
DESK STUDY & GROUND INVESTIGATION REPORT

Royal Heights
Queen's Road
Reading

Client: Reading Heights Limited

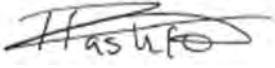
Engineer: Fluid Structures

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This report is intended as a Ground Investigation Report (GIR) as defined in BS EN1997-2, unless specifically noted otherwise. The report is not a Geotechnical Design Report (GDR) as defined in EN1997-2 and recommendations made within this report are for guidance only.

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EXECUTIVE SUMMARY

This executive summary contains an overview of the key findings and conclusions. No reliance should be placed on any part of the executive summary until the whole of the report has been read. Other sections of the report may contain information that puts into context the findings that are summarised in the executive summary.

BRIEF

This report describes the findings of a site investigation carried out by Geotechnical and Environmental Associates (GEA) on the instructions of Fluid Structures, on behalf of Reading Heights Limited, with respect to the conversion of the existing office building into residential units, which will include the addition of two storeys and the construction of a ten-storey extension. The purpose of the investigation has been to research the history of the site with respect to possible contaminative uses, to determine the ground conditions, to assess the extent of any contamination and to provide information to assist with the design of suitable foundations for the proposed development.

DESK STUDY FINDINGS

The desk study research has indicated that the site was developed prior to 1879 with terraced houses, fronting onto Watlington Street to the east and Queen's Road to the south, with gardens at the rear. It is possible that the former terraced houses had basements. A print works was present in the central western part of the site from some time between 1931 and 1957 map, present until the 1989 map, when the site had been cleared and replaced with the existing building in the south of the site and a car park in the north. It is understood that the existing building was formerly used as offices and is now vacant. The print works represents a potential source of contamination. Within 250 m of the site there have been saw mills, a timber yard, printing works, gas works, breweries, wharves, works and warehouses, which are potentially contaminative land uses. However, most of these sites have since been redeveloped and there are unlikely to be any ongoing sources of contamination. In addition, groundwater flow beneath the site is expected to be in a northeasterly direction and the site was located upstream of most of these contaminative uses. A tank has been shown on the 1991 immediately to the west of the site within the grounds of the Queen's Wharf apartment block. No landfills are recorded within 250 m of the site and made ground associated with demolition of the houses previously present on the site is likely to be predominantly inert demolition rubble, such that no potential sources of soil gas have been identified.

A preliminary UXO risk assessment has been carried and has concluded that there is minimal risk that items of UXO will be encountered on the site such that no further action is required.

GROUND CONDITIONS

The investigation has generally confirmed the expected ground conditions, in that beneath a moderate to significant thickness of made ground, a cover of Superficial Deposits was encountered, overlying the Seaford Chalk Formation which was proved to the maximum depth investigated of 30.00 m. The made ground extended to depths of between 0.80 m and 2.60 m, with the greatest thickness encountered in the east of the site, within the footprint of the former terraced houses. The Superficial Deposits extended to depths of between 1.75 m and 4.40 m and generally comprised soft brown clayey silt with occasional gravel composed of flint and chalk. The underlying Seaford Chalk Formation was highly weathered to a depth of about 6 m with a brown clay infill. The chalk was recovered predominantly as putty chalk (Grade Dm) to the maximum depth investigated, but this is a result of disturbance of the chalk by drilling. Groundwater was encountered within the chalk during drilling at a depth of approximately 4.00 m, rising to 2.00 m and subsequent monitoring has indicated groundwater at 2.00 m. Contamination testing has measured elevated lead and benzo(a)pyrene above the screening values for a residential end use with plant uptake.

RECOMMENDATIONS

Load changes for Clarendon House are proposed to be negligible and therefore no modifications should be necessary to the existing foundations. For the proposed ten-storey extension, loads are high and piled foundations will be required to support the new building.

Remedial measures in the form of imported clean soil will be required where any areas of soft landscaping are to be incorporated into the scheme to protect end users from the lead and benzo(a)pyrene contamination.

