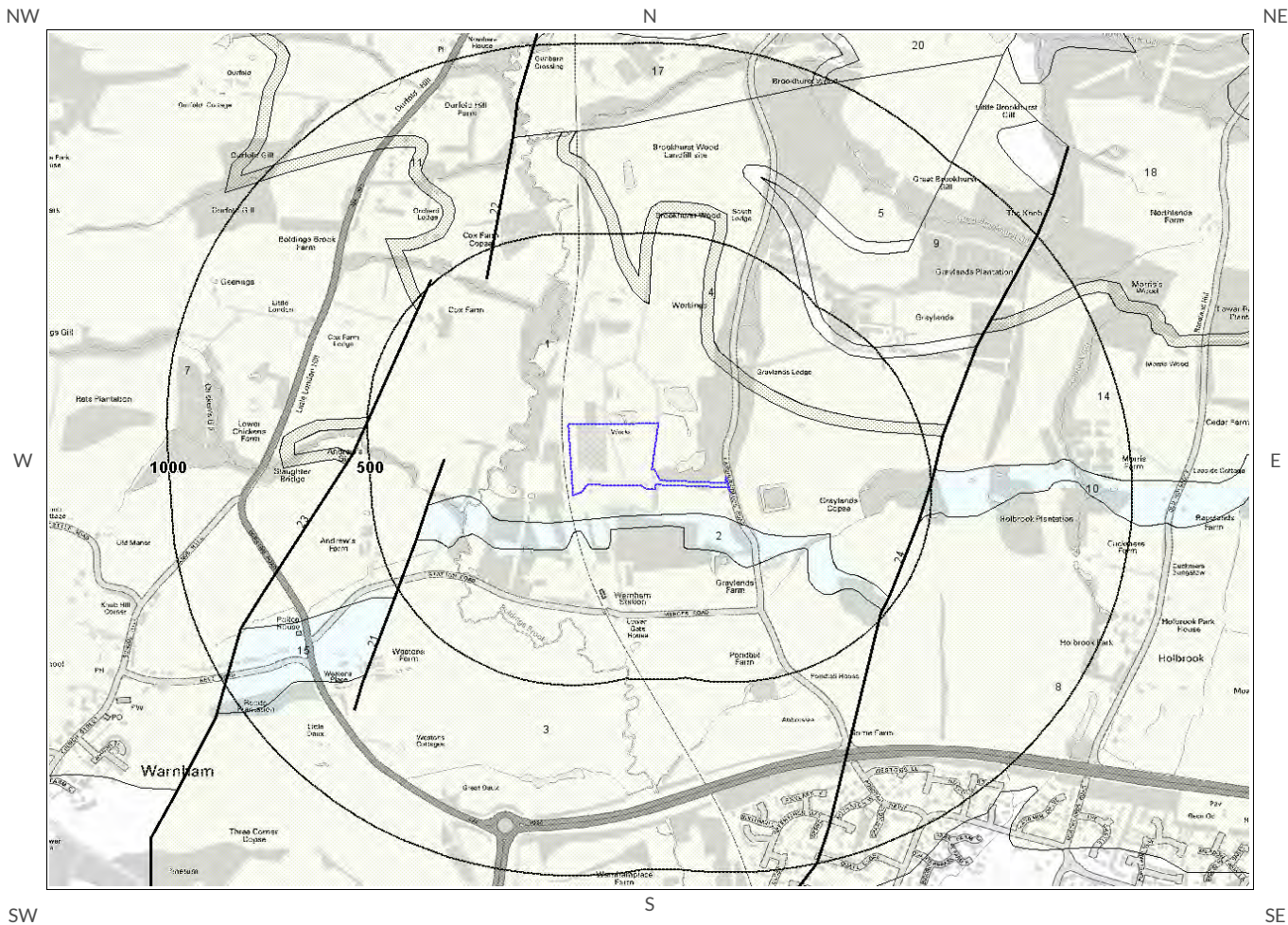
## 1.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site\*\* boundary? No

Database searched and no data found.

\* This includes an automatically generated 50m buffer zone around the site

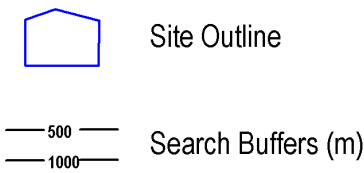
# 1.3 Bedrock and Faults Map



Bedrock and Faults Legend



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## 1.3 Bedrock, Solid Geology & Faults

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:302

### 1.3.1 Bedrock/ Solid Geology

Records of Bedrock/ Solid Geology within 500m of the study site boundary:

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	WC-MDST	Weald Clay Formation - Mudstone	Barremian / Hauterivian
2	66.0	S	HST-SDST	Horsham Stone Member - Sandstone	Hauterivian
3	94.0	S	WC-MDST	Weald Clay Formation - Mudstone	Barremian / Hauterivian
4	214.0	NE	WC-LMST	Weald Clay Formation - Limestone	Barremian / Hauterivian
5	244.0	NE	WC-MDST	Weald Clay Formation - Mudstone	Barremian / Hauterivian
6	437.0	NE	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
7	462.0	NW	WC-MDST	Weald Clay Formation - Mudstone	Barremian / Hauterivian
8	465.0	E	WC-MDST	Weald Clay Formation - Mudstone	Barremian / Hauterivian
9	467.0	NE	WC-MDST	Weald Clay Formation - Mudstone	Barremian / Hauterivian
10	473.0	E	HST-SDST	Horsham Stone Member - Sandstone	Hauterivian
11	479.0	NW	WC-LMST	Weald Clay Formation - Limestone	Barremian / Hauterivian
12A	493.0	W	WC-LMST	Weald Clay Formation - Limestone	Barremian / Hauterivian

### 1.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site\* boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	Low	Very Low

### 1.3.3 Faults

Are there any records of Faults within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	Category Description	Feature Description
21	313.0	W	FAULT	Normal fault, inferred
22	429.0	NW	FAULT	Normal fault, inferred
23	462.0	NW	FAULT	Normal fault, inferred
24	465.0	E	FAULT	Normal fault, inferred

\* This includes an automatically generated 50m buffer zone around the site

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as Faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

---

#### 1.3.4 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level

---

#### 1.3.5 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary

---


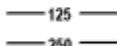



# 2 Ground Workings Map



Ground Workings Legend



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-  Site Outline
-  Search Buffers (m)
-  Historic Surface Ground Workings
-  Historic Underground Workings
-  Current Ground Workings



## 2 Ground Workings

### 2.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on GroundSure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping.

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

The following Historical Surface Ground Working Features are provided by GroundSure:

ID	Distance (m)	Direction	NGR	Use	Date
1	0.0	On Site	517023 134327	Unspecified Ground Workings	1914
2	0.0	On Site	517160 134358	Unspecified Pits	1914
3A	0.0	On Site	517157 134449	Brick Works	1979
4A	0.0	On Site	517157 134449	Brick Works	1992
5B	0.0	On Site	517212 134444	Unspecified Heap	1979
6B	0.0	On Site	517212 134444	Unspecified Heap	1992
7	0.0	On Site	517166 134409	Unspecified Ground Workings	1956
8	0.0	On Site	517183 134288	Unspecified Pit	1956
9X	0.0	On Site	517125 134387	Brick Works	1914
10	0.0	On Site	517281 134621	Unspecified Quarry	1956
11E	1.0	N	517114 134420	Pond	1914
12G	2.0	S	517141 134219	Ponds	1914
13C	2.0	N	517132 134421	Ponds	1979
14C	2.0	N	517132 134421	Ponds	1992
15D	4.0	W	516993 134364	Cuttings	1876
16D	4.0	W	516993 134364	Cuttings	1876
17E	5.0	N	517121 134434	Pond	1956
18F	7.0	S	517061 134148	Unspecified Heap	1979
19F	7.0	S	517061 134148	Unspecified Heap	1992
20G	8.0	S	517136 134213	Ponds	1956
21	20.0	W	516980 134196	Refuse Heap	1914



ID	Distance (m)	Direction	NGR	Use	Date
22H	25.0	N	517304 134305	Pond	1992
23H	25.0	N	517304 134305	Pond	1979
24I	32.0	W	516943 134327	Unspecified Pit	1914
25I	36.0	W	516964 134323	Unspecified Pit	1956
26J	39.0	S	517017 134163	Cuttings	1876
27J	39.0	S	517017 134163	Cuttings	1876
28S	57.0	S	516895 134039	Sewage Works	1932
29	58.0	S	516937 134038	Brick Yard	1896
30K	61.0	NE	517278 134491	Pond	1992
31K	61.0	NE	517278 134491	Pond	1979
32L	61.0	W	516927 134184	Unspecified Heap	1992
33L	61.0	W	516927 134184	Unspecified Heap	1979
34M	63.0	S	517034 134104	Cuttings	1876
35M	63.0	S	517034 134104	Cuttings	1876
36O	88.0	SW	516863 134172	Unspecified Pit	1895
37N	101.0	N	516995 134535	Cuttings	1876
38N	101.0	N	516995 134535	Cuttings	1876
39O	117.0	W	516887 134183	Unspecified Pit	1914
40	130.0	W	516876 134155	Unspecified Ground Workings	1956
41U	137.0	SW	516857 134128	Unspecified Ground Workings	1932
42Q	141.0	W	516859 134267	Unspecified Heap	1914
43R	144.0	W	516834 134249	Ponds	1914
44	144.0	SW	516879 134132	Unspecified Heap	1909
45P	148.0	N	517267 134620	Clay Pit	1979
46P	148.0	N	517267 134620	Clay Pit	1992
47Q	149.0	W	516852 134260	Unspecified Heap	1956
48R	150.0	W	516828 134243	Ponds	1956
49S	153.0	S	516904 134060	Unspecified Ground Workings	1909
50	153.0	S	516904 134060	Unspecified Ground Workings	1932
51T	156.0	S	517374 134042	Ponds	1992

ID	Distance (m)	Direction	NGR	Use	Date
52T	156.0	S	517374 134042	Ponds	1979
53	158.0	SW	516817 134115	Unspecified Ground Workings	1909
54S	161.0	S	516899 134057	Unspecified Ground Workings	1956
55T	170.0	S	517360 134033	Ponds	1896
56T	171.0	S	517359 134034	Ponds	1932
57T	171.0	S	517359 134034	Ponds	1909
58T	174.0	S	517359 134030	Ponds	1956
59S	176.0	SW	516897 134071	Unspecified Pit	1896
60U	176.0	W	516843 134130	Unspecified Ground Workings	1896
61V	177.0	S	517364 134027	Pond	1876
62V	177.0	S	517364 134027	Pond	1876
63W	194.0	SW	516895 134009	Unspecified Pit	1896
64W	208.0	SW	516882 134015	Unspecified Heap	1909
65W	208.0	SW	516882 134015	Unspecified Heap	1932
66W	214.0	SW	516878 134010	Unspecified Heap	1956

## 2.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the GroundSure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? No

Database searched and no data found.

## 2.3 Current Ground Workings

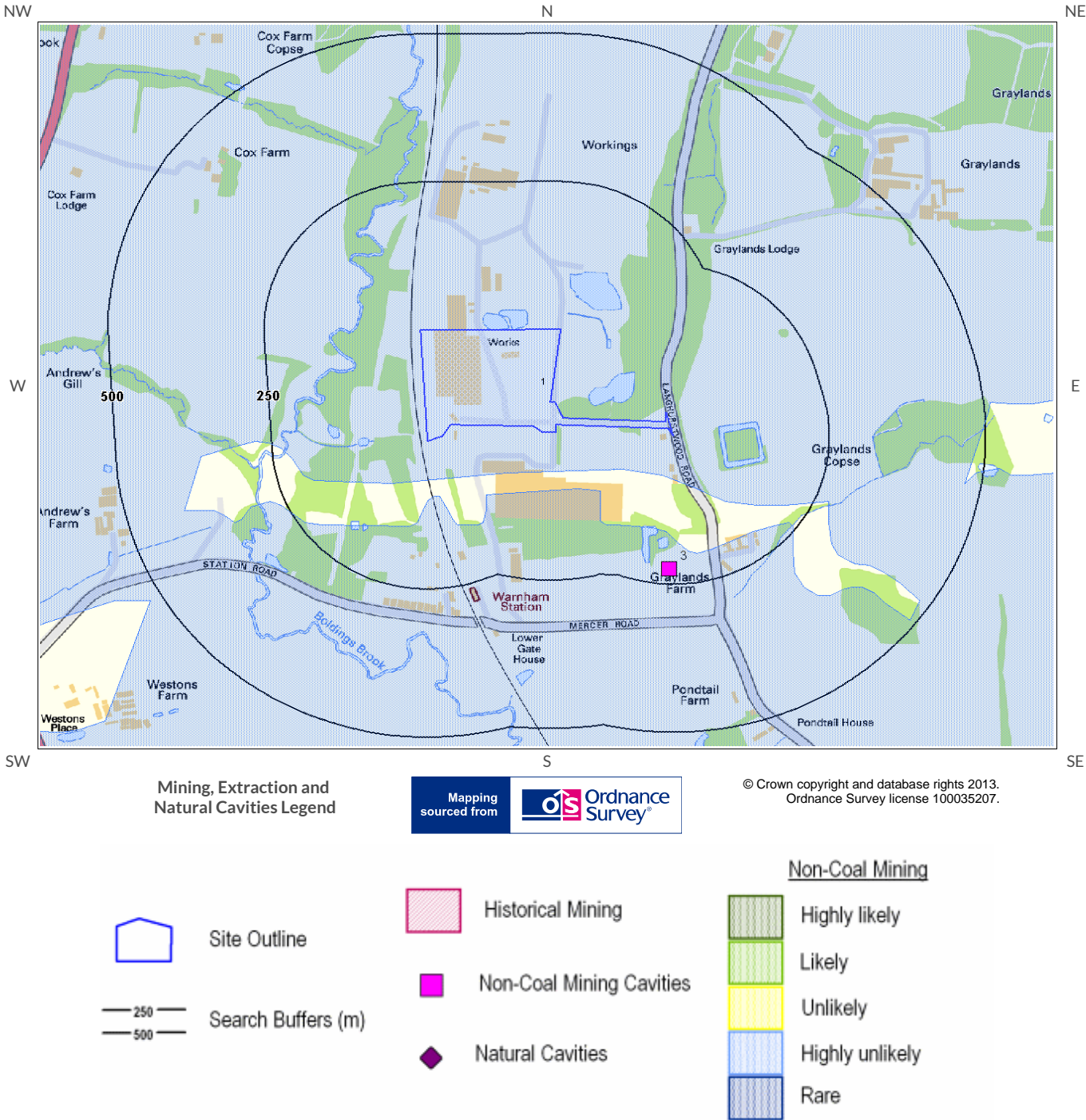
This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
67X	0.0	On Site	517195 134334	Clay & Shale	Warnham Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
68W	237.0	SW	516877 134022	Clay & Shale	Warnham Brick Yard	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	656.0	NE	517500 135000	Clay & Shale	Warnham Brickworks	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Active
Not shown	672.0	E	518079 134223	Sandstone	Holbrook Plantation Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

# 3 Mining, Extraction & Natural Cavities Map







## 3 Mining, Extraction & Natural Cavities

### 3.1 Historical Mining

This dataset is derived from GroundSure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

### 3.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

### 3.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

### 3.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	0.0	On Site	Not available	Iron Ore	Highly Unlikely - Localised small scale mining may have occurred but restricted in extent.
Not shown	597.0	N	Not available	Iron Ore	Highly Unlikely - Localised small scale mining may have occurred but restricted in extent.

### 3.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled "Review of mining instability in Great Britain, 1990" PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? Yes

The following Non-Coal Mining Cavities information provided by Peter Brett Associates:

ID	Distance (m)	Direction	NGR	Address	Superficial Deposits	Bedrock Deposits	Extracted Mineral
3	223.0	S	517400 134000	Warnham, West Sussex	-	Weald Clay Formation	Magnetite, Marcasite, Siderite, Ironstone

### 3.6 Natural Cavities

This dataset provides information based on Peter Brett Associates natural cavities database.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

### 3.7 Brine Extraction

This dataset provides information from the Brine Compensation Board which has been discontinued and is now covered by the Coal Authority.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

### 3.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

### 3.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level. More detailed information on potential Tin Mining may be found in Section 3.4 – Non-Coal Mining Hazards.

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

---

### 3.10 Clay Mining

This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

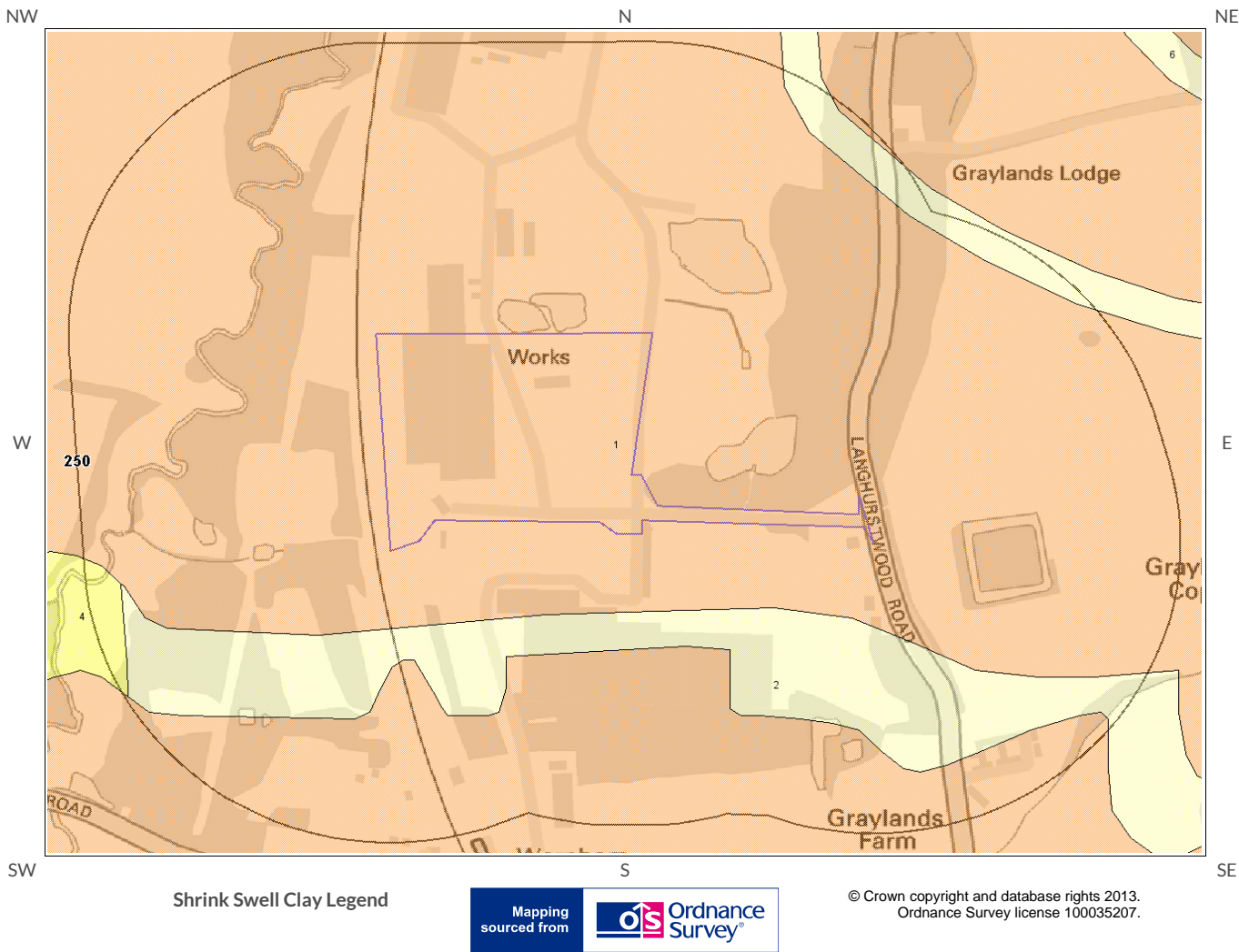
Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

---

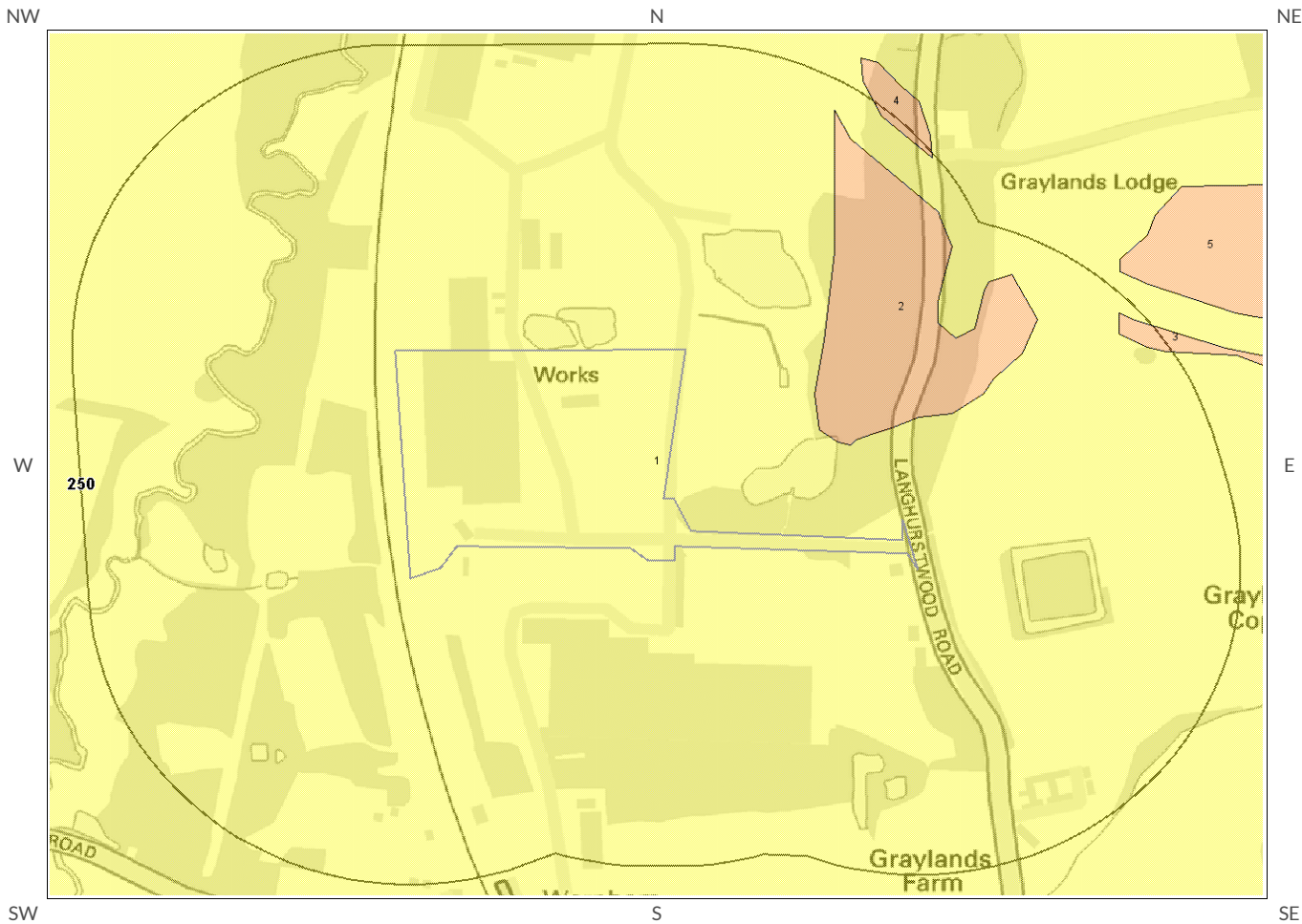
4 Natural Ground Subsidence

4.1 Shrink-Swell Clay Map





# 4.2 Landslides Map



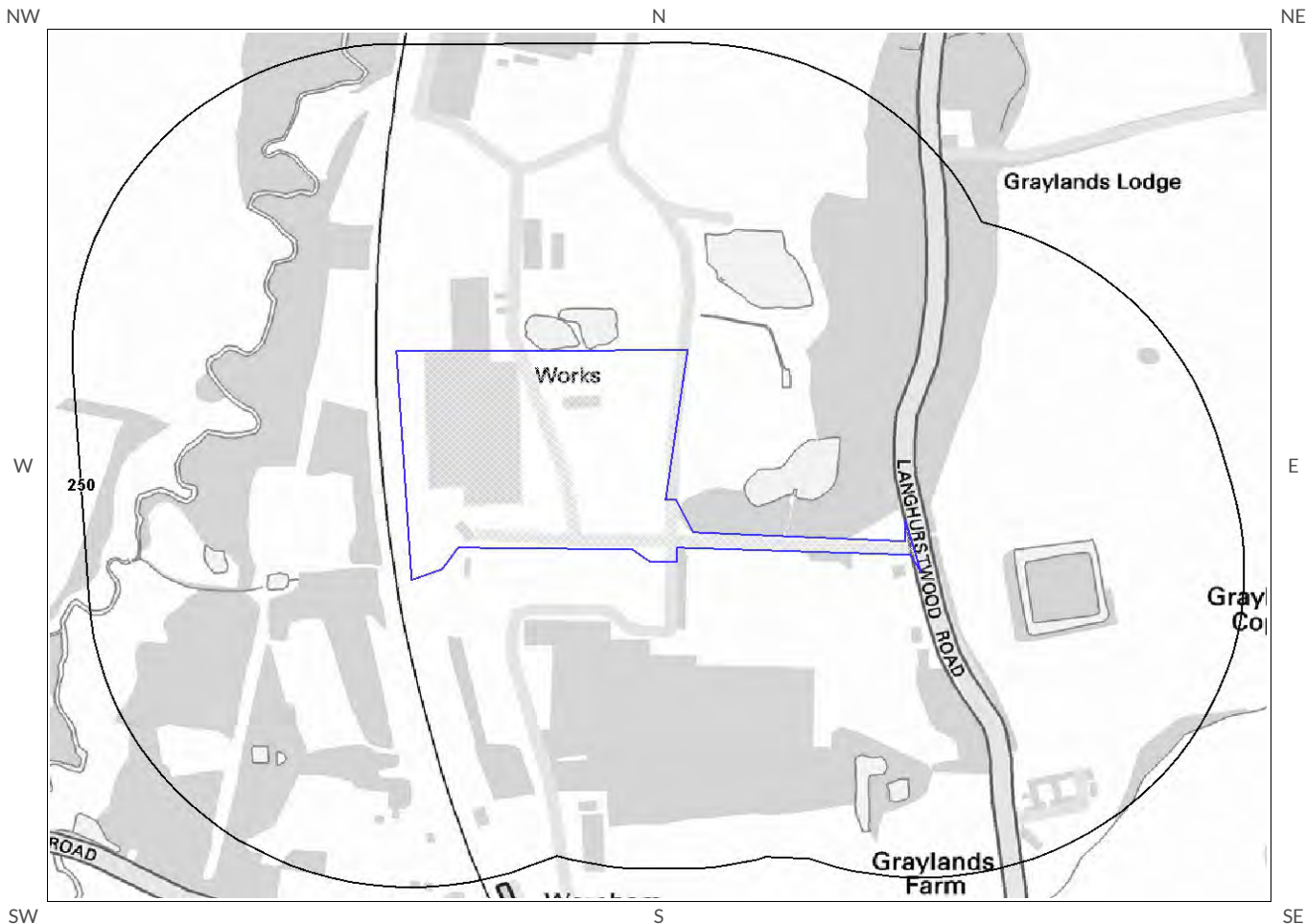
Landslides Legend



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	Site Outline		No Data / Null		Low
	Search Buffers (m)		Negligible		Moderate
			Very Low		High

