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ENVIRONMENTAL INVESTIGATION REPORT

**Units 25c - 25e
Solent Road, Havant, Hampshire**

Report No: IN12899 CL 001a

August 2012

Client: Hargreaves Properties Ltd

Report Prepared By:

Report Reviewed By:



Kirsten Mills

James Skinner

Executive Summary

We were commissioned by Rapleys LLP on behalf of Hargreaves Properties Ltd (Hargreaves) to carry out an intrusive environmental investigation at a site currently occupied by three industrial units, off Solent Road and Brockhampton Lane in Havant.

We undertook our investigation works on the 5th and 6th July 2012. We investigated the soil and groundwater quality at the site by constructing eight boreholes, five of which were completed as permanent groundwater monitoring wells. We recovered representative soil and groundwater samples from the site and submitted these for chemical analysis for a range of potential contaminants.

The geology underlying the site was found to comprise Made Ground and/or clay Alluvium, overlying flint gravel River Terrace Deposits and then the Upper Chalk. Groundwater was encountered at shallow depth within the Made Ground or River Terrace Deposits, with a resting elevation recorded at approximately 1.0m below ground level. Groundwater flow was calculated to be toward the west.

We recorded olfactory and/or visual evidence of hydrocarbons in samples of the Made Ground taken from a single borehole (Borehole Eight). No other obvious evidence of contamination was encountered during our site investigation or ground water monitoring works.

Our chemical testing identified low concentrations of hydrocarbon compounds in soil and/or groundwater taken from two locations: on the eastern corner of the site (BH8) and in a central location close to former fuel tanks (BH4).

We have used the investigation data to generate a conceptual site model and then completed a Generic Quantitative Risk Assessment. Our risk assessment results indicate that the concentrations of various organic and inorganic compounds identified during our investigation do not pose a potentially unacceptable risk to current or future site workers.

With regard to environmental receptors, and specifically the underlying shallow River Terrace Deposit aquifer, our Generic Quantitative Risk Assessment indicates that concentrations of hydrocarbon compounds encountered in groundwater from BH8 and BH4 fractionally exceed relevant generic acceptance criteria.

Based on our investigation data, however, we consider it unlikely that the low concentrations of hydrocarbons encountered pose a potential long-term risk to the identified environmental receptors, and note that no detectable hydrocarbon concentrations were recorded in the hydraulically down-gradient wells installed along the sites western boundary.

We do not consider that our site investigation identified any significant contamination of soils or groundwater at the site. We also did not identify any current site activities that we consider are likely to pose an immediate ongoing risk of contamination.

Our investigation and subsequent risk assessment of the site have not identified any contamination issues that we would consider to be a significant constraint to redevelopment for continued commercial use. We recommend that this report be submitted to the Local Planning Authority in support of future planning applications and/or to assist in discharge of possible conditions associated with the proposed development scheme.

Recommendations relating to the proposed redevelopment are included in the body of our report.

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Attachment One:	Notice to Interested Parties
Attachment Two:	Borehole Logs
Attachment Three:	Map Data and Environmental Data Report
Attachment Four:	Chemical Analysis Certificates

1 Introduction

1.1 The Purpose of This Assessment

We were commissioned by Rapleys LLP on behalf of Hargreaves Ltd (Hargreaves) to carry out an intrusive environmental investigation at a site currently occupied by three industrial units, off Solent Road and Brockhampton Lane in Havant. We understand that Hargreaves have purchased the freehold of the site and propose to redevelop the existing units and neighbouring plots to the east for future retail use. Our investigation was therefore commissioned in support of future planning applications.

The purpose of our assessment is to determine whether the quality of soil and/or groundwater underlying the site has been impacted with pollutants associated with past operations or activities and whether any contaminants present might pose an unacceptable (long-term) risk to future site users and/or any environmental receptors that are associated with the site.

All the activities comprising this assessment were carried out in accordance with the procedures set out in our Quality Manual. Your attention is drawn to the Notice to Interested Parties included as Attachment One.

1.2 The Scope of This Assessment

Our assessment of the site was carried out in the following parts:

- Preliminary Risk Assessment - A desk based study comprising a review site specific information that is readily available in the public domain to develop a conceptual site model to assess potential pollutants, pathways and receptors associated with the site;
- A walkover survey to identify visual signs of pollution or potentially polluting activities;
- An intrusive soil investigation comprising the construction of eight boreholes, drilled using our Geoprobe direct-push sampling system. Five of the boreholes were completed as groundwater monitoring wells;
- Collection and chemical analysis of representative soil and groundwater samples;
- Development of a Conceptual Site Model to assess potential pollutants, pathways and receptors associated with the site and completion of a Generic (Quantitative) Risk Assessment; and
- Provision of recommendations relating to the presence of potential pollutants identified during our investigation.

1.3 Previous Work

As part of our environmental assessment we have reviewed the following environmental investigation and monitoring reports for two plots located adjacent to our subject site:

- Ref 1 – Letter report detailing ongoing groundwater monitoring and assessment at Phase 3 and 4 Development Area, Solent Road, Havant, September 2007 – Completed by WSP Environmental UK Ltd (WSP) on behalf of Hargreaves Ltd (WSP Letter Ref: 12061252).
- Phase 2 Environmental Site Investigation Report for Hargreaves, August 2010 – Completed by RPS Health, Safety and Environment (RPS) on behalf of Hargreaves Ltd (RPS Report ref. HLEI12725/001R).

Whilst neither report contains information regarding the investigation site itself, both contain background information regarding the general site setting and works completed on neighbouring plots. We have used information from these documents, where relevant, within our current report.

2 Site Details

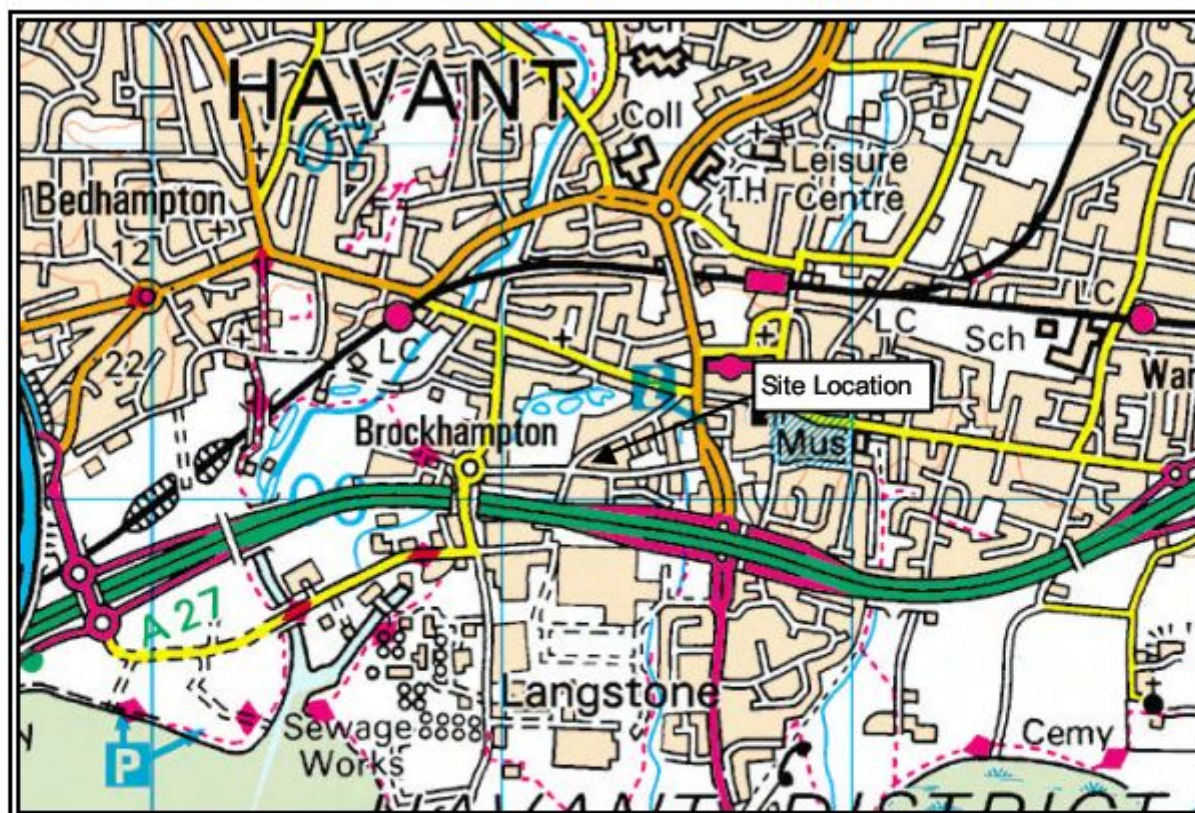
2.1 Site Description, Location and Setting

The site is located at National Grid Reference 471287 106097 at approximately 6m above Ordnance Datum. The site occupies a roughly triangular plot of approximately 0.71ha and currently comprises three industrial units of varying size, two of which are occupied by tenants and the third empty.

The site is situated off Solent Road and Brockhampton Lane, approximately 0.75km south of the centre of Havant in Hampshire. The surrounding land use is predominantly a mixture of commercial, industrial and retail properties with occasional terraced residential cottages. A summary of the surrounding land use is provided as Table One below, and a map showing the site's locality is also provided below as Figure One.

Direction	Distance	Surrounding Land Uses
North	~25m	Industrial Units (Tanneries Industrial Estate) located beyond Brockhampton Lane. Residential properties located to the north west. Brockhampton Springs located approximately 75m to the north west.
East	~10m	Commercial units, Pizza Hut restaurant and retail park beyond
South	~15m	Industrial units beyond Solent Road. Tesco supermarket and petrol station to the south east.
West	~15m	Residential properties beyond Brockhampton Lane with the Bosmere Medical Practice beyond.

Table One: Surrounding Land Use



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Figure One – Map Showing Site Location

2.2 Future Development

We understand from a review of preliminary scheme design drawings provided by Hargreaves, that it is proposed to redevelop the three existing industrial units on the site, and neighbouring units to the east, as a single new retail unit with associated parking and delivery areas.

2.3 Licenses and Permissions

We understand that as part of pre-planning application consultations with Havant Borough Council, the Environmental Health Department raised a number of observations and comments relating to potential historical contamination issues associated with the site and neighbouring plot to the east.

It was highlighted that contamination was encountered on the neighbouring plot (now Pizza Hut) during redevelopment works completed in 2007, although these issues were addressed to the satisfaction of the Local Authority and Environment Agency. There was also anecdotal information suggesting potential historical solvent contamination on the site relating to an 'offsite source', although we were unable to obtain confirmatory details of this event.

On the basis of the available evidence, Environmental Health advised that further contamination assessment is justified at the site and that, if planning consent were granted for the development, specific planning conditions requiring contamination assessment should be imposed.

Whilst our assessment has not been compiled to directly satisfy any specific planning conditions for the site, we have reviewed the recommended requirements of likely conditions. The information contained in this report should therefore assist in satisfying any such requirements.

3 **Environmental Desk Study**

This section of our report summarises the site's environmental setting based on a review of readily available information for the site. We have used this information to identify potential contaminant sources and sensitive receptors, which we have subsequently used in conjunction with the results of our intrusive investigation to generate a Conceptual Site Model, presented in Section 5.

3.1 Geology

We have assessed the geology of the site's locality from available BGS maps and memoirs. These show the geology to comprise (in succession, from the surface downward):

Unit Ia: Alluvium – Most likely to comprise soft to firm compressible clays, possibly containing layers of silt, sand, occasional peat and gravel. The estimated thickness of this unit under the site is up to 4m.

Unit Ib: Head Deposits – Composition dependent upon upslope source, although generally comprising poorly sorted and mixed deposits of clay, gravel and sands. The estimated thickness of this unit under the site, if present, is approximately 1-2m.

Unit Ic: River Terrace Deposits (Undifferentiated) – Sand and flint gravel with potential lenses of silt, clay or peat. The estimated thickness of this unit under the site is up to 9m.

Unit II: Upper Chalk: Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culver Chalk Formation and Portsdown Chalk Formation (Undifferentiated) – White Chalk with flints. The estimated thickness of this unit under the site is greater than 60m.

We note that the shallow drift geology listed above may not all be present across the site. Expected thicknesses of the units have been derived from existing borehole logs for nearby plots of land.

3.2 Hydrogeology

3.2.1 Groundwater Sensitivity

The Environment Agency Groundwater Vulnerability Map shows the site location as overlying a Principal aquifer. These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. We interpret this to refer to the Upper Chalk.

The Environment Agency Groundwater Vulnerability Map also shows the site location as overlying a Secondary Aquifer (Class A). These are 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. We interpret this to refer to the Alluvium, River Terrace Deposits and Head Deposits.

We consider the site could potentially pose a direct risk of impact to the underlying aquifer units.

3.2.2 Public Water Abstractions and Source Protection Zones

The Environment Agency defines Source Protection Zones around groundwater abstractions used for public water supply. The Zones are defined by the estimated travel time of potential contaminants to the abstractions. This travel time can be influenced by factors such as the underlying geology or the volume of groundwater being abstracted. Source Protection Zones are therefore areas that may be considered to be particularly sensitive to groundwater impact.

The site does not lie within a currently defined Source Protection Zone.

However, we have identified public water supply abstractions located ~340m to the northwest, ~700m to the northwest and ~760m to the west, as detailed in the table below.

Reference / name	Annual Volume (cubic metres)	Distance and Direction from Site	Aquifer	End Use
Bedhampton Ps Spring No. 2	35,770,000	340m NW	Upper Chalk	Potable Water Supply
Bedhampton Ps Spring No. 1	35,770,000	700m NW		
Havant Ps	35,770,000	760m W		

Table Two: Licensed Groundwater Abstractions

The site is shown located ~80m from a linear inner source protection zone (SPZ 1) associated with the two nearest abstractions, actually comprising groundwater springs, and a geological horizon running east west. The geology between the site and the abstractions is likely to be permeable and, as such, there is the potential for any contamination associated with the site to impact the abstractions, depending on the flow direction and hydraulic dynamics of the springs.

3.3 Hydrology

The nearest surface water to the site is an unnamed tributary to the Brockhampton Stream, approximately 80m to the northwest. Other surface water features in the vicinity of the site include: an unnamed tributary to the Lavant Stream, approximately 185m east; the Brockhampton Stream, approximately 190m northwest; and the Langstone Mill Channel, approximately 200m to the southeast. The Environment Agency has not published any chemical or biological quality data on these watercourses.

We consider these watercourses are likely to be in continuity with shallow groundwater underlying the site and, given the permeable nature of the geology, they are considered potentially at-risk from any contamination present under the site.

We have not identified any surface water abstractions are licensed by the Environment Agency and located within 1km of the site.

3.4 Regulatory Comment

We have obtained the following information relating to the site:

3.4.1 Landfill Sites

The Environment Agency records show that there are no current or past landfill sites within 250m of the site.

The site is therefore unlikely to be at-risk of impact from elevated concentrations of hazardous ground gases that are commonly associated with landfill sites e.g. methane or carbon dioxide. As such we do not consider monitoring or assessment are required as part of any future investigation works and no special precautions are likely required to prevent landfill gas infiltration into the current building or future developments at the site.

3.4.2 Radon Gas

The site is located in an area where the National Radiological Protection Board have determined that 3-5% houses exceed the recommended Action Level for radon for existing homes in the UK of 200Bqm⁻³ (averaged over a year). This places the site in a medium risk area for radon.

Under the Ionising Radiations Regulations (1985) radon prevention measures may have to be installed in any new buildings constructed at the site in order to prevent radon infiltration. The local Environmental Health Department or local Health and Safety Executive will be able to further advise on whether radon measurements and/or protection measures are required at the site. The National Radiological Protection Board is able to provide a measurement service for radon gas if required.

Details of the measures that should be taken to provide protection against radon and guidance on the technical solutions that are required to satisfy Building Regulations requirements can be found in the BRE Report BR211 - Radon: Protective measures for new dwellings.

3.4.3 Flood Risk

The site is located in an area that is designated by the Environment Agency as being potentially at risk of flooding. The Environment Agency has classified the western half of the site's location as being within a Zone Three floodplain with the nearby Brockhampton Stream tributary, and the underlying shallow groundwater are shown to pose the potential flood risk also.

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. The site does not have flood defenses within 250m and is not located within an area benefiting from flood defenses.

We are aware that detailed assessment of potential flood risk is being undertaken by others as part of the proposed planning application submission.

3.4.4 Ecology

The following ecological receptors were identified in the vicinity of the site:

- Langstone Harbour – a Site of Special Scientific Interest, approximately 890m south;
- Chichester Harbour – an Area of Outstanding Natural Beauty, approximately 790m southeast.

3.5 Site History Review

3.5.1 Historic Maps

We have assessed the site's history from available Ordnance Survey maps of the locality. Our review has been completed to identify potential historical sources of contamination or contaminative land uses that may have impacted soil or groundwater quality beneath the site.

Selected historical maps are reproduced in Attachment Three and are commented on overleaf.

- 1866-1869: The site is shown as agricultural/pastoral land. There is a spring shown present on site with the resultant stream shown running east parallel to the southern site boundary. Brockhampton Lane is already present along the northwest boundary of the site. There is a 'washing factory' shown approximately 30m to the northwest. There is a reservoir shown approximately 120m northwest and a tannery 200m to the northwest. There is another surface water feature labelled as Milldam(?), approximately 200m to the southeast. Portsmouth Water Works is shown 250m to the northwest. The surrounding area is agricultural/pastoral land or residential housing.
- 1896-1897: No significant changes to the site. The washing factory is now shown as the Chamois Leather Works. A parchment works has been built approximately 150m to the northeast. The residential housing has increased within the surrounding area. No further significant changes to the surrounding area.
- 1907-1909: No significant changes to the site. A sewage works has been built 200m to the southeast. The tannery is now shown redeveloped by the Water Works. No further significant changes to the surrounding area.
- 1931-1932: A number of small buildings have been developed along the southern boundary of the site and the spring and stream are no longer visible (possibly indicating the watercourse has been culverted). The sewage works has expanded in size. No further significant changes to the surrounding area.
- 1942: No significant changes to the site and the surrounding area.
- 1952-1960: No significant changes to the site. A small works building is now shown ~250m to the northeast.
- 1966-1973: The site and surrounding area has been developed with industrial buildings. The site has a Warehouse, a (non-descript) Factory and a Plastics Factory shown occupying the building configuration that currently exists on site, with an electricity substation on the north boundary. The surrounding area is shown extensively developed with six electronics factories, two electroplating factories, another plastic factory, five engineering works, three depots, a foundry, five unidentified factories and a number of warehouses and large unidentified buildings within a 250m radius of the site. Solent Road has been built along the southern boundary of the site and the Havant Bypass has been built approximately 100m to the south of the site. The sewage works to the south has been redeveloped into a large unidentified building positioned on an embankment.
- 1987-1993: No significant changes to the site. A tank of unknown contents and size is labelled next to an unidentified industrial unit 100m to the north of the site. No further significant changes to the surrounding area.
- 2002: No significant changes to the site. The industrial buildings to the south, opposite the site on the Solent Road have been demolished and redeveloped as a Tesco superstore. No further significant changes noted to the surrounding area.
- 2012: No significant changes noted to the site. The large building, which replaced the sewage works to the south, is now labelled as Langstone Technology Park. The area to the east is shown redeveloped with the current units.

3.5.2 Regulatory Comment

Information from the Environment Agency's National Incidents Reporting System shows two recorded incidents involving oils and fuels to the north and northwest of the site in 2001 and 2002. Both are recorded as "minor" impact with respect water, with the closer of the two also recorded as "minor" impact with respect to land.

Whilst neither incident relate to the site itself, there could be a potential risk of contaminants migrating onto the site, depending on groundwater flow direction.

As previously discussed, Havant Borough Council have reported anecdotal reports of solvent contamination being present on the western half of the site, resulting from an offsite source. Additionally, Havant Borough Council has stated that several investigation reports relating to the site immediately to the north, the Tanneries Industrial Estate, indicate the presence of "hydrocarbon and solvent" contamination.

3.5.3 Previous Environmental Assessment Information

We have been provided with two reports detailing environmental assessment completed on two neighbouring plots. Whilst these works do not relate to the site directly, they provide background information regarding the site setting and also allow a review of any potential offsite sources of contamination that could be present. The reports are summarised briefly below:

Ref 1 – Letter report detailing ongoing groundwater monitoring and assessment at Phase 3 and 4 Development Area, Solent Road, Havant, September 2007 – Completed by WSP Environmental UK Ltd (WSP) on behalf of Hargreaves Ltd (WSP Letter Ref: 12061252

This letter report details verification monitoring works completed on the site to the immediate east of the site, now occupied by the Pizza Hut restaurant. We understand that a below ground fuel tank was encountered during the redevelopment of this plot in 2007 and contamination of the underlying soils and groundwater in the vicinity of the tank was identified and remediated at the time to the satisfaction of the Local Planning Authority and Environment Agency.

The WSP report details the results of a sixth groundwater verification monitoring visit to the site. The monitoring data is reported to continue to indicate decreasing concentrations of hydrocarbons in groundwater. No additional works are recommended and it is assumed that the monitoring works were being completed as part of an agreed post-remedial validation period.

Ref 2 - Phase 2 Environmental Site Investigation Report for Hargreaves, August 2010 – Completed by RPS Health, Safety and Environment (RPS) on behalf of Hargreaves Ltd (RPS Report ref. HLE112725/001R).

This report details the findings of an intrusive environmental investigation completed at an adjacent property to the southwest of the site, beyond Solent Road in August 2010. The report describes this neighbouring plot as being used as a small metal cutting factory and states that an underground storage tank and two oil-water interceptors were present from previous vehicle depot uses.

No contamination was found in excess of screening values appropriate for commercial land use in the soil or groundwater sampled during the investigation. A small area of Japanese Knotweed was highlighted.

3.6 Site Walkover Observations

Two of the current units at the site are occupied by various tenants and the other building was empty and locked at the time of our investigation. As such we were not generally able to complete a detailed environmental audit of the building interiors or activities being carried out therein. A summary of the observations we made during our site investigation works and inspection are summarised below.

For the purposes of our observations we have used the original building numbering scheme, with the three units designated 25e (western building), 25d (central building) and 25c (eastern building). Photographs supporting our observations are provided in the following sections. The general site layout is shown as Figure Two, as Page 15.

3.6.1 Unit 25e

This is the smallest of the buildings present on the site and occupies the western area of the site. It comprises a small warehouse structure with offices located at the northern end. The building is occupied by Navitron Systems Ltd, a manufacturer of marine navigation systems. It appears that the former warehouse space has been internally sub-divided with block work walls to form various parts stores and small workshop areas.

We did not note any evidence of fuel storage tanks or waste storage areas associated with the building. There were limited parking areas along the Brockhampton Lane boundary of the unit, one paved with concrete and another unpaved gravel.

There were two electricity sub-stations located along the western boundaries of Unit 25e, both contained within locked compounds.



3.6.2 Unit 25d

This building was empty and locked at the time of our investigation. It appeared that it had recently been occupied by a company called Shore Laminates, which we understand fabricate laminate materials including kitchen worktops and 'wet walls'. Again the building comprised a warehouse structure with offices on the northern end. The warehouse was empty with all previous machinery removed.

Along the eastern edge of the building was a poor quality tarmac access road, formally leading off Solent Road and running between Units 25d and 25e. The tarmac was breaking up in several places and numerous repair patches and scars were evident. There is a security gate across the access road approximately half way along the buildings and the locked section, toward Solent Road, was fairly overgrown.

We noted the presence of two above ground fuel tanks, a large boiler contained within a brick boiler room and a locked, brick built flammable liquid (warning signs indicate 'flammable petroleum mixture') store. We also noted a large IBC container full of glue which had set hard.

The two fuel tanks were both raised from the ground on brick plinths, neither contained by any sort of bund. Both were constructed from steel. The larger tank, with a capacity estimated at 6,750litres, was shown to have contained diesel and was fitted with a metered dispensing pump. The smaller tank, with a capacity of 1,250litres, was shown to contain gas oil and appeared to have been associated with the boiler.

The boiler room contained a large boiler structure with what appeared to be a furnace at the base. This contained ash and it is therefore likely that waste wood from the site could have been burnt to at least part power the boiler.

We could not gain access to the brick flammable liquids stores. Given the previous activities that took place in the building we would consider it likely that this was used for the storage of glues and organic solvents.