Part 1: INVESTIGATION REPORT

This section of the report details the objectives of the investigation, the work that has been carried out to meet these objectives and the results of the investigation. Interpretation of the findings is presented in Part 2.

1.0 INTRODUCTION

Geotechnical and Environmental Associates (GEA) has been commissioned by Fluid Structures, on behalf of Reading Heights Limited, to carry out a desk study and ground investigation at Royal Heights, Queens Road, Reading RG1 4BN.

1.1 Proposed Development

It is understood that it is proposed to convert the existing office building into residential units, which will include the addition of two extra storeys and a ten-storey extension on the eastern half of the car park. Some soft landscaped areas may be incorporated into the scheme.

This report is specific to the proposed development and the advice herein should be reviewed if the development proposals are amended.

1.2 Purpose of Work

The principal technical objectives of the work carried out were as follows:

- ❑ to determine the history of the site and surrounding area, particularly with respect to any previous or present potentially contaminative uses;
- ❑ to assess the risk from unexploded ordnance (UXO);
- ❑ to determine the ground conditions and their engineering properties;
- ❑ to determine the configuration of the existing foundations;
- ❑ to provide advice for the design of suitable foundations;
- ❑ to provide an indication of the degree of soil contamination present; and
- ❑ to assess the risk that any such contamination may pose to the proposed development, its users or the wider environment.

1.3 Scope of Work

In order to meet the above objectives, a desk study was carried out followed by a ground investigation. The desk study comprised:

- ❑ a review of historical Ordnance Survey (OS) maps and environmental searches sourced from the Envirocheck database;
- ❑ a review of readily available geology maps;

- ❑ a preliminary UXO risk assessment (ref EP5854-00, dated 10 January 2018) commissioned from 1st Line Defence; and
- ❑ a walkover survey of the site carried out at the time of the fieldwork.

In the light of this desk study an intrusive ground investigation was carried out which comprised, in summary, the following activities:

- ❑ a single cable percussion borehole advanced to a depth of 30.00 m;
- ❑ two trial pits, mechanically excavated using a tracked mini-excavator to a depth of 1.50 m;
- ❑ four open-drive sampler boreholes, sampled to 5 m and extended by continuous probing to a depth of 8.15 m;
- ❑ standard penetration tests (SPTs) at regular intervals in the boreholes to provide quantitative data on the strength of the soils;
- ❑ installation of three standpipes to a depth of 5.00 m and two return groundwater monitoring visits;
- ❑ testing of selected soil samples for contamination and geotechnical purposes; and
- ❑ provision of a report presenting and interpreting the above data, together with our advice and recommendations with respect to the proposed development.

The report includes a contaminated land assessment which has been undertaken in accordance with the methodology presented in Contaminated Land Report (CLR) 11¹ and involves identifying, making decisions on, and taking appropriate action to deal with, land contamination in a way that is consistent with government policies and legislation within the United Kingdom. The risk assessment is thus divided into three stages comprising Preliminary Risk Assessment, Generic Quantitative Risk Assessment, and Site-Specific Risk Assessment.

The exploratory methods adopted in this investigation have been selected on the basis of the constraints of the site including but not limited to access and space limitations, together with any budgetary or timing constraints. Where it has not been possible to reasonably use an EC7 compliant investigation technique a practical alternative has been adopted to obtain indicative soil parameters and any interpretation is based upon engineering experience, local precedent where applicable and relevant published information.