# 4.3 Ground Dissolution Soluble Rocks Map



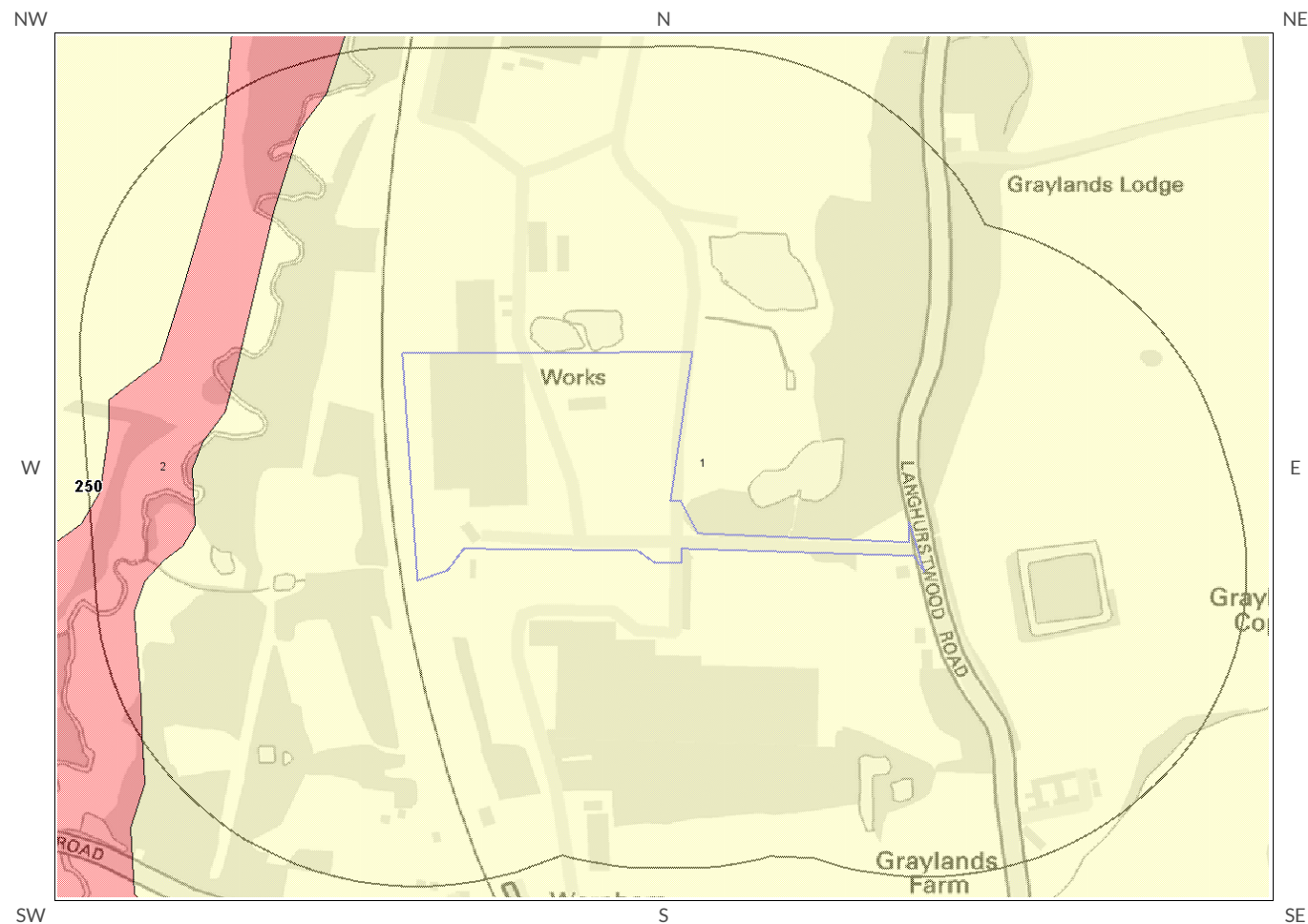
Ground Dissolution  
Soluble Rocks Legend

Mapping  
sourced from  
 Ordnance  
Survey®

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# 4.4 Compressible Deposits Map



Compressible Deposits Legend

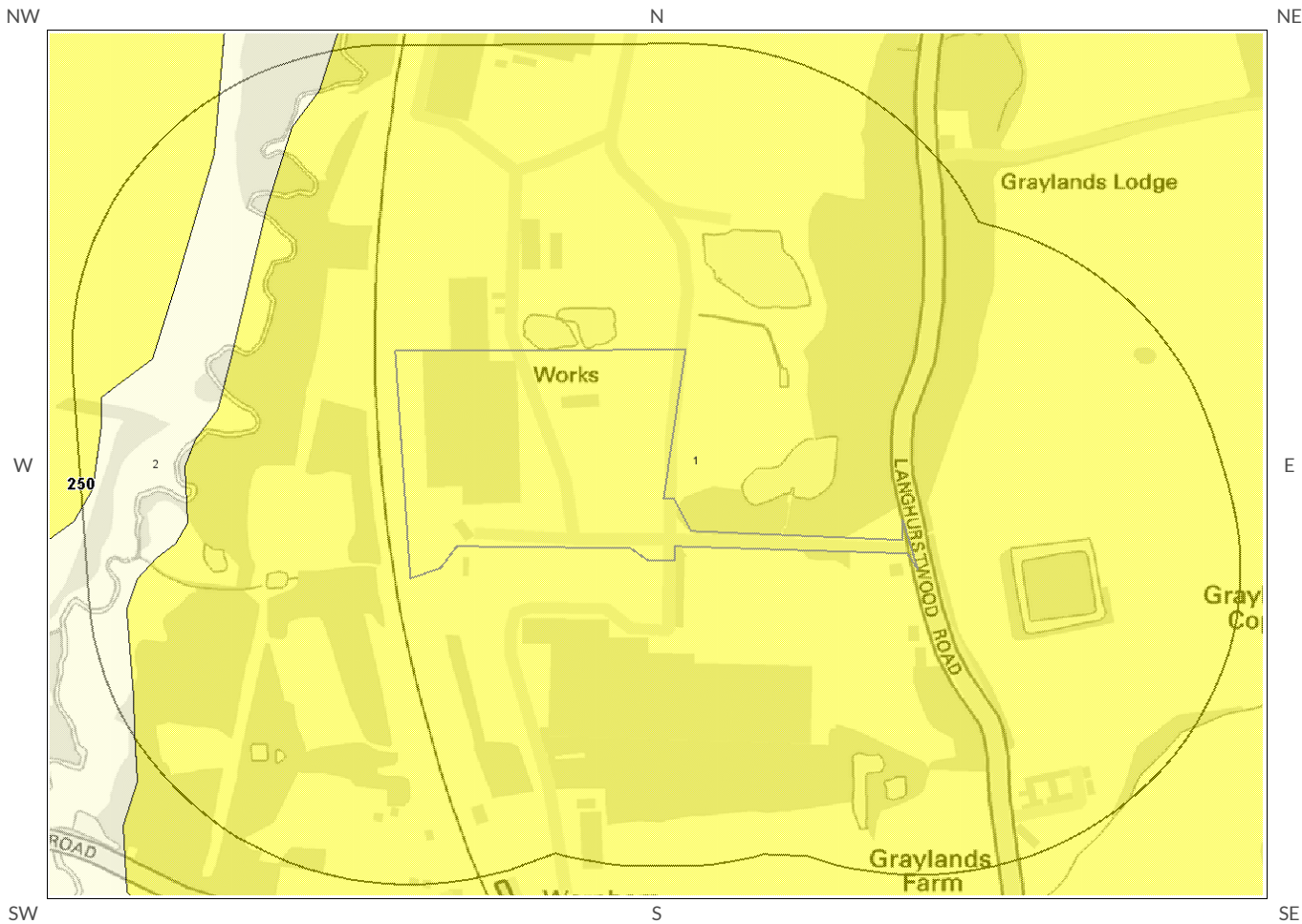


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# 4.5 Collapsible Deposits Map



Collapsible Deposits Legend

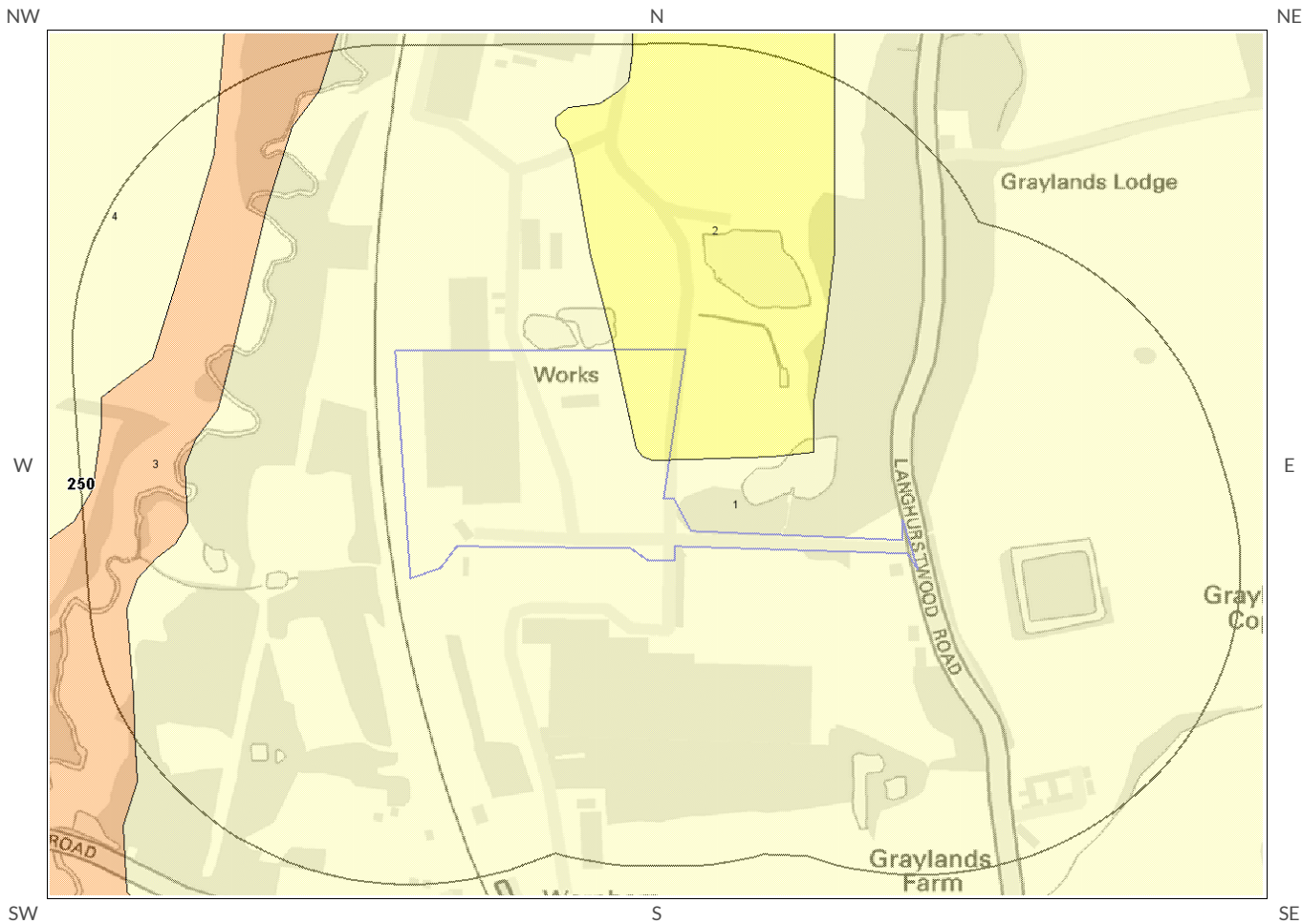


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- |   |                    |   |                |   |          |
|---|--------------------|---|----------------|---|----------|
|  | Site Outline       |  | No Data / Null |  | Low      |
|  | Search Buffers (m) |  | Negligible     |  | Moderate |
|   |                    |  | Very Low       |  | High     |



# 4.6 Running Sand Map



Running Sand Legend



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## 4 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site\* boundary? Low

### 4.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

### 4.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

\* This includes an automatically generated 50m buffer zone around the site

### 4.3 Ground Dissolution of Soluble Rocks

The following Landslides information provided by the British Geological Survey:

Distance (m)	Direction	Hazard Rating	Details
0	On site	Null-Negligible	Soluble rocks are not present in the search area. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

### 4.4 Compressible Deposits

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

### 4.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

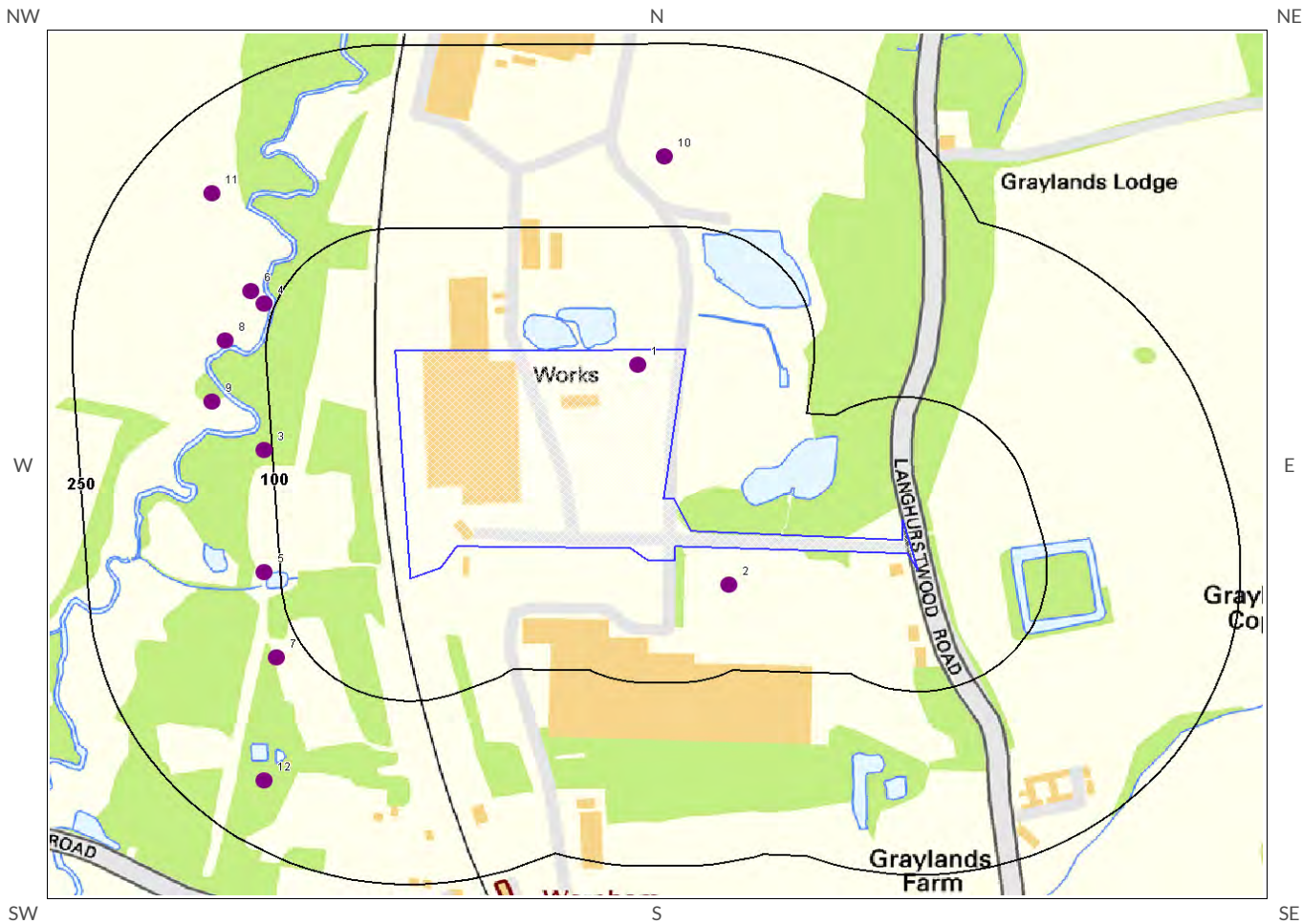
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

### 4.6 Running Sands

The following Running Sands Rocks information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
2	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.



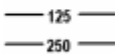
# 5 Borehole Records Map



Borehole Records Legend



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-  Site Outline
-  Borehole Locations
-  Search Buffers (m)





## 5 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary:

12

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	0.0	On Site	517190 134390	TQ13SE5	-1.0	SUSSEX & DORKING BRICK CO WARNHAM W/E
2	31.0	S	517260 134210	TQ13SE4	-1.0	SUSSEX & DORKING BRICK CO WARNHAM W/D
3	107.0	W	516900 134320	TQ13SE26	3.46	A24 LONDON- WORTHINGHAM WARNHAM IMP 19
4	109.0	W	516900 134440	TQ13SE23	9.0	A24 LONDON- WORTHINGHAM WARNHAM IMP 16
5	113.0	W	516900 134220	TQ13SE27	2.31	A24 LONDON- WORTHINGHAM WARNHAM IMP 20
6	122.0	NW	516890 134450	TQ13SE22	9.0	A24 LONDON- WORTHINGHAM WARNHAM IMP 15
7	123.0	SW	516910 134150	TQ13SE28	2.31	A24 LONDON- WORTHINGHAM WARNHAM IMP 21
8	132.0	W	516870 134410	TQ13SE24	16.0	A24 LONDON- WORTHINGHAM WARNHAM IMP 17
9	144.0	W	516860 134360	TQ13SE25	6.46	A24 LONDON- WORTHINGHAM WARNHAM IMP 18
10	157.0	N	517210 134560	TQ13SE3	-1.0	SUSSEX & DORKING BRICK CO WARNHAM W/C
11	191.0	NW	516860 134530	TQ13SE21	2.46	A24 LONDON- WORTHINGHAM WARNHAM IMP 14
12	201.0	SW	516900 134050	TQ13SE29	5.0	A24 LONDON- WORTHINGHAM WARNHAM IMP 22

Additional online information is available for the following boreholes listed above:

#3: [scans.bgs.ac.uk/sobi\\_scans/boreholes/578561](https://scans.bgs.ac.uk/sobi_scans/boreholes/578561)  
#4: [scans.bgs.ac.uk/sobi\\_scans/boreholes/578558](https://scans.bgs.ac.uk/sobi_scans/boreholes/578558)  
#5: [scans.bgs.ac.uk/sobi\\_scans/boreholes/578562](https://scans.bgs.ac.uk/sobi_scans/boreholes/578562)  
#6: [scans.bgs.ac.uk/sobi\\_scans/boreholes/578557](https://scans.bgs.ac.uk/sobi_scans/boreholes/578557)  
#7: [scans.bgs.ac.uk/sobi\\_scans/boreholes/578563](https://scans.bgs.ac.uk/sobi_scans/boreholes/578563)  
#8: [scans.bgs.ac.uk/sobi\\_scans/boreholes/578559](https://scans.bgs.ac.uk/sobi_scans/boreholes/578559)  
#9: [scans.bgs.ac.uk/sobi\\_scans/boreholes/578560](https://scans.bgs.ac.uk/sobi_scans/boreholes/578560)  
#11: [scans.bgs.ac.uk/sobi\\_scans/boreholes/578556](https://scans.bgs.ac.uk/sobi_scans/boreholes/578556)  
#12: [scans.bgs.ac.uk/sobi\\_scans/boreholes/578564](https://scans.bgs.ac.uk/sobi_scans/boreholes/578564)

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## 6 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary:

14

For further information on how this data is calculated and limitations upon its use, please see the GroundSure GeoInsight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<150 mg/kg
2.0	W	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
66.0	S	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<150 mg/kg
69.0	S	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<150 mg/kg
94.0	S	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<150 mg/kg
123.0	W	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<150 mg/kg
132.0	S	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
178.0	W	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
214.0	NE	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<150 mg/kg
215.0	S	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
215.0	S	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
221.0	W	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
244.0	NE	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<150 mg/kg
247.0	SW	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<150 mg/kg

\*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

# Contact Details



EmapSite  
Telephone: 0118 9736883  
sales@emapsite.com



## British Geological Survey Enquiries

Kingsley Dunham Centre  
Keyworth, Nottingham NG12 5GG  
Tel: 0115 936 3143.  
Fax: 0115 936 3276.  
Email: [enquiries@bgs.ac.uk](mailto:enquiries@bgs.ac.uk)  
Web: [www.bgs.ac.uk](http://www.bgs.ac.uk)

BGS Geological Hazards Reports and general geological enquiries



## British Gypsum

British Gypsum Ltd  
East Leake  
Loughborough  
Leicestershire  
LE12 6HX



## The Coal Authority

200 Lichfield Lane  
Mansfield  
Notts NG18 4RG  
Tel: 0845 762 6848  
DX 716176 Mansfield 5  
[www.coal.gov.uk](http://www.coal.gov.uk)



## Public Health England

Public information access office  
Public Health England, Wellington House  
133-155 Waterloo Road, London, SE1 8UG  
<https://www.gov.uk/government/organisations/public-health-england>  
Email: [enquiries@phe.gov.uk](mailto:enquiries@phe.gov.uk)  
Main switchboard: 020 7654 8000



## Johnson Poole & Bloomer Limited

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Brierley Hill, West Midlands  
DY5 3LH  
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Email: [enquiries.gs@pb.co.uk](mailto:enquiries.gs@pb.co.uk)  
Website: [www.jpb.co.uk](http://www.jpb.co.uk)



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## Getmapping PLC

Virginia Villas, High Street, Hartley Witney,  
Hampshire RG27 8NW  
Tel: 01252 845444  
Website: <http://www1.getmapping.com/>



## Peter Brett Associates

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Tel: +44 (0)118 950 0761 E-mail: [reading@pba.co.uk](mailto:reading@pba.co.uk)  
Website: <http://www.peterbrett.com/home>



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Report Reference: EMS-228947\_303750

Client Reference: EMS\_228947\_303750



## Standard Terms and Conditions

### 1 Definitions

In these terms and conditions unless the context otherwise requires:

**"Beneficiary"** means the person or entity for whose benefit the Client has obtained the Services.

**"Client"** means the party or parties entering into a Contract with GroundSure.

**"Commercial"** means any building or property which is not Residential.

**"Confidential Information"** means the contents of this Contract and all information received from the Client as a result of, or in connection with, this Contract other than

(i) information which the Client can prove was rightfully in its possession prior to disclosure by GroundSure and

(ii) any information which is in the public domain (other than by virtue of a breach of this Contract).

**"Support Services"** means Support Services provided by GroundSure including, without limitation, interpreting third party and in-house environmental data, providing environmental support advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

**"Contract"** means the contract between GroundSure and the Client for the provision of the Services, and which shall incorporate these terms and conditions, the Order, and the relevant User Guide.

**"Third Party Data Provider"** means any third party providing Third Party Content to GroundSure.

**"Data Reports"** means reports comprising factual data with no accompanying interpretation.

**"Fees"** has the meaning set out in clause 5.1.

**"GroundSure"** means GroundSure Limited, a company registered in England and Wales under number 03421028.

**"GroundSure Materials"** means all materials prepared by GroundSure and provided as part of the Services, including but not limited to Third Party Content, Data Reports, Mapping, and Risk Screening Reports.

**"Intellectual Property"** means any patent, copyright, design rights, trade or service mark, moral rights, data protection rights, know-how or trade mark in each case whether registered or not and including applications for the same or any other rights of a similar nature anywhere in the world.

**"Mapping"** means a map, map data or a combination of historical maps of various ages, time periods and scales.

**"Order"** means an electronic, written or other order form submitted by the Client requesting Services from GroundSure in respect of a specified Site.

**"Ordnance Survey"** means the Secretary of State for Business, Innovation and Skills, acting through Ordnance Survey, Adanac Drive, Southampton, SO16 0AS, UK.

**"Order Website"** means the online platform through which Orders may be placed by the Client and accepted by GroundSure.

**"Report"** means a Risk Screening Report or Data Report for Commercial or Residential property.

**"Residential"** means any building or property used as or intended to be used as a single dwelling.

**"Risk Screening Report"** means a risk screening report comprising factual data with an accompanying interpretation by GroundSure.

**"Services"** means any Report, Mapping and/or Support Services which GroundSure has agreed to provide by accepting an Order pursuant to clause 2.6.

**"Site"** means the area of land in respect of which the Client has requested GroundSure to provide the Services.

**"Third Party Content"** means data, database information or other information which is provided to GroundSure by a Third Party Data Provider.

"User Guide" means the user guide, as amended from time to time, available upon request from GroundSure and on the website ([www.GroundSure.com](http://www.GroundSure.com)) and forming part of this Contract.

### 2 Scope of Services, terms and conditions, requests for insurance and quotations

2.1 GroundSure agrees to provide the Services in accordance with the Contract.

2.2 GroundSure shall exercise reasonable skill and care in the provision of the Services.

2.3 Subject to clause 7.3 the Client acknowledges that it has not relied on any statement or representation made by or on behalf of GroundSure which is not set out and expressly agreed in writing in the Contract and all such statements and representations are hereby excluded to the fullest extent permitted by law.

2.4 The Client acknowledges that terms and conditions appearing on a Client's order form, printed stationery or other communication, or any terms or conditions implied by custom, practice or course of dealing shall be of no effect, and that this Contract shall prevail over all others in relation to the Order.

2.5 If the Client or Beneficiary requests insurance in conjunction with or as a result of the Services, GroundSure shall use reasonable endeavours to recommend such insurance, but makes no warranty that such insurance shall be available from insurers or that it will be offered on reasonable terms. Any insurance purchased by the Client or Beneficiary shall be subject solely to the terms of the policy issued by insurers and GroundSure will have no liability therefor. In addition you acknowledge and agree that GroundSure does not act as an agent or broker for any insurance providers. The Client should take (and ensure that the Beneficiary takes) independent advice to ensure that the insurance policy requested or offered is suitable for its requirements.

2.6 GroundSure's quotations or proposals are valid for a period of 30 days only unless an alternative period of time is explicitly stipulated by GroundSure. GroundSure reserves the right to withdraw any quotation or proposal at any time before an Order is accepted by GroundSure. GroundSure's acceptance of an Order

shall be binding only when made in writing and signed by GroundSure's authorised representative or when accepted through the Order Website.

### 3 The Client's obligations

3.1 The Client shall comply with the terms of this Contract and

(i) procure that the Beneficiary or any third party relying on the Services complies with and acts as if it is bound by the Contract and

(ii) be liable to GroundSure for the acts and omissions of the Beneficiary or any third party relying on the Services as if such acts and omissions were those of the Client.

3.2 The Client shall be solely responsible for ensuring that the Services are appropriate and suitable for its and/or the Beneficiary's needs.

3.3 The Client shall supply to GroundSure as soon as practicable and without charge all requisite information (and the Client warrants that such information is accurate, complete and appropriate), including without limitation any environmental information relating to the Site and shall give such assistance as GroundSure shall reasonably require in the provision of the Services including, without limitation, access to the Site, facilities and equipment.

3.4 Where the Client's approval or decision is required to enable GroundSure to carry out work in order to provide the Services, such approval or decision shall be given or procured in reasonable time and so as not to delay or disrupt the performance of the Services.

3.5 Save as expressly permitted by this Contract the Client shall not, and shall procure that the Beneficiary shall not, re-sell, alter, add to, or amend the GroundSure Materials, or use the GroundSure Materials in a manner for which they were not intended. The Client may make the GroundSure Materials available to a third party who is considering acquiring some or all of, or providing funding in relation to, the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.6 The Client is responsible for maintaining the confidentiality of its user name and password if using the Order Website and the Client acknowledges that GroundSure accepts no liability of any kind for any loss or damage suffered by the Client as a consequence of using the Order Website.

### 4 Reliance

4.1 The Client acknowledges that the Services provided by GroundSure consist of the presentation and analysis of Third Party Content and other content and that information obtained from a Third Party Data Provider cannot be guaranteed or warranted by GroundSure to be reliable.

4.2 In respect of Data Reports, Mapping and Risk Screening Reports, the following classes of person and no other are entitled to rely on their contents;

- (i) the Beneficiary,
- (ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate),
- (iv) the first purchaser or first tenant of the Site, and
- (v) the professional advisers and lenders of the first purchaser or tenant of the Site.

4.3 In respect of Support Services, only the Client, Beneficiary and parties expressly named in a Report and no other parties are entitled to rely on its contents.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise expressly agreed in writing, no other person or entity of any kind is entitled to rely on any Services or Report issued or provided by GroundSure. Any party considering such Reports and Services does so at their own risk.

### 5 Fees and Disbursements

5.1 GroundSure shall charge and the Client shall pay fees at the rate and frequency specified in the written proposal, Order Website or Order acknowledgement form, plus (in the case of Support Services) all proper disbursements incurred by GroundSure. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services (together "Fees").

5.2 The Client shall pay all outstanding Fees to GroundSure in full without deduction, counterclaim or set off within 30 days of the date of GroundSure's invoice or such other period as may be agreed in writing between GroundSure and the Client ("Payment Date"). Interest on late payments will accrue on a daily basis from the Payment Date until the date of payment (whether before or after judgment) at the rate of 8% per annum.