There was no evidence of any below ground tanks or oil/water interceptors in the vicinity of the building.



Photograph Three – Unit 25d looking south



Photograph Four – Flammable liquids store, fuel tanks and boiler room located along eastern site of Unit 25d



Photograph Five – Boiler room, Unit 25d



Photograph Six – Fuel tanks, Unit 25d

3.6.3 Unit 25c

This is the largest of the three buildings and has been sub-divided into four separate areas, each occupied by a separate tenant. The southern end (facing Solent Road) is occupied by Solent Dry Cleaners, there is a MOT and vehicle repair workshop, a caravan repair centre and then at the northern end a car parts supplier. Overall the original building is, again, a large warehouse structure with offices toward the northern end. Various modifications have been made over the years to sub-divide the structure.

Whilst detailed inspections of the various businesses were not possible we obtained the following information from conversations with the various tenants:

- The dry cleaning operation comprises a series of sealed machines and there is no bulk chemical storage on site. We understand that the operation is regulated and permitted by the Environment Agency in terms of emissions and no issues have ever been reported. The dry cleaner has been present for 9 years on the site.
- The vehicle workshops comprise 6no hydraulic vehicle ramps and a paint booth. We understand there is no below ground waste oil storage, and all lubricating oil and/or waste oils are stored in 205litre drums prior to disposal via tanker.
- The caravan repair workshop comprises an open warehouse space. We did not observe any waste storage areas.
- The motor parts supply company comprises office space and warehousing used for parts storage.

We did not observe any oil/water interceptors or evidence of below ground fuel storage at the site. The general condition of the warehouse floors appeared to be good, although the external pavement is of relatively poor quality and exhibits numerous repair scars.



Photograph Seven – Unit 25c southern end



Photograph Eight – Unit 25c looking south

3.7 Summary of Potential Contaminant Sources

Based on our review of the site, we have identified the following potential sources of contamination or contaminative land uses that may have impacted soil or groundwater quality beneath the site:

- The site's various current or recent land uses, including car repair workshops, dry cleaning operations and fuel storage (tanks and flammable liquid store). Whilst impact is unlikely, due to the actual nature of the operations, potential contaminants are used and stored on site;
- The site's historical tannery, industrial and manufacturing uses, potentially causing contamination from inorganic compounds, hydrocarbon compounds or chlorinated solvents;
- Known historic contamination of the adjacent site to the east and units to the north involving various hydrocarbon contaminants;
- The surrounding factory and warehouse land uses, which may have involved heavy metals or petroleum related compounds.

4 Results of our Investigation

4.1 Review of Buried Utilities

To mitigate the risk of hitting underground services, we collected and reviewed information relating to potential services present from the various public utility providers. We completed a survey of each borehole location, visually inspecting manhole covers and inspection pits and also used a Cable Avoidance Tool (CAT) scanner to locate and confirm service routings.

We noted that the underground services at the site location had recently been surveyed in detail, with paint still marking the location of the majority of services.

In areas where we were not completely confident of the location of underground services, we also hand dug inspection pits at selected borehole locations to 1.2m depths to ensure they were clear of buried infrastructure.

4.2 Borehole Investigation

4.2.1 Description of Works Completed

We undertook an intrusive investigation of the site on the 5th and 6th July 2012.

We investigated the soil and groundwater quality at the site by constructing eight boreholes using our Geoprobe 5400 direct-push sampling system across the site. All boreholes were constructed to sufficient depths to confirm underlying groundwater quality, generally comprising a target depth of ~4.0m.

Representative soil samples were recovered from each borehole in sealed liners and logged onsite by a suitably qualified technician. Sub-samples were preserved in glass jars and stored in cool boxes during transportation to the laboratory for subsequent analysis.

We completed five of the boreholes as permanent groundwater monitoring wells. These wells were subsequently monitored and groundwater samples obtained. Prior to sampling, resting groundwater levels were recorded using a water-level meter. Samples were collected, using disposable bailers, once sufficient purging of standing water had been completed.

Samples obtained were also preserved in amber glass bottles and stored in cool boxes during transportation to the laboratory for subsequent analysis.

Borehole and well locations are provided as Figure Two overleaf.

4.2.2 Soil Stratigraphy

The following strata were identified by the investigation.

Layer I Made Ground – Concrete / tarmac / topsoil / hogging over MEDIUM DENSE red/grey/brown/black/cream very clayey GRAVEL or FIRM black/brown/grey sandy very gravelly CLAY. Including red brick fragments, flints and clinker.

Layer IIa Alluvium – SOFT to FIRM grey/black/brown slightly sandy slightly gravelly CLAY.

Layer IIb Head Deposits – MEDIUM DENSE black grey brown very clayey flint GRAVEL or FIRM creamy grey very gravelly CLAY. Occasional peat inclusions.

Layer IIc River Terrace Deposits – LOOSE to MEDIUM DENSE orange/cream/blue/grey/black/brown sandy clayey chalky flint GRAVEL. Occasional very coarse sandy layers.

Layer III Upper Chalk – Structureless creamy brown becoming creamy white weak highly weathered CHALK with frequent to rare flints (GRADE VI). Becoming blocky (GRADE V) with depth. Occasional SOFT creamy brown chalky clay bands.



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SUBADRA ARCHIVE NO : IN12899 DR 00

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KEY

- BUILDING OUTLINE (SUBJECT SITE)
- INVESTIGATION SITE BOUNDARY
- BH1 PERMANENT WELL LOCATION
- BH1 BOREHOLE LOCATION



BOREHOLE LOCATION PLAN

FIGURE TWO

The distribution of these strata between boreholes is summarised on the following Table and detailed logs for each are included in Attachment Four.

Borehole	One		Two		Three		Four	
Soil Layer	from	to	from	to	from	to	from	to
Layer I	0.0	1.4	0.0	1.0	0.0	0.3	0.0	1.6
Layer IIa	-	-	-	-	0.3	1.5	-	-
Layer IIb	-	-	-	-	1.5	2.0	1.6	1.8
Layer IIc	1.4	2.2	1.0	2.4	2.0	3.6	1.8	3.3
Layer IIIa	-	-	2.4	3.6	-	-		
Layer IIIb	2.2	4.8	3.6	4.8	3.6	4.8	3.3	4.8
Borehole	Five		Six		Seven		Eight	
Soil Layer	from	to	from	to	from	to	from	to
Layer I	0.0	0.9	0.0	0.8	0.0	1.9	0.0	1.6
Layer IIa	0.9	1.5	-	-	-	-	1.6	2.3
Layer IIb	1.5	2.0	0.8	1.5	-	-	-	-
Layer IIc	2.0	3.6	1.5	4.0	1.9	>4.8	2.3	3.8
Layer IIIa	-	-	-	-	-	-	-	-
Layer IIIb	3.6	4.8	4.0	4.8	-	-	3.8	4.8

All dimensions in metres below ground level

Table Three: Intrusive Investigation - Soil Stratigraphy

The thickness of Made Ground encountered beneath the site varied in depth, from no obvious layer being present to 1.9m depth of material containing clinker and rubble. There was no obvious trend to the depths and variable composition.

The shallow drift deposits comprising Alluvium and/or Head Deposits were found inconsistent across the site and detailed differentiation was difficult. We did encounter River Terrace Deposits in all of the boreholes, however, overlying the Chalk. The depth to the underlying Upper Chalk appears to increase toward the north and east of the site and Chalk was entirely absent from Borehole Seven, likely due to the larger depth of River Terrace Deposits.

A layer of clay in Borehole Two between the River Terrace Deposits and the Upper Chalk has been interpreted as a marl band associated with the Upper Chalk, however this was not repeated in any other location. This interpretation was made on the basis of an existing borehole to the north.

4.2.3 Groundwater

We encountered initial groundwater strike at approximately 1.2m below ground level in the Made Ground or River Terrace Deposits. The depth of groundwater strike varied across the site and we consider the shallow clay geology could well be locally confining water contained in underlying River Terrace Deposits.

At rest groundwater levels were recorded at approximately 1.0m below ground level. Our groundwater monitoring data is summarised in the following table.

Borehole	Groundwater – Initial Strike	Groundwater Level – At Rest	Depth to Base of Well	Strike Layer
One	1.2	1.13	4.32	Made Ground
Two	No strike noted	1.02	3.62	-
Three	1.0 and 2.0	No well installed		Alluvium and River Terrace Deposits
Four	1.2	1.00	3.55	Made Ground
Five	1.1	No well installed		Alluvium
Six	1.0	0.96	3.50	Head Deposits
Seven	1.7	No well installed		Made Ground
Eight	2.0	1.26	3.45	Alluvium

All dimensions in metres below ground level

Table Four: Groundwater Data

We have also used our monitoring data of the 6th July 2012 and site levels obtained from our GPS surveying equipment to plot the piezometric surface in order to provide an indication of the direction of groundwater flow beneath the site. The results of our survey indicate that the direction of flow is generally towards the west. This trend is shown in Figure Three on the following page.

We carried out rising head tests on all installed wells on 6th July 2012. The results are summarised in the following table and presented in Attachment Four.

Borehole	Layer	Permeability	
		(m/second)	(m/day)
One	Made Ground	Instant Recharge*	
Two	Made Ground	Instant Recharge*	
Four	Made Ground	7.67x10 ⁻⁶	0.66
Six	Head Deposits	Instant Recharge*	
Eight	Alluvium	Instant Recharge*	

Note: * - Unable to purge sufficient water to draw down water levels to complete meaningful permeability test

Table Five: Rising Head Test Results – 6th July 2012

Groundwater in Boreholes Two, Four, Six and Eight recharged instantly and we were not able to get a measurable value for permeability. The recorded permeability ranged from 0.66m/day to instant recharge within the shallow Made Ground and/or River Terrace Deposits, showing the high variability of the layer.

4.2.4 Observed Contamination

We recorded olfactory and/or visual evidence of hydrocarbons in Made Ground soils taken from Borehole Eight between 1.0 and 1.3m depth.

No other evidence of contamination was encountered during our site investigation or groundwater monitoring works.



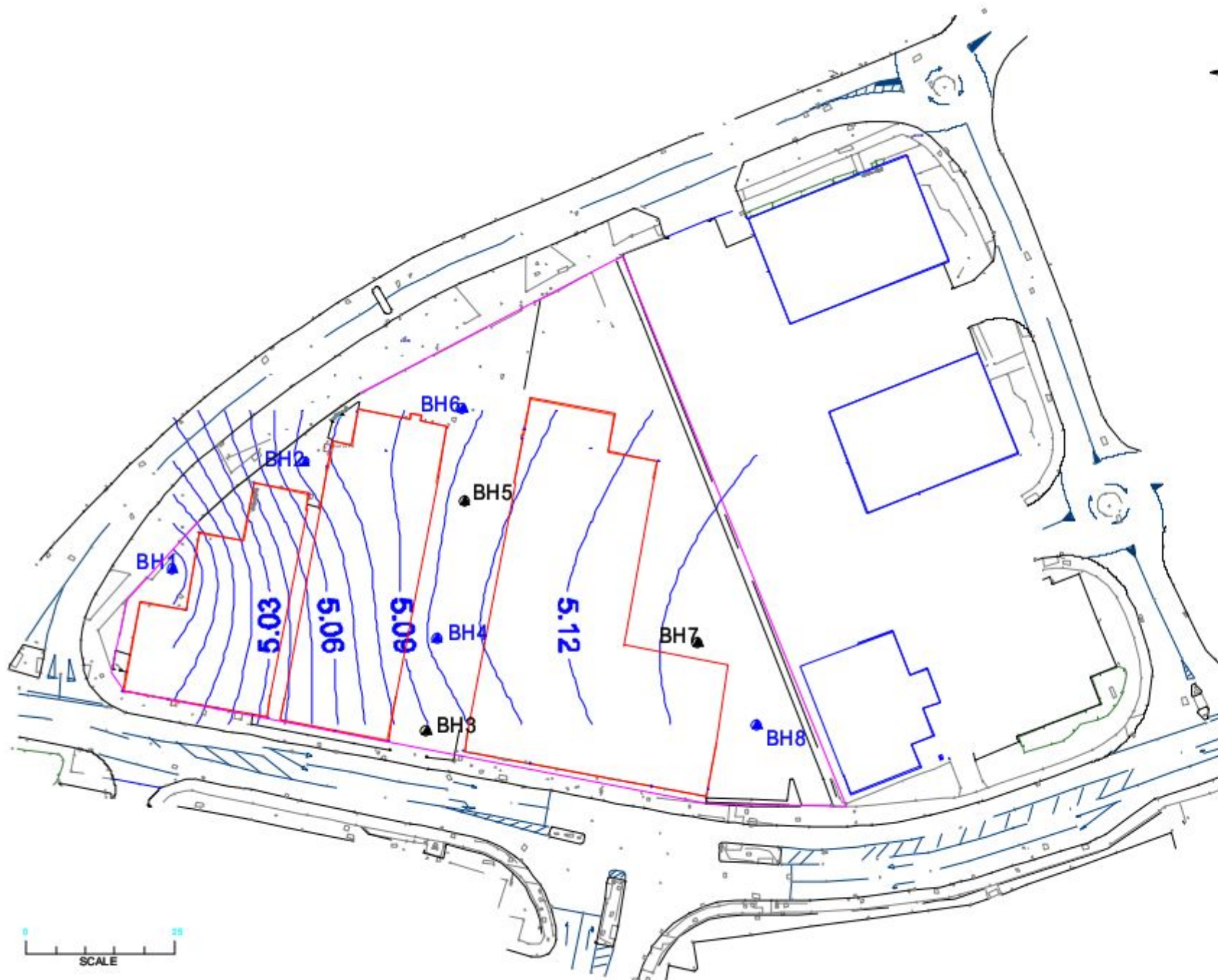
SUBADRA

Consultants in the Earth Sciences

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KEY

5.12
Groundwater elevation
(m above site datum)



Drawing File Reference:
IN12899 DR 004 Groundwater 06/07/12

Scale:	Date:	Drawn:	Auth'd:
see scale bar	17/07/12	KM	JS

Project:
Retail Unit, Havant

Title:
Groundwater contours
6th July 2012

FIGURE THREE

4.3 Chemical Analysis Results

Based upon the results of our desk-top assessment and site walkover survey we have completed the following analysis on representative soil and groundwater samples collected from the site:

Analysis	Rationale	No of samples	
		Soil	Water
Total petroleum hydrocarbons (TPH) (reported by carbon range)	Representative of compounds present in petrol, diesel and lube oils	10	5
Volatile organic compounds (VOCs) (includes BTEX compounds)	Representative of compounds present in petrol and paints/solvents often associated with repair workshops	8	5
Polycyclic aromatic hydrocarbons (PAHs)	Representative of compounds present in diesel and lube oil	5	-
Inorganic Contaminants Suite (including heavy metals).	Typical of compounds found in fill material	7	-
Total Organic Carbon	Site-specific data used within risk assessment process	5	-

Table Six: Schedule of Analysis

The results of the analyses are summarised below. Chemical Analysis Certificates are included in Attachment Four.

4.3.1 Chemical Analysis Results - Soil Samples

Sampling Location	Depth (m)	Total Petroleum Hydrocarbon Concentration (mg/kg)				
		>C ₈ -C ₁₀	>C ₁₀ -C ₁₂	>C ₁₂ -C ₁₆	>C ₁₆ -C ₂₁	>C ₂₁ -C ₃₅
One	1.0	<0.5	<0.5	<0.5	<0.5	<0.5
Two	2.3	<0.5	<0.5	<0.5	<0.5	<0.5
Three	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Four	1.1	<0.5	<0.5	<0.5	1.32	0.751
Five	0.9	<0.5	<0.5	<0.5	<0.5	<0.5
Five	3.4	<0.5	<0.5	<0.5	10.8	137
Six	1.5	<0.5	<0.5	<0.5	<0.5	<0.5
Seven	1.9	<0.5	<0.5	<0.5	<0.5	<0.5
Eight	1.3	4.21	7.55	58.6	38.9	<0.5
Eight	2.2	<0.5	<0.5	<0.5	<0.5	<0.5

Table Seven: TPH Analysis Results – Soil

Sampling Location	Depth (m)	Polycyclic Aromatic Hydrocarbon Concentration (mg/kg)*		
		Naphthalene	Benzo(a)pyrene	Total PAHs
Three	2.1	<0.1	<0.1	<1.6
Four	0.5-0.8	<0.1	<0.1	<1.6
Five	0.3-0.6	<0.1	<0.1	<1.6
Seven	4.1	<0.1	<0.1	<1.6
Eight	1.1-1.2	<0.1	<0.1	<1.6

Note: * - See analysis certificate for full EPA16 speciated PAH data.

Table Eight: PAH Analysis Results – Soil

Sampling Location	Depth (m)	Inorganic Element Concentration (mg/kg)					
		Arsenic	Beryllium	Boron	Cadmium	Chromium	Copper
One	0.5-0.8	3	<0.5	<1	<0.5	14	10
Two	0.6-0.8	12	<0.5	<1	<0.5	733	945
Four	0.5-0.8	16	<0.5	<1	<0.5	30	22
Five	0.3-0.6	4	<0.5	1.2	<0.5	10	25
Six	0.5-0.8	6	<0.5	<1	<0.5	18	15
Seven	0.2-0.3	7	<0.5	1.5	<0.5	28	21
Eight	1.1-1.2	4	<0.5	<1	<0.5	10	<4
		Lead	Mercury	Nickel	Selenium	Vanadium	Zinc
One	0.5-0.8	24	<1	6	<3	12	30
Two	0.6-0.8	161	<1	16	<3	24	388
Four	0.5-0.8	65	<1	11	<3	17	76
Five	0.3-0.6	80	<1	7	<3	15	39
Six	0.5-0.8	56	<1	8	<3	20	55
Seven	0.2-0.3	608	<1	17	<3	20	84
Eight	1.1-1.2	12	<1	4	<3	7	19

Table Nine: Inorganic Compounds Analysis Results – Soil Samples

Sampling Location	Depth (m)	Total Organic Carbon (%)
One	3.2	0.2
Three	2.5	0.2
Six	2.8	<0.1
Seven	1.2	0.6
Eight	1.8	0.4

Table Ten: Total Organic Carbon Analysis Results - Soil Samples

No detectable concentrations of Volatile Organic Compounds, including chlorinated solvents, were identified in any of the eight analysed soil samples.

4.3.2 Chemical Analysis Results – Groundwater Samples

Sampling Location	Total Petroleum Hydrocarbon Concentration (µg/l)				
	>C ₈ -C ₁₀	>C ₁₀ -C ₁₂	>C ₁₂ -C ₁₆	>C ₁₆ -C ₂₁	>C ₂₁ -C ₃₅
One	<10	<10	<10	<10	<10
Two	<10	<10	<10	<10	<10
Four	130	99.3	29.5	<10	<10
Six	<10	<10	<10	<10	<10
Eight	<10	<10	169	87.2	<10

Table Eleven: TPH Analysis Results – Groundwater

Sampling Location	Concentration (µg/l)						
	MTBE	n-Propyl-benzene	Isopropyl-benzene	Benzene	Toluene	Ethyl-benzene	Total Xylenes
One	<10	<5	<5	<5	<5	<5	<5
Two	<10	<5	<5	<5	<5	<5	<15
Four	<10	12	23	10	<5	<5	<15
Six	<10	<5	<5	<5	<5	<5	<15
Eight	<10	<5	<5	<5	<5	<5	<15

Table Twelve: Volatile Organic Compounds – Groundwater

5 Conceptual Site Model

5.1 Summary of Potential Sensitive Receptors

Based upon the results of our desk study and subsequent investigation we consider potentially at-risk human receptors include:

- Commercial workers onsite (either in the existing industrial units or future retail unit);
- Neighbouring commercial and residential properties.

We consider potentially at-risk environmental receptors include:

- Underlying groundwater (both shallow Secondary A aquifers and deeper Principal chalk aquifer);
- The groundwater abstractions to the northwest and west;
- Various surrounding surface water bodies, the closest being the unnamed tributary to the Brockhampton Stream, approximately 80m to the northwest;

5.2 Summary of Identified Contaminant Sources

Based upon the results of our intrusive investigation we have identified the following potential contaminants at the site:

- Low concentrations of hydrocarbons, generally consistent with petrol, have been identified in soil and groundwater in the general vicinity of the above ground storage tanks along Unit 25d;
- Low concentrations of hydrocarbons, generally consistent with diesel range fuels, have been identified in the eastern corner of the site, potentially associated with limited migration of contaminants from the adjacent site.

5.3 Data Gaps and Uncertainties

We note the following data gaps/uncertainties that have arisen during the course of our desktop survey and subsequent investigation:

- We have little information regarding the historical uses of the various buildings on site following their development on the site between 1960 and 1966 until their most recent use.
- We have not been able to complete a detailed inspection of the various buildings as they are all occupied by tenants and/or empty and locked. We therefore cannot confirm that no other potential contaminant source areas exist.

5.4 Conceptual Site Model

We have used the information presented in the previous sections of this report to create a Conceptual Site Model. We have reviewed potential contaminants and their receptors together with any possible pathways that may link them. The resulting pollutant linkages are summarised in the table below.

Contaminant	Pathway	Receptor	Viable Pollutant Linkage
Heavy metals and inorganic compounds	Ingestion and dermal contact	On site commercial workers	No – site areas not occupied by buildings covered with hard standing.
Low concentrations of hydrocarbons identified - associated with the former fuel tanks and migration of offsite contamination	Ingestion and dermal contact	On site commercial workers	No – site areas not occupied by buildings covered with hard standing.
	Permeation of contaminants, particularly hydrocarbons, into drinking water supply service pipes	On site commercial workers	Possible – recommend that all new pipework be constructed of hydrocarbon impervious material and installed within clean fill material.
	Volatilisation of hydrocarbons to indoor/outdoor air (either direct from soils or dissolved in groundwater)	On site commercial workers	Unlikely – low concentrations encountered and clay drift geology will prevent vapour migration.

Table Thirteen: Conceptual Site Model – Assessment of Viable Pollutant Linkages
(Continued on next page)

Contaminant	Pathway	Receptor	Viable Pollutant Linkage?
Low concentrations of hydrocarbons identified - associated with the former fuel tanks and migration of offsite contamination	Off-site migration of hydrocarbons: volatilisation to indoor/outdoor air (vapours from on-site soils or via lateral migration of dissolved compounds)	Off-site commercial workers	Unlikely due to the high clay content of the drift geology.
	Downward migration of contaminants to groundwater	Underlying Secondary A Aquifer in the Drift Geology	Yes – hydrocarbons found within groundwater samples show impact to the aquifer in the drift.
		Underlying Principal Aquifer in the Upper Chalk	Possible – dependent upon the consistency of the barrier between the drift geology and the productive chalk.
	Off-site migration of contaminants dissolved in groundwater leading to direct impact of environmental receptors	Surface water streams - 80m and 190m northwest, 185m east and 200m southeast	Possible - groundwater flow direction across the site calculated to the west.
		The three groundwater abstractions (340m and 700m northwest and 760m west)	Possible – dependent upon the consistency of the barrier between the drift geology and the productive chalk.
		The Langstone Harbour SSSI (890m south) and Chichester Harbour Area of Outstanding Natural Beauty (790m southeast)	No – groundwater flow direction across the site is to the west.

Table Thirteen: Conceptual Site Model – Assessment of Viable Pollutant Linkages (Continued)

Our qualitative assessment has confirmed that viable pollutant linkages do exist at the site. We have therefore carried out a Generic Quantitative Risk Assessment to confirm whether the concentrations of potential contaminants identified during our investigation pose an unacceptable risk to the long-term health (chronic) of future site users and environmental receptors.