1.4 Limitations

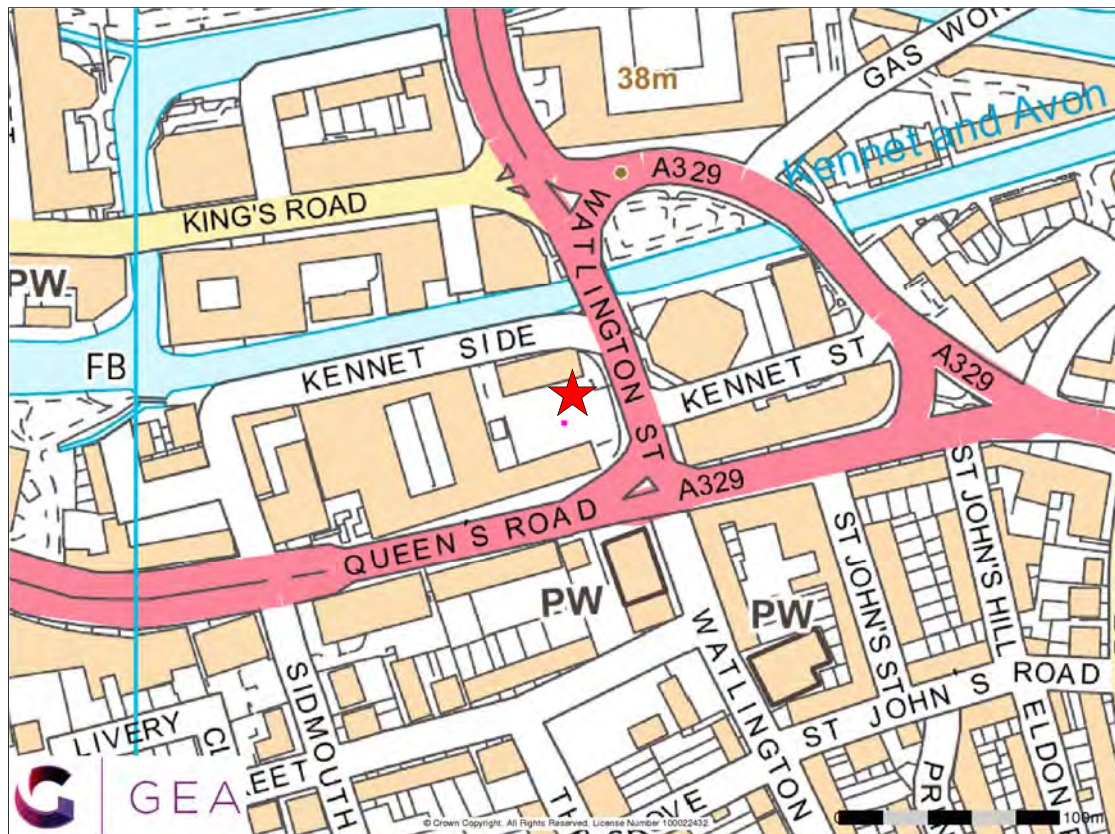
The conclusions and recommendations made in this report are limited to those that can be made on the basis of the investigation. The results of the work should be viewed in the context of the range of data sources consulted, the number of locations where the ground was sampled and the number of soil,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

1 *Model Procedures for the Management of Land Contamination* issued jointly by the Environment Agency and the Department for Environment, Food and Rural Affairs (DEFRA) Sept 2004

2.0 THE SITE

2.1 Site Description

The site is located approximately 920 m to the southeast of Reading railway station and fronts onto Queen's Road to the south. It is bounded to the east by Watlington Street, located at a higher level and supported by a retaining wall, to the north by a six-storey apartment block, called Grantley Heights and to the west by a seven-storey apartment block, known as Queen's Wharf.. The site may additionally be located by National Grid Reference 472190, 173290 and is shown on the map extract below.



A walkover survey was carried out by an engineer from GEA on 15 January 2018, prior to the fieldwork and selected photographs are included below. The site is irregular in shape and measures roughly 40 m north-south by 50 m east-west. It is essentially on a level plot and is currently occupied by Clarendon House, which fronts onto Queen's Road to the south. Clarendon House is a four-storey building with partial basement, formerly used as offices and currently vacant apart from live-in security personnel.

A tarmac car park is present to the north of the office building, with an area of soft landscaping in the southeastern corner, planted with bushes. The car park can be accessed via Kenet Side. At the time of the investigation the car park was not in use.