5.3 The Client shall be deemed to have agreed the amount of any invoice unless an objection is made in writing within 28 days of the date of the invoice. As soon as reasonably practicable after being notified of an objection, without prejudice to clause 5.2 a member of GroundSure's management team will contact the Client and the parties shall then use all reasonable endeavours to resolve the dispute within 15 days.

### 6 Intellectual Property and Confidentiality

6.1 Subject to

- (i) full payment of all relevant Fees and
- (ii) compliance with this Contract, the Client is granted (and is permitted to sub-licence to the Beneficiary) a royalty-free, worldwide, non-assignable and (save to the extent set out in this Contract) non-transferable licence to make use of the GroundSure Materials.

6.2 All Intellectual Property in the GroundSure Materials are and shall remain owned by GroundSure or GroundSure's licensors (including without limitation the Third Party Data Providers) the Client acknowledges, and shall procure acknowledgement by the Beneficiary of, such ownership. Nothing in this Contract purports to transfer or assign any rights to the Client or the Beneficiary in respect of such Intellectual Property.

6.3 Third Party Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client shall, and shall procure that any recipients of the GroundSure Materials shall:

- (i) not remove, suppress or modify any trade mark, copyright or other proprietary marking belonging to GroundSure or any third party from the Services;
  - (ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;
  - (iii) not create any product or report which is derived directly or indirectly from the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);
  - (iv) not combine the Services with or incorporate such Services into any other information data or service;
  - (v) not reformat or otherwise change (whether by modification, addition or enhancement), the Services (save that those acting for the Beneficiary in a professional capacity shall not be in breach of this clause 6.4(v) where such reformatting is in the normal course of providing advice based upon the Services);
  - (vi) where a Report and/or Mapping contains material belonging to Ordnance Survey, acknowledge and agree that such content is protected by Crown Copyright and shall not use such content for any purpose outside of receiving the Services; and
  - (vii) not copy in whole or in part by any means any map prints or run-on copies containing content belonging to Ordnance Survey (other than that contained within Ordnance Survey's OS Street Map) without first being in possession of a valid Paper Map Copying Licence from Ordnance Survey,
- 6.5 Notwithstanding clause 6.4, the Client may make reasonable use of the GroundSure Materials in order to advise the Beneficiary in a professional capacity. However, GroundSure shall have no liability in respect of any advice, opinion or report given or provided to Beneficiaries by the Client.
- 6.6 The Client shall procure that any person to whom the Services are made available shall notify GroundSure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.

#### **7. Liability: Particular Attention Should Be Paid To This Clause**

7.1 This Clause 7 sets out the entire liability of GroundSure, including any liability for the acts or omissions of its employees, agents, consultants, subcontractors and Third Party Content, in respect of:

- (i) any breach of contract, including any deliberate breach of the Contract by GroundSure or its employees, agents or subcontractors;
  - (ii) any use made of the Reports, Services, Materials or any part of them; and
  - (iii) any representation, statement or tortious act or omission (including negligence) arising under or in connection with the Contract.
- 7.2 All warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from the Contract.
- 7.3 Nothing in the Contract limits or excludes the liability of the Supplier for death or personal injury resulting from negligence, or for any damage or liability incurred by the Client or Beneficiary as a result of fraud or fraudulent misrepresentation.

7.4 GroundSure shall not be liable for

- (i) loss of profits;
- (ii) loss of business;
- (iii) depletion of goodwill and/or similar losses;
- (iv) loss of anticipated savings;
- (v) loss of goods;
- (vi) loss of contract;
- (vii) loss of use;
- (viii) loss or corruption of data or information;
- (ix) business interruption;
- (x) any kind of special, indirect, consequential or pure economic loss, costs, damages, charges or expenses;
- (xi) loss or damage that arise as a result of the use of all or part of the GroundSure Materials in breach of the Contract;
- (xii) loss or damage arising as a result of any error, omission or inaccuracy in any part of the GroundSure Materials where such error, omission or inaccuracy is caused by any Third Party Content or any reasonable interpretation of Third Party Content;
- (xiii) loss or damage to a computer, software, modem, telephone or other property; and
- (xiv) loss or damage caused by a delay or loss of use of GroundSure's internet ordering service.

7.5 GroundSure's total liability in relation to or under the Contract shall be limited to £10 million for any claim or claims.

7.6 GroundSure shall procure that the Beneficiary shall be bound by limitations and exclusions of liability in favour of GroundSure which accord with those detailed in clauses 7.4 and 7.5 (subject to clause 7.3) in respect of all claims which the Beneficiary may bring against GroundSure in relation to the Services or other matters arising pursuant to the Contract.

#### **8 GroundSure's right to suspend or terminate**

8.1 If GroundSure reasonably believes that the Client or Beneficiary has not provided the information or assistance required to enable the proper provision of the Services, GroundSure shall be entitled to suspend all further performance of the Services until such time as any such deficiency has been made good.

8.2 GroundSure shall be entitled to terminate the Contract immediately on written notice in the event that:

- (i) the Client fails to pay any sum due to GroundSure within 30

days of the Payment Date; or

- (ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an administration order made against it or if a receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or
- (iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or
- (iv) the Client or the Beneficiary breaches any term of the Contract (including, but not limited to, the obligations in clause 4) which is incapable of remedy or if remediable, is not remedied within five days of notice of the breach.

#### **9. Client's Right to Terminate and Suspend**

9.1 Subject to clause 10.1, the Client may at any time upon written notice terminate or suspend the provision of all or any of the Services.

9.2 In any event, where the Client is a consumer (and not a business) he/she hereby expressly acknowledges and agrees that:

- (i) the supply of Services under this Contract (and therefore the performance of this Contract) commences immediately upon GroundSure's acceptance of the Order; and
- (ii) the Reports and/or Mapping provided under this Contract are
  - (a) supplied to the Client's specification(s) and in any event
  - (b) by their nature cannot be returned.

#### **10 Consequences of Withdrawal, Termination or Suspension**

10.1 Upon termination of the Contract:

- (i) GroundSure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client and/or Beneficiary any property of the Client and/or Beneficiary in GroundSure's possession or control; and
- (ii) the Client shall pay to GroundSure all and any Fees payable in respect of the performance of the Services up to the date of termination or suspension. In respect of any Support Services provided, the Client shall also pay GroundSure any additional costs incurred in relation to the termination or suspension of the Contract.

#### **11 Anti-Bribery**

11.1 The Client warrants that it shall:

- (i) comply with all applicable laws, statutes and regulations relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010;
- (ii) comply with such of GroundSure's anti-bribery and anti-corruption policies as are notified to the Client from time to time; and
- (iii) promptly report to GroundSure any request or demand for any undue financial or other advantage of any kind received by or on behalf of the Client in connection with the performance of this Contract.

11.2 Breach of this Clause 11 shall be deemed a material breach of this Contract.

#### **12 General**

12.1 The Mapping contained in the Services is protected by Crown copyright and must not be used for any purpose other than as part of the Services or as specifically provided in the Contract.

12.2 The Client shall be permitted to make one copy only of each Report or Mapping Order. Thereafter the Client shall be entitled to make unlimited copies of the Report or Mapping Order only in accordance with an Ordnance Survey paper map copy license available through GroundSure.

12.3 GroundSure reserves the right to amend or vary this Contract. No amendment or variation to this Contract shall be valid unless signed by an authorised representative of GroundSure.

12.4 No failure on the part of GroundSure to exercise, and no delay in exercising, any right, power or provision under this Contract shall operate as a waiver thereof.

12.5 Save as expressly provided in this Contract, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.

12.6 The Secretary of State for Business, Innovation and Skills ("BIS") or BIS' successor body, as the case may be, acting through Ordnance Survey may enforce a breach of clause 6.4(vi) and clause 6.4(vii) of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.

12.7 GroundSure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:

- (i) the Client or Beneficiary's failure to provide facilities, access or information;
- (ii) fire, storm, flood, tempest or epidemic;
- (iii) Acts of God or the public enemy;
- (iv) riot, civil commotion or war;
- (v) strikes, labour disputes or industrial action;
- (vi) acts or regulations of any governmental or other agency;
- (vii) suspension or delay of services at public registries by Third Party Data Providers;
- (viii) changes in law; or
- (ix) any other reason beyond GroundSure's reasonable control.

In the event that GroundSure is prevented from performing the Services (or any part thereof) in accordance with this clause 12.6 for a period of not less than 30 days then GroundSure shall be entitled to terminate this Contract immediately on written notice to the Client.

12.8 Any notice provided shall be in writing and shall be deemed to be properly

given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.

12.9 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email (save to the extent such day is not a working day where it shall be deemed to have been delivered on the next working day) and on the second working day after the day of posting if sent by first class post.

12.10 The Contract constitutes the entire agreement between the parties and shall supersede all previous arrangements between the parties relating to the subject matter hereof.

12.11 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.

12.12 This Contract shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with this Contract shall be subject to the exclusive jurisdiction of the English courts.

12.13 GroundSure is an executive member of the Council of Property Search Organisation (CoPSO) and has signed up to the Search Code administered by the Property Codes Compliance Board (PCCB). All Risk Screening Reports shall be supplied in accordance with the provisions of the Search Code.

12.14 If the Client or Beneficiary has a complaint about the Services, written notice should be given to the Compliance Officer at GroundSure who will respond in a timely manner.

12.15 The Client agrees that it shall, and shall procure that each Beneficiary shall, treat in confidence all Confidential Information and shall not, and shall procure that each Beneficiary shall not (i) disclose any Confidential Information to any third party other than in accordance with the terms of this Contract; and (ii) use Confidential Information for a purpose other than the exercise of its rights and obligations under this Contract. Subject to clause 6.6, nothing shall prevent the Client or any Beneficiary from disclosing Confidential Information to the extent required by law







EmapSite  
Masdar House, ,  
Eversley, RG27 ORP

GroundSure  
Reference: EMS-228947\_303751

Your Reference: EMS\_228947\_303751

Report Date 28 Nov 2013

Report Delivery Method: Email - pdf

## GroundSure EnviroInsight

Address: The Wealden Brickworks, Horsham, West Sussex, RH12 4QD,

Dear Sir/ Madam,

Thank you for placing your order with GroundSure. Please find enclosed the **GroundSure Enviroinsight** as requested.

If you would like further assistance regarding this report then please contact the emapsite customer services team on 0118 9736883 quoting the above report reference number.

Yours faithfully,

emapsite customer services team

Enc.  
GroundSure EnviroInsight



# GroundSure Envirolnsight

Address: The Wealden Brickworks, Horsham, West Sussex, RH12 4QD,

Date: 28 Nov 2013

Reference: EMS-228947\_303751

Client: EmapSite

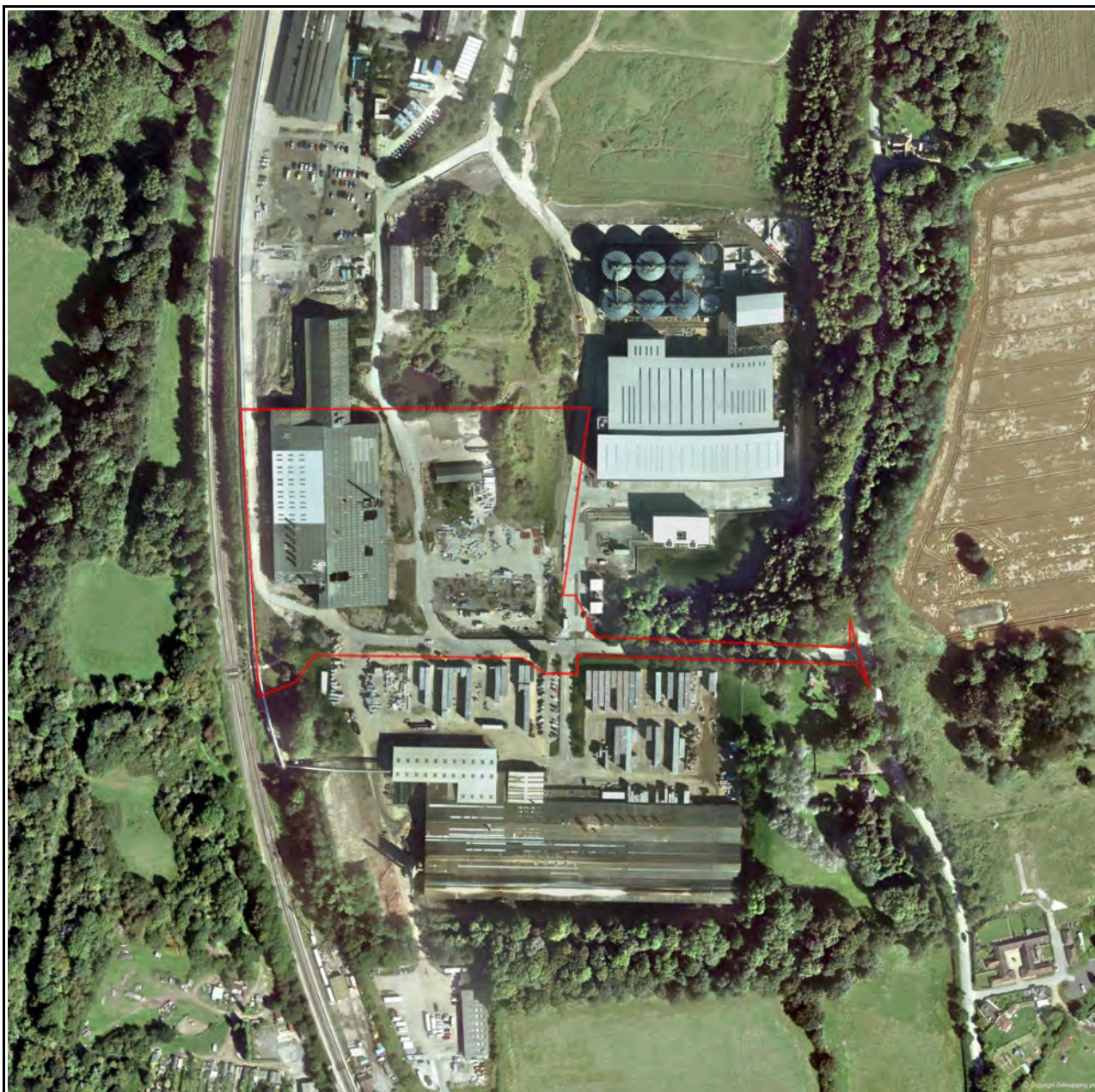
NW

N

NE

W

E



SW

S

SE

Grid Reference: 517125,134316

Aerial Photograph Capture date: 31-Aug-2012  
Site Size: 3.73ha

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# Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Environmental Permits, Incidents and Registers		On-site	0-50m	51-250	251-500		
1.1 Industrial Sites Holding Environmental Permits and/or Authorisations							
1.1.1	Records of historic IPC Authorisations	0	0	0	0		
1.1.2	Records of Part A(1) and IPPC Authorised Activities	0	0	0	40		
1.1.3	Records of Water Industry Referrals (potentially harmful discharges to the public sewer)	0	0	0	0		
1.1.4	Records of Red List Discharge Consents (potentially harmful discharges to controlled waters)	0	0	0	0		
1.1.5	Records of List 1 Dangerous Substances Inventory sites	0	0	0	0		
1.1.6	Records of List 2 Dangerous Substances Inventory sites	0	0	0	0		
1.1.7	Records of Part A(2) and Part B Activities and Enforcements	1	0	1	1		
1.1.8	Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0		
1.1.9	Records of Licensed Discharge Consents	1	1	5	21		
1.1.10	Records of Planning Hazardous Substance Consents and Enforcements	0	0	1	0		
1.2	Records of COMAH and NIHHS sites	2	0	0	0		
1.3 Environment Agency Recorded Pollution Incidents							
1.3.1	National Incidents Recording System, List 2	0	0	0	0		
1.3.2	National Incidents Recording System, List 1	0	0	0	0		
1.4	Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0		
Section 2: Landfill and Other Waste Sites		On-site	0-50m	51-250	251-500	501-1000	1000-5000
2.1 Landfill Sites							
2.1.1	Environment Agency Registered Landfill Sites	0	0	1	1	0	Not searched
2.1.2	Environment Agency Historic Landfill Sites	0	0	0	0	0	0
2.1.3	BGS/DoE Landfill Site Survey	0	0	0	0	0	0
2.1.4	GroundSure Local Authority Landfill Sites Data	0	0	0	2	1	0
2.2 Landfill and Other Waste Sites Findings							
2.2.1	Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	1	0	0	0	Not searched	Not searched
2.2.2	Environment Agency Licensed Waste Sites	1	0	0	6	0	0

Section 3: Current Land Use	On-site	0-50m	51-250	251-500
3.1 Current Industrial Sites Data	0	1	10	Not searched
3.2 Records of Petrol and Fuel Sites	0	0	0	0
3.3 Underground High Pressure Oil and Gas Pipelines	0	0	0	0

Section 4: Geology				
4.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	Yes			
4.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	None			
4.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.				

Section 5: Hydrogeology and Hydrology	0-500m					
5.1 Are there any records of Productive Strata in the Superficial Geology within 500m of the study site?	Yes					
5.2 Are there any records of Productive Strata in the Bedrock Geology within 500m of the study site?	Yes					
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
5.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	1	0	0	0	0
5.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	1	0	0	0	1
5.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
5.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
5.7 Is there any Environment Agency information on river quality within 1500m of the study site?	No	No	No	No	No	No
5.8 Detailed River Network entries within 500m of the site	0	0	6	18	Not searched	Not searched
5.9 Surface water features within 250m of the study site	Yes	Yes	Yes	Not searched	Not searched	Not searched

Section 6: Flooding				
6.1 Are there any Environment Agency indicative Zone 2 floodplains within 250m of the study site?	Yes			
6.2 Are there any Environment Agency indicative Zone 3 floodplains within 250m of the study site?	Yes			
6.3 Are there any Flood Defences within 250m of the study site?	No			
6.4 Are there any areas benefiting from Flood Defences within 250m of the study site?	No			
6.5 Are there any areas used for Flood Storage within 250m of the study site?	No			
6.6 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Negligible			
6.7 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Not Applicable			

## Section 7: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
7.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	1	0
7.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
7.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
7.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
7.5 Records of Ramsar sites	0	0	0	0	0	0
7.6 Records of Ancient Woodlands	0	2	1	5	18	33
7.7 Records of Local Nature Reserves (LNR)	0	0	0	0	1	0
7.8 Records of World Heritage Sites	0	0	0	0	0	0
7.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0
7.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
7.11 Records of National Parks	0	0	0	0	0	0
7.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
7.13 Records of Nitrate Vulnerable Zones	1	0	0	0	0	0

## Section 8: Natural Hazards

8.1 What is the maximum risk of natural ground subsidence?

Low

## Section 9: Mining

9.1 Are there any coal mining areas within 75m of the study site?

Yes

9.2 What is the risk of subsidence relating to shallow mining within 150m of the study site?

Low

9.3 Are there any brine affected areas within 75m of the study site?

No

# Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between GroundSure and the Client. The document contains the following sections:

## 1. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

## 2. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

## 3. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure underground oil and gas pipelines.

## 4. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

## 5. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

## 6. Flooding

Provides information on surface water flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

## 7. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

## 8. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence.

## 9. Mining

Provides information on areas of coal and shallow mining.

## 10. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, GroundSure provide a free Technical Helpline (08444 159000) for further information and guidance.

## Note: Maps

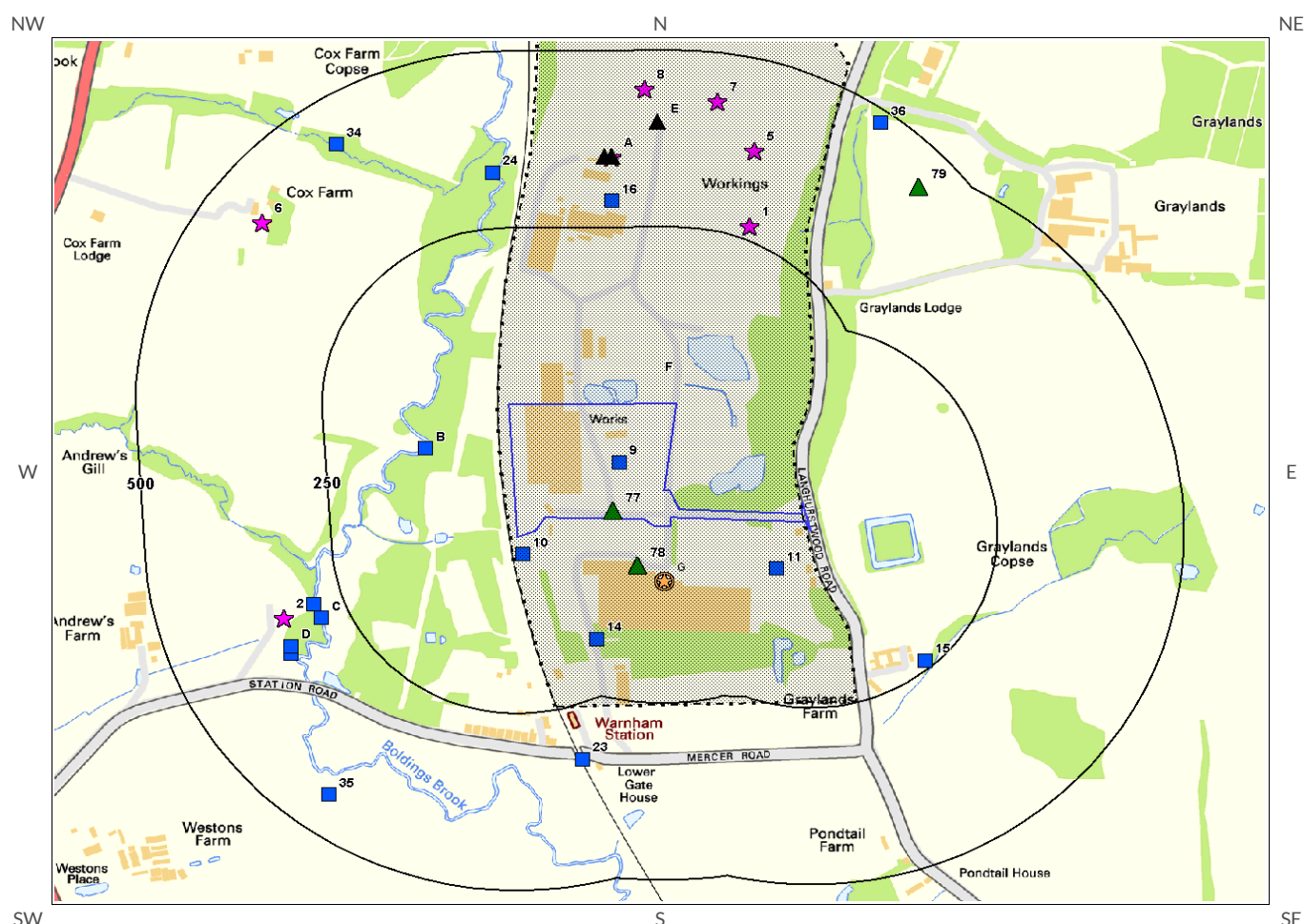
Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.



# 1 Environmental Permits, Incidents and Registers Map



Environmental Permits,  
Incidents and Registers Legend

Mapping  
sourced from  
**Ordnance Survey**

© Crown copyright and database rights 2013.  
Ordnance Survey license 100035207.

- |  |                    |  |                               |  |  |
|--|--------------------|--|-------------------------------|--|--|
|  | Site Outline       |  | Recorded Pollution Incident   |  | RAS 3 & 4 Authorisations                                       |
|  | Search Buffers (m) |  | Dangerous Substances (List 1) |  | Part A(1) Authorised Processes and Historic IPC Authorisations |
|  |                    |  | Dangerous Substances (List 2) |  | Part A(2) and Part B Authorised Processes                      |
|  |                    |  | Water Industry Referrals      |  | COMAH / NIHHS Sites  |
|  |                    |  | Licensed Discharge Consents   |  | Sites Determined as Contaminated Land                          |
|  |                    |  | Red List Discharge Consents   |  | Hazardous Substance Consents and Enforcements                  |



# 1 Environmental Permits, Incidents and Registers

## 1.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency and Local Authorities reveal the following information:

### 1.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

### 1.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

40

The following Part A(1) and IPPC Authorised Activities are represented as points on the Authorisations, Incidents and Registers map:

ID	Distance	Direction	NGR	Details	
83A	347.0	N	517140 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Anaerobic Digestion Facility Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT	Permit Number: RP3232UU Original Permit Number: RP3232UU EPR Reference: - Issue Date: 11/2/2009 Effective Date: 11/2/2009 Last date noted as effective: 2013-10-01 Status: Effective
84A	347.0	N	517140 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Anaerobic Digestion Facility Process: ASSOCIATED PROCESS	Permit Number: RP3232UU Original Permit Number: RP3232UU EPR Reference: - Issue Date: 11/2/2009 Effective Date: 11/2/2009 Last date noted as effective: 2013-10-01 Status: Effective
85A	347.0	N	517140 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurstwood Landfill Site Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: UP3031SP Original Permit Number: BV9896IY EPR Reference: - Issue Date: 27/9/2005 Effective Date: 11/10/2005 Last date noted as effective: 2013-10-01 Status: Superseded
86A	347.0	N	517140 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Anaerobic Digestion Facility Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY BIOLOGICAL TREATMENT	Permit Number: RP3232UU Original Permit Number: RP3232UU EPR Reference: - Issue Date: 11/2/2009 Effective Date: 11/2/2009 Last date noted as effective: 2013-10-01 Status: Effective

ID	Distance	Direction	NGR	Details	
87A	347.0	N	517140 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Anaerobic Digestion Facility Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: RP3232UU Original Permit Number: RP3232UU EPR Reference: - Issue Date: 11/2/2009 Effective Date: 11/2/2009 Last date noted as effective: 2013-10-01 Status: Effective
88A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: VP3634UY Original Permit Number: BV9896IY EPR Reference: - Issue Date: 9/6/2010 Effective Date: 9/6/2010 Last date noted as effective: 2013-10-01 Status: Superseded
89A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: TP3137TN Original Permit Number: BV9896IY EPR Reference: - Issue Date: 15/7/2010 Effective Date: 15/7/2010 Last date noted as effective: 2013-10-01 Status: Superseded
90A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: ASSOCIATED PROCESS	Permit Number: TP3137TN Original Permit Number: BV9896IY EPR Reference: - Issue Date: 15/7/2010 Effective Date: 15/7/2010 Last date noted as effective: 2013-10-01 Status: Superseded
91A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: COMBUSTION; WASTE DERIVED FUEL =>3MW BUT <50MW	Permit Number: FP3535CF Original Permit Number: BV9896IY EPR Reference: - Issue Date: 3/2/2012 Effective Date: 3/2/2012 Last date noted as effective: 2013-10-01 Status: Superseded
92A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: ASSOCIATED PROCESS	Permit Number: NP3837FK Original Permit Number: BV9896IY EPR Reference: - Issue Date: 18/1/2012 Effective Date: 18/1/2012 Last date noted as effective: 2013-10-01 Status: Superseded
93A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: ASSOCIATED PROCESS	Permit Number: FP3735NS Original Permit Number: BV9896IY EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2013-10-01 Status: Effective
94A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY BIOLOGICAL TREATMENT	Permit Number: VP3634UY Original Permit Number: BV9896IY EPR Reference: - Issue Date: 9/6/2010 Effective Date: 9/6/2010 Last date noted as effective: 2013-10-01 Status: Superseded
95A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: CREATED BY IED - DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT	Permit Number: FP3735NS Original Permit Number: BV9896IY EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2013-07-01 Status: Effective