6 Generic Quantitative Risk Assessment

6.1 Methodology

We have completed our Quantitative Risk Assessment by comparing the concentrations of compounds identified during our site investigation with Generic Acceptance Criteria (GAC). We have used Generic Acceptance Criteria from a variety of sources within our assessment, as specified in the tables below. In carrying out these risk assessments we have adhered to the following assumptions and methodologies:

- Based upon our understanding of the site's future use and absence of potential at-risk off-site human receptors we have limited our assessment of human receptors to future employees working in the new building.
- Organic contaminants of concern are limited to total petroleum hydrocarbons by carbon group. As we did not find concentrations of BTEX above method detection limits in the soil analysed, we have not included these in our human health risk assessment.
- Inorganic contaminants of concern are limited to arsenic, beryllium, cadmium, chromium, lead, mercury, nickel and selenium, copper, vanadium and zinc. Chromium has been assessed on the basis of a combined value of Chromium III and Chromium VI.
- The results of the chemical analyses carried out on soil and groundwater samples have been used to determine concentrations of these contaminants at the site.
- We have used a value of 1% soil organic matter in calculating GACs.
- Generic Assessment Criteria for total petroleum hydrocarbons (TPH) bands is based upon lowest value from published/calculated aliphatic and aromatic concentrations. The recorded maximum concentrations for TPH compared to the GACs include both aliphatic and aromatic concentrations.
- In the assessment of risk posed to environmental receptors, we have limited our assessment to the underlying Secondary A aquifer in the shallow drift geology as this is considered the primary receptor, being encountered directly under the site at shallow depths and most likely in continuity with the identified surface water streams.

6.2 Risk to Human Health

Contaminant	Maximum concentration recorded in soil (mg/kg)	GAC for Commercial Land Use (mg/kg)	Source of Generic Acceptance Criteria.	Does maximum concentration exceed GAC?
TPH C ₈₋₁₀ (aliphatic)	4.21	2,100**	LQM CIEH	No
TPH C ₁₀₋₁₂ (aromatic)	7.55	17,000		No
TPH C ₁₂₋₁₆ (aromatic)	58.6	36,000		No
TPH C ₁₆₋₂₁ (aromatic)	38.9	28,000**		No
TPH C ₂₁₋₃₅ (aromatic)	137	28,000**		No

Note: * - Former SGV value

** - GAC exceeds solubility limit

Table Fourteen: Results of Generic Risk Assessment - Human Health/Soil (continued overleaf)

Contaminant	Maximum concentration recorded in soil (mg/kg)	GAC for Commercial Land Use (mg/kg)	Source of Generic Acceptance Criteria.	Does maximum concentration exceed GAC?
Arsenic	12	640	EA SGV	No
Cadmium	<0.5	230		No
Nickel	17	1,800		No
Selenium	<3	13,000		No
Mercury	<1	26		No
Lead*	608	750		No
Beryllium	<0.5	420	LQM CIEH	No
Chromium	733	30435		No
Copper	945	71,700		No
Zinc	388	665,000		No

Note: * - Former SGV value

** - GAC exceeds solubility limit

Table Fourteen: Results of Generic Risk Assessment - Human Health/Soil (continued)**6.3 Risk Posed to Environmental Receptors**

Contaminant	Maximum concentration recorded in groundwater (µg/l)	GAC for Secondary A Aquifer (µg/l)	Source of Generic Acceptance Criteria.	Does maximum concentration exceed GAC?
Total Petroleum Hydrocarbons	258.8	50	EA EQS	Yes
Benzene	10	10	EA EQS	Yes
Xylene*	<10	30		No
Toluene	<5	50		No
Ethylbenzene	<10	20		No

Notes: EA EQS – Environmental Quality Standard (Actual or proposed)

* - Maximum Allowable Concentration

Table Fifteen: Generic Acceptance Criteria for Environmental Receptors (Surface Water)

7 Environmental Assessment Conclusions and Recommendations

7.1 Investigation Conclusions - Generic Quantitative Risk Assessment Results

The results of our Generic Quantitative Risk Assessment indicate that the concentrations of various organic and inorganic compounds identified during our investigation do not pose a potentially unacceptable risk to current or future site workers.

With regard to environmental receptors, and specifically the underlying shallow River Terrace Deposit aquifer, our Generic Quantitative Risk Assessment indicates that concentrations of hydrocarbon compounds encountered in groundwater from BH4 (adjacent to the above ground fuel tanks) and BH8 (in the eastern corner of the site) exceed relevant generic acceptance criteria.

Based on our investigation data, however, we consider it unlikely that the low concentrations of hydrocarbons encountered pose a viable risk to the identified environmental receptors, and note that no detectable hydrocarbon concentrations were recorded in the hydraulically down-gradient wells installed along the sites western boundary.

In summary, our site investigation did not identify significant contamination of underlying soil or groundwater at the site. We also did not identify any current site activities that appear to pose an immediate ongoing risk of contamination.

Our investigation and subsequent risk assessment of the site have not identified any contamination issues that we would consider to be a significant constraint to redevelopment for continued commercial use. We note however that conditions associated with the potential for contaminated land may be stipulated as part of any future planning approvals and further works may be required prior to discharge of all relevant conditions.

7.2 Recommendations

We make the following recommendations relating to the site and proposed future development scheme:

- The former fuel tanks, flammable materials store and various waste containers that we identified along the eastern side of Unit 25d should be permanently decommissioned and removed from site. Significant improvements would be required were the tanks to be put back into service, with suitable bunds for the tanks an absolute minimum requirement.
- Industrial warehouses have occupied the site for many years and we were not able to complete a detailed inspection of the interiors of the buildings present. It is possible that additional potential sources of contamination are present (below ground tanks, oil/water interceptors etc) that we haven't identified or investigated. We would recommend that verification of site conditions is completed during/following the demolition of site buildings and that any potential contamination is investigated at that time. Additional sampling of soils and/or groundwater underlying the buildings may be required.
- We recommend that this report be submitted to the Local Planning Authority in support of future planning applications and/or to assist in discharge of possible conditions associated with the proposed development scheme.

Your attention is drawn to the Notice to Interested Parties included as Attachment One.

8 References

HSE (1991) "Protection of Workers and the General Public During the Development of Contaminated Land" HMSO, London

Construction (Design and Management) Regulations 1994. SI 1994/3140. The Stationery Office.

DEFRA and Environment Agency (2002a) "Priority Contaminants for the Assessment of Contaminated Land" Report CLR8, R&D Dissemination Centre, WRc plc, Swindon.

DEFRA and Environment Agency (2002b) "Assessment of Risks to Human Health from Land Contamination: An Overview of the Development of Soil Guideline Values and Related Research.", Report CLR 7 R&D Dissemination Centre, WRc plc, Swindon.

DEFRA and Environment Agency (2004) "Model Procedures for the Management of Land Contamination" Report CLR 11 Environment Agency, Bristol.

ATTACHMENT ONE: NOTICE TO INTERESTED PARTIES

NOTICE TO INTERESTED PARTIES

The purpose of our site assessment is to provide general information on the environmental and/or geotechnical conditions existing at the site and related to soil or groundwater. Where the Client or others specified the scope of the investigation, the validity of our conclusions may be limited by the scope of work completed. We are not responsible for any such limitations imposed by the scope of work.

Where stated in this report, we have used information supplied by third parties. While we have evaluated as far as possible the validity of this information, we cannot guarantee its accuracy in any way whatsoever.

No investigation technique is capable of completely identifying all of the contaminants that might be present in the soil or groundwater under a site. Where specified in our report, we have examined the ground by constructing a number of boreholes and/or trial pits. We recovered samples of soil and/or groundwater from available exposures.

The depth and spacing of our sampling locations were selected to ensure with a reasonable probability that they would be representative of the actual conditions across the whole site. However, safety considerations relating to existing site infrastructure may have restricted our ability to investigate all potential contaminant sources. Specifically, we were unable to investigate the soil and groundwater condition immediately adjacent to the underground petroleum installation and other buried services. These limitations must be borne in mind when considering the conclusions reached in this report.

Soil is intrinsically variable and the spread of contaminants within the soil is therefore subject to a degree of non-uniformity. For these reasons no sampling technique can completely eliminate the possibility of obtaining samples that are not representative of the actual conditions. Our sampling techniques are intended to reduce the possibility to an acceptable level.

Groundwater levels and soil vapour levels that we report were accurate at the time of the investigation. Groundwater and soil vapour levels are variable. Long term monitoring may be required to ensure that the levels recorded during our investigation are representative of long term and possible 'worst case' conditions.

This investigation was carried out to assess the significance of contamination resulting from use of the site as identified in this report. Unless we have indicated otherwise, no assessment of the potential impact of any other previous uses has been made. No investigation was carried out to determine whether or not any deleterious or hazardous materials have been used in the construction of the buildings present on the site.

We do not accept any responsibility for the cost of remedial works or other costs incurred in whatever way whatsoever as a result of any omissions, errors or other shortcomings in this report unless we have been given reasonable opportunity to verify ourselves that such faults exist and we have been given a reasonable opportunity to carry out works to remedy such faults ourselves using the most practicable means available to us. We do not accept liability for any consequential losses incurred by you while we carry out any remedial works we deem necessary.

This report has been prepared for Hargreaves Properties Ltd. Use of, and reliance on, this report by other third parties will be at such third parties own risk, and we are unable to accept any liability or responsibility to third parties.

Neither the whole nor any part of this report, or any reference to it, may be included in any published document circular or statement or published in any way without our prior written approval.

This report and its contents, together with any supporting correspondence or other documentation, remain the property of Subadra Consulting Limited until paid for in full.

ATTACHMENT TWO : BOREHOLE LOGS

Borehole No. One

SUBADRA

Consultants in the Earth Sciences

Unit 13, Triangle Business Park, Stoke Mandeville
Tel. 01296 739400 Fax. 01296 739401.

Project Name	Retail Unit, Havant	Date	6th July 2012
Project Code	IN12899	Ground Level	Approximately 6m AOD
Coordinates	471287 106097 (Site Centre)	Equipment	Geoprobe 5400 (Direct Push)

Depth (m)	Monitoring Well	Water Level	Log	Sample	Chemical Analysis Scheduled	SPT ('N') or Su (kPa)	Description
0							0.0 to 0.2m CONCRETE
				S1 @ 0.5-0.8m	Metals		0.2 to 0.4m MEDIUM DENSE red GRAVEL. Gravel is red brick fragments. (MADE GROUND)
1				S2 @ 1.0m	TPH		0.4 to 1.4m MEDIUM DENSE grey brown very dayey GRAVEL. Gravel is flint. (MADE GROUND)
							Groundwater strike at 1.2m.
2				S3 @ 2.2m	VOC		1.4 to 2.2m MEDIUM DENSE cream brown clayey GRAVEL. Gravel is flint. (RIVER TERRACE DEPOSITS)
3				S4 @ 3.2m	TOC		2.2 to 3.2m Structureless cream brown weak highly weathered CHALK with frequent flint gravel. (GRADE VI) (UPPER CHALK)
4				S5 @ 4.5m			3.2 to 4.8m Structureless creamy white weak blocky CHALK with frequent flint gravel. (GRADE V) (UPPER CHALK)
5							Borehole terminated at 4.8m.

Borehole terminated at: 4.8m

Hydrocarbon odour/staining: None noted

Groundwater monitoring well installed to: 4.7m

Groundwater encountered at: Perched groundwater at 1.2m

Dwn: JS

Ckd: KM

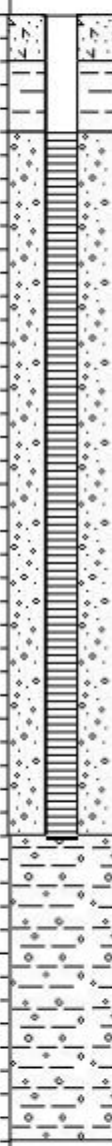
Borehole No. Two

SUBADRA

Consultants in the Earth Sciences

Unit 13, Triangle Business Park, Stoke Mandeville
Tel. 01296 739400 Fax. 01296 739401.

Project Name	Retail Unit, Havant	Date	6th July 2012
Project Code	IN12899	Ground Level	Approximately 6m AOD
Coordinates	471287 106097 (Site Centre)	Equipment	Geoprobe 5400 (Direct Push)

Depth (m)	Monitoring Well	Water Level	Log	Sample	Chemical Analysis Scheduled	SPT ('N') or Su (kPa)	Description
0		Standing at 1.02m					0.0 to 1.0m MEDIUM DENSE dark brown grey black very clayey GRAVEL. Gravel is flint and red brick fragments. (MADE GROUND)
				S1 @ 0.6-0.8m	Metals		
1							1.0 to 2.4m MEDIUM DENSE cream grey clayey chalky GRAVEL. Gravel is flint. Sand layer from 2.2 to 2.3m. (RIVER TERRACE DEPOSITS)
2				S2 @ 2.0m	VOC		
				S3 @ 2.3m	TPH		
3							2.4 to 3.6m SOFT to FIRM creamy brown chalky CLAY. Frequent flint and chalk fragments. (UPPER CHALK)
				S4 @ 3.2m			
4							3.6 to 4.8m Structureless creamy white weak blocky CHALK with frequent flint gravel. (GRADE V) (UPPER CHALK) Borehole terminated at 4.8m.
				S5 @ 4.5m			
5							

Borehole terminated at: 4.8m

Hydrocarbon odour/staining: None noted

Groundwater monitoring well installed to: 3.5m

Groundwater encountered at: No strike noted

Dwn: JS

Ckd: KM

Borehole No. Three

SUBADRA

Consultants in the Earth Sciences

Unit 13, Triangle Business Park, Stoke Mandeville
Tel. 01296 739400 Fax. 01296 739401.

Project Name	Retail Unit, Havant	Date	6th July 2012
Project Code	IN12899	Ground Level	Approximately 6m AOD
Coordinates	471287 106097 (Site Centre)	Equipment	Geoprobe 5400 (Direct Push)

Depth (m)	Monitoring Well	Water Level	Log	Sample	Chemical Analysis Scheduled	SPT ('N') or Su (kPa)	Description
0							0.0 to 0.1m TARMAC
							0.1 to 0.3m CONCRETE
				S1 @ 0.5m	TPH		0.3 to 1.5m SOFT to FIRM dark grey becoming brown slightly sandy CLAY. Frequent flint gravel. (ALLUVIUM)
1							Groundwater strike at 1.0m.
				S2 @ 1.6m	VOC		1.5 to 2.0m MEDIUM DENSE grey very clayey flint GRAVEL. Frequent chalk fragments. (HEAD DEPOSITS)
2				S3 @ 2.1m	PAH		2.0 to 3.6m MEDIUM DENSE creamy brown slightly clayey slightly chalky GRAVEL. Gravel is flint. Occasional very coarse sandy layers. (RIVER TERRACE DEPOSITS)
				S4 @ 2.5m	TOC		
3				S5 @ 3.5m			
4				S6 @ 4.5m			3.6 to 4.8m Structureless creamy brown weak clayey blocky CHALK with flint gravels. (UPPER CHALK)
5							Borehole terminated at 4.8m.

Borehole terminated at: 4.8m

Hydrocarbon odour/staining: None noted

Groundwater monitoring well installed to: None installed

Groundwater encountered at: Perched groundwater at 1.0m and 2.0m

Dwn: JS

Ckd: KM

Borehole No. Four

SUBADRA

Consultants in the Earth Sciences

Unit 13, Triangle Business Park, Stoke Mandeville
Tel. 01296 739400 Fax. 01296 739401.

Project Name	Retail Unit, Havant	Date	6th July 2012
Project Code	IN12899	Ground Level	Approximately 6m AOD
Coordinates	471287 106097 (Site Centre)	Equipment	Geoprobe 5400 (Direct Push)

Depth (m)	Monitoring Well	Water Level	Log	Sample	Chemical Analysis Scheduled	SPT ('N') or Su (kPa)	Description
0							0.0 to 0.2m TARMAC
				S1 @ 0.5-0.8m	PAH/Metals		0.2 to 0.4m MEDIUM DENSE red GRAVEL. Gravel is red brick fragments. (MADE GROUND)
1				S2 @ 1.1m	TPH		0.4 to 1.6m FIRM black brown sandy very gravelly CLAY. Clinker and flints present. (MADE GROUND)
							Groundwater strike at 1.2m.
2				S3 @ 2.4m			1.6 to 1.8m FIRM creamy grey very gravelly CLAY. Gravel is flint. (HEAD)
							1.8 to 3.3m LOOSE to MEDIUM DENSE creamy grey brown very clayey chalky GRAVEL. Gravel is flint. (RIVER TERRACE DEPOSITS)
3				S4 @ 3.4m	VOC		3.3 to 4.8m Structureless creamy white weak blocky CHALK with frequent flint gravel. (GRADE V) (UPPER CHALK)
4				S5 @ 4.5m			Brown staining at 3.4m. Borehole terminated at 4.8m.
5							

Borehole terminated at: 4.8m

Hydrocarbon odour/staining: None noted

Groundwater monitoring well installed to: 3.5m

Groundwater encountered at: Perched groundwater at 1.2m

Dwn: JS

Ckd: KM

Borehole No. Five

SUBADRA

Consultants in the Earth Sciences

Unit 13, Triangle Business Park, Stoke Mandeville
Tel. 01296 739400 Fax. 01296 739401.

Project Name	Retail Unit, Havant	Date	6th July 2012
Project Code	IN12899	Ground Level	Approximately 6m AOD
Coordinates	471287 106097 (Site Centre)	Equipment	Geoprobe 5400 (Direct Push)

Depth (m)	Monitoring Well	Water Level	Log	Sample	Chemical Analysis Scheduled	SPT ('N') or Su (kPa)	Description
0							0.0 to 0.2m TARMAC
				S1 @ 0.3-0.6m	PAH/Metals		0.2 to 0.9m MEDIUM DENSE black grey brown very dayey GRAVEL. Gravel is flint with clinker and red brick. (MADE GROUND)
1				S2 @ 0.9m	TPH		0.9 to 1.5m FIRM dark grey black slightly sandy CLAY. (ALLUVIUM)
				S3 @ 1.8m	VOC		1.5 to 2.0m MEDIUM DENSE black grey clayey GRAVEL. Gravel is flint. Peat inclusions present. (HEAD DEPOSITS)
2							2.0 to 3.6m MEDIUM DENSE grey black brown dayey slightly sandy GRAVEL. Gravel is flint. (RIVER TERRACE DEPOSITS)
3				S4 @ 3.4m	TPH		
4				S5 @ 4.1m			3.6 to 4.8m Structureless creamy brown white weak dayey blocky CHALK with flint gravels. (GRADE V) (UPPER CHALK)
5							Borehole terminated at 4.8m.

Borehole terminated at: 4.8m

Hydrocarbon odour/staining: None noted

Groundwater monitoring well installed to: None installed

Groundwater encountered at: Perched groundwater at 1.1m

Dwn: JS

Ckd: KM

Borehole No. Six

SUBADRA

Consultants in the Earth Sciences

Unit 13, Triangle Business Park, Stoke Mandeville
Tel. 01296 739400 Fax. 01296 739401.

Project Name	Retail Unit, Havant	Date	6th July 2012
Project Code	IN12899	Ground Level	Approximately 6m AOD
Coordinates	471287 106097 (Site Centre)	Equipment	Geoprobe 5400 (Direct Push)

Depth (m)	Monitoring Well	Water Level	Log	Sample	Chemical Analysis Scheduled	SPT ('N') or Su (kPa)	Description
0							0.0 to 0.2m TARMAC
							0.2 to 0.4m TARMAC
				S1 @ 0.5-0.8m	Metals		0.4 to 0.8m FIRM black grey sandy very gravelly CLAY. (MADE GROUND)
1		Strike at 1.0m Standing at 0.96m					0.8 to 1.5m MEDIUM DENSE black grey brown very dayey GRAVEL. Gravel is flint. (HEAD DEPOSITS)
				S2 @ 1.5m	TPH		1.5 to 4.0m LOOSE to MEDIUM DENSE cream brown clayey chalky GRAVEL. Gravel is flint. (RIVER TERRACE DEPOSITS)
2							
				S3 @ 2.8m	TOC		
3							
				S4 @ 4.1m	VOC		4.0 to 4.8m Structureless cream white weak blocky CHALK with flint gravel. (GRADE V) (UPPER CHALK)
4							Borehole terminated at 4.8m.
5							

Borehole terminated at: 4.8m

Hydrocarbon odour/staining: None noted

Groundwater monitoring well installed to: 3.5m

Groundwater encountered at: Perched groundwater at 1.0m

Dwn: JS

Ckd: KM

Borehole No. Seven

SUBADRA

Consultants in the Earth Sciences

Unit 13, Triangle Business Park, Stoke Mandeville
Tel. 01296 739400 Fax. 01296 739401.

Project Name	Retail Unit, Havant	Date	6th July 2012
Project Code	IN12899	Ground Level	Approximately 6m AOD
Coordinates	471287 106097 (Site Centre)	Equipment	Geoprobe 5400 (Direct Push)

Depth (m)	Monitoring Well	Water Level	Log	Sample	Chemical Analysis Scheduled	SPT ('N') or Su (kPa)	Description
0							0.0 to 0.1m TARMAC
				S1 @ 0.2-0.3m	Metals		0.1 to 1.9m MEDIUM DENSE blue grey orange becoming sandy GRAVEL. (MADE GROUND) Groundwater strike at 1.7m.
				S2 @ 0.5m	PAH		
1				S3 @ 1.2m	TOC		1.9 to 4.8m MEDIUM DENSE blue grey orange becoming sandy GRAVEL. (RIVER TERRACE DEPOSITS) Borehole terminated at 4.8m.
				S4 @ 1.9m	TPH		
2				S5 @ 2.2m	VOC		
3				S6 @ 3.5m			
				S7 @ 3.9m			
4				S8 @ 4.5m			
				S9 @ 4.6-4.8m			
5							

Borehole terminated at: 4.8m

Hydrocarbon odour/staining: None noted

Groundwater monitoring well installed to: None installed

Groundwater encountered at: Perched groundwater at 1.7m

Dwn: KM

Ckd: JS

Borehole No. Eight

SUBADRA

Consultants in the Earth Sciences

Unit 13, Triangle Business Park, Stoke Mandeville
Tel. 01296 739400 Fax. 01296 739401.

Project Name	Retail Unit, Havant	Date	6th July 2012
Project Code	IN12899	Ground Level	Approximately 6m AOD
Coordinates	471287 106097 (Site Centre)	Equipment	Geoprobe 5400 (Direct Push)

Depth (m)	Monitoring Well	Water Level	Log	Sample	Chemical Analysis Scheduled	SPT ('N') or Su (kPa)	Description
0							0.0 to 0.1m TARMAC
							0.1 to 0.3m CONCRETE
				S1 @ 0.4-0.5m			0.3 to 2.3m MEDIUM DENSE grey brown red cream very clayey gravelly SAND. (MADE GROUND)
1				S2 @ 1.0-1.2m	Metals/PAH		Hydrocarbon odour and grey staining from 1.0 to 1.3m.
				S3 @ 1.3m	TPH		
2				S4 @ 1.8m	TOC		1.6 to 2.3m SOFT grey slightly gravelly CLAY. (ALLUVIUM)
				S5 @ 2.2m	TPH	Su = 20	Groundwater strike at 2.0m.
3				S6 @ 2.7m			2.3 to 3.8m MEDIUM DENSE orange cream blue grey sandy GRAVEL. (RIVER TERRACE DEPOSITS)
				S7 @ 3.4m			
4				S8 @ 3.8m	VOC		3.8 to 4.8m Structureless white cream very weak highly weathered CHALK with no flints. (UPPER CHALK)
				S9 @ 4.3m			Borehole terminated at 4.8m.
				S10 @ 4.8m			
5							

Borehole terminated at: 4.8m

Hydrocarbon odour/staining: From 1.0 to 1.3m

Groundwater monitoring well installed to: 3.5m

Groundwater encountered at: Perched groundwater at 2.0m

Dwn: KM

Ckd: JS

ATTACHMENT THREE:
MAP DATA AND ENVIRONMENTAL DATA REPORT

GroundSure EnviroInsight

Address: PO9 1TR

Date: Jul 6, 2012

GroundSure Reference: S EMS-171700_253487

Your Reference: EMS_171700_253487

Client: EmapSite



Brought to you by GroundSure

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.