ID	Distance	Direction	NGR	Details	
96A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: FP3535CF Original Permit Number: BV9896IY EPR Reference: - Issue Date: 3/2/2012 Effective Date: 3/2/2012 Last date noted as effective: 2013-10-01 Status: Superseded
97A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY BIOLOGICAL TREATMENT	Permit Number: NP3837FK Original Permit Number: BV9896IY EPR Reference: - Issue Date: 18/1/2012 Effective Date: 18/1/2012 Last date noted as effective: 2013-10-01 Status: Superseded
98A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY BIOLOGICAL TREATMENT	Permit Number: TP3137TN Original Permit Number: BV9896IY EPR Reference: - Issue Date: 15/7/2010 Effective Date: 15/7/2010 Last date noted as effective: 2013-10-01 Status: Superseded
99A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: FP3535CF Original Permit Number: BV9896IY EPR Reference: - Issue Date: 3/2/2012 Effective Date: 3/2/2012 Last date noted as effective: 2013-10-01 Status: Superseded
100A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: DISPOSAL OF > 50 T/D NON- HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT	Permit Number: FP3735NS Original Permit Number: BV9896IY EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2013-10-01 Status: Effective
101A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: ASSOCIATED PROCESS	Permit Number: FP3535CF Original Permit Number: BV9896IY EPR Reference: - Issue Date: 3/2/2012 Effective Date: 3/2/2012 Last date noted as effective: 2013-10-01 Status: Superseded
102A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: NP3837FK Original Permit Number: BV9896IY EPR Reference: - Issue Date: 18/1/2012 Effective Date: 18/1/2012 Last date noted as effective: 2013-10-01 Status: Superseded
103A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY BIOLOGICAL TREATMENT	Permit Number: FP3535CF Original Permit Number: BV9896IY EPR Reference: - Issue Date: 3/2/2012 Effective Date: 3/2/2012 Last date noted as effective: 2013-10-01 Status: Superseded
104A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: COMBUSTION; WASTE DERIVED FUEL =>3MW BUT <50MW	Permit Number: NP3837FK Original Permit Number: BV9896IY EPR Reference: - Issue Date: 18/1/2012 Effective Date: 18/1/2012 Last date noted as effective: 2013-10-01 Status: Superseded



ID	Distance	Direction	NGR	Details	
105A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: VP3634UY Original Permit Number: BV9896IY EPR Reference: - Issue Date: 9/6/2010 Effective Date: 9/6/2010 Last date noted as effective: 2013-10-01 Status: Superseded
106A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: TP3137TN Original Permit Number: BV9896IY EPR Reference: - Issue Date: 15/7/2010 Effective Date: 15/7/2010 Last date noted as effective: 2013-10-01 Status: Superseded
107A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: ASSOCIATED PROCESS	Permit Number: VP3634UY Original Permit Number: BV9896IY EPR Reference: - Issue Date: 9/6/2010 Effective Date: 9/6/2010 Last date noted as effective: 2013-10-01 Status: Superseded
108A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: FP3735NS Original Permit Number: BV9896IY EPR Reference: - Issue Date: 30/5/2013 Effective Date: 30/5/2013 Last date noted as effective: 2013-10-01 Status: Effective
109A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: NP3837FK Original Permit Number: BV9896IY EPR Reference: - Issue Date: 18/1/2012 Effective Date: 18/1/2012 Last date noted as effective: 2013-10-01 Status: Superseded
110A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: COMBUSTION; WASTE DERIVED FUEL =>3MW BUT <50MW	Permit Number: TP3137TN Original Permit Number: BV9896IY EPR Reference: - Issue Date: 15/7/2010 Effective Date: 15/7/2010 Last date noted as effective: 2013-10-01 Status: Superseded
111A	347.0	N	517130 134750	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Landfill Site Process: COMBUSTION; WASTE DERIVED FUEL =>3MW BUT <50MW	Permit Number: VP3634UY Original Permit Number: BV9896IY EPR Reference: - Issue Date: 9/6/2010 Effective Date: 9/6/2010 Last date noted as effective: 2013-10-01 Status: Superseded
112E	397.0	N	517200 134800	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Waste Recycling & Management Park Facility Epr/hp3238gw/v002 Process: CREATED BY IED - DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT	Permit Number: BP3738NM Original Permit Number: HP3238GW EPR Reference: - Issue Date: 28/5/2013 Effective Date: 28/5/2013 Last date noted as effective: 2013-07-01 Status: Effective
113E	397.0	N	517200 134800	Operator: Biffa Waste Service Limited Installation Name: Brookhurst Wood Mbt Facility Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY BIOLOGICAL TREATMENT	Permit Number: HP3238GW Original Permit Number: HP3238GW EPR Reference: EA/EPR/HP3238GW/A001 Issue Date: 5/7/2010 Effective Date: 5/7/2010 Last date noted as effective: 2013-10-01 Status: Superseded

ID	Distance	Direction	NGR	Details	
114E	397.0	N	517200 134800	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Waste Recycling & Management Park Facility Epr/hp3238gw/v002 Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY BIOLOGICAL TREATMENT	Permit Number: BP3337CG Original Permit Number: HP3238GW EPR Reference: - Issue Date: 20/12/2012 Effective Date: 20/12/2012 Last date noted as effective: 2013-10-01 Status: Superseded
115E	397.0	N	517200 134800	Operator: Biffa Waste Service Limited Installation Name: Brookhurst Wood Mbt Facility Process: COMBUSTION; WASTE OIL =>3MW BUT <50MW	Permit Number: HP3238GW Original Permit Number: HP3238GW EPR Reference: EA/EPR/HP3238GW/A001 Issue Date: 5/7/2010 Effective Date: 5/7/2010 Last date noted as effective: 2013-10-01 Status: Superseded
116E	397.0	N	517200 134800	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Waste Recycling & Management Park Facility Epr/hp3238gw/v002 Process: DISPOSAL OF > 50 T/D NON- HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT	Permit Number: BP3738NM Original Permit Number: HP3238GW EPR Reference: - Issue Date: 28/5/2013 Effective Date: 28/5/2013 Last date noted as effective: 2013-10-01 Status: Effective
117E	397.0	N	517200 134800	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Waste Recycling & Management Park Facility Epr/hp3238gw/v002 Process: ASSOCIATED PROCESS	Permit Number: BP3738NM Original Permit Number: HP3238GW EPR Reference: - Issue Date: 28/5/2013 Effective Date: 28/5/2013 Last date noted as effective: 2013-10-01 Status: Effective
118E	397.0	N	517200 134800	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Waste Recycling & Management Park Facility Epr/hp3238gw/v002 Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT	Permit Number: BP3337CG Original Permit Number: HP3238GW EPR Reference: - Issue Date: 20/12/2012 Effective Date: 20/12/2012 Last date noted as effective: 2013-10-01 Status: Superseded
119E	397.0	N	517200 134800	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Waste Recycling & Management Park Facility Epr/hp3238gw/v002 Process: COMBUSTION; WASTE OIL =>3MW BUT <50MW	Permit Number: BP3337CG Original Permit Number: HP3238GW EPR Reference: - Issue Date: 20/12/2012 Effective Date: 20/12/2012 Last date noted as effective: 2013-10-01 Status: Superseded
120E	397.0	N	517200 134800	Operator: Biffa Waste Service Limited Installation Name: Brookhurst Wood Mbt Facility Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT	Permit Number: HP3238GW Original Permit Number: HP3238GW EPR Reference: EA/EPR/HP3238GW/A001 Issue Date: 5/7/2010 Effective Date: 5/7/2010 Last date noted as effective: 2013-10-01 Status: Superseded
121E	397.0	N	517200 134800	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Waste Recycling & Management Park Facility Epr/hp3238gw/v002 Process: DISPOSAL OF > 50 T/D NON- HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO- CHEMICAL TREATMENT	Permit Number: BP3738NM Original Permit Number: HP3238GW EPR Reference: - Issue Date: 28/5/2013 Effective Date: 28/5/2013 Last date noted as effective: 2013-10-01 Status: Effective
122E	397.0	N	517200 134800	Operator: Biffa Waste Services Ltd Installation Name: Brookhurst Wood Waste Recycling & Management Park Facility Epr/hp3238gw/v002 Process: CREATED BY IED - DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT	Permit Number: BP3738NM Original Permit Number: HP3238GW EPR Reference: - Issue Date: 28/5/2013 Effective Date: 28/5/2013 Last date noted as effective: 2013-07-01 Status: Effective

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1.1.3 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

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1.1.4 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

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1.1.5 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

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1.1.6 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

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1.1.7 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

3

The following Part A(2) and Part B Activities are represented as points on the Authorisations, Incidents and Registers map:

ID	Distance	Direction	NGR	Details
77	0.0	On Site	517141 134250	Address: Ambion Bricks (Redland), Warnham Works, Langhurstwood Road, RH12 4QF Process: Ceramics/clay/plaster/brick Process Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
78	63.0	S	517174 134172	Address: Wienerberger Ltd, Warnham Brickworks, Langhurstwood Rd, RH12 4QF Process: Ceramics/clay/plaster/brick Process Status: Current Permit Permit Type: Part A2 Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

ID	Distance	Direction	NGR	Details
79	444.0	NE	517551 134707	Address: Greens Accident Repairs, The Transport Depot, Langhurstwood Road, Horsham, West Sussex, RH12 4QD Process: Vehicle Repair And Servicing Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

#### 1.1.8 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

#### 1.1.9 Records of Licensed Discharge Consents within 500m of the study site:

28

The following Licensed Discharge Consents records are represented as points on the Authorisations, Incidents and Registers map:

ID	Distance	Direction	NGR	Details
9	0.0	On Site	517150 134320	Address: Wealden South Works, Wealden South Works, Langhurstwood Road, Horsham, West Sussex Effluent Type: Sewage Discharges - Final/treated Effluent - Not Water Company Permit Number: P04022 Permit Version: 1 Receiving Water: Freshwater River Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: - Effective Date: - Revocation Date: -
10	26.0	S	517020 134190	Address: Holbrook Works, Horsham, Holbrook Works, Langhurstwood Road, Horsham, West Sussex Effluent Type: Sewage Discharges - Final/treated Effluent - Not Water Company Permit Number: P04098 Permit Version: 1 Receiving Water: Freshwater River Status: Revoked (wra 91, S88 & Sched 10 As Amended By Env Act 1995) Issue date: 12/2/1992 Effective Date: 12/2/1992 Revocation Date: 27/4/2007
11	67.0	S	517360 134170	Address: Warnham Cottages, Horsham, Warnham Cottages, Langhurstwood Road, Horsham, West Sussex Effluent Type: Sewage Discharges - Final/treated Effluent - Not Water Company Permit Number: P04047 Permit Version: 1 Receiving Water: Freshwater River Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: 2/1/1992 Effective Date: 2/1/1992 Revocation Date: -
12 B	116.0	W	516890 134340	Address: Warnham Brick Works, Warnham Brick Works, West Sussex Effluent Type: Miscellaneous Discharges - Surface Water Permit Number: S01144 Permit Version: 1 Receiving Water: Freshwater River Status: Pre Nra Legislation Where Issue Date < 01-sep-89 (historic Only) Issue date: 29/3/1962 Effective Date: 29/3/1962 Revocation Date: 1/7/1991
13 B	116.0	W	516890 134340	Address: Warnham Brick Works, Warnham Brick Works, West Sussex Effluent Type: Sewage Discharges - Final/treated Effluent - Not Water Company Permit Number: S01144 Permit Version: 1 Receiving Water: Freshwater River Status: Pre Nra Legislation Where Issue Date < 01-sep-89 (historic Only) Issue date: 29/3/1962 Effective Date: 29/3/1962 Revocation Date: 1/7/1991



ID	Distance	Direction	NGR	Details
14	171.0	S	517120 134070	<p>Address: Transport Workshop, Transport Workshop, Langhurstwood Road, Horsham, West Sussex</p> <p>Effluent Type: Sewage Discharges - Final/treated Effluent - Not Water Company</p> <p>Permit Number: P04046</p> <p>Permit Version: 1</p> <p>Receiving Water: Freshwater River</p> <p>Status: Lapsed Under Schedule 23 Environment Act 1995</p> <p>Issue date: 2/1/1992</p> <p>Effective Date: 2/1/1992</p> <p>Revocation Date: 31/3/1997</p>
15	239.0	SE	517560 134040	<p>Address: Graylands Farm Barns, Horsham, Graylands Farm Barns, Langhurstwood Road, Horsham, West Sussex, RH12 4QD</p> <p>Effluent Type: Sewage Discharges - Final/treated Effluent - Not Water Company</p> <p>Permit Number: P12731</p> <p>Permit Version: 1</p> <p>Receiving Water: Tributary Of Boldings Brook</p> <p>Status: New Consent (wra 91, S88 &amp; Sched 10 As Amended By Env Act 1995)</p> <p>Issue date: 3/4/2006</p> <p>Effective Date: 3/4/2006</p> <p>Revocation Date: -</p>
16	287.0	N	517140 134690	<p>Address: Warnham Leachates, Warnham Landfill, Treated Tip Leachate</p> <p>Effluent Type: Trade Discharges - Unspecified</p> <p>Permit Number: P01716</p> <p>Permit Version: 1</p> <p>Receiving Water: -</p> <p>Status: Revoked (wra 91, S88 &amp; Sched 10 As Amended By Env Act 1995)</p> <p>Issue date: 1/9/1988</p> <p>Effective Date: 1/9/1988</p> <p>Revocation Date: -</p>
17 C	288.0	SW	516750 134100	<p>Address: Warnham S.t.w., Warnham S.t.w., Station Road, Warnham West Sussex</p> <p>Effluent Type: Sewage Discharges - Final/treated Effluent - Water Company</p> <p>Permit Number: W00331</p> <p>Permit Version: 1</p> <p>Receiving Water: Freshwater Stream Or River</p> <p>Status: Consent Revoked Or Revised - New Consent Issued (37(1))</p> <p>Issue date: 9/5/1983</p> <p>Effective Date: 9/5/1983</p> <p>Revocation Date: 31/3/2004</p>
18 C	290.0	W	516740 134120	<p>Address: Warnham S.t.w., Warnham S.t.w., Station Road,, Warnham, West Sussex</p> <p>Effluent Type: Sewage Discharges - Final/treated Effluent - Water Company</p> <p>Permit Number: W02508</p> <p>Permit Version: 1</p> <p>Receiving Water: Freshwater River</p> <p>Status: Revoked (wra 91, S88 &amp; Sched 10 As Amended By Env Act 1995)</p> <p>Issue date: 28/5/1980</p> <p>Effective Date: 28/5/1980</p> <p>Revocation Date: 31/3/2004</p>
19 C	290.0	W	516740 134120	<p>Address: Warnham Wwtw, Warnham Wwtw, Station Road, Warnham, West Sussex, RH12 3SR</p> <p>Effluent Type: Sewage Discharges - Final/treated Effluent - Water Company</p> <p>Permit Number: A01204</p> <p>Permit Version: 3</p> <p>Receiving Water: Boldings Brook, Trib Of Arun</p> <p>Status: New Consent (wra 91, S88 &amp; Sched 10 As Amended By Env Act 1995)</p> <p>Issue date: 24/3/2010</p> <p>Effective Date: 24/3/2010</p> <p>Revocation Date: -</p>
20 C	290.0	W	516740 134120	<p>Address: Warnham Wwtw, Warnham Wwtw, Station Road, Warnham, West Sussex, RH12 3SR</p> <p>Effluent Type: Sewage Discharges - Final/treated Effluent - Water Company</p> <p>Permit Number: A01204</p> <p>Permit Version: 4</p> <p>Receiving Water: Boldings Brook, Trib Of Arun</p> <p>Status: New Consent (wra 91, S88 &amp; Sched 10 As Amended By Env Act 1995)</p> <p>Issue date: 24/3/2010</p> <p>Effective Date: -</p> <p>Revocation Date: -</p>
21 C	290.0	W	516740 134120	<p>Address: Warnham Wwtw, Warnham Wwtw, Station Road, Warnham, West Sussex, RH12 3SR</p> <p>Effluent Type: Sewage Discharges - Final/treated Effluent - Water Company</p> <p>Permit Number: A01204</p> <p>Permit Version: 2</p> <p>Receiving Water: Boldings Brook, Trib Of Arun</p> <p>Status: New Consent (wra 91, S88 &amp; Sched 10 As Amended By Env Act 1995)</p> <p>Issue date: -</p> <p>Effective Date: 1/4/2009</p> <p>Revocation Date: 23/3/2010</p>
22 C	290.0	W	516740 134120	<p>Address: Warnham Wwtw, Warnham Wwtw, Station Road, Warnham, West Sussex, RH12 3SR</p> <p>Effluent Type: Sewage Discharges - Final/treated Effluent - Water Company</p> <p>Permit Number: A01204</p> <p>Permit Version: 1</p> <p>Receiving Water: Boldings Brook, Trib Of Arun</p> <p>Status: New Consent (wra 91, S88 &amp; Sched 10 As Amended By Env Act 1995)</p> <p>Issue date: 31/3/2004</p> <p>Effective Date: 31/3/2004</p> <p>Revocation Date: 31/3/2009</p>
23	327.0	S	517100 133900	<p>Address: Station House, Station House, Warnham, Horsham, West Sussex</p> <p>Effluent Type: Sewage Discharges - Unspecified - Not Water Company</p> <p>Permit Number: P00111</p> <p>Permit Version: 1</p> <p>Receiving Water: Freshwater River</p> <p>Status: Pre Nra Legislation Where Issue Date &lt; 01-sep-89 (historic Only)</p> <p>Issue date: 22/8/1985</p> <p>Effective Date: 22/8/1985</p> <p>Revocation Date: -</p>

ID	Distance	Direction	NGR	Details	
24	329.0	N	516980 134730	Address: Langhurstwood Range, Langhurstwood Range, Langhurstwood Road, Warnham West Sussex Effluent Type: Miscellaneous Discharges - Surface Water Permit Number: N01586 Permit Version: 1	Receiving Water: Freshwater River Status: Pre Nra Legislation Where Issue Date < 01-sep-89 (historic Only) Issue date: - Effective Date: - Revocation Date: -
25 D	341.0	SW	516710 134060	Address: Warnham S.t.w., Warnham S.t.w., Station Road,, Warnham, West Sussex Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: W02508 Permit Version: 1	Receiving Water: Freshwater River Status: Revoked (wra 91, S88 & Sched 10 As Amended By Env Act 1995) Issue date: 28/5/1980 Effective Date: 28/5/1980 Revocation Date: 31/3/2004
26 D	346.0	SW	516710 134050	Address: Warnham Wwtw, Warnham Wwtw, Station Road, Warnham, West Sussex, RH12 3SR Effluent Type: Sewage Discharges - Unspecified - Water Company Permit Number: A01204 Permit Version: 2	Receiving Water: Boldings Brook, Trib Of Arun Status: New Consent (wra 91, S88 & Sched 10 As Amended By Env Act 1995) Issue date: - Effective Date: 1/4/2009 Revocation Date: 23/3/2010
27 D	346.0	SW	516710 134050	Address: Warnham Wwtw, Warnham Wwtw, Station Road, Warnham, West Sussex, RH12 3SR Effluent Type: Sewage Discharges - Pumping Station - Water Company Permit Number: A01204 Permit Version: 3	Receiving Water: Boldings Brook, Trib Of Arun Status: New Consent (wra 91, S88 & Sched 10 As Amended By Env Act 1995) Issue date: 24/3/2010 Effective Date: 24/3/2010 Revocation Date: -
28 D	346.0	SW	516710 134050	Address: Warnham Wwtw, Warnham Wwtw, Station Road, Warnham, West Sussex, RH12 3SR Effluent Type: Sewage Discharges - Unspecified - Water Company Permit Number: A01204 Permit Version: 1	Receiving Water: Boldings Brook, Trib Of Arun Status: New Consent (wra 91, S88 & Sched 10 As Amended By Env Act 1995) Issue date: 31/3/2004 Effective Date: 31/3/2004 Revocation Date: 31/3/2009
29 D	346.0	SW	516710 134050	Address: Warnham Wwtw, Warnham Wwtw, Station Road, Warnham, West Sussex, RH12 3SR Effluent Type: Sewage Discharges - Stw Storm Overflow/storm Tank - Water Company Permit Number: A01204 Permit Version: 1	Receiving Water: Boldings Brook, Trib Of Arun Status: New Consent (wra 91, S88 & Sched 10 As Amended By Env Act 1995) Issue date: 31/3/2004 Effective Date: 31/3/2004 Revocation Date: 31/3/2009
30 D	346.0	SW	516710 134050	Address: Warnham Wwtw, Warnham Wwtw, Station Road, Warnham, West Sussex, RH12 3SR Effluent Type: Sewage Discharges - Stw Storm Overflow/storm Tank - Water Company Permit Number: A01204 Permit Version: 4	Receiving Water: Boldings Brook, Trib Of Arun Status: New Consent (wra 91, S88 & Sched 10 As Amended By Env Act 1995) Issue date: 24/3/2010 Effective Date: - Revocation Date: -
31 D	346.0	SW	516710 134050	Address: Warnham Wwtw, Warnham Wwtw, Station Road, Warnham, West Sussex, RH12 3SR Effluent Type: Sewage Discharges - Pumping Station - Water Company Permit Number: A01204 Permit Version: 4	Receiving Water: Boldings Brook, Trib Of Arun Status: New Consent (wra 91, S88 & Sched 10 As Amended By Env Act 1995) Issue date: 24/3/2010 Effective Date: - Revocation Date: -
32 D	346.0	SW	516710 134050	Address: Warnham Wwtw, Warnham Wwtw, Station Road, Warnham, West Sussex, RH12 3SR Effluent Type: Sewage Discharges - Stw Storm Overflow/storm Tank - Water Company Permit Number: A01204 Permit Version: 3	Receiving Water: Boldings Brook, Trib Of Arun Status: New Consent (wra 91, S88 & Sched 10 As Amended By Env Act 1995) Issue date: 24/3/2010 Effective Date: 24/3/2010 Revocation Date: -

ID	Distance	Direction	NGR	Details	
33 D	346.0	SW	516710 134050	Address: Warnham Wwtw, Warnham Wwtw, Station Road, Warnham, West Sussex, RH12 3SR Effluent Type: Sewage Discharges - Stw Storm Overflow/storm Tank - Water Company Permit Number: A01204 Permit Version: 2	Receiving Water: Boldings Brook, Trib Of Arun Status: New Consent (wra 91, S88 & Sched 10 As Amended By Env Act 1995) Issue date: - Effective Date: 1/4/2009 Revocation Date: 23/3/2010
34	435.0	NW	516770 134770	Address: Cox Farm, Cox Farm, Dorking Road, Warnham, West Sussex Effluent Type: Sewage Discharges - Final/treated Effluent - Not Water Company Permit Number: P07954 Permit Version: 1	Receiving Water: Freshwater River Status: New Consent (wra 91, S88 & Sched 10 As Amended By Env Act 1995) Issue date: - Effective Date: - Revocation Date: -
35	445.0	SW	516760 133850	Address: Weston Place Farm, Weston Place Farm, Warnham West Sussex Effluent Type: Agriculture - Site Drainage Permit Number: D01078 Permit Version: 1	Receiving Water: Freshwater River Status: Pre Nra Legislation Where Issue Date < 01-sep-89 (historic Only) Issue date: 21/5/1963 Effective Date: 21/5/1963 Revocation Date: -
36	482.0	NE	517500 134800	Address: Redland Technology, Redland Technology, Graylands, Langhurstwood Road, Horsham, West Sussex, RH12 4QG Effluent Type: Sewage Discharges - Final/treated Effluent - Not Water Company Permit Number: P03886 Permit Version: 1	Receiving Water: Freshwater River Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: - Effective Date: - Revocation Date: -

#### 1.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

1

The following records are represented as polygons on the Industrial Sites and Processes map:

ID	Distance	Direction	Application Reference Number	NGR	Application Status	Application Date	Address	Details	Details of Enforcement Action
123 G	78.0	S	NH/119/92	517209.0 134152.0	Approved	18/09/1992	Ambion Brick Co Ltd, Holbrook Brickworks, Langhurst Wood Road, Horsham, West Sussex, RH12 4QF	Deemed hazardous substance consent for storage of 600 tonnes of butane Site: Langhurstwood Rd Horsham	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

## 1.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site:

2

The following COMAH & NIHHS Authorisation records provided by the Health and Safety Executive are represented as polygons or buffered points on the Authorisations, Incidents and Registers map:

ID	Distance	Direction	NGR	Address	Type	Status
80F	0.0	On Site	517200 134400	redland bricks ltd, warnham, horsham	COMAH	2001

ID	Distance	Direction	NGR	Address	Type	Status
81F	0.0	On Site	517200 134400	redland bricks ltd,warnham,horsham	NIHHS	2001

### 1.3 Environment Agency Recorded Pollution Incidents

#### 1.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

8

The following NIRS List 2 records are represented as points on the Authorisations, Incidents and Registers Map:

ID	Distance	Direction	NGR	Details
1	269.0	N	517324 134654	Incident Date: 17/06/2001 Incident Identification: 9785 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Sulphide Odour Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)
2	334.0	W	516700 134100	Incident Date: 27/12/2002 Incident Identification: 127814 Pollutant: Sewage Materials Pollutant Description: Storm Sewage Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
3A	349.0	N	517139 134752	Incident Date: 11/06/2001 Incident Identification: 8627 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
4A	349.0	N	517139 134752	Incident Date: 11/06/2001 Incident Identification: 8627 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
5	373.0	N	517330 134761	Incident Date: 25/06/2001 Incident Identification: 11200 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
6	420.0	NW	516670 134659	Incident Date: 18/12/2002 Incident Identification: 126547 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Landfill Odour Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
7	430.0	N	517280 134830	Incident Date: 18/06/2001 Incident Identification: 10016 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Sulphide Odour Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)
8	445.0	N	517183 134848	Incident Date: 27/09/2002 Incident Identification: 111080 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Effects on Humans Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)



1.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

Database searched and no data found.

---

1.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site?

0

Database searched and no data found.

---








# 2 Landfill and Other Waste Sites Map



Landfill and Other Waste Sites Legend



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- |   |                          |   |                          |   |                                  |
|---|--------------------------|---|--------------------------|---|----------------------------------|
|  | Site Outline             |  | E.A. Active Landfill     |  | Historic and Planned Waste Sites |
|  | E.A. Historic Landfill   |  | E.A. Licensed Waste Site |  | BGS / DoE Survey Landfill        |
|  | Local Authority Landfill |   |                          |   |                                  |

— 250 —  
— 500 —  
Search Buffers (m)



## 2 Landfill and Other Waste Sites

### 2.1 Landfill Sites

#### 2.1.1 Records from Environment Agency landfill data within 1000m of the study site:

2

The following Environment Agency landfill records are represented as polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
1	133.0	N	517400 134800	Address: Warnham Brickworks, Langhurstwood Road Warnham, West Sussex, RH12 4QD Landfill Reference: 19660.0 Environmental Permitting Regulations (Waste) Reference: BIF093 Landfill Type: A1 : Co-Disposal Landfill Site Operator: Biffa Waste Services Ltd Status: IPPC IPPC Reference: EPR Reference:
2	398.0	N	517370 134240	Address: Brookhurstwood Landfill, Langhurstwood Road, Warnham, Horsham, West Sussex, RH12 4QD Landfill Reference: 19678.0 Environmental Permitting Regulations (Waste) Reference: WAS002 Landfill Type: A4 : Household, Commercial & Industrial Waste Landfill Operator: Waste Management Ltd Status: IPPC IPPC Reference: EPR Reference:

#### 2.1.2 Records of Environment Agency historic landfill sites within 1500m of the study site:

0

Database searched and no data found.