Report Section	Number of records found within (X) m of the study site boundary					
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1. Environmental Permits, Incidents and Registers	on-site	0-50	51-250	251-500	501-1000	1000-1500
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1.1 Industrial Sites Holding Environmental Permits and/or Authorisations

Records of historic IPC Authorisations	0	0	0	2	-	-
Records of Part A(1) and IPPC Authorised Activities	0	0	0	0	-	-
Records of Water Industry Referrals (potentially harmful discharges to the public sewer)	0	0	0	0	-	-
Records of Red List Discharge Consents (potentially harmful discharges to controlled waters)	0	0	0	0	-	-
Records of List 1 Dangerous Substances Inventory sites	0	0	0	0	-	-
Records of List 2 Dangerous Substances Inventory sites	0	0	0	0	-	-
Records of Part A(2) and Part B Activities and Enforcements	0	0	2	0	-	-
Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	7	1	-	-
Records of Licensed Discharge Consents	0	0	3	11	-	-
Records of Planning Hazardous Substance Consents and Enforcements	0	0	0	0	-	-

1.2 Records of COMAH and NIHHS sites

0	0	0	0	-	-
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1.3 Environment Agency Recorded Pollution Incidents

National Incidents Recording System, List 2	0	0	3	-	-	-
National Incidents Recording System, List 1	0	0	0	-	-	-

1.4 Sites Determined as Contaminated Land under Part IIA EPA 1990

0	0	0	0	-	-
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2. Landfill and Other Waste Sites	on-site	0-50	51-250	251-500	501-1000	1000-1500
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2.1 Landfill Sites

Environment Agency Registered Landfill Sites	0	0	0	0	1	-
Landfill Data – Operational Landfill Sites	0	0	0	0	1	-
Environment Agency Historic Landfill Sites	0	0	0	0	2	0
Landfill Data – Non-Operational Landfill Sites	0	0	0	0	0	-
BGS/DoE Landfill Site Survey	0	0	0	0	0	1
GroundSure Local Authority Landfill Sites Data	0	0	0	0	0	0

2.2 Landfill and Other Waste Sites Findings

Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	-	-
Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	1	0	-	-
Environment Agency Licensed Waste Sites	0	0	0	0	25	0

3. Current Land Uses	on-site	0-50	51-250	251-500	501-1000	1000-1500
3.1 Current Industrial Sites Data	6	7	43	-	-	-
3.2 Records of Petrol and Fuel Sites	0	1	0	2	-	-
3.3 Underground High Pressure Oil and Gas Pipelines	0	0	0	0	-	-

4. Geology	Description
4.1 Are there any records of Artificial Ground and Made Ground present beneath the study site? *	No
4.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site? *	Yes
4.3 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	

Source: Scale: 1:50,000 BGS Sheet 316

* This includes an automatically generated 50m buffer zone around the site.

5. Hydrogeology and Hydrology	on-site	0-50	51-250	251-500	501-1000	1001-2000
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		
5.3 Groundwater Abstraction Licences (within 2000m of the study site).	0	0	0	1	2	0
5.4 Surface Water Abstraction Licences (within 2000m of the study site).	0	0	0	0	0	0
5.5 Potable Water Abstraction Licences (within 2000m of the study site).	0	0	0	1	2	0
5.6 Are there any Source Protection Zones within 500m of the study site?					Yes	
5.7 River Quality						
Is there any Environment Agency information on river quality within 1500m of the study site?	No	No	No	No	Yes	No
5.8 Detailed River Network entries within 500m of the site	0	0	6	11	-	-
5.9 Surface water features within 250m of the study site	No	No	Yes	-	-	-

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?	Very High
6.7 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	High

7. Designated Environmentally Sensitive Sites	on-site	0-50	51-250	251-500	501-1000	1001-2000
7.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	1	3
7.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0

7.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	1	3
7.3 Records of Local Nature Reserves (LNR)	0	0	0	0	0	1
7.4 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	3
7.5 Records of Special Protection Areas (SPA)	0	0	0	0	1	2
7.6 Records of Ramsar sites	0	0	0	0	1	2
7.7 Records of World Heritage Sites	0	0	0	0	0	0
7.8 Records of Environmentally Sensitive Areas	0	0	0	0	0	0
7.9 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	1	0
7.10 Records of National Parks	0	0	0	0	0	0
7.11 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
7.12 Records of Nitrate Vulnerable Zones	1	0	0	0	0	2

8. Natural Hazards

8.1 What is the maximum risk of natural ground subsidence? Moderate

9. Mining

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

9.2 What is the risk of subsidence relating to shallow mining within 150m of the study site? Negligible

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. These searches are conducted using radii of up to 500m.

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.

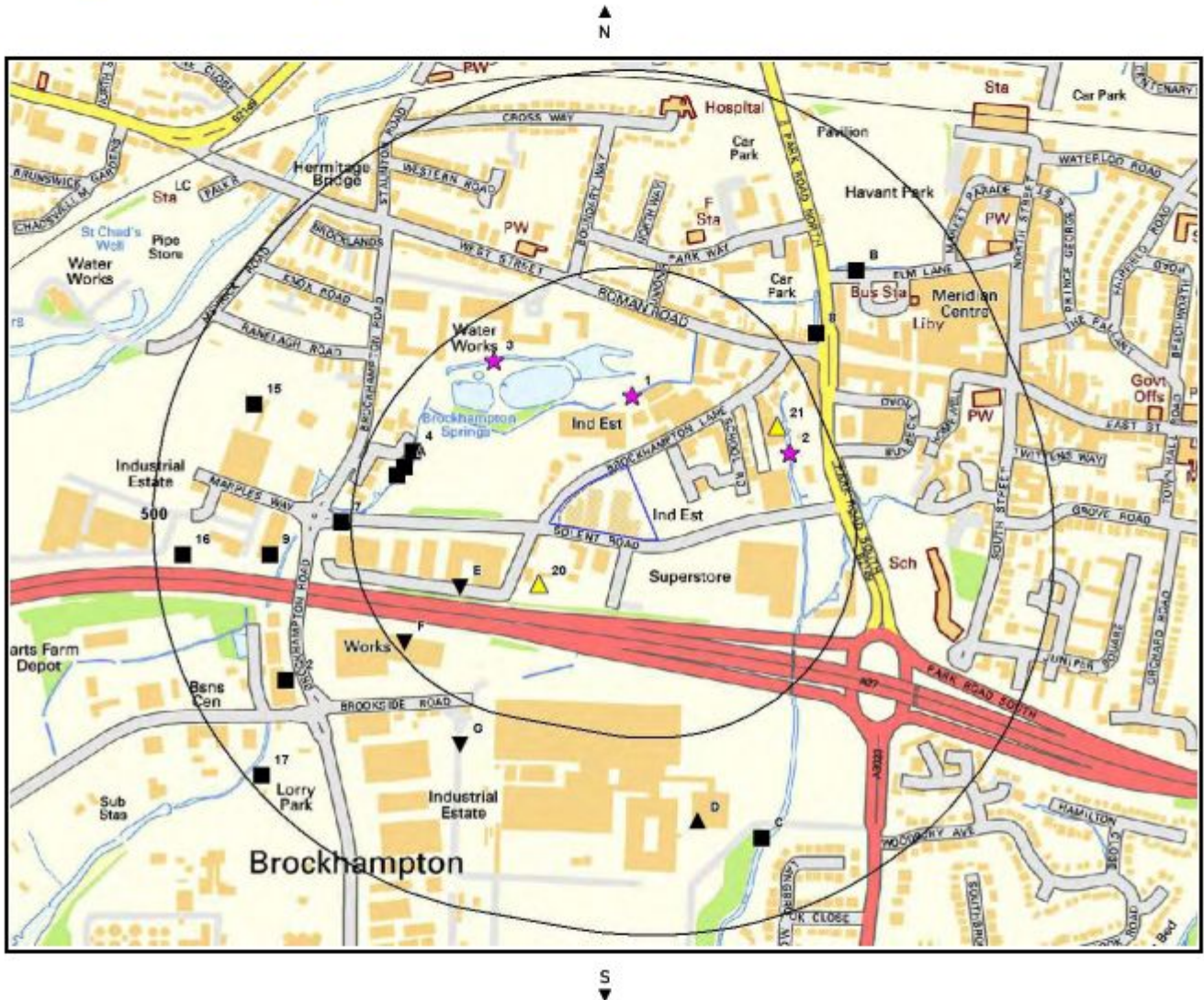
Note: Maps

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



Authorisations, Incidents and Registers Legend

Enabled by **OS** Ordnance Survey

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Licence Number: 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 / NIHS 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:

Records of historic IPC Authorisations within 500m of the study site: 2

The following IPC Authorisations are represented as points on the Authorisations, Incidents and Registers map:

ID	Distance	Direction	NGR	Details
30D	360.0	S	471400, 105700	Operator: Adflex Solutions Ltd (dissolved) Address: PO Box 6, Havant, Hampshire, PO9 1SA Process: Processes Involving Halogens Permit Number: AU8741 Original Permit Number: IPCMINVAR Date Approved: 17-1-1997 Effective Date: 17-1-1997 Status: Revoked
31D	360.0	S	471400, 105700	Operator: Adflex Solutions Ltd (dissolved) Address: PO Box 6, Havant, Hampshire, PO9 1SA Process: Processes Involving Halogens Permit Number: AP1131 Original Permit Number: IPCAPP Date Approved: 29-3-1995 Effective Date: 1-4-1995 Status: Superseded By Variation

Records of Part A(1) and IPPC Authorised Activities within 500m of the study site: 0

Database searched and no data found.

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.

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.

Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site: 0

Database searched and no data found.

Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site: 0

Database searched and no data found.

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

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	
20	80.0	S	471200, 106000	Address: Tesco Solent Rd, Po9 5ah Process: Petrol Vapour Recovery Process Status: Unknown Permit Type: Part B	Enforcement: Data requested, not received. Date of Enforcement: Data requested, not received. Comment: Data requested, not received.
21	193.0	NE	471500, 106200	Address: Shell Havant Park Rd, Po9 1ha Process: Petrol Vapour Recovery Process Status: Unknown Permit Type: Part B	Enforcement: Data requested, not received. Date of Enforcement: Data requested, not received. Comment: Data requested, not received.

Records of Category 3 or 4 Radioactive Substance Licences within 500m of the study site:

8

The following RAS Licence (3 or 4) records are represented as points on the Authorisations, Incidents and Registers map:

ID	Distance [m]	Direction	Address	Operator	Type	Permission Number	Dates	Status
32E	138.0	SW	Apollo Fire Detectors Ltd, 6 Solent Road, Havant, Hampshire, PO9 1JH	Apollo Fire Detector s Ltd	Keeping And Use Of Radioactive Materials (was Rsa60 Section 1).	AC1407	Date of Approval:31-3-1991 Effective from:31-3-1991 Last date of update:2003-12-01	Revoked/cancelled
33E	138.0	SW	Apollo Fire Detectors Ltd, 6 Solent Road, Havant, Hampshire, PO9 1JH	Apollo Fire Detector s Ltd	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AC1369	Date of Approval:31/3/1991 Effective from:31/3/1991 Last date of update:2012-05-16	Revoked/cancelled
34E	138.0	SW	Apollo Fire Detectors Ltd, 6 Solvent Road , Havant, Hampshire, PO91 1JH	Apollo Fire Detector s Ltd	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AC1385	Date of Approval:31/3/1991 Effective from:31/3/1991 Last date of update:2012-05-16	Revoked/cancelled
35F	236.0	SW	Apollo Fire Detectors Ltd, 36 Brookside Road, Havant, PO9 1JR	Apollo Fire Detector s Ltd	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AW6707	Date of Approval:10/10/1996 Effective from:14/10/1996 Last date of update:2012-05-16	Superseded By Variation
36F	236.0	SW	Apollo Fire Detectors Ltd, 36 Brookside Road, Havant, PO9 1JR	Apollo Fire Detector s Ltd	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AW6707	Date of Approval:23/1/2001 Effective from:23/1/2001 Last date of update:2012-05-16	Superseded By Variation

37F	236.0	SW	Apollo Fire Detectors Ltd, 36 Brookside Road, Havant, PO9 1JR	Apollo Fire Detector s Ltd	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AW6707	Date of Approval:5 /6/2003 Effective from:7/7/2003 Last date of update:20 12-05-16	Superseded By Variation
38F	236.0	SW	Apollo Fire Detectors Ltd, 36 Brookside Road, Havant, PO9 1JR	Apollo Fire Detector s Ltd	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AW6707	Date of Approval:4 /8/2009 Effective from:1/9/2009 Last date of update:20 12-05-16	Revoked/ cancelled
39G	301.0	S	Apollo Fire Detectors Ltd, 36 Brookside Road, Havant, PO9 1JR	Apollo Fire Detector s Ltd	Keeping And Use Of Radioactive Materials (was Rsa60 Section 1).	AW6715	Date of Approval:- Effective from:- Last date of update:20 01-06-01	-

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

14

The following Licensed Discharge Consents records are represented as points on the Authorisations, Incidents and Registers map:

ID	Distance	Direction	NGR	Details	
4	195.0	NW	471040, 106170	Address: Manor Court, Manor Court, Brockhampton Road, Havant Hampshire Effluent Type: Miscellaneous Discharges - Surface Water Permit Number: P02242 Permit Version: 1	Receiving Water: Freshwater River Status: Lapsed Under Schedule 23 Environment Act 1995 Issue date: 31/7/1989 Effective Date: 31/7/1989 Revocation Date: 31/3/1997
5A	196.0	W	471030, 106150	Address: Manor Court, Manor Court, Brockhampton Road, Havant Hampshire Effluent Type: Miscellaneous Discharges - Surface Water Permit Number: P02242 Permit Version: 1	Receiving Water: Freshwater River Status: Lapsed Under Schedule 23 Environment Act 1995 Issue date: 31/7/1989 Effective Date: 31/7/1989 Revocation Date: 31/3/1997
6A	202.0	W	471020, 106140	Address: Manor Court, Manor Court, Brockhampton Road, Havant Hampshire Effluent Type: Miscellaneous Discharges - Surface Water Permit Number: P02242 Permit Version: 1	Receiving Water: Freshwater River Status: Lapsed Under Schedule 23 Environment Act 1995 Issue date: 31/7/1989 Effective Date: 31/7/1989 Revocation Date: 31/3/1997
7	263.0	W	470950, 106080	Address: Manor Court, Manor Court, Brockhampton Road, Havant Hampshire Effluent Type: Miscellaneous Discharges - Surface Water Permit Number: P02242 Permit Version: 1	Receiving Water: Freshwater River Status: Lapsed Under Schedule 23 Environment Act 1995 Issue date: 31/7/1989 Effective Date: 31/7/1989 Revocation Date: 31/3/1997
8	292.0	NE	471550, 106320	Address: 62-66 West Street, 62-66 West Street, Havant Hampshire Effluent Type: Miscellaneous Discharges - Surface Water Permit Number: N01171 Permit Version: 1	Receiving Water: Freshwater River Status: Lapsed Under Schedule 23 Environment Act 1995 Issue date: 4/6/1982 Effective Date: 4/6/1982 Revocation Date: 31/3/1997
9	355.0	W	470860, 106040	Address: Kingscroft Court, Marples Way, Kingscroft Court, Marples Way, Havant, Hampshire, PO9 1LS Effluent Type: Miscellaneous Discharges - Surface Water Permit Number: P00398 Permit Version: 1	Receiving Water: Freshwater River Status: Pre Nra Legislation Where Issue Date < 01-sep-89 (historic Only) Issue date: 20/2/1986 Effective Date: 20/2/1986 Revocation Date: -

10B	381.0	NE	471600, 106400	Address: Bus Station At Elm Road, Bus Station At Elm Road, Havant Hampshire Effluent Type: Trade Discharges - Site Drainage Permit Number: N01228 Permit Version: 2	Receiving Water: Saline Estuary Status: New Consent (wra 91, S88 & Sched 10 As Amended By Env Act 1995) Issue date: 14/2/1996 Effective Date: 14/2/1996 Revocation Date: -
11B	381.0	NE	471600, 106400	Address: Bus Station At Elm Road, Bus Station At Elm Road, Havant Hampshire Effluent Type: Miscellaneous Discharges - Surface Water Permit Number: N01228 Permit Version: 1	Receiving Water: Saline Estuary Status: Pre Nra Legislation Where Issue Date < 01-sep-89 (historic Only) Issue date: - Effective Date: - Revocation Date: 14/2/1996
12	388.0	SW	470880, 105880	Address: Boshampton Lane, Boshampton Lane, Havant Hampshire Effluent Type: Miscellaneous Discharges - Surface Water Permit Number: N01265 Permit Version: 1	Receiving Water: Saline Estuary Status: Pre Nra Legislation Where Issue Date < 01-sep-89 (historic Only) Issue date: 5/5/1978 Effective Date: 5/5/1978 Revocation Date: -
13C	399.0	S	471480, 105680	Address: Langstone Road, Langstone Road, Havant, Hampshire Effluent Type: Miscellaneous Discharges - Surface Water Permit Number: N01162 Permit Version: 2	Receiving Water: Freshwater River Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: 17/3/1995 Effective Date: 17/3/1995 Revocation Date: -
14C	399.0	S	471480, 105680	Address: Langstone Road, Langstone Road, Havant, Hampshire Effluent Type: Miscellaneous Discharges - Surface Water Permit Number: N01162 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: 17/3/1995
15	402.0	W	470840, 106230	Address: Seven Springs Ltd, Seven Springs Ltd, The Bottling Plant, Ranelagh Road, Bedhampton, HAVANT Effluent Type: Trade Discharges - Process Effluent - Not Water Company Permit Number: P07982 Permit Version: 1	Receiving Water: Freshwater River Status: Revoked (wra 91, S88 & Sched 10 As Amended By Env Act 1995) Issue date: 2/6/2000 Effective Date: 2/6/2000 Revocation Date: -
16	465.0	W	470750, 106040	Address: Kingscroft Court, Marples Way, Kingscroft Court, Marples Way, Havant, Hampshire, PO9 1LS Effluent Type: Miscellaneous Discharges - Surface Water Permit Number: P00398 Permit Version: 1	Receiving Water: Freshwater River Status: Pre Nra Legislation Where Issue Date < 01-sep-89 (historic Only) Issue date: 20/2/1986 Effective Date: 20/2/1986 Revocation Date: -
17	483.0	SW	470850, 105760	Address: Nursery Units @ Harts Farm Way, Nursery Units @ Harts Farm Way, (south Side), Brockhampton, Havant, Hampshire Effluent Type: Trade Discharges - Unspecified Permit Number: N01080 Permit Version: 1	Receiving Water: Saline Estuary Status: Pre Nra Legislation Where Issue Date < 01-sep-89 (historic Only) Issue date: - Effective Date: - Revocation Date: -

Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site: 0

Database searched and no data found.

1.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 0

Database searched and no data found.

1.3 Environment Agency Recorded Pollution Incidents

Records of National Incidents Recording System, List 2 within 250m of the study site:

3

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

ID	Distance	Direction	NGR	Details
1	88.0	N	471316, 106241	Incident Date: 2/5/2002 Incident Identification: 76228 Pollutant: Oils and Fuel Pollutant Description: Mixed/Waste Oils Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
2	195.0	NE	471515, 106168	Incident Date: 16/1/2002 Incident Identification: 52708 Pollutant: Inert Materials and Wastes Pollutant Description: Other Inert Material or Waste Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
3	196.0	NW	471142, 106285	Incident Date: 22/11/2001 Incident Identification: 44445 Pollutant: Oils and Fuel Pollutant Description: Diesel Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

Records of National Incidents Recording System, List 1 within 250m of the study site:

0

Database searched and no data found.

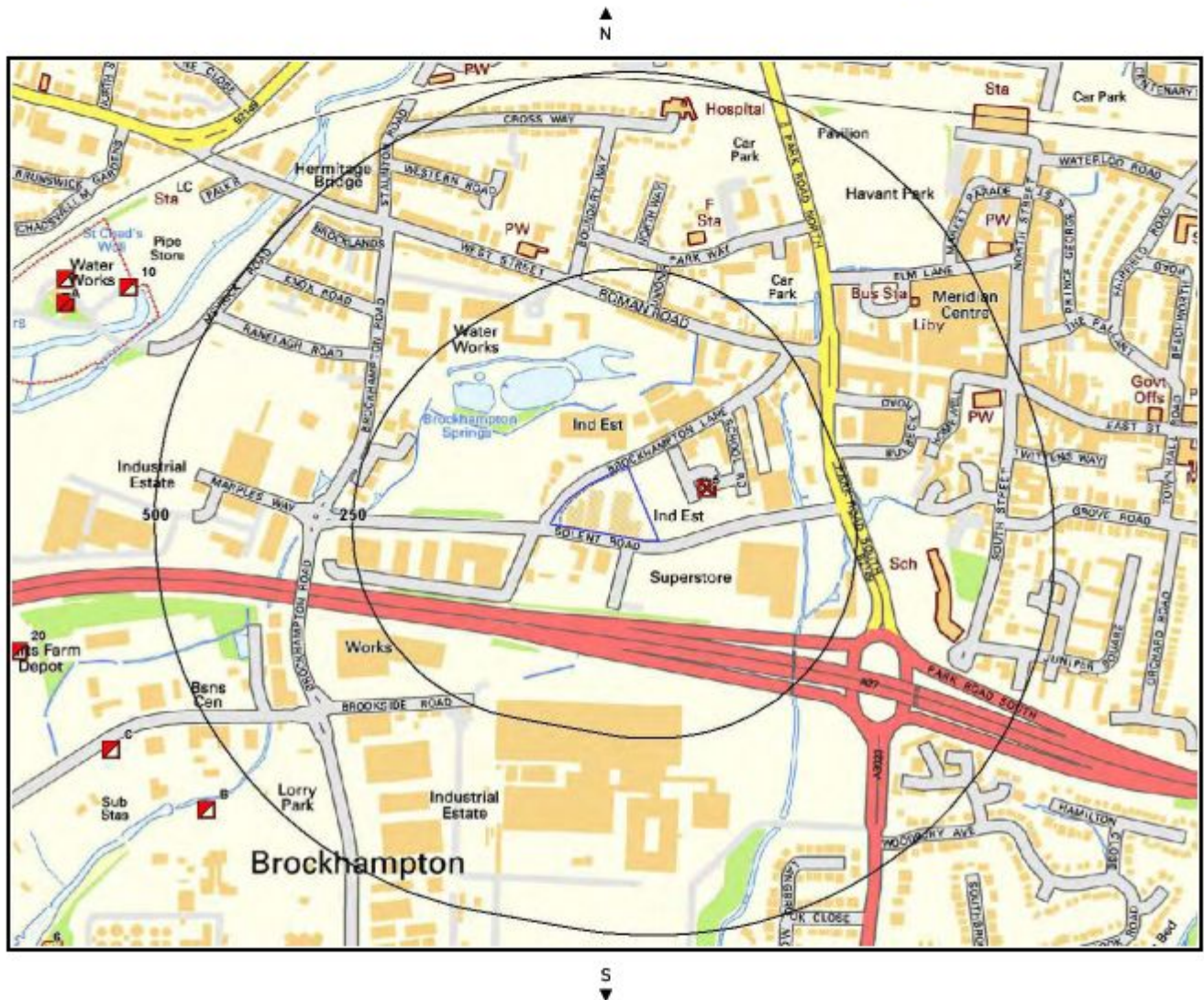
1.4 Sites Determined as Contaminated Land under Part IIA EPA 1990

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.

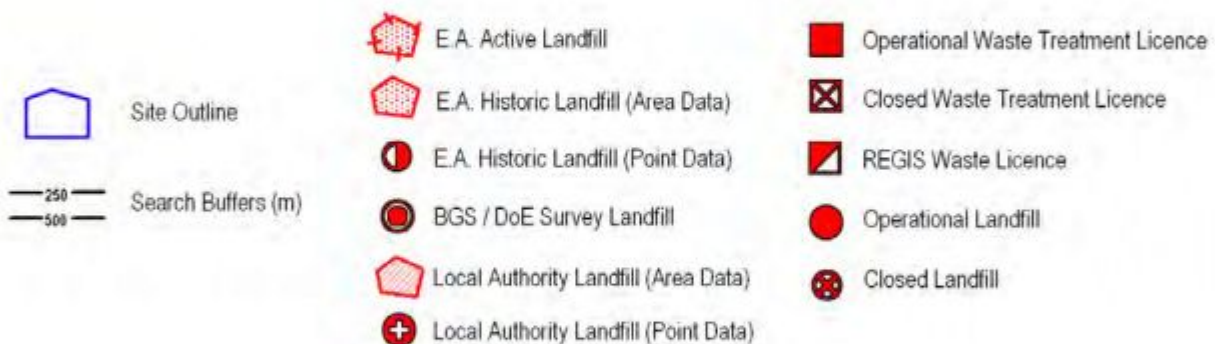
2. Landfill and Other Waste Sites Map



Landfill & Other Waste Sites Legend

Enabled by Ordnance Survey

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2. Landfill and Other Waste Sites

2.1 Landfill Sites

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

1

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

ID	Distance	Direction	NGR	Details
4A	561.0	NW	470600, 106390	Address: Bedhampton Waterworks, Meyrick Road, Havant, Hampshire, PO9 1NN Landfill Reference: 19988.0 Regis Reference: POR008 Landfill Type: A5 : Landfill taking Non- Biodegradable Wastes Operator: Portsmouth Water Ltd Status: IPPC IPPC Reference: EPR Reference:

Records of operational landfill sites sourced from Landmark within 1000m of the study site:

1

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

ID	Distance	Direction	NGR	Details
1A	674.0	NW	470600, 106360	Site Address: Bedhampton Waterworks, Meyrick Road, HAVANT, Hampshire, PO9 1LG Agency Reference: EAWML19988 Waste Type: Inert Waste Description: Inert Landfill Known Restrictions: No known restriction on source of waste Record Date: 01-Nov-1991 Transfer Date: Modification Date: 01-Jun-1996 Status: Operational as far as is known Category: LANDFILL Regulator: EA - Southern Region - Hampshire Area (Winchester) Size: Medium (< 75,000 tonnes/year)

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

2

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

ID	Distance	Direction	NGR	Details
6	767.0	S	470700, 105200	Site Address: Land South Of Budds Farm Sewage Works, Brockhampton, Hampshire Waste Licence: - Site Reference: FHA10, HAV4 Waste Type: Household Regis Reference: - Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -
Not shown	957.0	SW	470000, 105500	Site Address: Harts Farm Way, Harts Farm Way, Havant Waste Licence: Yes Site Reference: FHA15, 1760/1/13/6 Waste Type: Household Regis Reference: - Licence Issue: 24-Nov-1978 Licence Surrendered: Licence Hold Address: The Castle, Winchester, Hampshire Operator: -

Records of non-operational landfill sites sourced from Landmark within 1000m of the study site:

0

Database searched and no data found.

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

1

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

ID	Distance	Direction	NGR	Details	
Not shown	1212.0	SW	470100, 105600	Address: Storhouse Lake Tip, Havant, Hants BGS Number: 33.0	Risk: Risk not recorded Waste Type: N/A

Records of Local Authority landfill sites within 1500m of the study site:

0

Database searched and no data found.

2.2 Other Waste Sites

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

0

Database searched and no data found.

Records of non-operational 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	Direction	NGR	Details	
5	82.0	NE	471411, 106123	Site Address: 12B Clarendon Road, HAVANT, Hampshire, Landfill Licence: 19GAVDAL EA Reference: - Waste Type: Difficult Waste Description: - Known Restrictions: No known restriction on source of waste	Record Date: 01-Aug-1990 Transfer Date: Modification Date: Status: Licence lapsed/cancelled/defunct/not applicable/surrendered Category: SCRAPYARD Regulator: EA - Southern Region - Hampshire Area (Winchester) Size: Undefined

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

25

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

ID	Distance	Direction	NGR	Details	
8B	566.0	SW	470778, 105717	Site Address: Havant Lorry Park, Southmoor Lane, Havant, Hampshire, PO9 1JW Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Regis Licence Number: 000936 EPR reference: - Operator: Sita Solent Ltd Waste Management licence No: 19991 Annual Tonnage: 0.0	Issue Date: 29/09/1997 Effective Date: 31/05/2000 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Havant Lorry Park Correspondence Address: -, Dean Road, Yate, Bristol, South Glouceste, BS37 5ND
9B	566.0	SW	470778, 105717	Site Address: Havant Lorry Park, Southmoor Lane, Havant, Hampshire, PO9 1JW Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Regis Licence Number: 000936 EPR reference: EA/EPR/AP3092HB/S002 Operator: Sita Solent Ltd Waste Management licence No: 19991 Annual Tonnage: 0.0	Issue Date: 29/09/1997 Effective Date: 31/05/2000 Modified: - Surrendered Date: 19/10/2010 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Havant Lorry Park Correspondence Address: -, -

10	612.0	NW	470680, 106380	Site Address: Bedhampton Waste Works, Meyrick Road, Havant, Hampshire, PO9 1NN Type: Transfer Station taking Non- Biodegradable Wastes Size: < 25000 tonnes Regis Licence Number: POR022 EPR reference: EA/EPR/BP3998HK/A001 Operator: Portsmouth Water Limited Waste Management licence No: 10279 Annual Tonnage: 23000.0	Issue Date: 29/06/2007 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Bedhampton Waste Works Correspondence Address: -, -
11C	625.0	SW	470658, 105792	Site Address: Harts Farm Way, Havant, Hampshire, PO9 1JN Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Regis Licence Number: TJW005 EPR reference: - Operator: T J Waste And Recycling Limited Waste Management licence No: 100089 Annual Tonnage: 0.0	Issue Date: 17/09/2007 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Havant Waste Transfer Facility Correspondence Address: -, The Pavilion, 2, Sherbourne Road, South Farnborough, Farnborough, Hampshire, GU14 6JT
12C	625.0	SW	470658, 105792	Site Address: Harts Farm Way, Havant, Hampshire, PO9 1JN Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Regis Licence Number: DUD004 EPR reference: - Operator: T J Waste & Recycling Ltd. Waste Management licence No: 10221 Annual Tonnage: 74884.0	Issue Date: 23/11/2000 Effective Date: 11/01/2008 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Harts Farm Way Transfer Station Correspondence Address: -, Charity Farm, 127, Wickham Road, Fareham, Hampshire, PO17 5BP
13C	625.0	SW	470658, 105792	Site Address: Land/ Premises At, Harts Farm Way, Havant, Hampshire, PO9 1JN Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Regis Licence Number: TJW005 EPR reference: EA/EPR/NP3695EU/A001 Operator: T J Waste & Recycling Ltd Waste Management licence No: 100089 Annual Tonnage: 124999.0	Issue Date: 17/09/2007 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Havant Waste Transfer Facility Correspondence Address: -, -
14C	625.0	SW	470658, 105792	Site Address: Harts Farm Way, Havant, Hampshire, PO9 1JN Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Regis Licence Number: DUD001 EPR reference: - Operator: Dudman Waste & Environmental Ltd Waste Management licence No: 10221 Annual Tonnage: 74884.0	Issue Date: 23/11/2000 Effective Date: 02/07/2002 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Harts Farm Way Transfer Station Correspondence Address: -, Unit 6 Rudford Industrial Estate, Ford, West Sussex, BN18 0BD
15C	625.0	SW	470658, 105792	Site Address: Harts Farm Way Transfer Station, Harts Farm Way, Havant, Hampshire, PO9 1JN Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Regis Licence Number: DUD004 EPR reference: EA/EPR/DP3095HH/T003 Operator: T J Waste & Recycling Ltd Waste Management licence No: 10221 Annual Tonnage: 74884.0	Issue Date: 23/11/2000 Effective Date: 11/01/2008 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Harts Farm Way Transfer Station Correspondence Address: -, -
16A	674.0	NW	470600, 106360	Site Address: Bedhampton Waterworks, Meyrick Road, Havant, Hampshire Type: Landfill taking Non-Biodegradeable Wastes Size: >= 25000 tonnes < 75000 tonnes Regis Licence Number: POR008 EPR reference: - Operator: Portsmouth Water Company Ltd Waste Management licence No: 19988 Annual Tonnage: 0.0	Issue Date: 18/02/1992 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Bedhampton Waterworks Correspondence Address: -, P O Box 8, West Street, Havant, Hampshire, PO9 1LG

17A	687.0	NW	470600, 106390	Site Address: Bedhampton Waterworks, Meyrick Road, Havant, Hampshire, PO9 1NN Type: Inert LF Size: < 25000 tonnes Regis Licence Number: POR008 EPR reference: EA/EPR/NP3439SN/A001 Operator: Portsmouth Water Ltd Waste Management licence No: 19988 Annual Tonnage: 1126.0	Issue Date: 2/18/1992 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: IPPC Site Name: Bedhampton Waterworks Landfill Correspondence Address: -, P O Box 8, West Street, Havant, Hampshire, PO9 1LG
18A	687.0	NW	470600, 106390	Site Address: Bedhampton Waterworks, Meyrick Road, Havant, Hampshire, PO9 1NN Type: Landfill taking Non-Biodegradable Wastes Size: < 25000 tonnes Regis Licence Number: POR008 EPR reference: EA/EPR/WP3192HB/A001 Operator: Portsmouth Water Ltd Waste Management licence No: 19988 Annual Tonnage: 1126.0	Issue Date: 18/02/1992 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: IPPC Site Name: Bedhampton Waterworks Landfill Correspondence Address: -, -
19A	687.0	NW	470600, 106390	Site Address: Bedhampton Waterworks, Meyrick Road, H, Bedhampton, Hampshire, PO9 1NN Type: Inert LF Size: < 25000 tonnes Regis Licence Number: POR044 EPR reference: EA/EPR/NP3439PN/A001 Operator: Portsmouth Water Ltd Waste Management licence No: 210123 Annual Tonnage: 1126.0	Issue Date: 21/04/2005 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Bedhampton Landfill Correspondence Address: -, -
20	691.0	W	470541, 105918	Site Address: Havant Incinerator, Harts Farm Way, Havant, Hampshire Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Regis Licence Number: ASS002 EPR reference: EA/EPR/WP3792HZ/S002 Operator: Associated Environmental Projects (hampshire) Ltd Waste Management licence No: 19989 Annual Tonnage: 25000.0	Issue Date: 21/06/1993 Effective Date: - Modified: - Surrendered Date: 26/11/2001 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Recycling Storage Bays Correspondence Address: -, -
Not shown	735.0	W	470500, 105900	Site Address: Harts Farm Way, Havant, Hampshire, PO9 1JN Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Regis Licence Number: ONY032 EPR reference: - Operator: Veolia E S Hampshire Ltd Waste Management licence No: 10229 Annual Tonnage: 32.0	Issue Date: 19/12/2002 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Harts Farm Depot Correspondence Address: -, Poles Lane, Winchester, Otterbourne, Hampshire, SO21 1EA
Not shown	735.0	W	470500, 105900	Site Address: Harts Farm Way, Havant, Hampshire, PO9 1JN Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Regis Licence Number: ONY032 EPR reference: - Operator: Onyx (hampshire) Ltd Waste Management licence No: 10229 Annual Tonnage: 320.0	Issue Date: 19/12/2002 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Harts Farm Depot Correspondence Address: -, Poles Lane, Winchester, Otterbourne, Hampshire, SO21 1EA
Not shown	735.0	W	470500, 105900	Site Address: Harts Farm Way Depot, Harts Farm Way, Havant, Hampshire, PO9 1JN Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Regis Licence Number: HAM039 EPR reference: EA/EPR/FP3594LP/T001 Operator: Hampshire County Council Waste Management licence No: 10229 Annual Tonnage: 32.0	Issue Date: 19/12/2002 Effective Date: 01/02/2010 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Harts Farm Depot Correspondence Address: -, -

Not shown	749.0	W	470500, 105850	Site Address: Havant H W R C, Harts Farm Way, Havant, Hampshire, PO9 1JN Type: Non-hazardous & hazardous HWA Site Size: < 25000 tonnes Regis Licence Number: HOP043 EPR reference: EA/EPR/BB3538AG/A001 Operator: Hopkins Recycling Limited Waste Management licence No: 103260 Annual Tonnage: 74999.0	Issue Date: 02/03/2012 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Havant Household Waste Recycling Centre Correspondence Address: -, -
Not shown	754.0	SW	470530, 105760	Site Address: Harts Farm Way, Havant, Hampshire, PO9 1JN Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Regis Licence Number: HAM003 EPR reference: - Operator: Hampshire Recycling Ltd Waste Management licence No: 19983 Annual Tonnage: 0.0	Issue Date: 04/11/1998 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: H W R C At Harts Farm Way Correspondence Address: -, Unit 10, Bridge Farm, Curbridge, Botley, Hampshire, SO30 2HB
Not shown	754.0	SW	470530, 105760	Site Address: Land/ Premises At, Harts Farm Way, Havant, Hampshire, PO9 1JN Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Regis Licence Number: HOP014 EPR reference: EA/EPR/WP3592HT/V002 Operator: Hopkins Recycling Ltd Waste Management licence No: 19983 Annual Tonnage: 24999.0	Issue Date: 29/06/1993 Effective Date: - Modified: 19/08/2004 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: H W R C Correspondence Address: -, -
Not shown	774.0	SW	470518, 105738	Site Address: Havant Hwrc, Harts Farm Way, Havant, Hampshire, PO9 1HR Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Regis Licence Number: HOP015 EPR reference: - Operator: Hopkins Recycling Ltd Waste Management licence No: 10275 Annual Tonnage: 21850.0	Issue Date: 18/09/2006 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Havant Household Waste Recycling Centre Correspondence Address: -, Ashburton Court West, The Castle, Winchester, Hampshire, SO23 8UD
Not shown	774.0	SW	470518, 105738	Site Address: Havant Hwrc, Harts Farm Way, Havant, Hampshire, PO9 1HR Type: Household Waste Amenity Site Size: < 25000 tonnes Regis Licence Number: HOP015 EPR reference: EA/EPR/PP3198HX/A001 Operator: Hopkins Recycling Ltd Waste Management licence No: 10275 Annual Tonnage: 21850.0	Issue Date: 18/09/2006 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Havant Household Waste Recycling Centre Correspondence Address: -, -
Not shown	774.0	SW	470518, 105738	Site Address: Havant H W R C, Harts Farm Way, Havant, Hampshire, PO9 1JN Type: Household Waste Amenity Site Size: < 25000 tonnes Regis Licence Number: HOP015 EPR reference: EA/EPR/PP3198HX/A001 Operator: Hopkins Recycling Limited Waste Management licence No: 10275 Annual Tonnage: 21850.0	Issue Date: 18/09/2006 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Havant H W R C Correspondence Address: -, -
Not shown	812.0	SW	470700, 105450	Site Address: Southmoor Lane, Havant, Hampshire, PO9 1JW Type: Biological Treatment Facility Size: < 25000 tonnes Regis Licence Number: SOU038 EPR reference: - Operator: Southern Water Services Ltd Waste Management licence No: 19990 Annual Tonnage: 0.0	Issue Date: 16/02/1996 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Budds Farm Waste Water Treatment Works Correspondence Address: -, Southern House, Sparrowgrove, Otterbourne, Winchester, Hampshire, SO21 2SW

Not shown	812.0	SW	470700, 105450	Site Address: Budds Farm Water Treatment Works, Southmoor Lane, Budds Farm, Havant, Hampshire, PO9 1JW Type: Biological Treatment Facility Size: < 25000 tonnes Regis Licence Number: SOU038 EPR reference: EA/EPR/AP3392HG/A001 Operator: Southern Water Services Limited Waste Management licence No: 19990 Annual Tonnage: 1200.0	Issue Date: 16/02/1996 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: W T W Correspondence Address: -, -
Not shown	939.0	NE	472130, 106610	Site Address: 8, New Lane, Havant, Hampshire, PO9 2JH Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Regis Licence Number: WES001 EPR reference: EA/EPR/WP3292HL/A001 Operator: Wessex Construction And Plant Ltd Waste Management licence No: 19986 Annual Tonnage: 75000.0	Issue Date: 05/12/1991 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Transfer Station At New Lane Correspondence Address: -, -

3. Current Land Use Map



Current Land Use Legend

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- Site Outline
- Search Buffers (m)
- Current Industrial Sites
- Petrol & Fuel Sites
- Underground High Pressure Oil & Fuel Pipelines

3. Current Land Uses

3.1 Current Industrial Data

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

56

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

ID	Distance	Direction	Company	Address	Activity	Category
1	0.0	On Site	Electricity Sub Station	PO9	Electrical Features	Infrastructure and Facilities
2B	0.0	On Site	Shore Laminates Ltd	25D, Brockhampton Lane, Havant, PO9 1JD	Industrial Coatings and Finishings	Industrial Products
3A	0.0	On Site	Mitchell & James Caravans Ltd	Unit 3 25c, Brockhampton Lane, Havant, PO9 1JT	Sports and Leisure Equipment Repair	Repair and Servicing
4A	0.0	On Site	Havant Motor Factors	25c, Brockhampton Lane, Havant, PO9 1JT	Vehicle Parts and Accessories	Motoring
5A	0.0	On Site	Navitron Systems Ltd	25a, Brockhampton Lane, Havant, PO9 1JT	Marine Equipment Including Boats and Ships	Industrial Products
6B	0.0	On Site	Electricity Sub Station	PO9	Electrical Features	Infrastructure and Facilities
7P	23.0	S	Tesco Havant Langstone Harbour	Solent Road, Havant, Hampshire, PO9 1TR	Petrol and Fuel Stations	Road and Rail
8	35.0	NE	Six O Transport Ltd	4, Selbourne Road, Havant, PO9 1ND	Distribution and Haulage	Transport, Storage and Delivery
9	37.0	N	Electricity Sub Station	PO9	Electrical Features	Infrastructure and Facilities
10 D	38.0	NW	Hourglass Mirrors & Decorative Glass	14 The Tanneries, Brockhampton Lane, Havant, PO9 1JB	Glass	Industrial Products
11 C	48.0	NE	Tank	PO9	Tanks (Generic)	Industrial Features
12 C	48.0	NE	Industrial Estate	PO9	Business Parks and Industrial Estates	Industrial Features
13E	49.0	NE	Oden Services UK Ltd	23 The Tanneries, Brockhampton Lane, Havant, PO9 1JB	Waste Collection, Processing and Disposal Equipment	Industrial Products
14 D	51.0	NW	Andair Ltd	15 The Tanneries, Brockhampton Lane, Havant, PO9 1JB	Aeroplanes	Industrial Products
15E	64.0	NE	A C Redman Metal Spinnings Ltd	13 The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB	Metals Manufacturers, Fabricators and Stockholders	Industrial Products
16F	69.0	SW	Cosham Plant Hire	41, Brockhampton Lane, Havant, PO9 1LX	Construction and Tool Hire	Hire Services
17	74.0	N	Tank	PO9	Tanks (Generic)	Industrial Features
18	75.0	N	The Tanneries Industrial Estate	PO9	Business Parks and Industrial Estates	Industrial Features
19F	78.0	S	Depot	PO9	Container and Storage	Transport, Storage and Delivery
20	85.0	S	Industrial Estate	PO9	Business Parks and Industrial Estates	Industrial Features
21 H	89.0	NW	Tank	PO9	Tanks (Generic)	Industrial Features
22	91.0	SW	South Hants Glass	Unit 10, Solent Road, Havant, PO9 1JH	Glass	Industrial Products
23 G	101.0	NE	Bodyguard	27-28 The Tanneries, Brockhampton Lane, Havant, PO9 1JB	Vehicle Repair, Testing and Servicing	Repair and Servicing

24 G	101.0	NE	Iain's Auto Services	20 The Tanneries, Brockhampton Lane, Havant, PO9 1JB	Vehicle Repair, Testing and Servicing	Repair and Servicing
25 G	101.0	NE	Lynx Garage	19 The Tanneries, Brockhampton Lane, Havant, PO9 1JB	Vehicle Repair, Testing and Servicing	Repair and Servicing
26 H	102.0	NW	Tank	PO9	Tanks (Generic)	Industrial Features
27	104.0	E	Electricity Sub Station	PO9	Electrical Features	Infrastructure and Facilities
28	109.0	NE	G N X O Motorcycles Ltd	2-3 The Tanneries, Brockhampton Lane, Havant, PO9 1JB	Vehicle Components	Industrial Products
29	113.0	NE	Halfords	Unit 3 1, Selbourne Road, Havant, PO9 1ND	Vehicle Parts and Accessories	Motoring
30	121.0	NE	Electricity Sub Station	PO9	Electrical Features	Infrastructure and Facilities
31	126.0	SW	Electricity Sub Station	PO9	Electrical Features	Infrastructure and Facilities
32I	146.0	NE	E-tech Motorsport Ltd	4 The Tanneries, Brockhampton Lane, Havant, PO9 1JB	Vehicle Repair, Testing and Servicing	Repair and Servicing
33I	146.0	NE	Metalcraft Fabrications	29 The Tanneries, Brockhampton Lane, Havant, PO9 1JB	Metals Manufacturers, Fabricators and Stockholders	Industrial Products
34J	171.0	SW	Gas Governor	PO9	Gas Features	Infrastructure and Facilities
35J	174.0	SW	Gas Governor Station	PO9	Gas Features	Infrastructure and Facilities
36	181.0	NE	Henry Jones Joinery Ltd	59-61, West Street, Havant, PO9 1LB	General Construction Supplies	Industrial Products
37 K	188.0	NE	E M P Tooling Services Ltd	9, Brockhampton Lane, Havant, PO9 1LU	Cutting, Drilling and Welding Services	Construction Services
38	189.0	SE	Electricity Sub Station	PO9	Electrical Features	Infrastructure and Facilities
39L	202.0	NE	Electricity Sub Station	PO9	Electrical Features	Infrastructure and Facilities
40 K	206.0	NE	C J H Tyres Havant	3a, Brockhampton Lane, Havant, PO9 1LU	Vehicle Parts and Accessories	Motoring
41	216.0	W	Electricity Sub Station	PO9	Electrical Features	Infrastructure and Facilities
42 M	217.0	NE	South Coast Travel	1b, Brockhampton Lane, Havant, PO9 1LU	Airlines and Airline Services	Transport, Storage and Delivery
43L	221.0	NE	Alandown Motors Ltd	98, West Street, Havant, PO9 1LN	Vehicle Repair, Testing and Servicing	Repair and Servicing
44L	221.0	NE	Lawrence Warner Specialist Cars	98, West Street, Havant, PO9 1LN	Secondhand Vehicles	Motoring
45	228.0	SE	Electricity Sub Station	PO9	Electrical Features	Infrastructure and Facilities
46	230.0	NE	Merlin Management Solutions Ltd	24, Park Road South, Havant, PO9 1HB	Vehicle Hire and Rental	Hire Services
47 M	231.0	NE	Mercury Graphics	1a, Brockhampton Lane, Havant, PO9 1LU	Published Goods	Industrial Products
48 N	233.0	SW	Works	PO9	Unspecified Works Or Factories	Industrial Features
49	233.0	NW	Electricity Sub Station	PO9	Electrical Features	Infrastructure and Facilities
50 N	235.0	SW	Apollo Fire Detectors Ltd	36, Brookside Road, Havant, PO9 1JR	Electronic Equipment	Industrial Products
51	240.0	E	Renal Services Havant Operations	Langstone Gate, Solent Road, Havant, PO9 1TR	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products
52 O	246.0	S	Saacke Combustion Services Ltd	Langstone Technology Park 2b, Langstone Road, Havant, PO9 1SA	Industrial Engineers	Engineering Services
53 O	246.0	S	Teleplan	Langstone Technology Park 2b, Langstone Road, Havant, PO9 1SA	Electrical Equipment Repair and Servicing	Repair and Servicing
54 O	246.0	S	Lockheed Martin UK Ltd	Building 7000, Langstone Road, Langstone, Havant, PO9 1SW	Armed Services	Central and Local Government
55	247.0	NW	Tank	PO9	Tanks (Generic)	Industrial Features
56	249.0	NE	Speedy Hire Plc	47-49, West Street, Havant, PO9 1LA	Construction and Tool Hire	Hire Services

Report Reference: S EMS-171700_253487

3.2 Petrol and Fuel Sites

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

3

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance	Direction	NGR	Company	Address	LPG	Status
57P	41.0	S	471274, 106026	Tesco	Tesco Havant Langstone Harbour, Solent Road, Havant, Hampshire, PO9 1TR	No	Open
58	268.0	NE	471579, 106204	Texaco	Park Road South Service Station, Park Road South, Park Road South, Bulbeck Road, Havant, Hampshire, PO9 1HA	No	Closed
59	442.0	SW	470962, 105715	Unbranded	Havant Lorry Park, Southmoor Lane, Southmoor Lane, Havant, Hampshire, PO9 1JW	Not Applicable	Non-retail

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

Database searched and no data found.

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

4.2 Superficial Ground and Drift Geology

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

Lex Code	Description	Rock Type
HEAD-CLGR	HEAD	CLAYEY GRAVEL
RTDU-SSCL	RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)	SAND, SILT AND CLAY
ALV-CSSG	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

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

4.3 Bedrock and Solid Geology

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

LEX Code	Description	Rock Type
LPCK-CHLK	LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION, NEWHAVEN CHALK FORMATION, CULVER CHALK FORMATION AND PORTSDOWN CHALK FORMATION (UNDIFFERENTIATED)	CHALK

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

For more detailed geological and ground stability data please refer to the "GroundSure GeoInsight". Available from our website.