#### 2.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

#### 2.1.4 Records of Local Authority landfill sites within 1500m of the study site:

3

The following landfill records are represented as points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
11A	273.0	N		Cleanaway Limited, Warnham Leachate Treatment Plant, Warham Brickworks, Langhurstwood Road, Warnham, West Sussex	Horsham District Council	Point
12B	408.0	NE		Warnham Brickworks, Langhurstwood Road, Warnham, West Sussex,	Horsham District Council	Point
Not shown	576.0	N		Waste Management Limited, Brookhurstwood Landfill Site, Warnham Brickworks, Langhurstwood Road, Warnham, West Sussex, RH12 4Q2	Horsham District Council	Point

## 2.2 Other Waste Sites

#### 2.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

1

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
3	0.0	On Site	517054 134334	<p>Type of Site: Recycling Facilities &amp; Visitor Centre</p> <p>Site Address: Brookhurst Wood Landfill Site, Langhurstwood Road, HORSHAM, West Sussex, RH12 4QD</p> <p>Planning Application Reference: DC/06/2919 Date: 14/06/2010</p> <p>Further Details: Scheme comprises construction and operation of a materials recycling facility including offices and visitor centre, an anaerobic digestion plant and extension to landfill site. The associated works include access roads, sewer systems, infrastructure, enabling and landscaping. Construction - block, brick walls; raised access floor; double glazed windows; fire, timber doors; air conditioned heating; black top surfacing, fencing, kerbing, planting, Tarmac surfacing, turfing/grass, white lining site works; access controls, bathroom, emergency lighting, energy from waste, fire alarm system, suspended ceilings fittings. An application (ref: DC/06/2919) for detailed planning permission was granted by Horsham D.C. Please see ID 10553068 for the Visitor Centrescheme Please note the addition of LTR as the Lifts Sub Contractor. Data Source: Historic Planning Application Data Type: Point</p>



## 2.2.2 Records of Environment Agency licensed waste sites within 1500m of the study site:

7

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
4	0.0	On Site	517370 134240	<p>Site Address: Brookhurstwood Landfill, Langhurstwood Road, Warnham, Horsham, West Sussex, RH12 4QD  Type: Household, Commercial &amp; Industrial Waste Landfill  Size: &gt;= 75000 tonnes  Environmental Permitting Regulations (Waste) Licence Number: WAS002  EPR reference: EA/EPR/CP3294HF/V002  Operator: Waste Management Ltd  Waste Management licence No: 19678  Annual Tonnage: 1000000.0</p> <p>Issue Date: 14/08/1992  Effective Date: -  Modified: 03/04/2001  Surrendered Date: -  Expiry Date: -  Cancelled Date: -  Status: IPPC  Site Name: Brookhurstwood Landfill Site  Correspondence Address: -, -</p>
5A	298.0	N	517100 134700	<p>Site Address: Warham Brickworks, Langhurstwood Road, Warnham, West Sussex, RH12 4QD  Type: Biological Treatment Facility  Size: &lt; 25000 tonnes  Environmental Permitting Regulations (Waste) Licence Number: BIF002  EPR reference: HP3694HP/S002  Operator: Biffa Waste Services Limited  Waste Management licence No: 19659  Annual Tonnage: 0.0</p> <p>Issue Date: 10/04/1992  Effective Date: 12/01/2007  Modified: -  Surrendered Date: 03/01/2008  Expiry Date: -  Cancelled Date: -  Status: Surrendered  Site Name: Warnham Leachate Treatment Plant  Correspondence Address: -, -</p>
6A	298.0	N	517100 134700	<p>Site Address: Warham Brickworks, Langhurstwood Road, Warnham, West Sussex, RH12 4QD  Type: Biological Treatment Facility  Size: &lt; 25000 tonnes  Environmental Permitting Regulations (Waste) Licence Number: BIF002  EPR reference: EA/EPR/HP3694HP/S002  Operator: Biffa Waste Services Ltd  Waste Management licence No: 19659  Annual Tonnage: 0.0</p> <p>Issue Date: 10/04/1992  Effective Date: 12/01/2007  Modified: -  Surrendered Date: 03/01/2008  Expiry Date: -  Cancelled Date: -  Status: Surrendered  Site Name: Warnham Leachate Treatment Plant  Correspondence Address: -, -</p>
7A	298.0	N	517100 134700	<p>Site Address: Warham Brickworks, Langhurstwood Road, Warnham, West Sussex, RH12 4QD  Type: Biological Treatment Facility  Size: &lt; 25000 tonnes  Environmental Permitting Regulations (Waste) Licence Number: CLE001  EPR reference: -  Operator: Cleanaway Ltd  Waste Management licence No: 19659  Annual Tonnage: 18250.0</p> <p>Issue Date: 10/04/1992  Effective Date: -  Modified: -  Surrendered Date: -  Expiry Date: -  Cancelled Date: -  Status: Issued  Site Name: Warnham Leachate Treatment Plant  Correspondence Address: -, Cleanaway Limited, The Drive, Warley, Brentwood, Essex, CM13 3BE</p>
8	397.0	N	517200 134800	<p>Site Address: Land / Premises At, Langhurst Wood Road, Horsham, West Sussex, RH12 4QD  Type: Material Recycling Treatment Facility  Size: &gt;= 75000 tonnes  Environmental Permitting Regulations (Waste) Licence Number: BIF003  EPR reference: EA/EPR/VP3190VH/S002  Operator: Biffa Waste Services Ltd  Waste Management licence No: 10160  Annual Tonnage: 0.0</p> <p>Issue Date: 11/02/2009  Effective Date: -  Modified: -  Surrendered Date: 22/03/2011  Expiry Date: -  Cancelled Date: -  Status: Surrendered  Site Name: Brookhurst Wood Recycling And Waste Management Park  Correspondence Address: -, -</p>

ID	Distance (m)	Direction	NGR	Details	
9B	433.0	NE	517400 134800	Site Address: Warnham Brickworks, Langhurstwood Road, Warnham, West Sussex, RH12 4QD Type: Co-Disposal Landfill Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CLE002 EPR reference: - Operator: Cleanaway Ltd Waste Management licence No: 19660 Annual Tonnage: 24999.0	Issue Date: 03/03/1986 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Closure Site Name: Cleanaway Phase 2 Correspondence Address: -, Cleanaway Limited, The Drive, Warley, Brentwood, Essex, CM13 3BE
10B	433.0	NE	517400 134800	Site Address: Warnham Brickworks, Langhurstwood Road, Warnham, West Sussex, RH12 4QD Type: Co-Disposal Landfill Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BIF093 EPR reference: EA/EPR/EP3796LG/T001 Operator: Biffa Waste Services Ltd Waste Management licence No: 19660 Annual Tonnage: 24999.0	Issue Date: 03/03/1986 Effective Date: 28/10/2009 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: IPPC Site Name: Warnham Landfill Site ( Cleanaway Phase 2) Correspondence Address: -, -






# 3 Current Land Use Map



Current Land Use Legend



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-  Site Outline
-  Current Industrial Sites
-  Petrol & Fuel Sites
-  Underground High Pressure Oil & Fuel Pipelines
-  Search Buffers (m)



## 3 Current Land Uses

### 3.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site:

11

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	26.0	S	Filter Bed	517038 134196	RH12	Waste Storage, Processing and Disposal	Infrastructure and Facilities
2	61.0	E	Tanks	517287 134395	RH12	Tanks (Generic)	Industrial Features
3	99.0	S	Electricity Sub Station	517107 134142	RH12	Electrical Features	Infrastructure and Facilities
4	116.0	N	Tank	517108 134518	RH12	Tanks (Generic)	Industrial Features
5	116.0	S	Weinerberg er Ltd	517224 134113	Langhurstwood Road, Horsham, RH12 4QD	Bricks, Tiles, Clay and Ceramic Products	Industrial Products
6	135.0	S	Tanks	517108 134106	RH12	Tanks (Generic)	Industrial Features
7	205.0	S	Warnham Station	517066 134017	RH12	Railway Stations, Junctions and Halts	Public Transport, Stations and Infrastructure
8	230.0	N	Tank	517191 134633	RH12	Tanks (Generic)	Industrial Features
9	245.0	N	Conveyor	517167 134648	RH12	Conveyors	Industrial Features
10A	246.0	S	Esser Works	517155 133987	The Transport Depot, Mercer Road, Warnham, Horsham, RH12 3RL	Vehicle Repair, Testing and Servicing	Repair and Servicing
11A	246.0	S	Greens a R C	517155 133987	The Transport Depot, Mercer Road, Warnham, Horsham, RH12 3RL	Vehicle Repair, Testing and Servicing	Repair and Servicing

### 3.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site:

0

Database searched and no data found.

### 3.3 Underground High Pressure Oil and Gas Pipelines

Records of high pressure underground pipelines within 500m of the study site:

0

Database searched and no data found.





## 4 Geology

### 4.1 Artificial Ground and Made Ground

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
WGR-OPEN	WORKED GROUND (UNDIVIDED)	VOID

### 4.2 Superficial Ground and Drift Geology

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

### 4.3 Bedrock and Solid Geology

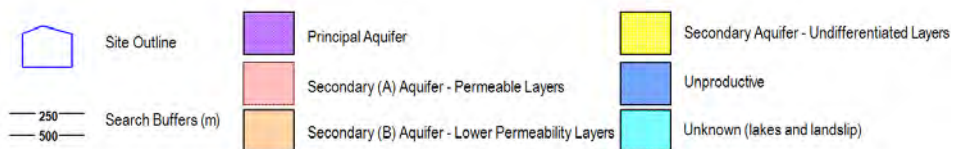
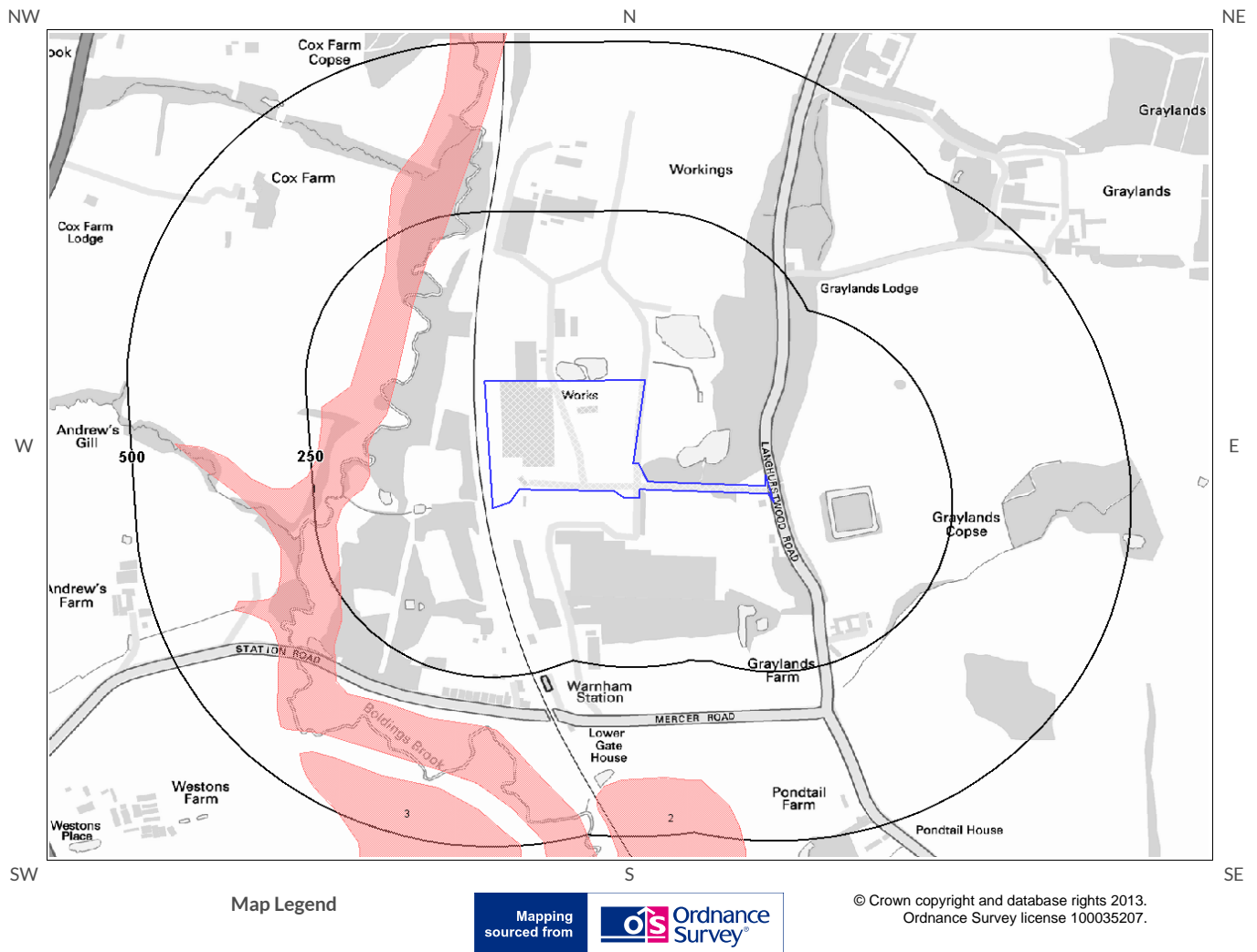
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
WC-MDST	WEALD CLAY FORMATION	MUDSTONE

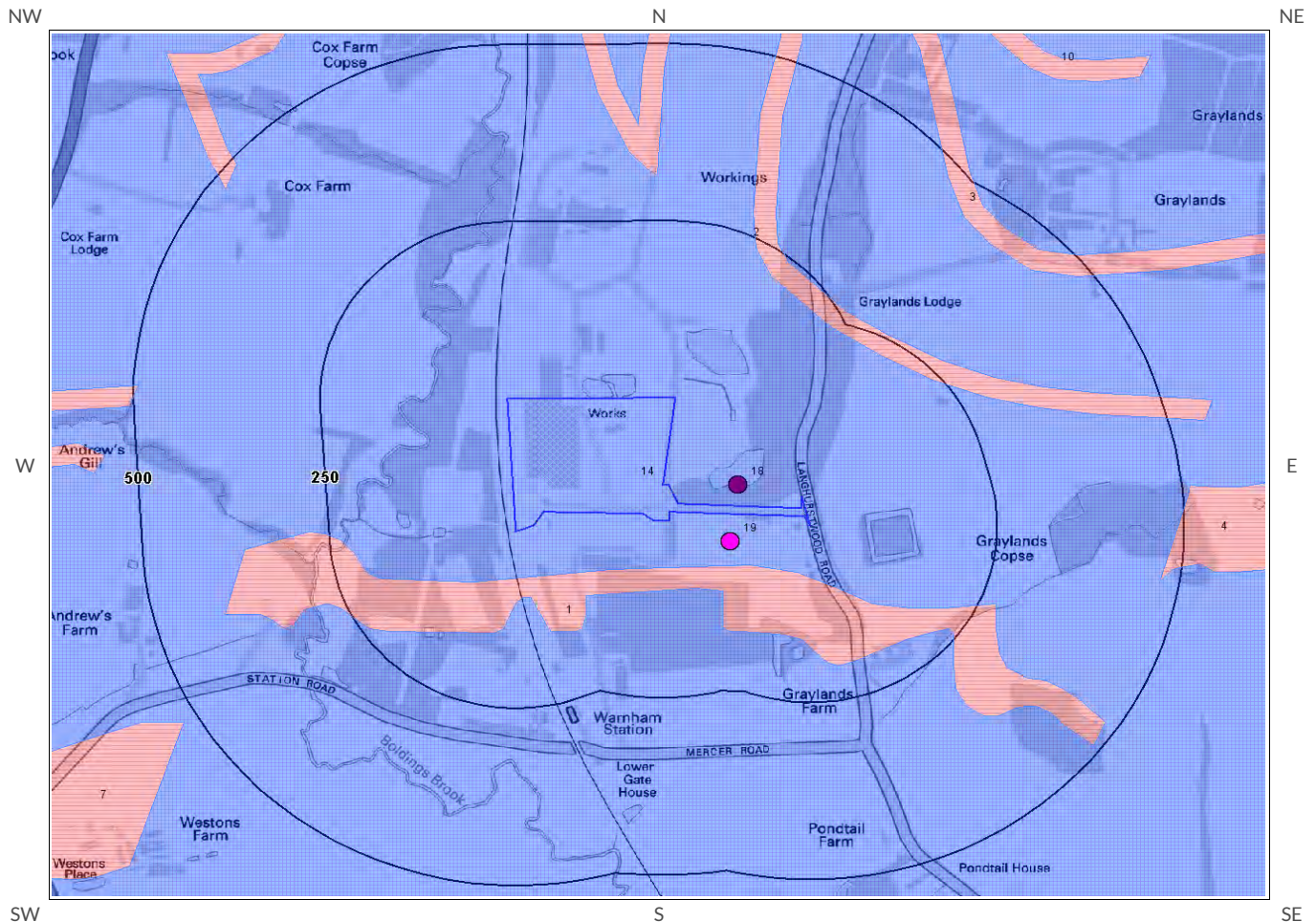
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

# 5 Hydrogeology and Hydrology

## 5a Aquifer Within Superficial Geology



# 5b Aquifer Within Bedrock Geology and Abstraction Licenses

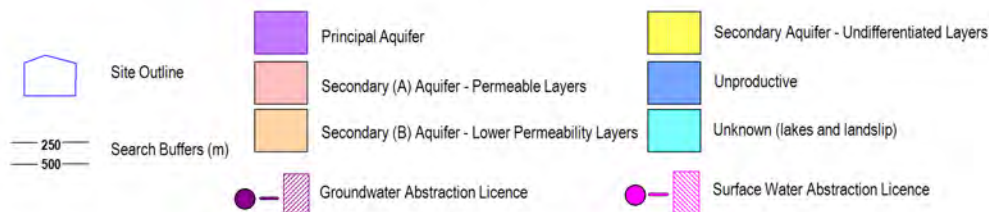


Map Legend

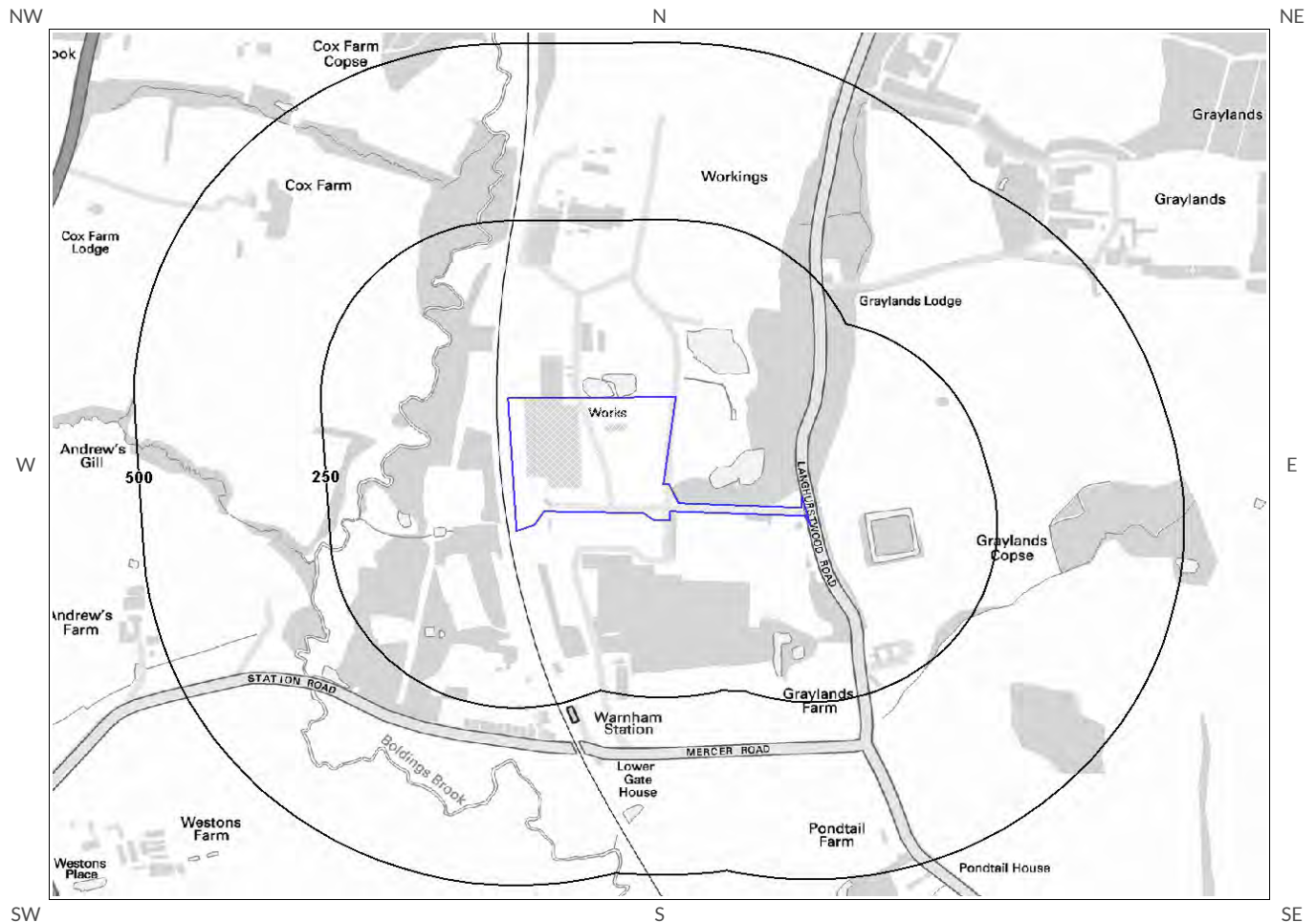
Mapping  
sourced from

Ordnance  
Survey

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# 5c Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses

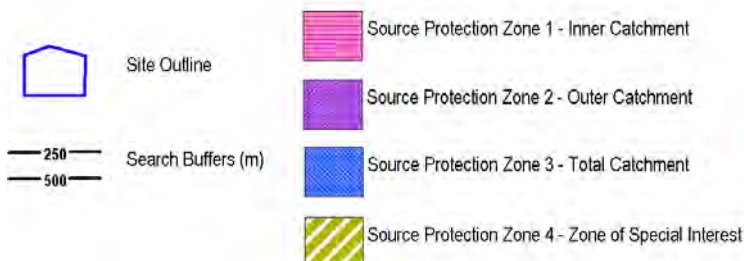



Map Legend

Mapping  
sourced from

 Ordnance  
Survey

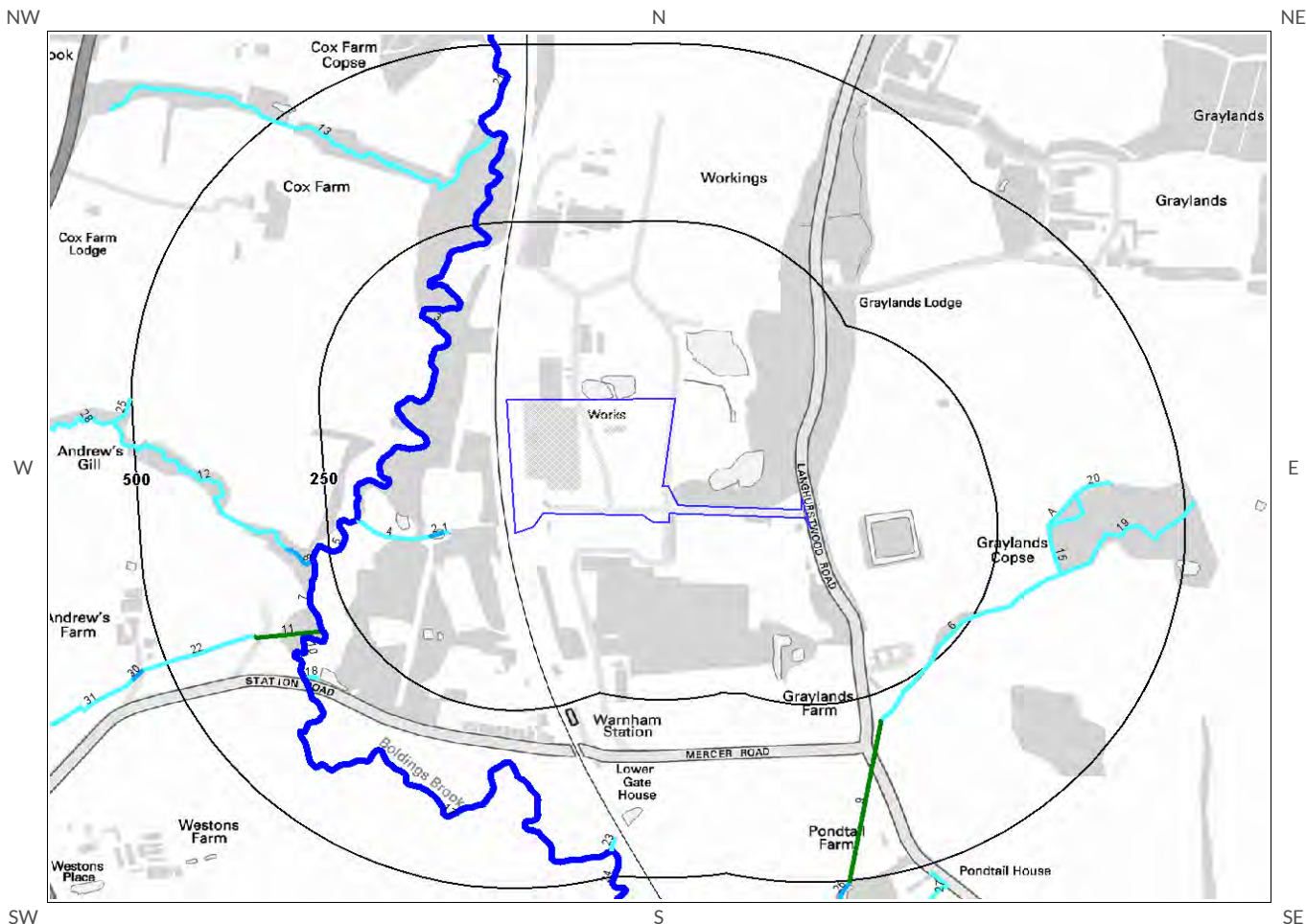
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 Potable Water Abstraction Licence



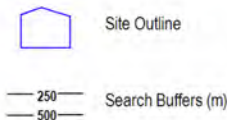
# 5d Hydrology – Detailed River Network and River Quality



Map Legend



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- |                                       |                                     |
|---------------------------------------|-------------------------------------|
| Primary River                         | Canal                               |
| Secondary River                       | Canal Tunnel                        |
| Tertiary River                        | Culvert                             |
| Lake/Reservoir                        | Multiple Channel Culvert            |
| Underground River (inferred)          | Underground River (Potential Sewer) |
| General Quality Assessment: Biology   | Underground River (local knowledge) |
| General Quality Assessment: Chemistry |                                     |



# 5 Hydrogeology and Hydrology

## 5.1 Aquifer within Superficial Deposits

Are there records of productive strata within the superficial geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the GroundSure Enviroinsight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (5a):

ID	Distance (m)	Direction	Designation	Description
1	123.0	W	Secondary A	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
2	414.0	S	Secondary A	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
3	420.0	S	Secondary A	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

## 5.2 Aquifer within Bedrock Deposits

Are there records of productive strata within the bedrock geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the GroundSure Enviroinsight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (5b):

ID	Distance (m)	Direction	Designation	Description
14	0.0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
1	66.0	S	Secondary A	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
2	214.0	NE	Secondary A	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
3	437.0	NE	Secondary A	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

ID	Distance (m)	Direction	Designation	Description
4	473.0	E	Secondary A	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
5	479.0	NW	Secondary A	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
6	493.0	W	Secondary A	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

### 5.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site? Yes

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (5b):

ID	Distance (m)	Direction	NGR	Details
18	29.0	N	517310 134280	Licence No: 25/088 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Southern Region Groundwater Point: Warnham Brickworks Data Type: Point Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 169/1383 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 13/10/1997 Version End Date:

### 5.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? Yes

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (5b):

ID	Distance (m)	Direction	NGR	Details
19	39.0	S	517300 134200	Licence No: 25/088 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Southern Region Surface Waters Point: Warnham Brickworks Data Type: Point Annual Volume (m³): 18000 Max Daily Volume (m³): 400 Application No: 169/1383 Original Start Date: - Expiry Date: - Issue No: 102 Version Start Date: 27/9/2004 Version End Date:
Not shown	1914.0	S	516830 132310	Licence No: 25/086 Details: Spray Irrigation - Storage Direct Source: Southern Region Surface Waters Point: Warnham Mill Pond Data Type: Point Annual Volume (m³): 23700 Max Daily Volume (m³): 1200 Application No: 169/1360 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 16/6/2009 Version End Date:

---

## 5.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site?

No

Database searched and no data found.

---

## 5.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site?

No

Database searched and no data found.

---

## 5.7 River Quality

Is there any Environment Agency information on river quality within 1500m of the study site?

No

---

### 5.7.1 Biological Quality:

Database searched and no data found.

---

### 5.7.2 Chemical Quality:

Database searched and no data found.