5a. Hydrogeology - Aquifer Within Superficial Geology

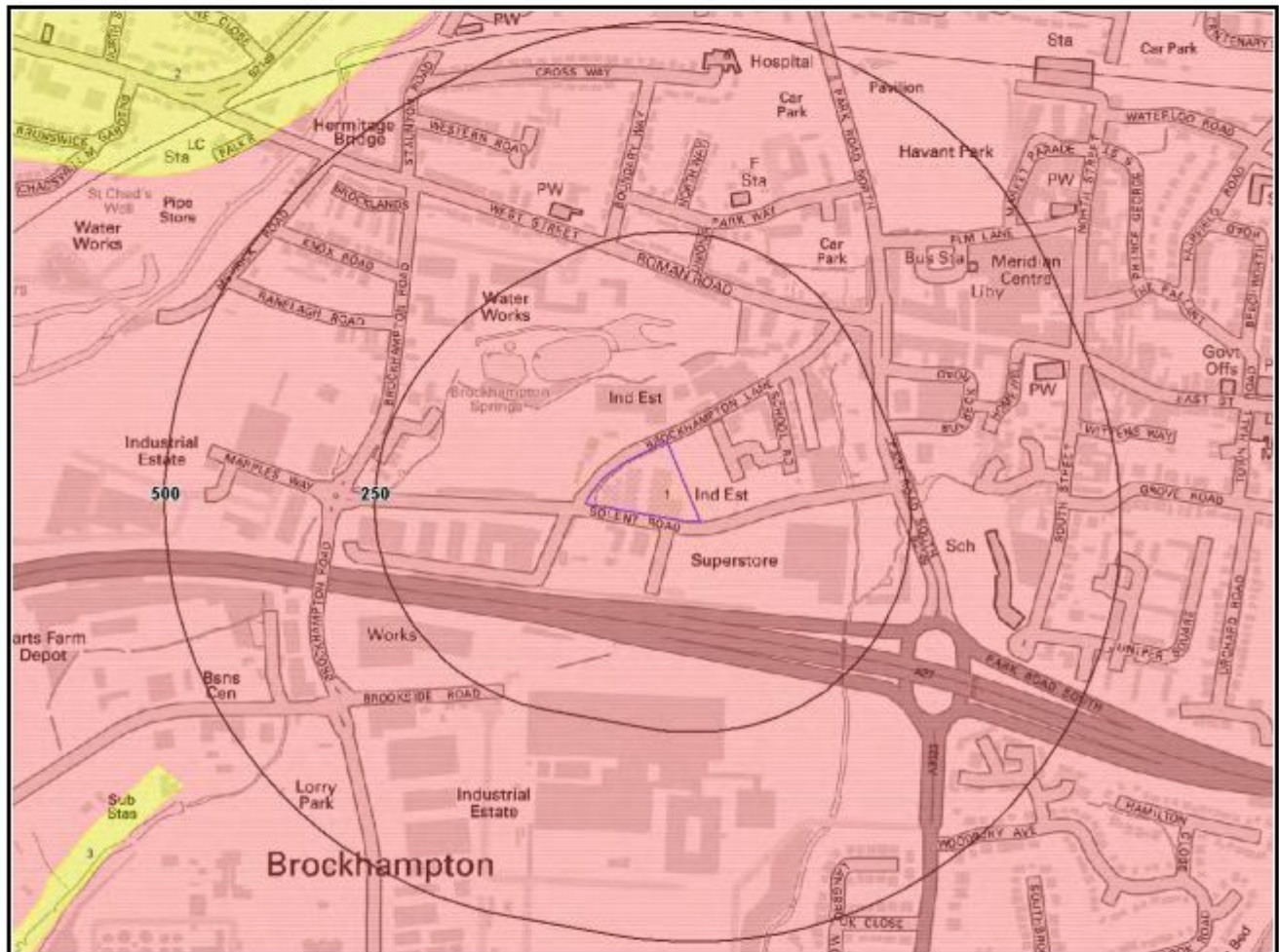
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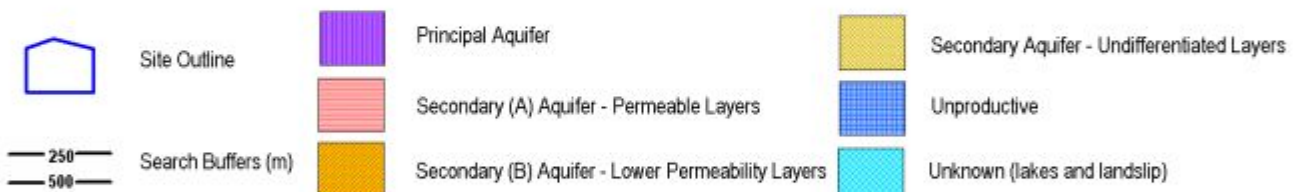
SE

Aquifer Within Superficial Geology Legend

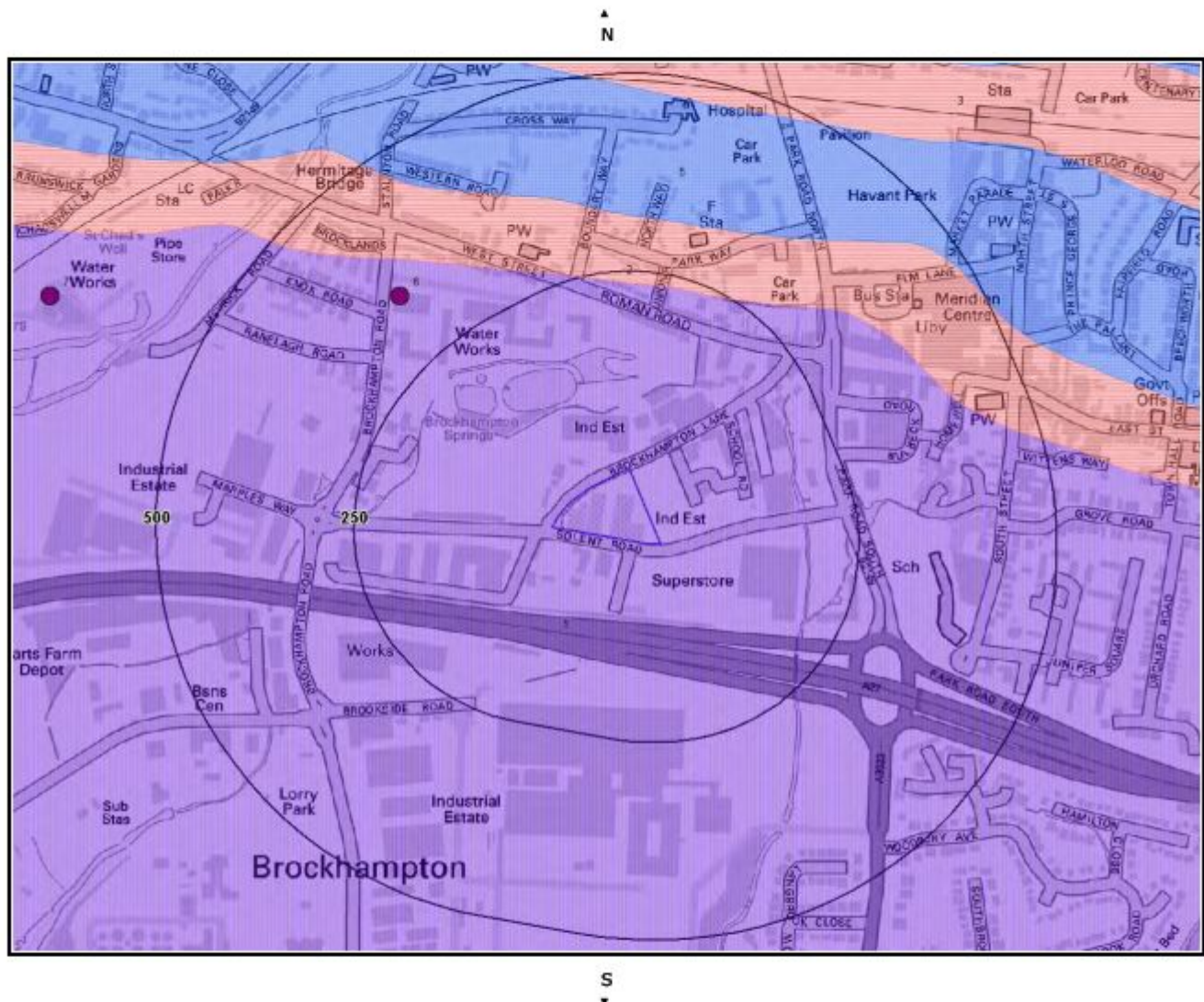
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5b. Hydrogeology - Aquifer Within Bedrock Geology and Abstraction Licenses



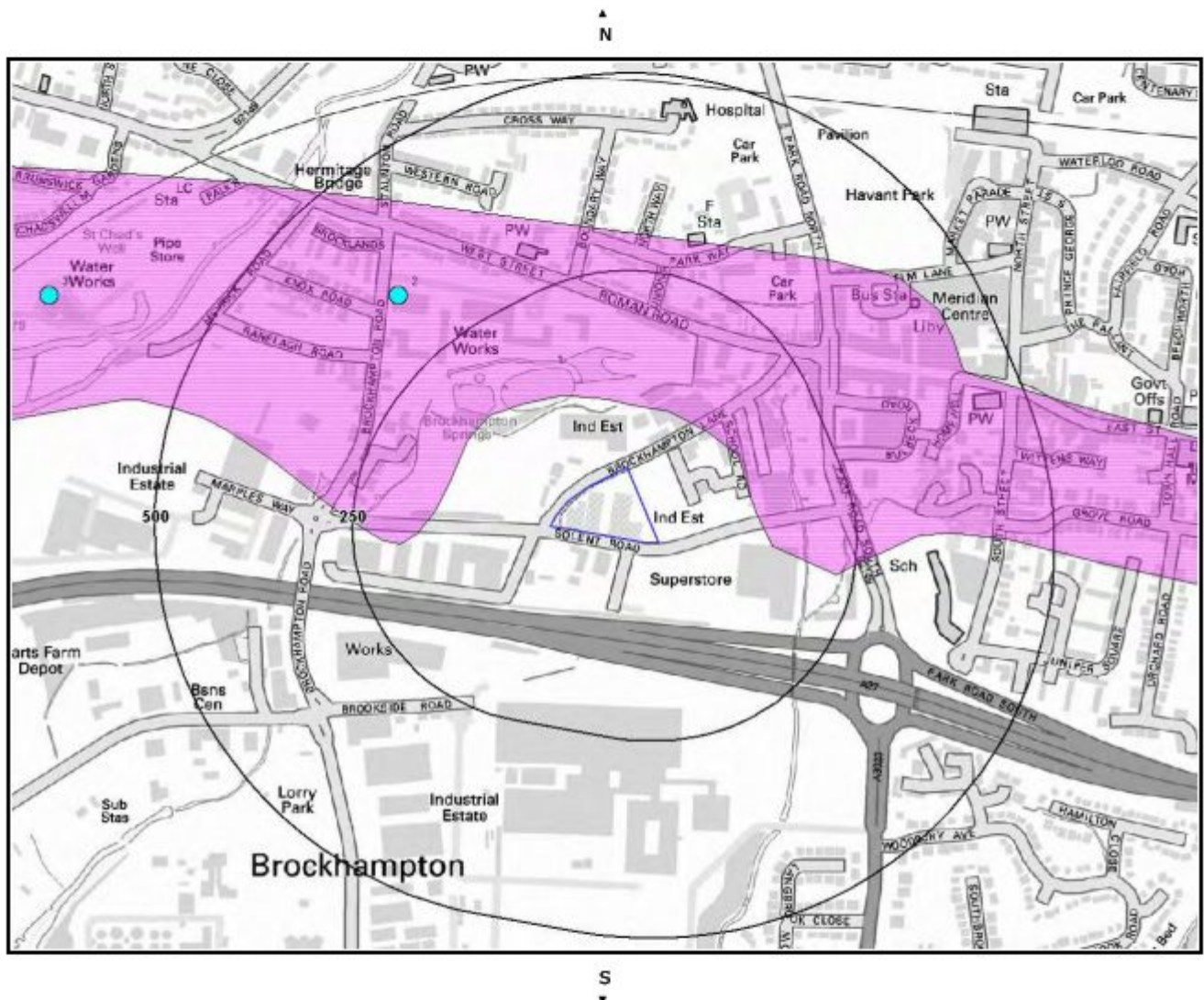
Aquifer Within Bedrock Geology Legend

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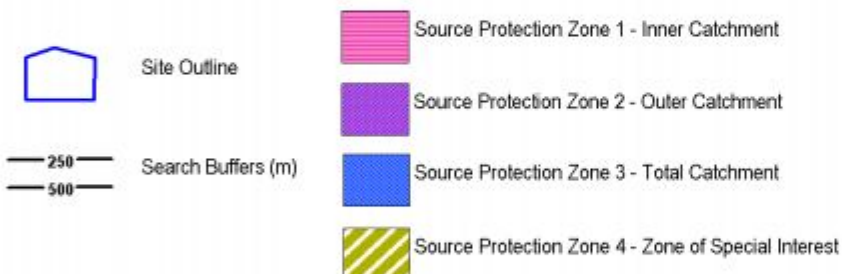
5c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



SPZ and Potable Water Abstraction Licenses
Legend

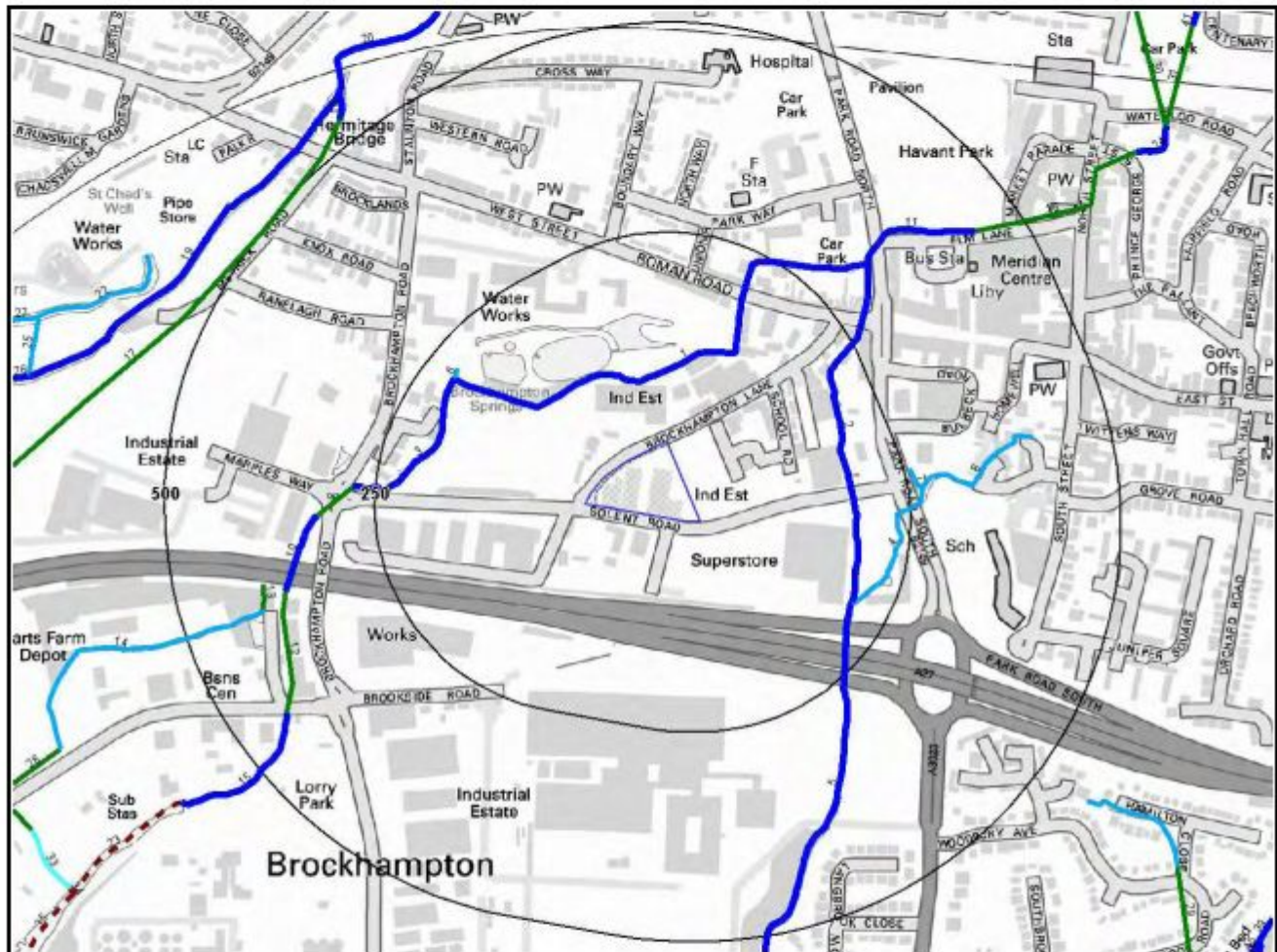
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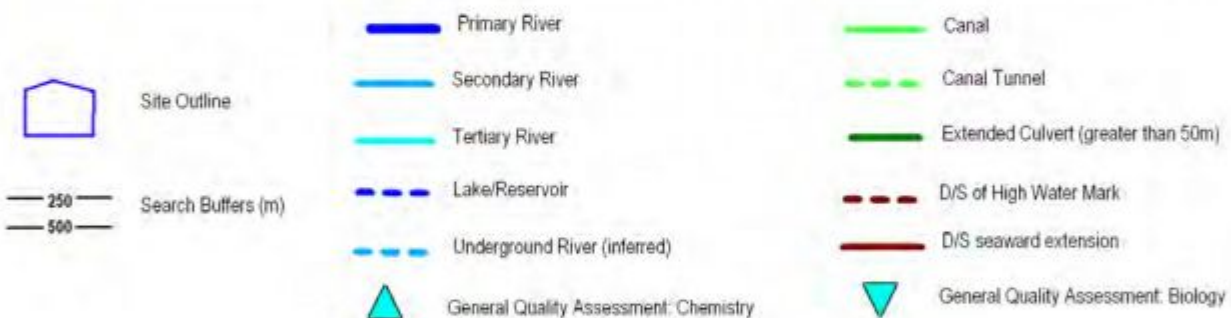


Potable Water Abstraction Licence

5d. Hydrology – Detailed River Network and River Quality



Hydrology Legend



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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	0.0	On Site	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
1	0.0	On Site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	234.0	N	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	318.0	N	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
3	472.0	N	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	Direction	NGR	Details
----	----------	-----------	-----	---------

6	337.0	NW	471020, 106370	Licence No: 11/42/36.2/1 Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: Bedhampton Ps Spring No 2 Data Type: Point	Annual Volume (m³): 35770000 Max Daily Volume (m³): 137000 Original Application No: NPS/WR/003341 Original Start Date: - Expiry Date: - Issue No: 102 Version Start Date: 9/6/2009 Version End Date:
7	697.0	NW	470580, 106370	Licence No: 11/42/36.2/1 Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: Bedhampton Ps Spring No 1 Data Type: Point	Annual Volume (m³): 35770000 Max Daily Volume (m³): 137000 Original Application No: NPS/WR/003341 Original Start Date: - Expiry Date: - Issue No: 102 Version Start Date: 9/6/2009 Version End Date:
Not shown	757.0	W	470480, 106270	Licence No: 11/42/36.2/1 Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: Havant Ps Data Type: Point	Annual Volume (m³): 35770000 Max Daily Volume (m³): 137000 Original Application No: NPS/WR/003341 Original Start Date: - Expiry Date: - Issue No: 102 Version Start Date: 9/6/2009 Version End Date:

5.4 Surface Water Abstraction Licences

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

No

Database searched and no data found.

5.5 Potable Water Abstraction Licences

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

Yes

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (5c):

ID	Distance	Direction	NGR	Details	
2	337.0	NW	471020, 106370	Licence No: 11/42/36.2/1 Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: Bedhampton Ps Spring No 2 Data Type: Point	Annual Volume (m³): 35770000 Max Daily Volume (m³): 137000 Original Application No: NPS/WR/003341 Original Start Date: - Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
3	697.0	NW	470580, 106370	Licence No: 11/42/36.2/1 Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: Bedhampton Ps Spring No 1 Data Type: Point	Annual Volume (m³): 35770000 Max Daily Volume (m³): 137000 Original Application No: NPS/WR/003341 Original Start Date: - Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	757.0	W	470480, 106270	Licence No: 11/42/36.2/1 Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: Havant Ps Data Type: Point	Annual Volume (m³): 35770000 Max Daily Volume (m³): 137000 Original Application No: NPS/WR/003341 Original Start Date: - Expiry Date: - Issue No: 102 Version Start Date: Version End Date:

5.6 Source Protection Zones

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

Yes

The following Source Protection Zones records are represented on the SPZ and Potable Water Abstraction Map (5c):

ID	Distance	Direction	Type	Description
1	79.0	N	1	Inner Catchment

5.7 River Quality

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

Yes

Biological Quality:

Database searched and no data found.

Chemical Quality:

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAH). In England, each chemical sample is measured for ammonia and dissolved oxygen. In Wales, the samples are measured for biological oxygen demand (BOD), ammonia and dissolved oxygen. The results are graded from A ('Very Good') to F ('Bad').

The following Chemical Quality records are shown on the Hydrology Map (5d):

ID	Distance [m]	Direction	NGR	River Details	Chemical Quality Grade (Headline Indicator)				
					2005	2006	2007	2008	2009
Not shown	668.0	N	471073, 106778	River Name: Hermitage Stream Reach: Tidal Limit - Source End/Start of Stretch: Sample Point NGR	B	B	B	B	B
Not shown	930.0	W	470300, 105900	River Name: Hermitage Stream Reach: Tidal Limit - Source End/Start of Stretch: End of Stretch NGR	B	B	B	B	B

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	Direction	Details	
1	78.0	NW	River Name: - Water Course Name: Brockhampton Stream Welsh River Name: - Alternative Name: -	River Type: Primary River Catchment: - Drain: NO Main River Status: Currently Undefined
2	184.0	E	River Name: - Water Course Name: Lavant Stream Welsh River Name: - Alternative Name: -	River Type: Primary River Catchment: - Drain: NO Main River Status: Currently Undefined
3	189.0	NW	River Name: Brockhampton Stream Water Course Name: Brockhampton Stream Welsh River Name: - Alternative Name: -	River Type: Primary River Catchment: - Drain: NO Main River Status: Currently Undefined

Report Reference: S EMS-171700_253487

4	204.0	SE	River Name: - Water Course Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Catchment: - Drain: NO Main River Status: Currently Undefined
5	204.0	SE	River Name: - Water Course Name: Langstone Mill Channel Welsh River Name: - Alternative Name: -	River Type: Primary River Catchment: - Drain: NO Main River Status: Currently Undefined
6	213.0	NW	River Name: - Water Course Name: Brockhampton Stream Welsh River Name: - Alternative Name: -	River Type: Secondary River Catchment: - Drain: NO Main River Status: Currently Undefined
7	256.0	E	River Name: - Water Course Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Catchment: - Drain: NO Main River Status: Currently Undefined
8	267.0	E	River Name: - Water Course Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Catchment: - Drain: NO Main River Status: Currently Undefined
9	277.0	W	River Name: - Water Course Name: Brockhampton Stream Welsh River Name: - Alternative Name: -	River Type: Extended Culvert (greater than 50m) Catchment: - Drain: NO Main River Status: Currently Undefined
10	319.0	W	River Name: Brockhampton Water Course Name: Brockhampton Stream Welsh River Name: - Alternative Name: -	River Type: Primary River Catchment: - Drain: NO Main River Status: Currently Undefined
11	319.0	NE	River Name: - Water Course Name: Lavant Stream Welsh River Name: - Alternative Name: -	River Type: Primary River Catchment: - Drain: NO Main River Status: Currently Undefined
12	371.0	W	River Name: - Water Course Name: Brockhampton Stream Welsh River Name: - Alternative Name: -	River Type: Extended Culvert (greater than 50m) Catchment: - Drain: NO Main River Status: Currently Undefined
13	395.0	W	River Name: - Water Course Name: Harts Farm Way Stream Welsh River Name: - Alternative Name: -	River Type: Extended Culvert (greater than 50m) Catchment: - Drain: NO Main River Status: Currently Undefined
14	403.0	W	River Name: - Water Course Name: Harts Farm Way Stream Welsh River Name: - Alternative Name: -	River Type: Secondary River Catchment: - Drain: NO Main River Status: Currently Undefined
15	433.0	SW	River Name: Brockhampton Water Course Name: Brockhampton Stream Welsh River Name: - Alternative Name: -	River Type: Primary River Catchment: - Drain: NO Main River Status: Currently Undefined
16	445.0	NE	River Name: - Water Course Name: Lavant Stream Welsh River Name: - Alternative Name: -	River Type: Extended Culvert (greater than 50m) Catchment: - Drain: NO Main River Status: Currently Undefined
17	499.0	NW	River Name: - Water Course Name: Hermitage Stream Welsh River Name: - Alternative Name: -	River Type: Extended Culvert (greater than 50m) Catchment: - Drain: NO 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 to Surface Water (m)	on-site	0-50	51-250
Surface water features within 250m of the study site	No	No	Yes

6. Environment Agency Flood Map

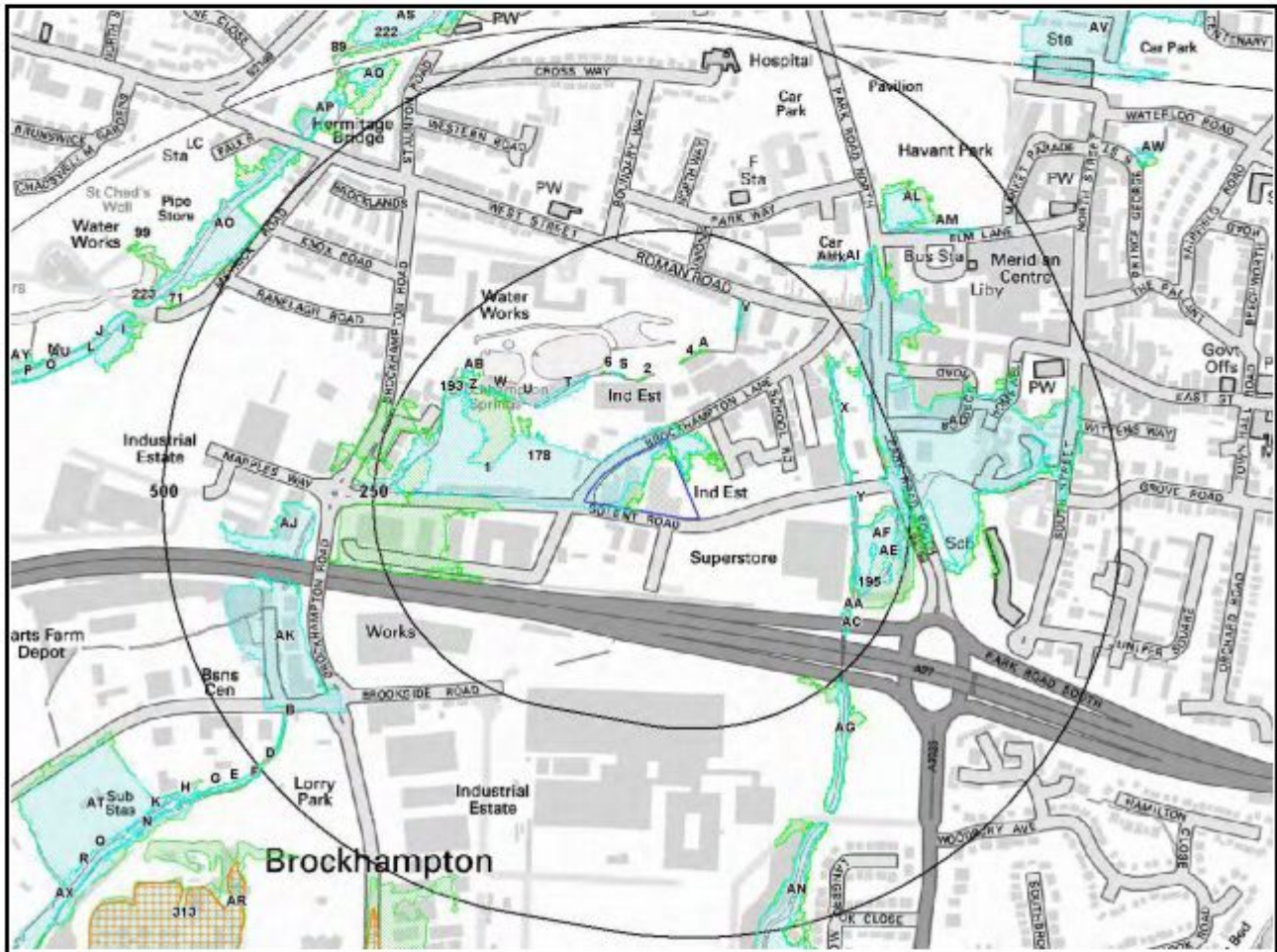
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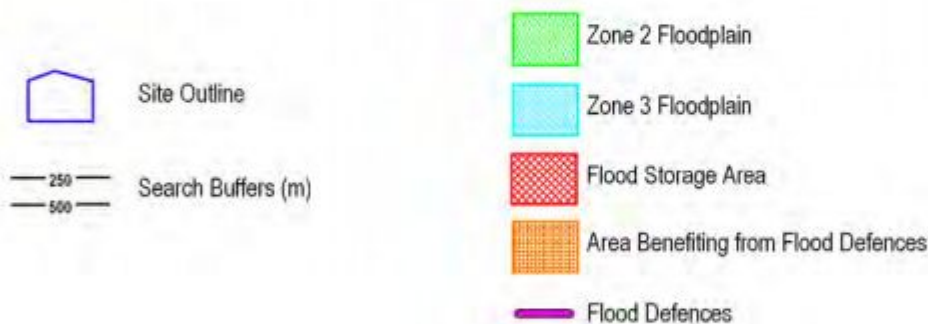
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SE

Environment Agency Flood Legend



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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	Direction	Update	Type
1	0.0	On Site	04-Jul-2012	Zone 2 - (Fluvial Models)
2	76.0	NW	04-Jul-2012	Zone 2 - (Fluvial Models)
3S	88.0	NW	04-Jul-2012	Zone 2 - (Fluvial Models)
4	93.0	N	04-Jul-2012	Zone 2 - (Fluvial Models)
5T	99.0	NW	04-Jul-2012	Zone 2 - (Fluvial Models)
6	104.0	NW	04-Jul-2012	Zone 2 - (Fluvial Models)
7A	107.0	N	04-Jul-2012	Zone 2 - (Fluvial Models)
8A	114.0	N	04-Jul-2012	Zone 2 - (Fluvial Models)
9U	128.0	NW	04-Jul-2012	Zone 2 - (Fluvial Models)
10V	154.0	NE	04-Jul-2012	Zone 2 - (Fluvial Models)
11X	179.0	E	04-Jul-2012	Zone 2 - (Fluvial Models)
12AE	181.0	E	04-Jul-2012	Zone 2 - (Fluvial Models)
13Y	181.0	E	04-Jul-2012	Zone 2 - (Fluvial Models)
14AA	202.0	SE	04-Jul-2012	Zone 2 - (Fluvial Models)
15AC	215.0	SE	04-Jul-2012	Zone 2 - (Fluvial Models)
16AD	219.0	E	04-Jul-2012	Zone 2 - (Fluvial Models)
17AG	223.0	SE	04-Jul-2012	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	Direction	Update	Type
178	0.0	On Site	04-Jul-2012	Zone 3 - (Fluvial Models)
179S	93.0	NW	04-Jul-2012	Zone 3 - (Fluvial Models)
180T	99.0	NW	04-Jul-2012	Zone 3 - (Fluvial Models)

181U	128.0	NW	04-Jul-2012	Zone 3 - (Fluvial Models)
182U	140.0	NW	04-Jul-2012	Zone 3 - (Fluvial Models)
183W	152.0	NW	04-Jul-2012	Zone 3 - (Fluvial Models)
184V	154.0	NE	04-Jul-2012	Zone 3 - (Fluvial Models)
185W	176.0	NW	04-Jul-2012	Zone 3 - (Fluvial Models)
186X	179.0	E	04-Jul-2012	Zone 3 - (Fluvial Models)
187Y	181.0	E	04-Jul-2012	Zone 3 - (Fluvial Models)
188AF	182.0	E	04-Jul-2012	Zone 3 - (Fluvial Models)
189Z	184.0	NW	04-Jul-2012	Zone 3 - (Fluvial Models)
190AB	193.0	NW	04-Jul-2012	Zone 3 - (Fluvial Models)
191Z	199.0	NW	04-Jul-2012	Zone 3 - (Fluvial Models)
192AA	203.0	SE	04-Jul-2012	Zone 3 - (Fluvial Models)
193	203.0	NW	04-Jul-2012	Zone 3 - (Fluvial Models)
194AB	208.0	NW	04-Jul-2012	Zone 3 - (Fluvial Models)
195	208.0	SE	04-Jul-2012	Zone 3 - (Fluvial Models)
196AC	215.0	SE	04-Jul-2012	Zone 3 - (Fluvial Models)
197AD	219.0	E	04-Jul-2012	Zone 3 - (Fluvial Models)
198AE	222.0	E	04-Jul-2012	Zone 3 - (Fluvial Models)
199AF	237.0	E	04-Jul-2012	Zone 3 - (Fluvial Models)
200AE	240.0	E	04-Jul-2012	Zone 3 - (Fluvial Models)
201AE	242.0	E	04-Jul-2012	Zone 3 - (Fluvial Models)

6.3 Flood Defences

Are there any Flood Defences within 250m of the study site?

No

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 used for Flood Storage

Are there any areas used for Flood Storage within 250m of the study site?

No

6.6 Groundwater Flooding Susceptibility Areas

Are there any British Geological Survey groundwater flooding susceptibility flood areas within 50m of the boundary of the study site?

Yes

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

Very High

6.7 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result?

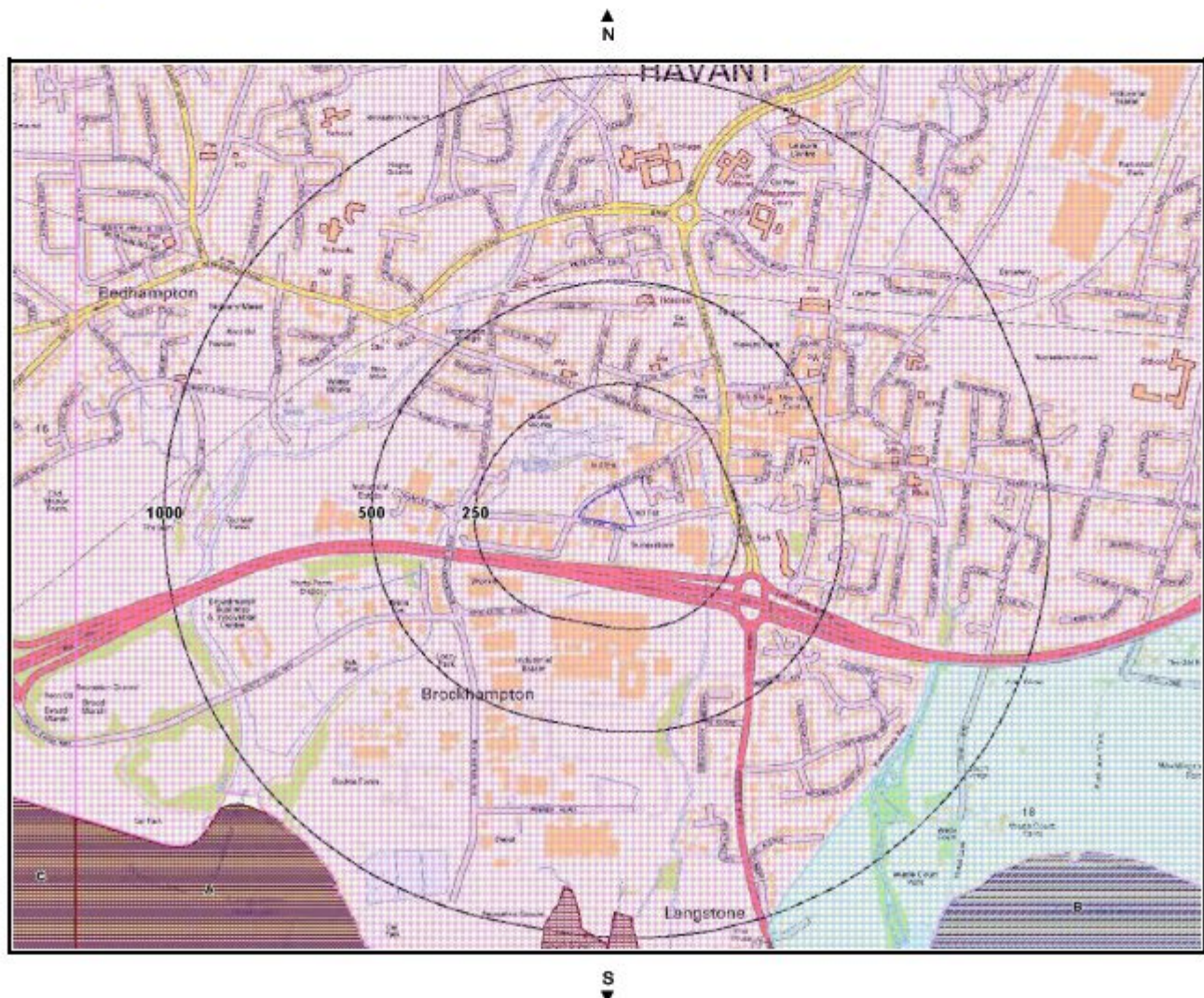
High

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



Designated Environmentally Sensitive Sites Legend

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7. Designated Environmentally Sensitive Sites

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

Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site: **4**

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	Direction	SSSI Name	Data Source
7A	889.0	S	Langstone Harbour	Natural England
8B	1188.0	SE	Chichester Harbour	Natural England
9C	1416.0	SW	Langstone Harbour	Natural England
Not shown	1749.0	SE	Warblington Meadow	Natural England

Records of National Nature Reserves (NNR) within 2000m of the study site: **0**

Database searched and no data found.

Records of Special Areas of Conservation (SAC) within 2000m of the study site: **3**

The following Special Area of Conservation (SAC) 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	Direction	SAC Name	Data Source
1A	1028.0	SW	Solent Maritime	Natural England
2	1188.0	SE	Solent Maritime	Natural England
3	1416.0	SW	Solent Maritime	Natural England

Records of Special Protection Areas (SPA) within 2000m of the study site: **3**

The following Special Protection Area (SPA) 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	Direction	SPA Name	Data Source
4A	889.0	S	Chichester and Langstone Harbours	Natural England
5B	1188.0	SE	Chichester and Langstone Harbours	Natural England
6C	1416.0	SW	Chichester and Langstone Harbours	Natural England

Records of Ramsar sites within 2000m of the study site: **3**

The following Ramsar site 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	Direction	Ramsar Site Name	Data Source
11A	889.0	S	Chichester and Langstone Harbours	Natural England
12B	1188.0	SE	Chichester and Langstone Harbours	Natural England
13C	1416.0	SW	Chichester and Langstone Harbours	Natural England

Records of Local Nature Reserves (LNR) within 2000m of the study site: **0**

Report Reference: S EMS-171700_253487

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	Direction	LNR Name	Data Source
Not shown	1855.0	S	West Hayling	Natural England

Records of World Heritage Sites within 2000m of the study site: 0

Database searched and no data found.

Records of Environmentally Sensitive Areas within 2000m of the study site: 0

Database searched and no data found.

Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site: 1

The following Area of Outstanding Natural Beauty (AONB) records and Scottish National Scenic Area (NSA) records provided by Natural England/Countryside Council for Wales/Scottish Government are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance	Direction	AONB/NSA Name	Data Source
18	785.0	SE	Chichester Harbour	Natural England

Records of National Parks (NP) within 2000m of the study site: 0

Database searched and no data found.

Records of Nitrate Sensitive Areas within 2000m of the study site: 0

Database searched and no data found.

Records of Nitrate Vulnerable Zones within 2000m of the study site: 3

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

ID	Distance	Direction	NVZ Type	Data Source
15	0.0	On Site	NVZ Area	DEFRA
16	1213.0	W	NVZ Area	DEFRA
Not shown	1961.0	S	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?

Moderate

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

Hazard
Very significant soluble rocks are present, with a moderate possibility of local natural subsidence due to high surface or subsurface water flow. Do not load the land or undertake building work before obtaining specialist advice. Do not dispose of drainage to the ground. Some possibility groundwater pollution. Maintain drainage infrastructure. For new build specialist site investigation and stability assessment may be necessary before construction. Construction work may cause subsidence. Increased construction costs are likely. For existing property probable increase in insurance risk due to soluble rocks.

8.1.4 Compressible Ground

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

Moderate

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:
 Report Reference: [S EMS-171700_253487](#)

Hazard

Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

8.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks* 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

Slight possibility for collapsible deposit problems after major changes in loading or groundwater conditions. Normal maintenance to avoid large amounts of water entering the ground through pipe leakage or soak-aways should reduce the likelihood of problems due to collapsible deposits. For new build, assess the possibility of collapsible (loessic) deposits in ground investigation. For existing property, no significant increase in insurance risk from collapsible deposits is likely.

8.1.6 Running Sand

What is the maximum Running Sand* 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 running sand problems after major changes in ground conditions. Normal maintenance to avoid leakage of water-bearing services or water bodies (ponds, swimming pools) should reduce likelihood of problems due to running sand. For new build consider possibility of running sand into trenches or excavations if water table is high or sandy strata are exposed to water. Avoid concentrated water inputs to site. Unlikely to be an increase in construction costs due to potential for running sand. For existing property no significant increase in insurance risk due to running sand problems is likely.

* 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*?

Negligible

*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

Database searched and no data found.

10. Contacts

GroundSure Helpline

Telephone: 08444 159 000
 info@4c.groundsure.com



British Geological Survey (England & Wales)

Kingsley Dunham Centre
 Keyworth, Nottingham NG12 5GG
 Tel: 0115 936 3143. Fax: 0115 936 3276. Email:
 enquiries@bgs.ac.uk
 Web: 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
 Email: enquiries@environment-agency.gov.uk



Health Protection Agency

Chilton, Didcot, Oxon, OX11 0RQ
 Tel: 01235 822622 www.hpa.org.uk/radiation
 Radon measures and general radon information and
 guidance



The Coal Authority

200 Lichfield Lane, Mansfield, Notts NG18 4RG
 Tel: 0845 762 6848
 DX 716176 Mansfield 5
 Web: www.groundstability.com



Ordnance Survey

Romsey Road
 Southampton SO16 4GU
 Tel: 08456 050505



Local Authority

Authority: Havant Borough Council
 Phone: 023 9247 4174
 Web: www.havant.gov.uk
 Address: Civic Centre Road, Havant, Hampshire, PO9 2AX

Get Mapping PLC

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



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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 conditions unless the context otherwise requires:

"Beneficiary" means the Client or the customer of the Client for whom the Client has procured the Services.

"Commercial" means any building which is not Residential.

"Commission" means an order for Consultancy Services submitted by a Client.

"Consultancy Services" mean consultancy services provided by GroundSure including, without limitation, carrying out interpretation of third party and in-house environmental data, provision of environmental consultancy advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

"Contract" means the contract between GroundSure and the Client for the performance of the Services which arises upon GroundSure's acceptance of an Order or Commission and which shall incorporate these conditions, the relevant GroundSure User Guide, proposal by GroundSure and the content of any subsequent report, and any agreed amendments in accordance with clause 11.

"Client" means the party that submits an Order or Commission.

"Data Provider" means any third party providing Third Party Content to GroundSure.

"Data Report" means reports comprising factual data with no professional interpretation in respect of the level of likely risk and/or liability available from GroundSure.

"GroundSure" means GroundSure Limited, a company registered in England and Wales under number 03421028 and whose registered office is at Greater London House, Hampstead Road, London NW1 7EJ.

"GroundSure Materials" means all materials prepared by GroundSure as a result of the provision of the Services, including but not limited to Data Reports, Mapping and Risk Screening Reports.

"Intellectual Property" means any patent, copyright, design rights, service marks, moral rights, data protection rights, know-how, trade mark or any other intellectual property rights.

"Mapping" an historical map or a combination of historical maps of various ages, time periods and scales available from GroundSure.

"Order" means an order form submitted by the Client requiring Services from GroundSure in respect of a specified Site.

"Order Website" means online platform via which Orders may be placed.

"Report" means a Risk Screening Report or Data Report for commercial or residential property available from GroundSure relating to the Site prepared in accordance with the specifications set out in the relevant User Guide.

"Residential" means any building used as or suitable for use as an individual dwelling.

"Risk Screening Report" means one of GroundSure's risk screening reports, comprising factual data with interpretation in respect of the level of likely risk and/or liability, excluding "Consultancy Services".

"Services" means the provision of any Report, Mapping or Consultancy Services which GroundSure has agreed to carry out for the Client/Beneficiary on these terms and conditions in respect of the Site.

"Site" means the landsite in respect of which GroundSure provides the Services.

"Third Party Content" means any data, database or other information contained in a Report or Mapping which is provided to GroundSure by a Data Provider.

"User Guide" means the relevant current version of the user guide, available upon request from GroundSure.

2 Scope of Services

2.1 GroundSure agrees to carry out the Services in accordance with the Contract and to the extent set out therein.

2.2 GroundSure shall exercise all the reasonable skill, care and diligence to be expected of experienced environmental consultants in the performance of the Services.

2.3 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 the Contract.

2.4 Terms and conditions appearing on a Client's order form, printed stationery or other communication, including invoices, to GroundSure, its employees, servants, agents or other representatives or any terms implied by custom, practice or course of dealing shall be of no effect and these terms and conditions shall prevail over all others.

2.5 If a Client/Beneficiary requests insurance in conjunction with or as a result of the Services, GroundSure shall use reasonable endeavours to procure such insurance, but makes no warranty that such insurance shall be available from insurers or offered on reasonable terms. GroundSure does not endorse or recommend any particular insurance product, policy or insurer. Any insurance purchased shall be subject solely to the terms of the policy issued by insurers and GroundSure will have no liability therefor. The Client/Beneficiary should take independent advice to ensure that the insurance policy requested and/or offered is suitable for its requirements.

2.6 GroundSure's quotations/proposals are valid for a period of 30 days only. GroundSure reserves the right to withdraw any quotation at any time before GroundSure accepts an Order or Commission. GroundSure's acceptance of an Order or Commission shall be effective only where such acceptance is in writing and signed by GroundSure's authorised representative or where accepted via GroundSure's Order Website.

3 The Client's obligations

3.1 The Client shall ensure the Beneficiary complies with and is bound by the terms and conditions set out in the Contract and shall provide that GroundSure may in its own right enforce such terms and conditions against the Beneficiary pursuant to the Contracts (Rights of Third Parties) Act 1999. The Client shall be liable for all breaches of the Contract by the Beneficiary as if they were breaches by the Client. The Client shall be solely responsible for ensuring that the Report/Mapping ordered is appropriate and suitable for the Beneficiary's needs.

3.2 The Client shall (or shall procure that the Beneficiary shall) supply to GroundSure as soon as practicable and without charge all information necessary and accurate relevant data including any specific and/or unusual environmental information relating to the Site known to the Client/Beneficiary which may pertain to the Services and shall give such assistance as GroundSure shall reasonably require in the performance of the Services (including, without limitation, access to a Site, facilities and equipment as agreed in the Contract).

3.3 Where Client/Beneficiary approval or decision is required, such approval or decision shall be given or procured in reasonable time as not to delay or disrupt the performance of any other part of the Services.

3.4 The Client shall not and shall not knowingly permit the Beneficiary to, save as expressly permitted by these terms and conditions, re-sell, alter, add to, amend or use out of context the content of any Report, Mapping or, in respect of any Services, information given by GroundSure. For the avoidance of doubt, the Client and Beneficiary may make the Report, Mapping or GroundSure's findings available to a third party who is considering acquiring the whole or part of the Site, or providing funding in relation to the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.5 The Client is responsible for maintaining the confidentiality of its user name and password if using GroundSure's internet ordering service and accepts responsibility for all activity that occurs under such account and password.