---



## 5.8 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site?

Yes

The following Detailed River Network records are represented on the Hydrology Map (5d):

ID	Distance (m)	Direction	Details	
1	88.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
2	96.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
3	101.0	W	River Name: Boldings Brook Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
4	116.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
5	210.0	W	River Name: Boldings Brook Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
6	240.0	SE	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
7	272.0	W	River Name: Boldings Brook Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
8	272.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
9	287.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined
10	291.0	SW	River Name: Boldings Brook Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
11	292.0	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined
12	307.0	W	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
13	310.0	N	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
14 A	317.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
15	318.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
16 A	318.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
17	323.0	S	River Name: Boldings Brook Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
18	333.0	SW	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
19	340.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
20	359.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
21	375.0	N	River Name: Boldings Brook Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
22	378.0	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
23	446.0	S	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
24	466.0	S	River Name: Boldings Brook Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined

## 5.9 Surface Water Features

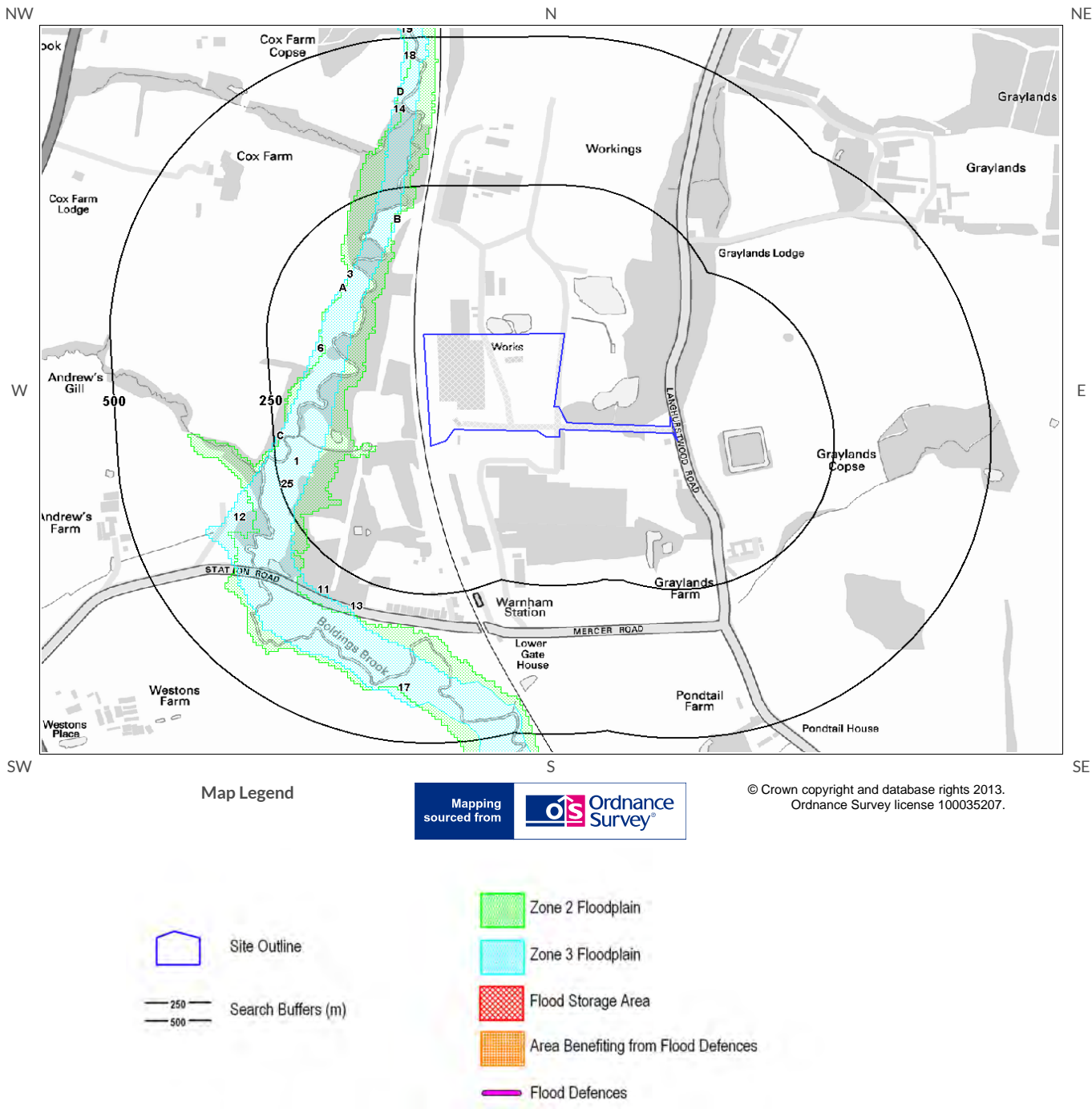
Are there any surface water features within 250m of the study site?

Yes

The following surface water records are not represented on mapping:

Distance (m)	Direction
0.0	N
2.0	N
24.0	N
60.0	NE
72.0	E
100.0	W
154.0	S
217.0	W
0.0	N
2.0	N
24.0	N
60.0	NE
72.0	E
79.0	E
100.0	W
116.0	W
154.0	S
217.0	W
240.0	SE

# 6 Environment Agency Flood Map







# 6 Flooding

## 6.1 Zone 2 Flooding

Zone 2 floodplain estimates the annual probability of flooding as one in one thousand (0.1%) or greater from rivers and the sea but less than 1% from rivers or 0.5% from the sea. Alternatively, where information is available they may show the highest known flood level.

Is the site within 250m of an Environment Agency indicative Zone 2 floodplain?

Yes

The following floodplain records are represented as green shading on the Flood Map:

ID	Distance (m)	Direction	Update	Type
1	77.0	W	09-Sep-2013	Zone 2 - (Fluvial Models )
2A	146.0	NW	09-Sep-2013	Zone 2 - (Fluvial Models )
3	148.0	NW	09-Sep-2013	Zone 2 - (Fluvial Models )
4A	149.0	NW	09-Sep-2013	Zone 2 - (Fluvial Models )
5A	152.0	W	09-Sep-2013	Zone 2 - (Fluvial Models )
6	158.0	W	09-Sep-2013	Zone 2 - (Fluvial Models )
7B	179.0	N	09-Sep-2013	Zone 2 - (Fluvial Models )
8B	193.0	N	09-Sep-2013	Zone 2 - (Fluvial Models )
9C	243.0	W	09-Sep-2013	Zone 2 - (Fluvial Models )

## 6.2 Zone 3 Flooding

Zone 3 estimates the annual probability of flooding as one in one hundred (1%) or greater from rivers and a one in two hundred (0.5%) or greater from the sea. Alternatively, where information is available they may show the highest known flood level.

Is the site within 250m of an Environment Agency indicative Zone 3 floodplain?

Yes

The following floodplain records are represented as blue shading on the Flood Map:

ID	Distance (m)	Direction	Update	Type
25	109.0	W	09-Sep-2013	Zone 3 - (Fluvial Models )

### 6.3 Flood Defences

Are there any Flood Defences within 250m of the study site?

No

Database searched and no data found.

---

### 6.4 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site?

No

---

### 6.5 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site?

No

---

### 6.6 Groundwater Flooding Susceptibility Areas

6.6.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site?

No

---

6.6.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?

Negligible

---

### 6.7 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result?

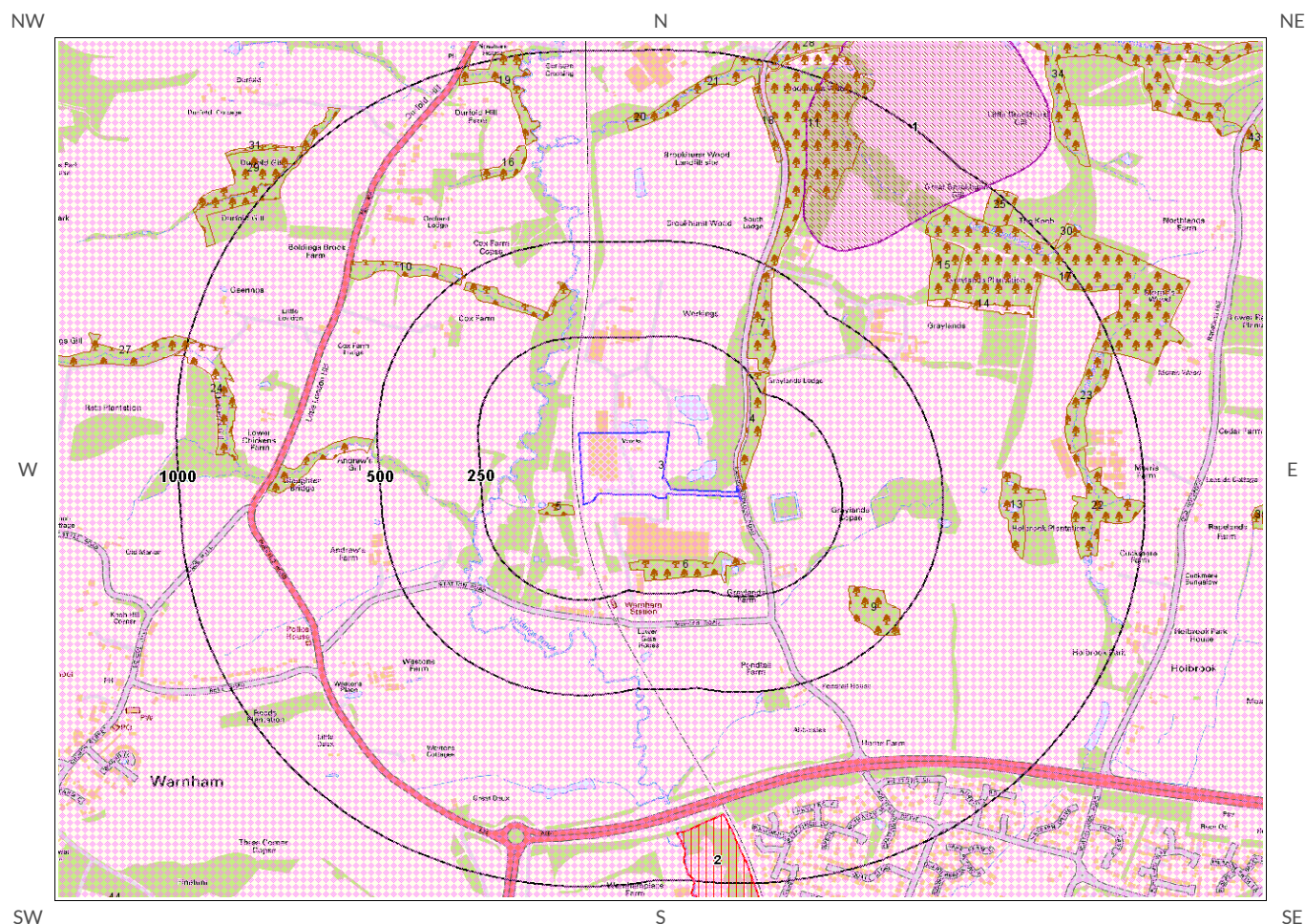
Not Applicable

Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

---

# 7 Designated Environmentally Sensitive Sites Map

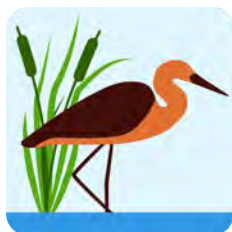


Map Legend



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# 7 Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site?

Yes

7.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

1

The following Site of Special Scientific Interest (SSSI) records provided by Natural England/Countryside Council for Wales and Scottish Natural Heritage are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SSSI Name	Data Source
1	622.0	NE	Warnham	Natural England

7.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

7.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

7.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

7.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.



#### 7.6 Records of Ancient Woodland within 2000m of the study site:

59

The following Ancient Woodland records are supplied by English Nature/Scottish Natural Heritage/Countryside Council for Wales and are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
4	10.0	E	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
5	27.0	W	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
6	140.0	S	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
7	274.0	NE	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
8	310.0	N	DURFOLD GILL	Ancient and Semi-Natural Woodland
9	347.0	SE	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
10	486.0	NW	DURFOLD GILL	Ancient and Semi-Natural Woodland
11	499.0	NE	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
12	513.0	W	DURFOLD GILL	Ancient and Semi-Natural Woodland
13	636.0	E	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
14	666.0	NE	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
15	677.0	NE	BROOKHURST/MORRIS WOODS	Ancient Replanted Woodland
16	689.0	N	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
17	721.0	NE	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
18	756.0	N	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
19	765.0	N	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
20	792.0	N	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
21	817.0	N	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
22	817.0	E	FURZEFIELD COPSE	Ancient and Semi-Natural Woodland
23	821.0	E	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
24	849.0	W	DURFOLD GILL	Ancient and Semi-Natural Woodland
25	920.0	NE	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
26	963.0	NW	DURFOLD GILL	Ancient and Semi-Natural Woodland
27	980.0	W	DURFOLD GILL	Ancient and Semi-Natural Woodland
28	984.0	N	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
29	995.0	NW	DURFOLD GILL	Ancient and Semi-Natural Woodland
30	1003.0	NE	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
31	1034.0	NW	DURFOLD GILL	Ancient and Semi-Natural Woodland
Not shown	1145.0	N	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
Not shown	1173.0	S	NORTH HEATH COPSE	Ancient and Semi-Natural Woodland
34	1196.0	NE	NORTHLANDS GILL	Ancient and Semi-Natural Woodland
35	1265.0	E	FURZEFIELD COPSE	Ancient and Semi-Natural Woodland
Not shown	1268.0	N	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
Not shown	1341.0	NE	NORTHLANDS COPSE	Ancient and Semi-Natural Woodland
Not shown	1344.0	N	BROOKHURST/MORRIS WOODS	Ancient and Semi-Natural Woodland
Not shown	1358.0	S	FURZEFIELD COPSE	Ancient and Semi-Natural Woodland
Not shown	1364.0	E	FURZEFIELD COPSE	Ancient and Semi-Natural Woodland
Not shown	1385.0	N	LANGHURST COPSE	Ancient and Semi-Natural Woodland
Not shown	1407.0	E	HURST WOOD	Ancient and Semi-Natural Woodland
43	1524.0	NE	NORTHLANDS GILL	Ancient and Semi-Natural Woodland
44	1527.0	SW	BUSHCROFT COPSE	Ancient and Semi-Natural Woodland
Not shown	1576.0	E	HURST WOOD	Ancient and Semi-Natural Woodland
Not shown	1593.0	SE	FURZEFIELD COPSE	Ancient and Semi-Natural Woodland
Not shown	1601.0	NE	NORTHLANDS COPSE	Ancient and Semi-Natural Woodland

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
Not shown	1637.0	NW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1688.0	E	HURST WOOD	Ancient Replanted Woodland
Not shown	1690.0	NE	ALLINGHAM WOOD	Ancient and Semi-Natural Woodland
Not shown	1695.0	SE	DUTSHELL COPSE	Ancient and Semi-Natural Woodland
Not shown	1708.0	NE	UPPER RAPELAND WOOD	Ancient Replanted Woodland
Not shown	1751.0	NE	NORTHLANDS COPSE	Ancient Replanted Woodland
Not shown	1795.0	W	UNKNOWN	Ancient Replanted Woodland
Not shown	1800.0	NE	HOLMING WOOD	Ancient and Semi-Natural Woodland
Not shown	1813.0	NE	NORTHLANDS GILL	Ancient and Semi-Natural Woodland
Not shown	1841.0	E	HAWKSBOURNE WOOD	Ancient and Semi-Natural Woodland
Not shown	1862.0	E	HAWKSBOURNE WOOD	Ancient Replanted Woodland
Not shown	1915.0	E	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1949.0	E	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1955.0	NW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1973.0	NW	UNKNOWN	Ancient and Semi-Natural Woodland

#### 7.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

1

The following Local Nature Reserve (LNR) records provided by Natural England/Countryside Council for Wales and Scottish Natural Heritage are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
2	820.0	S	Warnham	Natural England

#### 7.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

7.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

---

7.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

---

7.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

---

7.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

---

7.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

1

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

---

ID	Distance (m)	Direction	NVZ Name	Data Source
3	0.0	On Site	NVZ Area	DEFRA

---





# 8 Natural Hazards Findings

## 8.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a **GroundSure GeoInsight**, available from our [website](#). The following information has been found:

### 8.1.1 Shrink Swell

What is the maximum Shrink-Swell\* hazard rating identified on the study site?

Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

#### Hazard

Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

### 8.1.2 Landslides

What is the maximum Landslide\* hazard rating identified on the study site?

Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

#### Hazard

Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

### 8.1.3 Soluble Rocks

What is the maximum Soluble Rocks\* hazard rating identified on the study site?

Null - Negligible

Soluble rocks are not present in the search area. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

\* This indicates an automatically generated 50m buffer and site.

## 8.1.4 Compressible Ground

What is the maximum Compressible Ground\* hazard rating identified on the study site?

Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

### Hazard

No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

## 8.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks\* hazard rating identified on the study site?

Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

### Hazard

Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

## 8.1.6 Running Sand

What is the maximum Running Sand\*\* hazard rating identified on the study site?

Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

### Hazard

Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

\* This indicates an automatically generated 50m buffer and site.



# 9 Mining

## 9.1 Coal Mining

Are there any coal mining areas within 75m of the study site? No

Database searched and no data found.

---

## 9.2 Shallow Mining

What is the subsidence hazard relating to shallow mining on-site\*? Low

\*Please note this data is searched with a 150m buffer.

---

## 9.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? No

Guidance: No Guidance Required.

---

# Contact Details

EmapSite  
Telephone: 0118 9736883  
sales@emapsite.com



## British Geological Survey Enquiries

Kingsley Dunham Centre  
Keyworth, Nottingham NG12 5GG  
Tel: 0115 936 3143.  
Fax: 0115 936 3276.  
Email: [enquiries@bgs.ac.uk](mailto:enquiries@bgs.ac.uk)  
Web: [www.bgs.ac.uk](http://www.bgs.ac.uk)



BGS Geological Hazards Reports and general geological enquiries

## Environment Agency

National Customer Contact Centre, PO Box 544  
Rotherham, S60 1BY  
Tel: 08708 506 506  
Web: [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)  
Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)



## Public Health England

Public information access office  
Public Health England, Wellington House  
133-155 Waterloo Road, London, SE1 8UG  
<https://www.gov.uk/government/organisations/public-health-england>  
Email: [enquiries@phe.gov.uk](mailto:enquiries@phe.gov.uk)  
Main switchboard: 020 7654 8000



## The Coal Authority

200 Lichfield Lane  
Mansfield  
Notts NG18 4RG  
Tel: 0845 762 6848  
DX 716176 Mansfield 5  
[www.coal.gov.uk](http://www.coal.gov.uk)



## Ordnance Survey

Romsey Road  
Southampton SO16 4GU  
Tel: 08456 050505



## Local Authority

Authority: Horsham District Council  
Phone: 01403 215100  
Web: [www.horsham.gov.uk](http://www.horsham.gov.uk)  
Address: Park North, North Street, Horsham, West Sussex, RH12 1RL

## Gemapping PLC

Virginia Villas, High Street, Hartley Witney,  
Hampshire RG27 8NW  
Tel: 01252 845444



Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, English Nature who retain the Copyright and Intellectual Property Rights for the data. PointX © Database Right/Copyright, Thomson Directories Limited © Copyright Link Interchange Network Limited © Database Right/Copyright and Ordnance Survey © Crown Copyright and/or Database Right. All Rights Reserved. Licence Number [03421028].  
This report has been prepared in accordance with the GroundSure Ltd standard Terms and Conditions of business for work of this nature.

## Standard Terms and Conditions

### 1 Definitions

In these terms and conditions unless the context otherwise requires:

**“Beneficiary”** means the person or entity for whose benefit the Client has obtained the Services.

**“Client”** means the party or parties entering into a Contract with GroundSure.

**“Commercial”** means any building or property which is not Residential.

**“Confidential Information”** means the contents of this Contract and all information received from the Client as a result of, or in connection with, this Contract other than

(i) information which the Client can prove was rightfully in its possession prior to disclosure by GroundSure and

(ii) any information which is in the public domain (other than by virtue of a breach of this Contract).

**“Support Services”** means Support Services provided by GroundSure including, without limitation, interpreting third party and in-house environmental data, providing environmental support advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

**“Contract”** means the contract between GroundSure and the Client for the provision of the Services, and which shall incorporate these terms and conditions, the Order, and the relevant User Guide.

**“Third Party Data Provider”** means any third party providing Third Party Content to GroundSure.

**“Data Reports”** means reports comprising factual data with no accompanying interpretation.

**“Fees”** has the meaning set out in clause 5.1.

**“GroundSure”** means GroundSure Limited, a company registered in England and Wales under number 03421028.

**“GroundSure Materials”** means all materials prepared by GroundSure and provided as part of the Services, including but not limited to Third Party Content, Data Reports, Mapping, and Risk Screening Reports.

**“Intellectual Property”** means any patent, copyright, design rights, trade or service mark, moral rights, data protection rights, know-how or trade mark in each case whether registered or not and including applications for the same or any other rights of a similar nature anywhere in the world.

**“Mapping”** means a map, map data or a combination of historical maps of various ages, time periods and scales.

**“Order”** means an electronic, written or other order form submitted by the Client requesting Services from GroundSure in respect of a specified Site.

**“Ordnance Survey”** means the Secretary of State for Business, Innovation and Skills, acting through Ordnance Survey, Adanac Drive, Southampton, SO16 0AS, UK.

**“Order Website”** means the online platform through which Orders may be placed by the Client and accepted by GroundSure.

**“Report”** means a Risk Screening Report or Data Report for Commercial or Residential property.

**“Residential”** means any building or property used as or intended to be used as a single dwelling.

**“Risk Screening Report”** means a risk screening report comprising factual data with an accompanying interpretation by GroundSure.

**“Services”** means any Report, Mapping and/or Support Services which GroundSure has agreed to provide by accepting an Order pursuant to clause 2.6.

**“Site”** means the area of land in respect of which the Client has requested GroundSure to provide the Services.

**“Third Party Content”** means data, database information or other information which is provided to GroundSure by a Third Party Data Provider.

**“User Guide”** means the user guide, as amended from time to time, available upon request from GroundSure and on the website ([www.GroundSure.com](http://www.GroundSure.com)) and forming part of this Contract.

### 2 Scope of Services, terms and conditions, requests for insurance and quotations

2.1 GroundSure agrees to provide the Services in accordance with the Contract.

2.2 GroundSure shall exercise reasonable skill and care in the provision of the Services.

2.3 Subject to clause 7.3 the Client acknowledges that it has not relied on any statement or representation made by or on behalf of GroundSure which is not set out and expressly agreed in writing in the Contract and all such statements and representations are hereby excluded to the fullest extent permitted by law.

2.4 The Client acknowledges that terms and conditions appearing on a Client's order form, printed stationery or other communication, or any terms or conditions

implied by custom, practice or course of dealing shall be of no effect, and that this Contract shall prevail over all others in relation to the Order.

2.5 If the Client or Beneficiary requests insurance in conjunction with or as a result of the Services, GroundSure shall use reasonable endeavours to recommend such insurance, but makes no warranty that such insurance shall be available from insurers or that it will be offered on reasonable terms. Any insurance purchased by the Client or Beneficiary shall be subject solely to the terms of the policy issued by insurers and GroundSure will have no liability therefor. In addition you acknowledge and agree that GroundSure does not act as an agent or broker for any insurance providers. The Client should take (and ensure that the Beneficiary takes) independent advice to ensure that the insurance policy requested or offered is suitable for its requirements.

2.6 GroundSure's quotations or proposals are valid for a period of 30 days only unless an alternative period of time is explicitly stipulated by GroundSure. GroundSure reserves the right to withdraw any quotation or proposal at any time before an Order is accepted by GroundSure. GroundSure's acceptance of an Order shall be binding only when made in writing and signed by GroundSure's authorised representative or when accepted through the Order Website.

### 3 The Client's obligations

3.1 The Client shall comply with the terms of this Contract and

(i) procure that the Beneficiary or any third party relying on the Services complies with and acts as if it is bound by the Contract and

(ii) be liable to GroundSure for the acts and omissions of the Beneficiary or any third party relying on the Services as if such acts and omissions were those of the Client.

3.2 The Client shall be solely responsible for ensuring that the Services are appropriate and suitable for its and/or the Beneficiary's needs.

3.3 The Client shall supply to GroundSure as soon as practicable and without charge all requisite information (and the Client warrants that such information is accurate, complete and appropriate), including without limitation any environmental information relating to the Site and shall give such assistance as GroundSure shall reasonably require in the provision of the Services including, without limitation, access to the Site, facilities and equipment.

3.4 Where the Client's approval or decision is required to enable GroundSure to carry out work in order to provide the Services, such approval or decision shall be given or procured in reasonable time and so as not to delay or disrupt the performance of the Services.

3.5 Save as expressly permitted by this Contract the Client shall not, and shall procure that the Beneficiary shall not, re-sell, alter, add to, or amend the GroundSure Materials, or use the GroundSure Materials in a manner for which they were not intended. The Client may make the GroundSure Materials available to a third party who is considering acquiring some or all of, or providing funding in relation to, the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.6 The Client is responsible for maintaining the confidentiality of its user name and password if using the Order Website and the Client acknowledges that GroundSure accepts no liability of any kind for any loss or damage suffered by the Client as a consequence of using the Order Website.

### 4 Reliance

4.1 The Client acknowledges that the Services provided by GroundSure consist of the presentation and analysis of Third Party Content and other content and that information obtained from a Third Party Data Provider cannot be guaranteed or warranted by GroundSure to be reliable.

4.2 In respect of Data Reports, Mapping and Risk Screening Reports, the following classes of person and no other are entitled to rely on their contents;

- (i) the Beneficiary,
- (ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate),
- (iv) the first purchaser or first tenant of the Site, and
- (v) the professional advisers and lenders of the first purchaser or tenant of the Site.

4.3 In respect of Support Services, only the Client, Beneficiary and parties expressly named in a Report and no other parties are entitled to rely on its contents.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise expressly agreed in writing, no other person or entity of any kind is entitled to rely on any Services or Report issued or provided by GroundSure. Any party considering such Reports and Services does so at their own risk.

### 5 Fees and Disbursements

5.1 GroundSure shall charge and the Client shall pay fees at the rate and frequency specified in the written proposal, Order Website or Order acknowledgement form, plus (in the case of Support Services) all proper disbursements incurred by GroundSure. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services (together “Fees”).



5.2 The Client shall pay all outstanding Fees to GroundSure in full without deduction, counterclaim or set off within 30 days of the date of GroundSure's invoice or such other period as may be agreed in writing between GroundSure and the Client ("Payment Date"). Interest on late payments will accrue on a daily basis from the Payment Date until the date of payment (whether before or after judgment) at the rate of 8% per annum.

5.3 The Client shall be deemed to have agreed the amount of any invoice unless an objection is made in writing within 28 days of the date of the invoice. As soon as reasonably practicable after being notified of an objection, without prejudice to clause 5.2 a member of GroundSure's management team will contact the Client and the parties shall then use all reasonable endeavours to resolve the dispute within 15 days.

## 6 Intellectual Property and Confidentiality

### 6.1 Subject to

(i) full payment of all relevant Fees and

(ii) compliance with this Contract, the Client is granted (and is permitted to sub-licence to the Beneficiary) a royalty-free, worldwide, non-assignable and (save to the extent set out in this Contract) non-transferable licence to make use of the GroundSure Materials.

6.2 All Intellectual Property in the GroundSure Materials are and shall remain owned by GroundSure or GroundSure's licensors (including without limitation the Third Party Data Providers) the Client acknowledges, and shall procure acknowledgement by the Beneficiary of, such ownership. Nothing in this Contract purports to transfer or assign any rights to the Client or the Beneficiary in respect of such Intellectual Property.

6.3 Third Party Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client shall, and shall procure that any recipients of the GroundSure Materials shall:

(i) not remove, suppress or modify any trade mark, copyright or other proprietary marking belonging to GroundSure or any third party from the Services;

(ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;

(iii) not create any product or report which is derived directly or indirectly from the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);

(iv) not combine the Services with or incorporate such Services into any other information data or service;

(v) not reformat or otherwise change (whether by modification, addition or enhancement), the Services (save that those acting for the Beneficiary in a professional capacity shall not be in breach of this clause 6.4(v) where such reformatting is in the normal course of providing advice based upon the Services);

(vi) where a Report and/or Mapping contains material belonging to Ordnance Survey, acknowledge and agree that such content is protected by Crown Copyright and shall not use such content for any purpose outside of receiving the Services; and

(vii) not copy in whole or in part by any means any map prints or run-on copies containing content belonging to Ordnance Survey (other than that contained within Ordnance Survey's OS Street Map) without first being in possession of a valid Paper Map Copying Licence from Ordnance Survey,

6.5 Notwithstanding clause 6.4, the Client may make reasonable use of the GroundSure Materials in order to advise the Beneficiary in a professional capacity. However, GroundSure shall have no liability in respect of any advice, opinion or report given or provided to Beneficiaries by the Client.

6.6 The Client shall procure that any person to whom the Services are made available shall notify GroundSure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.

## 7.Liability: Particular Attention Should Be Paid To This Clause

7.1 This Clause 7 sets out the entire liability of GroundSure, including any liability for the acts or omissions of its employees, agents, consultants, subcontractors and Third Party Content, in respect of:

(i) any breach of contract, including any deliberate breach of the Contract by GroundSure or its employees, agents or subcontractors;

(ii) any use made of the Reports, Services, Materials or any part of them; and

(iii) any representation, statement or tortious act or omission (including negligence) arising under or in connection with the Contract.