4 Reliance

4.1 Upon full payment of all relevant fees and subject to the provisions of these terms and conditions, the Client and Beneficiary are granted an irrevocable royalty-free licence to access the information contained in a Report, Mapping or in a report prepared by GroundSure in respect of or arising out of Consultancy Services. The Services may only be used for the benefit of the Client and those persons listed in clauses 4.2 and 4.3.

4.2 In relation to Data Reports, Mapping and Risk Screening Reports, the Client shall be entitled to make Reports available to (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 (v) the professional advisers and lenders of the first purchaser or tenant of the Site. Accordingly GroundSure shall have the same duties and obligations to those persons in respect of the Services as it has to the Client and those persons shall have the benefit of any of the Client's rights under the Contract as if those persons were parties to the Contract. For the avoidance of doubt, the limitations of GroundSure's liability as set out in clauses 7 and 11.6 shall apply.

4.3 In relation to Consultancy Services, reliance shall be limited to the Client, Beneficiary and named parties on the Report.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise agreed in writing with GroundSure, any other party considering the information supplied by GroundSure as part of the Services, including (but not limited to) insurance underwriters, does so at their own risk and GroundSure has no legal obligations to such party unless otherwise agreed in writing.

4.5 The Client shall not and shall not knowingly permit any person (including the Beneficiary) who is provided with a copy of any Report, (except as permitted herein or by separate agreement with GroundSure) to: (a) remove, suppress or modify any trade mark, copyright or other proprietary marking from the Report or Mapping; (b) create any product which is derived directly or indirectly from the data contained in the Report or Mapping; (c) combine the Report or Mapping with, or incorporate the Report or Mapping into any other information data or service; or (d) re-format or otherwise change (whether by modification, addition or enhancement) data or images contained in the Report or Mapping.

4.6 Notwithstanding clause 4.5, if the Client acts in a professional capacity, it may make reasonable use of a Report and/or findings made as a result of Consultancy Services to advise Beneficiaries. However, GroundSure shall have no liability in respect of any opinion or report given to such Beneficiaries by the Client or a third party.

5 Fees and Disbursements

5.1 GroundSure shall charge the Client fees at the rate and frequency specified in the Contract together, in the case of Consultancy Services, with all proper disbursements incurred by GroundSure in performing the Services. For the avoidance of doubt, the fees payable for the Services are as set out in GroundSure's written proposal, Order Website or Order acknowledgement form. 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.

5.2 Unless GroundSure requires prepayment, the Client shall promptly pay all fees disbursements and other monies due to GroundSure in full without deduction, counterclaim or set off together with such value added tax or other tax as may be required within 30 days from the date of GroundSure's invoice or such other period as may be agreed in writing between GroundSure and the Client ("Payment Date"). GroundSure reserves the right to charge interest which shall accrue on a daily basis from 30 days after the date of Payment Date until the date of payment (whether before or after judgment) at the rate of five per cent per annum above the Bank of England base rate from time to time.

5.3 In the event that the Client disputes the amount payable in respect of GroundSure's invoice it shall notify GroundSure no later than 28 days after the date thereof that it is in dispute. In default of such notification the Client shall be deemed to have agreed the amount thereof. As soon as reasonably practicable following receipt of a notification in respect of any disputed invoice, a member of the management team at GroundSure shall contact the Client and the parties shall use all reasonable endeavours to resolve the dispute.

6 Intellectual Property and Confidentiality

6.1 Subject to the provisions of clause 4.1, the Client and the Beneficiary hereby acknowledge that all Intellectual Property in the Services and Content are and shall remain owned by either GroundSure or the Data Providers and nothing in these terms purports to transfer or assign any rights to the Client or the Beneficiary in respect of the Intellectual Property.

6.2 The Client shall acknowledge the ownership of the Third Party Content where such Third Party Content is incorporated or used in the Client's own documents, reports, systems or services whether or not these are supplied to a third party.

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

6.4 The Client acknowledges that the proprietary rights subsisting in copyright, database rights and any other intellectual property rights in respect of any data and information contained in any Report are and shall remain (subject to clause 11.1) the property of GroundSure and/or any third party that has supplied data or information used to create a Report, and that these conditions do not purport to grant, assign or transfer any such rights in respect thereof to a Client and/or a Beneficiary.

6.5 The Client shall (and shall procure that any recipients of the Report as permitted under clause 4.2 shall):

(i) not remove, suppress or modify any trademark, 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 data contained in 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; and
- (v) not reformat or otherwise change (whether by modification, addition or enhancement), data contained in the Services (save that those acting in a professional capacity to the Beneficiary shall not be in breach of this clause 6.5(v) where such reformatting is in the normal course of providing advice based upon the Services),
- in each case of parts (iii) to (v) inclusive, whether or not such product or report is produced for commercial profit or not.
- 6.6 The Client and/or Beneficiary shall and shall procure that any party 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.
- 6.8 Save as otherwise set out in these terms and conditions, any information provided by one party ("Disclosing Party") to the other party ("Receiving Party") shall be treated as confidential and only used for the purposes of these terms and conditions, except in so far as the Receiving Party is authorised by the Disclosing Party to provide such information in whole or in part to a third party.
- 7 Liability**
- THE CLIENT'S ATTENTION IS DRAWN TO THIS PROVISION**
- 7.1 Subject to the provisions of this clause 7, GroundSure shall be liable to the Beneficiary only in relation to any direct losses or damages caused by any negligent act or omission of GroundSure in preparing the GroundSure Materials and provided that the Beneficiary has used all reasonable endeavours to mitigate any such losses.
- 7.2 GroundSure shall not be liable for any other losses or damages incurred by the Beneficiary, including but not limited to:
- (i) loss of profit, revenue, business or goodwill, losses relating to business interruption, loss of anticipated savings, loss of or corruption to data or for any special, indirect or consequential loss or damage which arise out of or in connection with the GroundSure Materials or otherwise in relation to a Contract;
 - (ii) any losses or damages that arise as a result of the use of all or part of the GroundSure Materials in breach of these terms and conditions or contrary to the terms of the relevant User Guide;
 - (iii) any losses or damages that arise as a result of any error, omission or inaccuracy in any part of the GroundSure Materials where such part is based on any Third Party Content or any reasonable interpretation of Third Party Content. The Client accepts, and shall procure that any other Beneficiary shall accept, that it has no claim or recourse to any Data Provider in relation to Third Party Content; and/or
 - (iv) any loss or damage to a Client's computer, software, modem, telephone or other property caused by a delay or loss of use of GroundSure's internet ordering service.
- 7.3 GroundSure's total liability in contract, tort (including negligence or breach of statutory duty), misrepresentation, restitution or otherwise, arising in connection with the GroundSure Materials or otherwise in relation to the Contract shall be limited to £10 million in total (i) for any one claim or (ii) for a series of connected claims brought by one or more parties.
- 7.4 For the duration of the liability periods set out in clauses 7.5 and 7.6 below, GroundSure shall maintain professional indemnity insurance in respect of its liability under these terms and conditions provided such insurance is readily available at commercially viable rates. GroundSure shall produce evidence of such insurance if reasonably requested by the Client. A level of cover greater than GroundSure's current level of cover may be available upon request and agreement with the Client.
- 7.5 Any claim under the Contract in relation to Data Reports, Mapping and Risk Screening Reports, must be brought within six years from the date when the Beneficiary became aware that it may have a claim and in no event may a claim be brought twelve years or more after completion of such a Contract. For the avoidance of doubt, any claim in respect of which proceedings are notified to GroundSure in writing prior to the expiry of the time periods referred to in this clause 7.5 shall survive the expiry of those time periods provided the claim is actually commenced within six months of notification.
- 7.6 Any claim under the Contract in relation to Consultancy Services, must be brought within six years from the date the Consultancy Services were completed.
- 7.7 The Client accepts and shall procure that any other Beneficiary shall accept that it has no claim or recourse to any Data Provider or to GroundSure in respect of the acts or omissions of any Data Provider and/or any Third Party Content provided by a Data Provider.
- 7.8 Nothing in these terms and conditions:
- (i) excludes or limits the liability of GroundSure for death or personal injury caused by GroundSure's negligence, or for fraudulent misrepresentation; or
 - (ii) shall affect the statutory rights of a consumer under the applicable legislation.
- 8 GroundSure right to suspend or terminate**
- 8.1 In the event that GroundSure reasonably believes that the Client or Beneficiary as applicable has not provided the information or assistance required to enable the proper performance of the Services, GroundSure shall be entitled on fourteen days written notice to suspend all further performance of the Services until such time as any such deficiency has been made good.
- 8.2 GroundSure may additionally terminate the Contract immediately on written notice in the event that:
- (i) the Client shall fail to pay any sum due to GroundSure within 28 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 material term of the Contract (including, but not limited to, the obligations in clause 4) incapable of remedy or if remediable, is not remedied within 14 days of notice of the breach.
- 9 Client's Right to Terminate and Suspend**
- 9.1 Subject to clause 10.2, the Client may at any time after commencement of the Services by notice in writing to GroundSure require GroundSure to terminate or suspend immediately performance of all or any of the Services.
- 9.2 The Client waives all and any right of cancellation it may have under the Consumer Protection (Distance Selling) Regulations 2000 (as amended) in respect of the Order of a Report/Mapping. This does not affect the Beneficiary's statutory rights.
- 10 Consequences of Withdrawal, Termination or Suspension**
- 10.1 Upon termination or any suspension of the Services, 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/Beneficiary any property of the Client/Beneficiary in GroundSure's possession or control.
- 10.2 In the event of termination/suspension of the Contract under clauses 8 or 9, 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/suspension. In respect of any Consultancy Services provided, the Client shall also pay GroundSure any additional costs incurred in relation to the termination/suspension of the Contract.
- 11 General**
- 11.1 The mapping contained in the Services is protected by Crown copyright and must not be used for any purpose outside the context of the Services or as specifically provided in these terms.
- 11.2 GroundSure reserves the right to amend these terms and conditions. No variation to these terms shall be valid unless signed by an authorised representative of GroundSure.
- 11.3 No failure on the part of GroundSure to exercise and no delay in exercising, any right, power or provision under these terms and conditions shall operate as a waiver thereof.
- 11.4 Save as expressly provided in clauses 4.2, 4.3, 6.3 and 11.5, 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.
- 11.5 The Secretary of State for Communities and Local Government acting through Ordnance Survey may enforce breach of clause 6.1 of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.
- 11.6 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, pest 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 Data Providers; or
 - (viii) changes in law.
- 11.7 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.
- 11.8 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email and on the second working day after the day of posting if sent by first class post.
- 11.9 The Contract constitutes the entire contract between the parties and shall supersede all previous arrangements between the parties.
- 11.10 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.
- 11.11 These terms and conditions shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with these terms and conditions shall be subject to the exclusive jurisdiction of the English courts.
- 11.12 If the Client or Beneficiary has a complaint about the Services, notice can be given in any format eg writing, phone, email to the Compliance Officer at GroundSure who will respond in a timely manner.
- © GroundSure Limited January 2012

Site Details:

PO9 1TR

Client Ref: EMS_171700_253486
Report Ref: S EMS-171700_253486
Grid Ref: 471287, 106097

Map Name: MasterMap

Map date: 2012

Scale: 1:1,250

Printed at: 1:2,500



Produced by
GroundSure Environmental Insight
www.groundsure.com

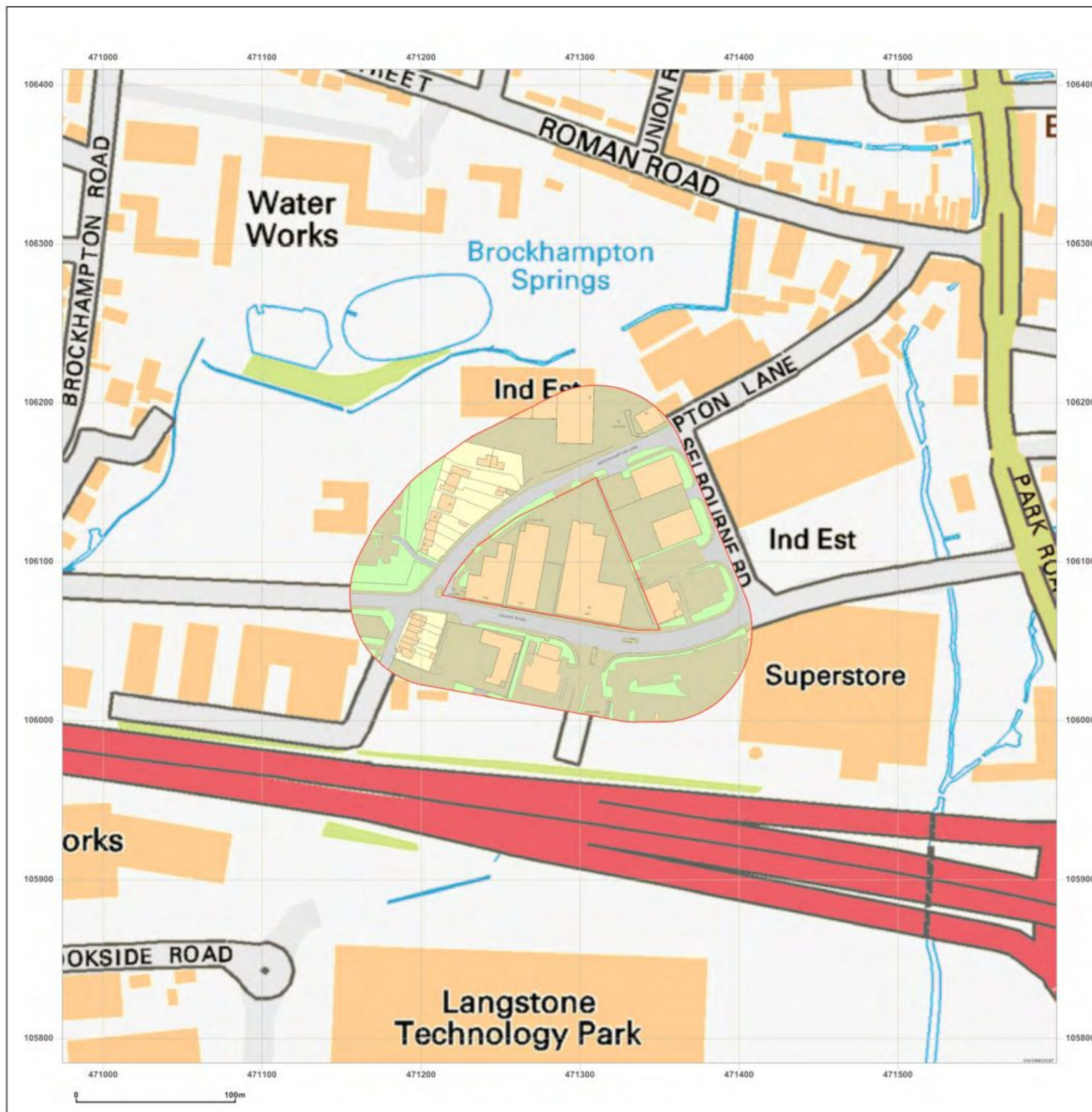


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Production date: 06 July 2012

To view map legend click here [Legend](#)



Site Details:

PO9 1TR

Client Ref: EMS_171700_253486
Report Ref: S EMS-171700_253486
Grid Ref: 471287, 106097

Map Name: National Grid

Map date: 1973

Scale: 1:1,250

Printed at: 1:2,500



Surveyed 1958 Revised 1972 Edition N/A Copyright 1973 Levelled 1957	Surveyed 1960 Revised 1972 Edition N/A Copyright 1973 Levelled 1957	Surveyed 1960 Revised 1972 Edition N/A Copyright 1973 Levelled 1957
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Site Details:

PO9 1TR

Client Ref: EMS_171700_253486
Report Ref: S EMS-171700_253486
Grid Ref: 471287, 106097

Map Name: National Grid

Map date: 1951-1952

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1951
Revised 1951
Edition N/A
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Levelled 1946

Surveyed 1952
Revised 1952
Edition N/A
Copyright N/A
Levelled 1946

Surveyed 1952
Revised 1952
Edition N/A
Copyright N/A
Levelled 1946



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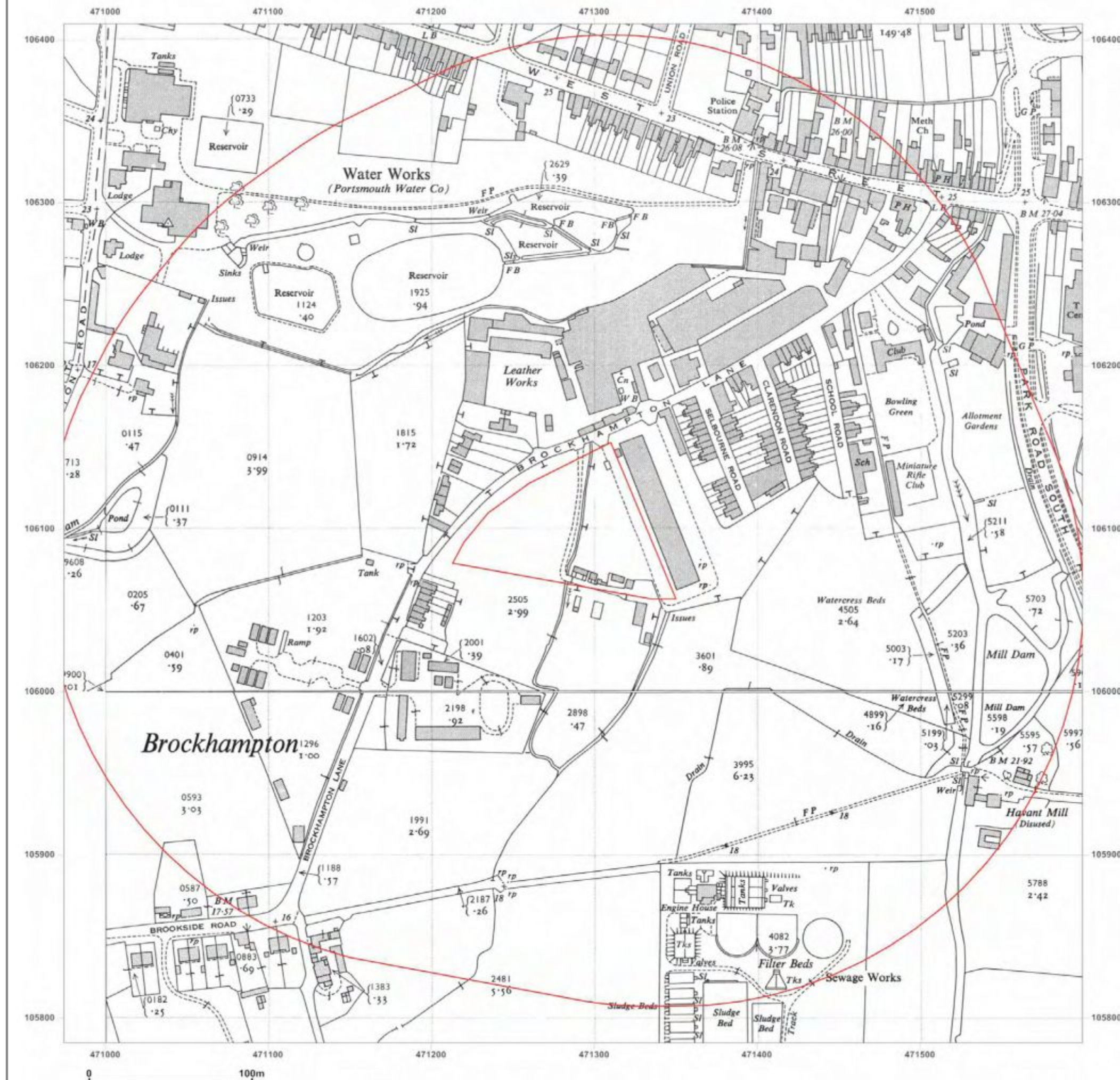


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Site Details:

PO9 1TR

Client Ref: EMS_171700_253486
Report Ref: S EMS-171700_253486
Grid Ref: 471287, 106097

Map Name: County Series

Map date: 1932

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1932
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Edition N/A
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Surveyed 1932
Revised 1932
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Site Details:

PO9 1TR

Client Ref: EMS_171700_253486
Report Ref: S EMS-171700_253486
Grid Ref: 471287, 106097

Map Name: County Series

Map date: 1897

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1897
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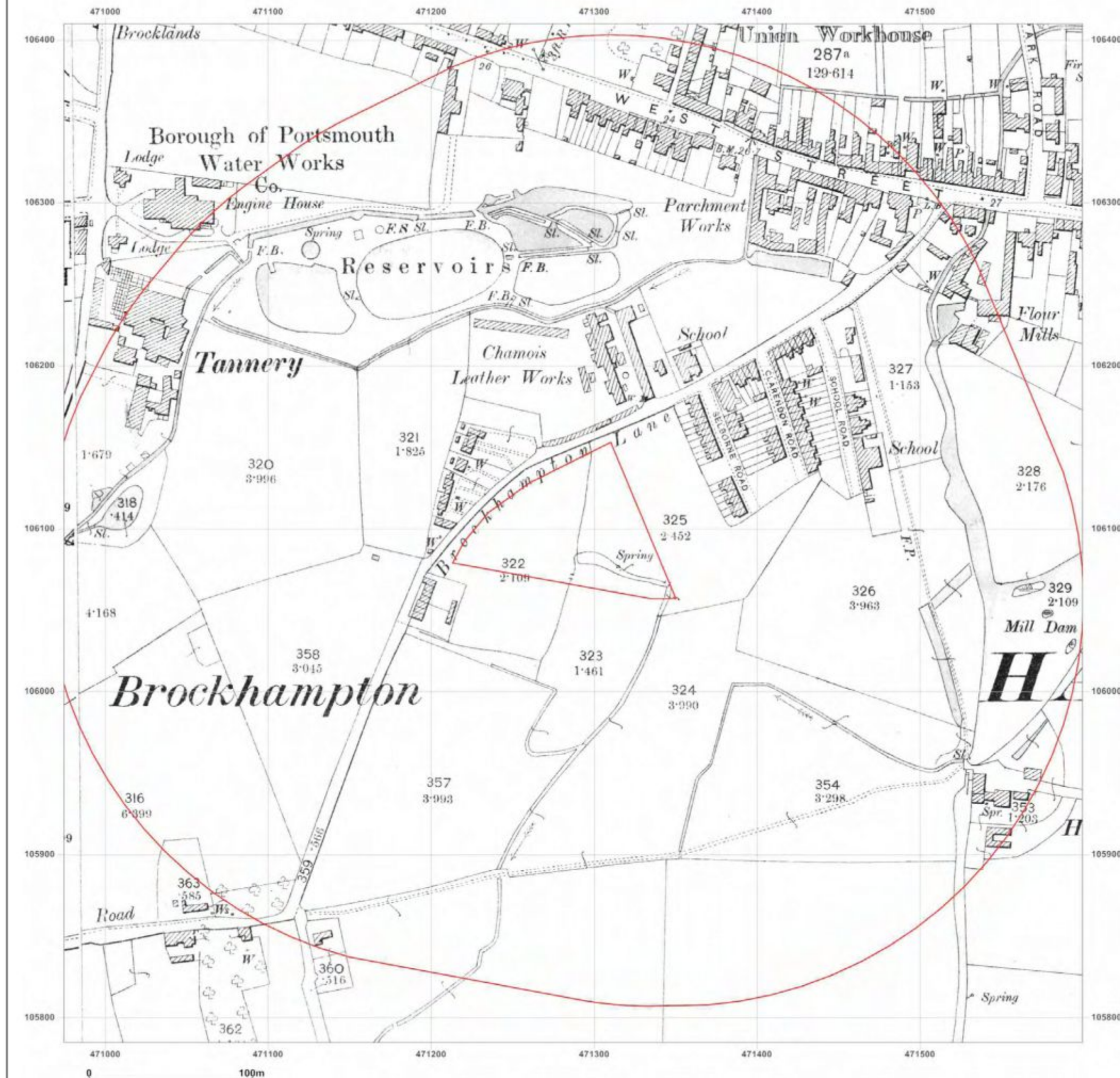


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ATTACHMENT FOUR: CHEMICAL ANALYSIS DATA