7.2 All warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from the Contract.

7.3 Nothing in the Contract limits or excludes the liability of the Supplier for death

or personal injury resulting from negligence, or for any damage or liability incurred by the Client or Beneficiary as a result of fraud or fraudulent misrepresentation.

7.4 GroundSure shall not be liable for

- (i) loss of profits;
- (ii) loss of business;
- (iii) depletion of goodwill and/or similar losses;
- (iv) loss of anticipated savings;
- (v) loss of goods;
- (vi) loss of contract;
- (vii) loss of use;
- (viii) loss or corruption of data or information;
- (ix) business interruption;
- (x) any kind of special, indirect, consequential or pure economic loss, costs, damages, charges or expenses;

(xi) loss or damage that arise as a result of the use of all or part of the GroundSure Materials in breach of the Contract;

(xii) loss or damage arising as a result of any error, omission or inaccuracy in any part of the GroundSure Materials where such error, omission or inaccuracy is caused by any Third Party Content or any reasonable interpretation of Third Party Content;

(xiii) loss or damage to a computer, software, modem, telephone or other property; and

(xiv) loss or damage caused by a delay or loss of use of GroundSure's internet ordering service.

7.5 GroundSure's total liability in relation to or under the Contract shall be limited to £10 million for any claim or claims.

7.6 GroundSure shall procure that the Beneficiary shall be bound by limitations and exclusions of liability in favour of GroundSure which accord with those detailed in clauses 7.4 and 7.5 (subject to clause 7.3) in respect of all claims which the Beneficiary may bring against GroundSure in relation to the Services or other matters arising pursuant to the Contract.

## 8 GroundSure's right to suspend or terminate

8.1 If GroundSure reasonably believes that the Client or Beneficiary has not provided the information or assistance required to enable the proper provision of the Services, GroundSure shall be entitled to suspend all further performance of the Services until such time as any such deficiency has been made good.

8.2 GroundSure shall be entitled to terminate the Contract immediately on written notice in the event that:

(i) the Client fails to pay any sum due to GroundSure within 30 days of the Payment Date; or

(ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an administration order made against it or if a receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or

(iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or

(iv) the Client or the Beneficiary breaches any term of the Contract (including, but not limited to, the obligations in clause 4) which is incapable of remedy or if remediable, is not remedied within five days of notice of the breach.

## 9. Client's Right to Terminate and Suspend

9.1 Subject to clause 10.1, the Client may at any time upon written notice terminate or suspend the provision of all or any of the Services.

9.2 In any event, where the Client is a consumer (and not a business) he/she hereby expressly acknowledges and agrees that:

(i) the supply of Services under this Contract (and therefore the performance of this Contract) commences immediately upon GroundSure's acceptance of the Order; and

- (ii) the Reports and/or Mapping provided under this Contract are
  - (a) supplied to the Client's specification(s) and in any event
  - (b) by their nature cannot be returned.

## 10 Consequences of Withdrawal, Termination or Suspension

10.1 Upon termination of the Contract:

(i) GroundSure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client and/or Beneficiary any property of the Client and/or Beneficiary in

GroundSure's possession or control; and

(ii) the Client shall pay to GroundSure all and any Fees payable in respect of the performance of the Services up to the date of termination or suspension. In respect of any Support Services provided, the Client shall also pay GroundSure any additional costs incurred in relation to the termination or suspension of the Contract.

## 11 Anti-Bribery

11.1 The Client warrants that it shall:

(i) comply with all applicable laws, statutes and regulations relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010;

(ii) comply with such of GroundSure's anti-bribery and anti-corruption policies as are notified to the Client from time to time; and

(iii) promptly report to GroundSure any request or demand for any undue financial or other advantage of any kind received by or on behalf of the Client in connection with the performance of this Contract.

11.2 Breach of this Clause 11 shall be deemed a material breach of this Contract.

## 12 General

12.1 The Mapping contained in the Services is protected by Crown copyright and must not be used for any purpose other than as part of the Services or as specifically provided in the Contract.

12.2 The Client shall be permitted to make one copy only of each Report or Mapping Order. Thereafter the Client shall be entitled to make unlimited copies of the Report or Mapping Order only in accordance with an Ordnance Survey paper map copy license available through GroundSure.

12.3 GroundSure reserves the right to amend or vary this Contract. No amendment or variation to this Contract shall be valid unless signed by an authorised representative of GroundSure.

12.4 No failure on the part of GroundSure to exercise, and no delay in exercising, any right, power or provision under this Contract shall operate as a waiver thereof.

12.5 Save as expressly provided in this Contract, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.

12.6 The Secretary of State for Business, Innovation and Skills ("BIS") or BIS' successor body, as the case may be, acting through Ordnance Survey may enforce a breach of clause 6.4(vi) and clause 6.4(vii) of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.

12.7 GroundSure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:

- (i) the Client or Beneficiary's failure to provide facilities, access or information;
- (ii) fire, storm, flood, tempest or epidemic;
- (iii) Acts of God or the public enemy;
- (iv) riot, civil commotion or war;
- (v) strikes, labour disputes or industrial action;
- (vi) acts or regulations of any governmental or other agency;
- (vii) suspension or delay of services at public registries by Third Party Data Providers;
- (viii) changes in law; or
- (ix) any other reason beyond GroundSure's reasonable control.

In the event that GroundSure is prevented from performing the Services (or any part thereof) in accordance with this clause 12.6 for a period of not less than 30 days then GroundSure shall be entitled to terminate this Contract immediately on written notice to the Client.

12.8 Any notice provided shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.

12.9 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email (save to the extent such day is not a working day where it shall be deemed to have been delivered on the next working day) and on the second working day after the day of posting if sent by first class post.

12.10 The Contract constitutes the entire agreement between the parties and shall supersede all previous arrangements between the parties relating to the subject matter hereof.

12.11 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.

12.12 This Contract shall be governed by and construed in accordance with English

law and any proceedings arising out of or connected with this Contract shall be subject to the exclusive jurisdiction of the English courts.

12.13 GroundSure is an executive member of the Council of Property Search Organisation (CoPSO) and has signed up to the Search Code administered by the Property Codes Compliance Board (PCCB). All Risk Screening Reports shall be supplied in accordance with the provisions of the Search Code.

12.14 If the Client or Beneficiary has a complaint about the Services, written notice should be given to the Compliance Officer at GroundSure who will respond in a timely manner.

12.15 The Client agrees that it shall, and shall procure that each Beneficiary shall, treat in confidence all Confidential Information and shall not, and shall procure that each Beneficiary shall not (i) disclose any Confidential Information to any third party other than in accordance with the terms of this Contract; and (ii) use Confidential Information for a purpose other than the exercise of its rights and obligations under this Contract. Subject to clause 6.6, nothing shall prevent the Client or any Beneficiary from disclosing Confidential Information to the extent required by law. © GroundSure Limited June 2013

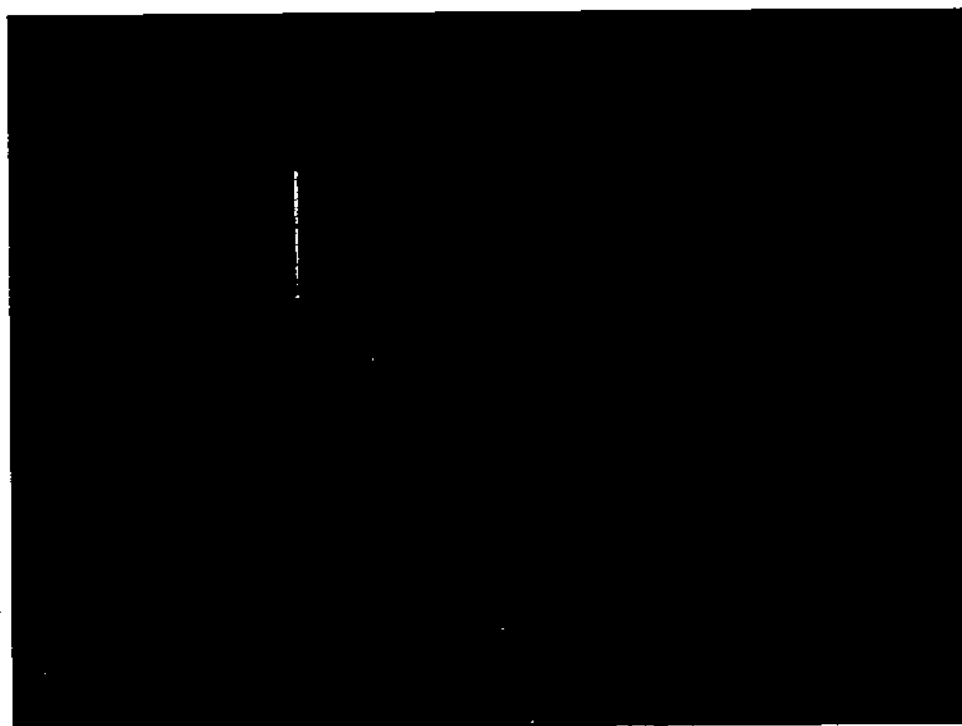


HORSHAM DISTRICT COUNCIL DEPOSITED PLAN	
Rec'd	13 JAN 2010
No.	DC/09/2355

Part 1 of 10

**Former Wealden Brickworks,  
Langhurstwood Road, Horsham,  
West Sussex**

**Phase 1 Desk Study**



Prepared for  
**Biffa Waste Services Ltd**

## Revision Schedule

**Former Wealden Brickworks, Langhurstwood Road, Horsham, West Sussex**  
**Phase 1 Desk Study**  
**December 2009**

Rev	Date	Details	Prepared by	Reviewed by	Approved by
01	26 November 2009	Draft	Anita Soper Assistant Geo- Environmental Engineer	Carlo Castello Senior Geo- Environmental Scientist	Carlo Castello Senior Geo- Environmental Scientist
02	17 December 2009	Final	Anita Soper Assistant Geo- Environmental Engineer	Carlo Castello Senior Geo- Environmental Scientist	Carlo Castello Senior Geo- Environmental Scientist

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## Appendices

Appendix A:	Figure 1 Site Location Plan Figure 2 Site Plan Figure 3 Exploratory Hole Location Plan from Capita Symonds 2005 Ground Investigation
Appendix B:	Envirocheck Report (29027301_1_1)
Appendix C:	Historical Maps
Appendix D:	Plates

# 1 Introduction

## Terms of Reference

- 1.1 Biffa Waste Services Ltd (Biffa) has commissioned Scott Wilson Ltd (Scott Wilson) to undertake a Phase 1 Desk Study contamination risk assessment of a site at the former Wealden Brickworks, Langhurstwood Road, Horsham, West Sussex. This has been commissioned in support of an outline planning application for the erection of a building for Class B2/B8 uses at the site.
- 1.2 The site is located at grid reference TQ 171 343 with grid co-ordinates of approximately 517104mE, 134335mN.

## Aims of Assessment

- 1.3 The aims of the Phase 1 assessment are:
- To identify the potential for the site to be contaminated.
  - To assess the associated contamination risks with respect to the proposed development.

## Methodology

- 1.4 The following methodology was adopted to realise the aims of the study:
- Review of present day maps, geological records and groundwater information.
  - Review of historical maps and site layout plans.
  - Collation and review of information in an Envirocheck Report obtained from the Landmark Information Group.
  - Site walkover.
  - Review of regulatory authority records.
  - Review of existing ground investigation report.
  - Review of current site operations.
  - Identification of potential contamination receptors.
  - Technical interpretation of the above information.
  - Preparation of a Conceptual Site Model.

## Information Sources

- 1.5 The following sources of information were used in preparing this report:

### Client Supplied Data

- Site plan.
- *Environmental Impact Assessment; Planning Application for the Redevelopment of Wealden and Wealden North Brickworks for Storage and Distribution Use (D8) Gazeley UK Ltd & Wealdland Ltd (Capita Symonds, October 2006).*

### Information in the Public Domain

- Current Ordnance Survey (OS) mapping.
- Historic OS mapping.
- Geological mapping.
- Hydrogeological mapping.
- Landmark Envirocheck Report.
- Environment Agency website.
- West Sussex County Council website.

### Information from the Site Walkover

- Records of field observations.
- Photographs.

### Future / Proposed Site Use

- 1.6 The future use of the site will be solely for commercial purposes. The proposal is for two buildings totalling approximately 15,000m<sup>2</sup> in area, staff and HGV parking, HGV turning areas and landscaping.

### Limitations of this Assessment

- 1.7 The results of this study are based on the information made available to Scott Wilson by Biffa, the Environment Agency (EA) and the site walkover, together with information from the public domain. The opinions presented in this report are partly based on the information obtained from the organisations contacted. Although Scott Wilson believes this information to be reliable it cannot and does not guarantee the authenticity or reliability of the information. It is also possible that there is other documentation concerning the site which Scott Wilson has not known of or managed to obtain.
- 1.8 For the purposes of this report, the terms 'surroundings' or 'surrounding area' mean within 250m of the site boundary.

## 2 Description of Site and Surrounding Area

### Location and Site Description

- 2.1 A site location plan is presented as Figure 1 in Appendix A. The Envirocheck Report can be found at Appendix B, and the associated historical maps at Appendix C. The table below summarises the findings of the site walkover, undertaken on 13 October 2009. Photographs taken during the site reconnaissance are presented as Plates in Appendix D.

<b>Address</b>	Langhurstwood Road, Horsham, West Sussex
<b>National Grid Reference</b>	TQ 171 343
<b>Size (ha)</b>	3
<b>Occupier(s)</b>	Biffa Waste Services Ltd
<b>On-site Operations</b>	Former brickworks
<b>Buildings</b>	<p>The site (see Plate 2) comprises the southern part of a disused brickworks building, a disused canteen (Plate 4) and a hardstanding area (Plates 5 and 6).</p> <p>The brickworks building on site is a one storey shed which contained:</p> <ul style="list-style-type: none"> <li>• A clay preparation plant and the moulding/extruding plant to form the bricks in the northern section (Plate 7);</li> <li>• A gas powered drying area in the west section (Plate 8);</li> <li>• Gas powered kilns (Plate 9) used to fire the bricks, with fume collection (Plate 10) system and filter in the eastern section (Plate 11); and</li> <li>• A production lane control unit in the middle of the shed (Plate 12).</li> </ul> <p>The different process areas are connected via a railway / tram line (Plate 13) where bricks used to be carried away via conveyors.</p> <p>The processing lanes were two storeys high with a drying / burning shed and gas supply at the bottom and fume collection system at the top.</p> <p>The building itself is in poor condition with holes in the walls (Plate 16).</p> <p>The roof tiles are likely to be made of asbestos cement (Plate 17).</p> <p>During the site walkover, no water run-off collectors were observed at the site.</p>



<b>Hardstanding / Landscaping</b>	Indoor and outdoor areas are covered with concrete and tarmac that is in very poor condition with cracks, fractures and holes (Plate 14). The indoor area showed evidence of a previous investigation with several trial pits having been dug and backfilled (Plate 15).
<b>Areas of Fill</b>	Given the industrial history of the area, the whole site is likely to be underlain by made ground.
<b>General Ground Slope</b>	The site slopes gently downward toward the south.
<b>Services</b>	Gas and electricity services are not disconnected. A water main runs across the site from the access road to the north of the production shed. It was disconnected due to significant leakages.

## Surrounding Area

- 2.2 Information on land surrounding the site was determined from the site walkover and is summarised below.
- 2.3 **North:** The area to the north of the site shows a large amount of historic industrial development, associated with the brickworks. Evidence of this includes disused buildings and structures as well as the storage of old metal drums. The northern section of the Wealden building contains the clay storage shed (Plate 18) and adjacent to this is a disused electricity substation (Plate 19) and a new operational electricity substation (Plate 20).
- 2.4 The area to the north of the canteen is occupied by two ponds (Plate 21). Further north are other disused building related to Wealden Brickworks North operations.
- 2.5 North of the clay storage area is a hardstanding and grassed area (Plate 22) that has been previously developed several times as brickworks buildings.
- 2.6 Further north are the current Brookhurst Wood landfill site (Plates 23 and 24) and the disused Cleanaway landfill site. This site includes two above-ground crude oil tanks (Plates 25 and 26).
- 2.7 The Cleanaway landfill site is an area reported to be approximately 130m northwest of the site. It is known to be a "Dilute and Disperse" landfill site constructed on a clay layer. It was under operation until 1989 and is now capped. There is a disused gas collection and processing plant adjacent to this site but it is not known if it was related to the Cleanaway landfill site (Plate 27).
- 2.8 Brookhurst Wood landfill site (Plate 28) is located approximately 400m north of the site. It is in operation with a fully integrated lining system. Leachate and methane are collected and treated at the site. Leachate is directly treated within a single batch reaction pond to treat ammonia and is then discharged to the main public sewage system north of the infilled area. A discharge consent is in place for the treated leachate discharge. Methane gas is collected and combusted within a generator to produce electricity which is exported to the National Grid through the operational electricity substation north of the site.
- 2.9 Out of the landfill area, rain water is collected through ditches and directed to an attenuation pond with an interceptor before being discharge to a stream off site.
- 2.10 **East:** Ponds in location of former quarry and Langhurstwood Road.

- 2.11 South: Current Wienerberger Brickworks directly south of the site (Plate 1).
- 2.12 West: Railway line and green fields.

### 3 History of the Site and Surrounding Area

#### Site History from Ordnance Survey Maps

- 3.1 The history of the site and surrounding areas has been determined from the historical OS mapping contained within the Envirocheck Report. Historical OS maps are presented within Appendix C.
- 3.2 The earliest mapping available from 1875 (1:2,500 scale) shows that the site comprises an undeveloped farmed field. The rail track (London Brighton and South Coast Line) has already been developed and lies adjacent to the west of the site. Approximately 150m west of the site is an un-named watercourse. There are three farms surrounding the site, these being Andrew's Farm, Cox Farm and Sharp's Farm approximately 400m south west, north west and south east of the site respectively. Approximately 300m to the south east of the site is a square feature labelled as a moat. The remainder of the land surrounding the site comprises undeveloped farmed fields.
- 3.3 The 1879 to 1880 (1:10,560 scale) map shows that the site is situated approximately 1.2km to the north east of Horsham town and 250m to the south of the large Langhurst Wood. Horsham Station lies approximately 300m to the south of the site. Greylands Farm and well lies approximately 600m to the north east. The site and surrounding area comprises undeveloped farmed fields.
- 3.4 The 1887 (1:2,500 scale) and 1898 to 1899 (1:10,000 scale) maps show that Warnham Brick Yard has been developed approximately 250m to the south west of the site. Greylands Farm is now named just Greylands and Sharp's Farm has been renamed to Greylands Farm.
- 3.5 The 1912 (1:2,500 scale) maps show that the site has been developed. Immediately to the north of the site is a brickworks with at least three kilns and associated buildings. A fourth kiln is situated in the north west corner of the site. The eastern half of the site and the land to the north appears to have undergone quarrying. A tramway is present in the north east section of the site and a tank and engine shed are located approximately in the centre of the site.
- 3.6 The 1913 to 1914 (1:10,560 scale) map shows that the watercourse to the west of the site is named Boldings Brook and that Cox's Farm has been renamed to Hillside Farm. Greylands, to the north east, now has tanks and an engine house.
- 3.7 The 1932 (1:10,560 scale) map does not include the site itself but does show that a sewage works has been developed approximately 300m to the south west between the site and Andrew's Farm.
- 3.8 The 1961 to 1962 (1:10,560 scale) map shows that the site has undergone further development. In addition to the kiln in the north west corner, there are a further three large buildings on the western section and six smaller unlabelled structures. Also an unlabelled building adjacent to the south east site boundary.
- 3.9 The 1976 to 1977 (1:2,500 scale) maps show the new development on the site in greater detail. The three large buildings in the west of the site are kilns and there is also a large kiln in the south east corner of the site. One of the smaller structures is labelled as a conveyor and two are chimneys, associated with the kilns. The surrounding area has also undergone development. Immediately to the south and south west are ponds, a spring and filter beds,

likely to be associated with the sewage works. Adjacent to the south east an unlabelled industrial area has been developed, to the west are ponds and tanks of unknown use, and the site to the north comprises additional kilns, ponds, a conveyer and a chimney.

- 3.10 The 1980 to 1982 (1:10,560 scale) map shows that several of the structures on site have been demolished. The kiln buildings in the north west and south east of the site are still present as is the conveyor. In addition the layout of buildings on the site to the north has changed with the majority of the kilns now removed and a new building being located on site. A large clay pit is labelled between approximately 250 and 1000m to the north north-west of the site.
- 3.11 The 1989 to 1992 (1:2,500 scale) maps show that further changes have taken place on site. All the former kiln buildings have now been removed and a large building is present in the eastern section as is seen today. There is only one un-labelled structure present on site in the north west corner.
- 3.12 The remainder of the maps, 1992 to 2009, show that site has undergone little or no further development. The large clay pit to the north north-west is unlabelled in 2006 (1:10,000 scale) and on the 2009 (1:10,000 scale) map the southern section is labelled as disused workings and the northern section as Brookhurst Wood landfill site.

## 4 Environmental Setting

### Introduction

- 4.1 This section of the report presents data on the geology, groundwater and surface water conditions at the site together with other environmental data relating to the environmental setting of the site, such as the nearby presence of sensitive environmental habitats or potentially contaminative industries.

### Geological Mapping

- 4.2 The following description of geology is based on British Geological Survey (BGS) mapping at 1:50,000 scale map No 302 (Horsham, 1972) included in the Envirocheck Report. The descriptions are taken from the BGS lexicon of named rock units. The descriptions are therefore idealised may vary from the nature of the strata encountered at the site.

Geological Unit	Age	Description
Weald Clay Formation (up to 33m in thickness)	Cretaceous	Dark grey thinly-bedded mudstones (shales) and mudstones with subordinate siltstones, fine- to medium-grained sandstones, including calcareous sandstone (e.g. Horsham Stone Member), shelly limestones (the so called "Paludina Limestones") and clay ironstones.
Upper Tunbridge Wells Sand	Cretaceous	The unit comprises a complex succession of interbedded deposits with both upward-fining and upward-coarsening cycles. Thinly bedded silty mudstones, siltstones, silty sandstones and fine-grained sandstones are laterally persistent over long distances. Sandstones, which form prominent scarp and dip slope features, are typically fine-grained and quartzose, weathering to a pale yellowish grey or brown colour.

- 4.3 The map also shows that there is worked ground in the north east corner of the site. There are alluvial deposits to the west of the site associated with the Boldings Brook.

### Geology and Ground Conditions from Boreholes

- 4.4 A ground investigation was conducted on the site in 2005 by Capita Symonds (Structures) Ltd for an environmental impact assessment on behalf of Gazeley in 2006. The ground investigation comprised an area which extended beyond the study area of this report to the north and south. From the study area itself a total of 19 No. exploratory holes were excavated, comprising 3 No. cable percussion boreholes between 7 and 12m in depth and 16 No. trial pits up to 4m in depth. The general ground conditions encountered comprised Made Ground over Weald Clay.

- **Made Ground (MG):** MG was encountered across the entire site and ranged in thickness between 0.30 and 3.8m but was typically 0.80m thick. It was described as concrete over an



unconsolidated aggregate of ash and red brick which is likely to be demolition waste from previous site structures.

- Weald Clay: Weald Clay was encountered in all locations beneath the Made Ground and was proven to a depth of 12m. It was described as stiff to very stiff laminated brown and blue grey clay.

## Groundwater Vulnerability

- 4.5 According to the Envirocheck Report the site lies on a non aquifer. This refers to the Weald Clay Formation which underlies the site. According to the Envirocheck Report the soils have not been classified for leaching potential. Existing ground investigations have proved the thickness to of the Weald Clay to 12m and according to the geological map the strata may be 33m thick. The Weald Clay is underlain by the Tunbridge Wells Sands which are likely to be water bearing.
- 4.6 Non aquifers are generally regarded as containing insignificant quantities of groundwater. However, groundwater flow through such rocks, although imperceptible, does take place and needs to be considered in assessing the risk associated with persistent pollutants.
- 4.7 This site does not lie within a Source Protection Zone (SPZ) as designated by the EA.

## Groundwater Records from Boreholes

- 4.8 Groundwater was recorded in the boreholes installed on site by Capita Symonds in 2005 as follows:

Exploratory Hole	Depth to Water During GI (mAOD)	Depth to Water During Monitoring 29/06/05 (mAOD)	Depth to Water During Monitoring 02/08/05 (mAOD)	Groundwater Bearing Strata	Comments
BH1	41.61	Dry	Dry	Weald Clay	-
BH3	46.75	49.21	50.17	Weald Clay	-
TP1	48.85	N/A	N/A	Weald Clay	Slight trickle of water observed.
TP7	50.42	N/A	N/A	Weald Clay	Trickle of water observed.
TP21	50.34	N/A	N/A	Made Ground	-

- 4.9 The Capita Symonds 2005 Report reported a minimal amount of water, which is to be expected given the non-aquifer status of the Weald Clay. Little information was given regarding the groundwater strikes within the boreholes, however during the monitoring visits the water was encountered at deeper depths which may indicate that this observed water comprises perched water associated with rain water infiltration.

- 4.10 The clay description for TP7 was noted as being *very firm to hard brown weathered clay which becomes hard, brittle, laminated and fractured with depth which some moisture in the fractures*. This suggests that water (and contaminants) may potentially transmit through fractures within the brittle clay. If groundwater flow through the fractures of the Weald Clay is present, it is likely to be in small quantities however.

## Flooding

- 4.11 According to the Envirocheck Report the site does not lie within an area at risk from flooding.

## Surface Water Features

- 4.12 The nearest surface water feature is a pond associated with the brick works operations adjacent to the north of the site. There are also ponds approximately 20m from the eastern boundary in the location of the previous quarry. Approximately 150m to the west of the site is the Boldings Brook, a tributary of the River Arun, and between the site and the brook are ponds (likely to be associated with the sewage treatment works) and a spring.
- 4.13 According to the Envirocheck Report the Boldings Brook had a General Quality Assessment (GQA) grade of 'D', indicating poor quality, from the sampling event in 2000.
- 4.14 Based on the above information, the Boldings Brook is considered to be the closest surface water receptor.

## Pollution Incidents

- 4.15 The Envirocheck Report lists three pollution incidents to controlled waters within 1km of the site. The closest was 269m to the south of the site. All were minor incidents.
- 4.16 There are four substantiated pollution incidents registered within 1km of the site. All incidents reported a sulphide odour between the 8<sup>th</sup> and the 18<sup>th</sup> June 2001 and given the timing and similarity of the reports they are likely to be the result of the same incident. The impact to the air from this event was regarded as significant but there was no impact to water or land.

## Pollution Prevention and Control

- 4.17 The Envirocheck Report lists one Integrated Pollution Prevention and Control (IPPC) permit to Biffa Waste Services Ltd, 353m to the north of the site. This IPPC has been modified and updated several times. It includes the combustion of fuels and the disposal of non hazardous waste including biological and physico-chemical treatment.
- 4.18 One Local Authority Pollution Prevention and Control Enforcement for the site is listed in the Envirocheck Report. This was an Air Pollution Control Enforcement Notice issued on the 30<sup>th</sup> April 2004.
- 4.19 There are four Local Authority Integrated Pollution Prevention and Control (LAPPC) permits within 1km of the site, the details of which are given in the table overleaf.

Name	Location	Process Type	Description	Date	Status	Distance/ Direction from Site
Wiener-berger Ltd	Langhurstwood Road	Minerals industries	Ceramic production	None given	Application not yet authorised	On site
Ambion Bricks	Langhurstwood Road	Local authority air pollution control	Manufacture of heavy clay goods	30 <sup>th</sup> September 1992	Transferred to LAIPPC	On site
Greens Accident and Repair Centre	Langhurstwood Road	Local authority pollution controls	Respraying of road vehicles	19 <sup>th</sup> January 2000	Permitted	248m South
Greens Accident Repairs	Langhurstwood Road	Local authority air pollution control	Respraying of road vehicles	8 <sup>th</sup> September 1998	Revoked	499m North East

## Sensitive Land Uses

- 4.20 The site lies within a Nitrate Vulnerable Zone (NVZ) designated by the Department for Environment, Food and Rural Affairs (Defra).
- 4.21 The Warnham Local Nature Reserve lies 864m to the south and the Warnham Site of Special Scientific Interest (SSSI), designated in this instance for geological conservation, is 629m north east of the site.

## Geological Hazards

- 4.22 The site is recorded in the Envirocheck Report as having the following potential risks of instability:
- No hazard for compressible ground stability hazards.
  - No hazard for collapsible ground stability hazards.
  - No hazard for ground dissolution stability hazards.
  - Very low to low potential for landslide ground stability hazards.
  - No hazard for running sand ground stability hazards.
  - Low potential for shrinking or swelling clay ground stability hazards.

## Mining

- 4.23 The Envirocheck Report indicates that the site is not in an area at risk from coal mining hazard and is at a low risk from shallow mining features.

- 4.24 The Envirocheck Report lists one active opencast mineral site, Warnham Brickworks, 662m north east. The Envirocheck Report lists inconclusive evidence of iron ore mining on site and a bell pit for iron ores 318m to the south east.

## Radon

- 4.25 The Envirocheck Report indicates that the site is not within a radon affected area. No radon protective measures are required for new buildings at the site.

## Contamination Summary from Previous Ground Investigations

- 4.26 As part of the 2005 Capita Symonds ground investigation, 18 No. soil samples were tested from seven exploratory holes on site (TP2, TP5, TP21, TP22, TP24, TP38, TP39) for acid and water soluble sulphate, sulphur, organic carbon, polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPHs) and a suite of metals (arsenic, cadmium, chromium, lead, mercury, selenium, copper, nickel and zinc). The 2006 Capita Symonds Report identified three areas with elevated contamination levels, two within the study area of this report and one adjacent to the north west of the site. See the Exploratory Hole Location Plan presented as Figure 3 in Appendix A.
- 4.27 One area included trial pits TP21, TP22, (on site) and TP26, TP28, TP29 (north of site). In these locations TPH was detected up to levels of 8,400 mg/kg and it was concluded by Capita Symonds that the contamination was either imported with made ground from off site, or may be linked to a spillage or dumping event in or near the silt ponds (off site, adjacent to the northern boundary). The TPH testing was not carried out in accordance with the *Criteria Working Group* specification as no aliphatic aromatic split of the total TPH was undertaken. Consequently the results cannot be compared with current best practice human health guideline values.
- 4.28 The second on-site contaminated area was in the vicinity of TP24 where elevated concentrations of TPH were detected. Once again, TPH testing was not carried out in accordance with the *Criteria Working Group* specification for appropriate guideline comparison.
- 4.29 The off-site area of contamination was detected in the vicinity of TP4 where during excavation hydrocarbons were observed beneath the floor slab. An old pipeline was present and is considered to be the likely source of contamination. Lower concentrations of hydrocarbons were also detected in TP20 and were believed to have migrated from the leak in TP4. If the leak has migrated toward the south (toward TP20) it is possible that contamination is present beneath the north west of the study area.
- 4.30 Soil sulphate results indicate that both the Made Ground and Weald Clay beneath the site will have a DS-2 design sulphate class. The pH of the soil samples was not determined and as a result an accurate ACEC class for the site cannot be provided from these results.
- 4.31 Phytotoxic metals, zinc and copper, are in several samples elevated above Dutch Intervention Values and as a result may adversely impact on plants that may be incorporated into the site development.
- 4.32 One groundwater sample was collected from the site and tested for pH and sulphate, a suite of metals (arsenic, cadmium, chromium, lead, mercury, selenium, copper, nickel and zinc),

speciated PAH and TPH. In addition, polychlorinated biphenyls (PCB) testing was undertaken on one groundwater sample, collected from BH4 adjacent to the north of the site.

- 4.33 The concentrations of the majority of groundwater analytes tested did not exceed laboratory detection limits, with the exception of arsenic and sulphate which had concentrations well below the EA's Environmental Quality Standards (EQS) for freshwater environments.
- 4.34 During this ground investigation, the ground gases from each borehole were measured during one monitoring event only. No detectable flow was measured. Methane was detected in one hole only at 0.4% (not within the study area of this report) and carbon dioxide concentration ranged from 0.1% to 4.6%, the highest being recorded within the same borehole where methane was detected, off site. The report concluded that made ground was the most likely source of the elevated ground gases and assessed the site using guidance contained in CIRIA Report 149 *Protecting Development from Methane as Characteristic Situation 2*. The report recommended that ventilation within confined spaces be provided, that a well constructed ground slab be placed, that the slab should not be penetrated by services installation, and that gas permeability membranes should be used.



## 5 Regulatory Records

- 5.1 The following section presents a summary of the environmental conditions of the site, gleaned from the Envirocheck Report which is presented in Appendix B.

### Discharge Consents

- 5.2 The table below shows details of discharge consents within 250m of the site. A further 45 discharge consents are registered between 250m and 1km from the site. The majority of these discharge into the Boldings Brook.

Operator	Discharge Type	Receiving Water	Issue Date	Status	Distance/ Direction from Site
Newco-Wealdland Ltd	Sewage Discharges – Final/treated Effluent – Not water company	Freshwater River	13 <sup>th</sup> December 1991	Post National Rivers Authority legislation	On Site
Wienerberger Ltd	Sewage Discharges – Final/treated Effluent – Not water company	Freshwater River	12 <sup>th</sup> February 1992	Revoked	79m South West
Sussex & Dorking Untd Brick Co.	Sewage Discharges – Final/treated Effluent – Not water company	Freshwater River	29 <sup>th</sup> March 1962	Post National Rivers Authority legislation	118m West
Wienerberger Ltd	Sewage Discharges – Final/treated Effluent – Not water company	Freshwater River	2 <sup>nd</sup> January 1992	Post National Rivers Authority legislation	172m South East
Mr M Reeve	Sewage Discharges – Final/treated Effluent – Not water company	Freshwater River	2 <sup>nd</sup> January 1992	Lapsed	186m South

## Water Abstractions

- 5.3 The closest groundwater abstraction well to the site is 105m to the south. The details of all the water abstractions within 1km of the site are presented in the table below. Given the location of the three abstractions it is likely that just one abstraction licence has been updated twice. One further water abstractions is registered between 1km and 2km of the site.

Operator	Location	Abstraction Source Use	Permit Start Date	Distance / Direction from Site
Wienerberger Ltd	Warnham Brickworks	Other industrial / Commercial / Public Services: General Use	27 <sup>th</sup> September 2004	105m South East
Thebrickbusiness	Warnham Brickworks	Other industrial / Commercial / Public Services: General Use	1 <sup>st</sup> January 2003	105m South East
Horsham District Council	Warnham Brickworks	Other industrial / Commercial / Public Services: General Use	13 <sup>th</sup> October 1997	105m South East

## Waste Facilities

- 5.4 The Envirocheck Report lists four Local Authority Recorded Landfill Sites within 1km of the site:

- Brookhurst Wood landfill site, on site<sup>1</sup>.
- Brickworks landfill site (Industrial, Commercial, Household and Special waste), on site.
- Warnham Brickworks (Refuse and Other Waste Materials), 216m north east.
- Brookhurst<sup>2</sup> Wood (Industrial, Commercial, Household and Special waste), 599m north.

<sup>1</sup> The Brookhurst Wood landfill is not located within the study area of this report. Landfill sites are often identified by Envirocheck where historical quarries were located and may not necessarily represent the exact landfill boundary. In this case the far north east corner of the site boundary overlaps the cutting of the former quarry and as a result the Envirocheck Report search may have incorrectly positioned the Brookhurst Wood landfill site 'on site'.

<sup>2</sup> Actually labelled as "Brockhurst".

5.5 The site has been re-developed several times and it is possible that demolition materials have been used as backfill material beneath the site.

5.6 The registered landfills present within 1km of the site are presented in the table below.

Licence Holder	Location	Specified Waste	Status	Distance / Direction from Site
Cleanaway Ltd	Warnham Brickworks, Langhurstwood Road	Clay, sub/topsoil. Lfg condensate, Liquid/Sludge from leachate plant	Site Closed	311m North East
Waste Management Ltd	Brookhurst Wood Landfill	Animal & Food production wastes, animal carcasses, cellulose, contaminated rubbish/bags/sacks, dog faeces, empty used containers, fluorescent lighting tubes, household/commercial & industrial waste, mineral processing waste, oil contaminated soil from minor spillages, clean drum, pharmaceutical/cosmetic products, road sweepings, scrap rubber, slag/boiler flue cleanings, stables waste, waste from contaminated land and treated sewage sludge and timber.	Operational as far as known	605m and 705m North
Cleanaway Ltd	Warnham Brickworks	Asbestos, household/commercial & industrial waste	Superseded	662m North East

5.7 According to the Envirocheck Report there are three active or issued Licensed Waste Management Facilities within 500m of the site. These are licensed to:

- Cleanaway Phase 2, 140m north at Warnham Brickworks.
- Waste Management Ltd, Brookhurstwood Landfill Site, 405m north on Langhurstwood Road.
- Biffa Waste Services Ltd, 400m north of the site on Langhurstwood Road.

5.8 There is one registered Waste Treatment or Disposal Site within 500m of the site:

- Cleanaway Ltd, Warnham Leachate Treatment Plant at Langhurstwood Road which is believed to be operational and treats leachate from the Cleanaway landfill site.

- 5.9 The Envirocheck Report lists one Planning Hazardous Substance Consent within the vicinity of the site, this is for Ambion Brick Co. Ltd at Holbrook Works 33m north east of the site for the reactive and explosive 2, 2-Bis(tert-butylperoxy)butane.

## Contemporary Trade Directory Entries

- 5.10 There are seven active and four inactive contemporary trades listed within the Envirocheck Report within 500m of the site. A summary of these is given in the table below.

Name	Location	Activity	Status	Distance / Direction from site
Wienerberger	Wealden Works, Langhurstwood Road	Brick Manufacturers	Active	10m South West (Adjacent to site)
Principal Cabling Services Ltd	Warnham Works, Langhurstwood Road	Electrical Engineers	Inactive	142m South East
Hall Tech	Langhurstwood Road	Garage Services	Inactive	204m East
Reco-Vie Recycling Ltd	The Transport Depot, Mercer Road	Recycling Centre	Active	268m South
Kam Trucking	Station Masters House, Station Road	Commercial Vehicle Bodybuilders & Repairers	Active	313m South
Hi-Tech Elbow Grease	Warnham Station, Station Road	Cleaning Services	Inactive	335m South
Biffa Waste Services Ltd	Brookhurstwood Landfill Site	Waste Disposal Services	Active	353m North
Arriva	Station Road	Bus & Coach Operators	Inactive	353m South West
Greens Accident Repair Centre	Mercer Road	MOT Testing Centre	Active	367m South
Halltech	Graylands Farm Cottages	Garage Services	Active	372m South East
Contron	Station House North, Mercer Road	Industrial Engineers	Active	373m South East

- 5.11 A further seven active and inactive contemporary trades are located between 500m and 1km of the site.

## Fuel Station Entries

- 5.12 There are no fuel station entries within 1km of the site listed within the Envirocheck Report.

## Registered Radioactive Substances

- 5.13 There are no radioactive substance registrations within 1km of the site listed within the Envirocheck Report.

## Planning Applications

- 5.14 Details of the planning history of the site and surrounding area were obtained from West Sussex County Council. Details of individual planning applications pertaining to the site are given below.

Application Reference	Date Registered	Details	Status
DC/666/05 (NH)	24/06/2005	Variation of bank holiday opening hours	Granted
DC/752/06 (NH)	24/02/2006	Erection of portakabin	Granted
DC/492/06 (NH)	20/02/2006	Proposed Gas Cleaning Plant following demolition of existing unit	Granted
DC1174/06 (NH)	27/03/2006	To extend the use of existing landfill operation	Granted
DC/2919/06 (NH)	23/11/2006	Construction and operation of a materials recycling facility, including offices and visitor centre, an anaerobic digestion plant, and extension to an existing landfill site, and ancillary infrastructure.	Granted
DC/652/08 (NH)	18/03/2008	Construction of agricultural/ forestry access for the maintenance and management of woodland areas and access to arable field	Granted
WSCC/040/09/NH	25/06/2009	Review of mineral planning permission (ROMP) for Langhurstwood Quarry at Warnham Brickworks.	Granted
WSCC/055/09 (NH)	31/07/2009	Construction and operation of a mechanical and biological treatment facility, including offices and visitor centre and ancillary plant and infrastructure.	Awaiting determination

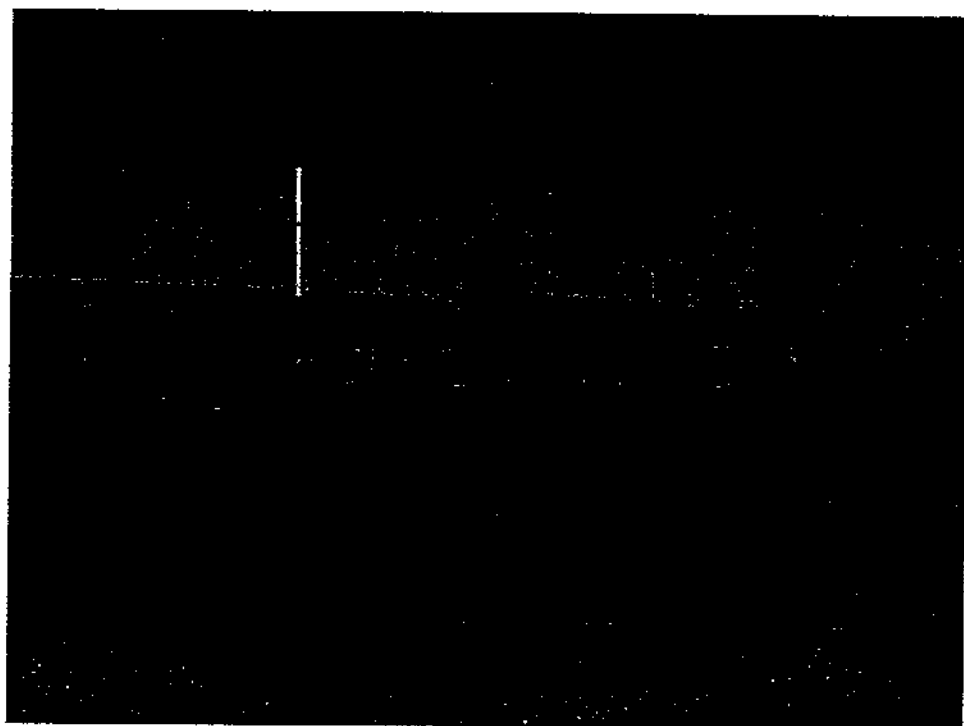




HORSHAM DISTRICT COUNCIL DEPOSITED PLAN	
Rec'd	13 JAN 2010
No.	DC/09/2355

**Former Wealden Brickworks,  
Langhurstwood Road, Horsham,  
West Sussex**

**Phase 1 Desk Study**    *Part 2 of 10*



Prepared for  
**Biffa Waste Services Ltd**

## 6 Conceptual Site Model and Preliminary Risk Assessment

- 6.1 This section of the report sets out the current and historic activities on the site that may have led to ground and or groundwater contamination.
- 6.2 It also aims to identify land which could potentially be affected by contamination such that it could affect the value or re-use of the land, or that mitigation would be required for certain end uses of the land.
- 6.3 The assessment also aims to identify land which would be regarded as 'contaminated land' under the terms of Part IIA of the Environmental Protection Act 1990. Land is considered to be contaminated if either:
- The land is causing significant harm to people, ecosystems or infrastructure, or there is a significant possibility that such harm could be caused.
  - Pollution of controlled waters is being, or is likely to be caused.
- 6.4 The following situations are defined as being where harm is to be regarded as significant:
- Chronic or acute toxic effect, serious injury or death to humans.
  - Irreversible or other adverse harm to the ecological system.
  - Substantial damage to, or failure of buildings.
  - Disease, other physical damage or death of livestock or crops.
  - Pollution of controlled waters.
- 6.5 The risk assessment uses a Source – Pathway – Receptor methodology for assessing whether a source of contamination could potentially lead to harmful consequences, that is there needs to be a pollutant linkage for harm to be caused, consisting of:
- A source of pollution.
  - A pathway for the pollutant to move along.
  - A receptor that is affected by the pollutant.
- 6.6 The pollutant source can be an identified leak of oil, an area of radio-active contamination or an area of dumped waste, for example. The pathways include transport of the contaminant by groundwater, surface water, windblown dust, vapours, etc, and for humans will include the means by which contaminants enter the body, e.g. dermal contact, ingestion, inhalation and so on. Receptors include people, other living organisms and the built environment. Groundwater and surface waters are receptors as well as being contaminant pathways.
- 6.7 The Source – Pathway – Receptor methodology relationship allows an assessment of the environmental risk to be determined, based on the nature of the source, the degree of exposure of the receptor to the source, and the sensitivity of the receptor.

## On Site Contamination Sources

- 6.8 Historical and recent industrial activity on the site may have led to soil and or groundwater contamination. A brickworks has been operational on the site since at least 1912. Structures associated with the brickworks have included kilns and chimneys, tanks, of unknown contents and a tramline. These activities have the potential to have impacted the site with metals, PAHs, hydrocarbon contamination and asbestos in made ground.
- 6.9 During the site visit it was noted that the roof tiles of the existing building may contain asbestos.
- 6.10 The site has undergone a series of redevelopments and it is possible that the demolition waste from previous structures may have been used as backfill on site. This Made Ground may contain contaminants such as asbestos, metals and hydrocarbons.
- 6.11 A ground investigation, undertaken in 2005, revealed two areas of contamination on the site. These are along the northern section of the eastern boundary and approximately in the centre of the site where elevated TPHs were detected.
- 6.12 Ground gases may be present on site due to the presence of Made Ground. Gas monitoring was carried out during the 2005 ground investigation and recorded slightly elevated concentrations of methane and carbon dioxide, which was attributed to the presence of Made Ground. This data is considered limited in its value however as only one monitoring event was undertaken.
- 6.13 Potential historical landfill operations (on site) may also result in the generation of ground-gases, particularly from the breakdown of organic waste materials.

## Off Site Contamination Sources

- 6.14 Soil and groundwater contamination of surrounding areas may have occurred due to industrial activity on land surrounding the site and consequently the potential exists for this contamination to impact on the site.
- 6.15 Off-site contaminating activities include the brickworks adjacent to the north and south, a rail track adjacent to the west, landfills 400m and 600m to the north, a garage 200m to the east and a sewage works 300m to the south west.
- 6.16 The brickworks include kilns and chimneys, (as on site) and during the site visit crude oil tanks, metals drums, settling ponds and both a disused and a new electrical substation were observed on land adjacent to the north of the site.
- 6.17 The former (north) and current (south) brickworks are potential sources of metal, PAH and hydrocarbon contamination.
- 6.18 The electrical substations may be sources of PCB contamination although PCB testing was undertaken during the 2005 ground investigation in the vicinity of the former substations and none was detected.
- 6.19 The landfill sites, Cleanaway (closed) and Brookhurst Wood (operational), are situated approximately 400m and 600m to the north north-west of the site respectively. The landfill sites are potentially a source of a variety of contaminants including metals, hydrocarbons, nitrogen

compounds and ground gases, although their distance to the site is likely to preclude impacts on the site.

- 6.20 The construction of the railway line prior to 1875, and its subsequent running, may have caused soil and groundwater contamination. The nature of the material used for construction is unknown and may include elevated hydrocarbons, metals and asbestos.
- 6.21 The sewage works and associated settling ponds and the garage to the east of the site may be a source of ground and or groundwater contamination.
- 6.22 A ground investigation undertaken in 2005 revealed an area of contamination present beneath a floor slab to the north west of the site. The elevated hydrocarbons were observed in trial pits and confirmed by contamination testing and are believed to be from a leaking fuel pipe-line. Based on testing undertaken on samples taken from closer to the site (i.e. south of this contaminated area), the leak may have migrated toward the south and as a result may be present beneath the north west of the site.

## Receptors and Pathways

- 6.23 Potential receptors and pathways from identified sources to receptors are believed to be as follows:

Receptor	Pathway
Site / construction workers and off-site human receptors (i.e. neighbours) during proposed development.	<p>Dermal contact, ingestion, inhalation of soils, inhalation of dusts, from earthworks.</p> <p>Inhalation of volatile organic compound vapours from soils and groundwater.</p> <p>Inhalation of ground gases generated from former landfilling operations.</p>
Site users / visitors following proposed development.	<p>Dermal contact, ingestion, inhalation of particles from soils</p> <p>Inhalation of volatiles from soils and groundwater.</p> <p>Inhalation of gases from off site landfilling activity.</p>
Surface water.	Site surface run-off, groundwater migration and discharge.
Ground water.	Leaching from overlying soils, direct pollution.
Buildings and services.	Chemical attack.
Plants and vegetation.	Direct contact, uptake through roots.

- 6.24 Additionally, construction works on site may result in the following receptor-pathway linkages occurring:
- Earthworks bringing contamination to the surface.
  - New service trenches causing migration of soluble / mobile substances.
  - Piling for foundations may aid the downward migration of contaminants from potential made ground into natural strata.

- Excavations in made ground may concentrate ground gases causing a hazard to ground workers.
- Construction / development works may result in the generation of waste soil / spoil and dewatered arisings that would require appropriate management.

## Environmental Risk Assessment

6.25 Using criteria based on those presented in Section 6.3 of the CIRIA Report "Contaminated Land Risk Assessment: A Guide to Good Practice" (CIRIA Report C552) the magnitude of the risk associated with potential contamination at the site has been assessed. To do this an estimate is made of:

- The potential severity of the risk.
- The likelihood of the risk occurring.

6.26 An overall evaluation of the level of risk is gained from a comparison of the severity and probability, as shown below.

Probability	Severity				
		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

6.27 The identified potential Source – Pathway – Receptor linkages are described in more detail in the following sub-sections. It provides an assessment of the risks involved, indicating where appropriate whether any immediate action is required to mitigate certain risks. It also discusses, where appropriate, what longer term measures or remedial works may be required in the future if the site were to be developed.

### Future Site Users

6.28 The proposed development on the site will comprise two commercial buildings with parking and associated landscaping. In the areas of hardstanding, tarmac or concrete, which is considered to be the majority of the site, the pathway between potential soil contamination and site users will effectively be removed therefore minimising direct contact risks. However, in areas where soils are potentially exposed (i.e. areas of landscaping) this pathway still remains.

6.29 The potential presence of ground gases and volatile organic compounds (VOCs) may pose an inhalation risk to future users. Hardstanding may not provide a sufficient barrier for the ingress of ground gases into site buildings and further gas monitoring will be required to assess the likelihood of this risk.



- 6.30 Soil contamination has previously been identified to be present in two areas of the site and consideration will need to be given to the locations of soft landscaped areas. The data collected during the previous ground investigation cannot be used to accurately assess the risk to human health from TPH contamination as CWG TPH testing was not undertaken. Given that soil contamination is known to be present on site, and the potential for ground-gas or volatiles to be present at the site, **the risk to future site users is considered moderate.**

### **Construction Workers and Adjacent Human Receptors**

- 6.31 There is a potential for disturbance of contaminated materials during future redevelopment on the site. Thus, workers may potentially be impacted by contaminated dusts during earthworks, as well as direct contact with soils and groundwater. Given the minimal amount of groundwater encountered and the lack of contamination detected in groundwater during the 2005 Capita Symonds ground investigation, this risk to groundwater exposure is considered to be low.
- 6.32 During ground works there is the potential for ground gases and vapours to concentrate in excavations and pose an asphyxiation, poisoning and / or explosion risk to site workers.
- 6.33 Potential also exists for nearby human receptors (i.e. adjacent site users) to be impacted by the migration of soil dusts from the site during the construction phase of development.
- 6.34 Risks to these receptors would be expected to be of short-term duration only, however, and could be adequately controlled using the following measures:
- Use of appropriate Personal Protective Equipment (PPE) for construction workers, including gloves and dust masks, use of ground gas / volatile monitoring equipment (including personal gas alarms), and hygiene facilities.
  - Use of appropriate site control measures, e.g. wetting of excavated soils, to minimise the migration of contaminated dusts from the site to adjacent sites.

- 6.35 The presence of asbestos is a potential risk, based on historical filling activities at the site.

- 6.36 **Risks to construction workers and off-site human receptors are therefore considered to be low / moderate**, provided appropriate control measures are implemented during any redevelopment works.

### **Groundwater**

- 6.37 Based on the previous ground investigation it is unclear whether groundwater is present within the Weald Clay or is instead perched water within the Made Ground. In addition only one groundwater sample was collected from the site which does not provide a sufficient coverage of data for a conclusion to be drawn.
- 6.38 The previous ground investigation identified fissures within the Weald Clay which have the ability to transmit contamination into the deeper Tunbridge Wells Sands. This pathway into the deep aquifer may also be introduced if deep piling techniques are required as part of the development.
- 6.39 Based on the above assessment, **the risk to groundwater beneath the site is considered to be moderate.**

### Surface Water

- 6.40 Contaminated perched water has the potential to migrate towards the Boldings Brook to the west of the site.
- 6.41 Given the distance of the brook to the site (150m), **the risks to surface water** (from perched water migration and low-level groundwater migration) **are moderate**.

### Buildings and Buried Services

- 6.42 Concrete (e.g. foundations) can be subject to attack from sulphates in ground or groundwater. Additionally, hydrocarbons or solvents within the ground can permeate through plastic pipework, therefore tainting mains (potable) water supplies.
- 6.43 The 2005 ground investigation included some sulphate testing. Based on this information both the made ground and Weald Clay beneath the site will have a DS-2 design sulphate class. The pH of the soil samples was not given and as a result an accurate ACEC class for the site cannot be provided from these results.
- 6.44 **The risk to buildings and buried services has therefore been assessed as moderate.**

### Vegetation

- 6.45 On-site vegetation may potentially be adversely impacted through both uptake from soils and groundwater (e.g. through the root system), or alternatively deposition of dusts (e.g. on leaves).
- 6.46 The proposed development will include landscaped areas and soil. Perched water contamination may pose a risk to vegetation and as a result **the risk to vegetation is considered to be low / moderate**. However, this can be mitigated against with the use of imported 'clean' topsoil.

## 7 Conclusions and Recommendations

### Conclusions

- 7.1.1 The site surface currently comprises mostly hardstanding in poor condition. It is underlain by Made Ground – which is known to be contaminated in at least two areas on site – and Weald Clay which is a non-aquifer.
- 7.1.2 A number of potential contaminating sources were identified on and in the vicinity of the site. Potential contamination receptors were identified as current and future site users, future construction workers, surface water, future buildings and services, and vegetation.
- 7.1.3 The risk to future site users from ground gases and soil contamination is considered to be **moderate** based on the historical uses of the site and surrounds, and previous ground investigation findings.
- 7.1.4 Risks to construction workers associated with the proposed construction works and off-site human health receptors (i.e. site neighbours) are considered to be **low / moderate**, based on the expected contaminants at the site and provided appropriate control measures are implemented during site works.
- 7.1.5 The risk to groundwater is considered to be **moderate** as the existing ground investigation identified elevated concentrations of TPH but did not adequately characterise the breakdown between aliphatic and aromatic components. In addition there remains uncertainty as to the water bearing strata beneath the site as during the previous ground investigation only one water sample was tested.
- 7.1.6 The risk to the surface water receptor (Boldings Brook) is considered to be **moderate**.
- 7.1.7 The risks to buildings and buried services are considered **moderate** based on sulphate results obtained during previous investigations at the site.
- 7.1.8 The risks to vegetation are considered to be **low / moderate** as contamination is known to be present and landscaping will be included as part of the redevelopment.

### Recommendations

- 7.1.9 Based on the findings of the Phase 1 investigation, it is recommended that additional Phase 2 ground investigation works be undertaken as part of a planning condition in order to obtain:
- Additional information on the presence of soil contamination, particularly TPH, with respect to the proposed development, and to provide preliminary information on soil disposal options for surplus soils potentially generated as a result of the development.
  - Additional information on the presence, nature, quantity and contamination status of groundwater beneath the site.
  - Additional information on ground gas conditions at the site as previous monitoring took place during one visit only and according to current guidance (CIRIA 665) a site of this nature is likely to require multiple gas monitoring visits over a longer period of time in order to allow for adequate assessment of risks.



### Site Hb – Wealden Brickworks - Plates



Plate 1: View looking north from site entrance



Plate 2: Southern facade of main building





**Plate 3: View north along eastern edge of main building**



**Plate 4: Main building interior – un renovated section**





**Plate 5: Damaged suspected ACM's**



**Plate 6: Suspected ACM debris**





**Plate 7: View east along the southern perimeter**



**Plate 8: Disused building to the north east of the site**





**Plate 9: Trailer and bin storage in the north east.**



**Plate 10: Bin storage in the northern section**





**Plate 11: View to the west from the north east corner**



**Plate 12: View south along main building**





**Plate 13: Stockpiled construction and demolition waste**



**Plate 14: Stockpiled waste and suspected ACM fragment**





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