Hypodermic needles were noted at the rear of Clarendon House, in the southwestern corner of the car park.



Northern elevation of
Clarendon House



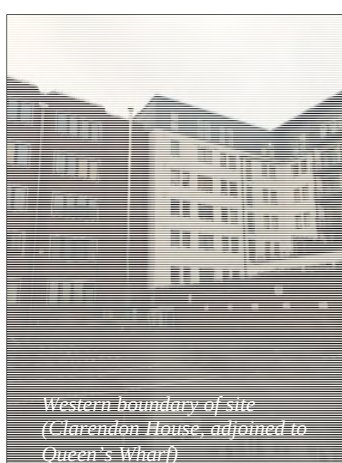
Queen's Wharf, looking west



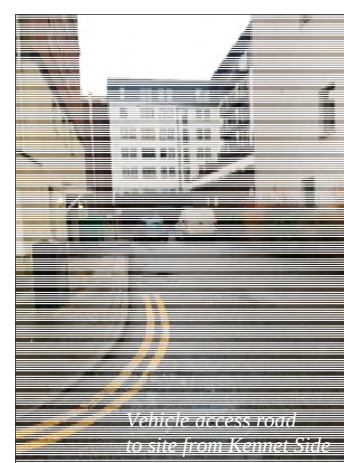
Grantley Heights on right



View of car park, looking
east towards Watlington Street



Western boundary of site
(Clarendon House, adjoined to
Queen's Wharf)



Vehicle access road
to site from Kennet Side

2.2 Site History

The site history has been researched by reference to historical Ordnance Survey (OS) maps obtained from the Envirocheck database and information submitted as part of previous planning applications, available on Reading Borough Council's website. This includes a Phase One Preliminary Risk Assessment carried out by RPS on behalf of a different client (report ref HLE153111/001R, dated June 2017).

The earliest map studied, dated, 1879, shows the site to already be developed with what appears to be terraced houses, fronting onto Watlington Street to the east and Queen's Road to the south. The immediate surrounding area also appears to be developed with terraced housing. A gas works was present 220 m to the northeast with a biscuit factory 160 m to the north. Within 250 m of the site was also wharves, breweries, printing works, two saw mills and a timber yard were present. The Kennet and Avon Canal had also been built by this time and was present 50 m to the north of the site.

By 1899, another biscuit factory had been constructed roughly 240 m to the southwest of the site and by 1912 this biscuit factory had relocated slightly to the east.

Between the 1931 and 1957 historical OS maps, a print works was located in the central western part of the site, with a warehouse shown 100 m to the west and a printing works 100 m to the east. During the period, the gas works appears to have been demolished.

By the 1989 map, the terraced houses on site and in the immediate surrounding area had been demolished, along with the print works and replaced with the existing office building of Clarendon House shown on this map in the south of the site. At some time between 1971 and 1989, the wharves, warehouses, factories, breweries and saw mill are removed and replaced.. On the 1991 map, a tank is first shown to the west of the site located within the grounds of Queen's Wharf, which is an apartment block. The tank has been shown on maps since 1991 and the contents of the tank is unknown.

A search of the planning applications relating to the site are available on Reading Borough Council' website and are summarised below;

Ref; 180156 (26/01/2018); Change of use of building from Class B1(a) (offices) to C3 (dwelling houses) to comprise 49 dwellings. No decision listed.

Ref 170905 (31/07/2017); Change of use of building from Class B1(a)(offices) to C3 (dwelling houses) to comprise 49 residential units. Approved.

Ref; 050013 (05/06/2005); Wall mounted air conditioning condenser unit on back of building. Permitted.

Ref; 010442 (04/05/2001); Installation of telecommunications apparatus consisting of 6 antennas, 3 m stub mast and radio equipment housing. No decision listed.

Ref 980612 (16/12/1998); Erection of 5/6 storey residential development comprising 24 apartments with associated car parking at ground/basement level. No decision listed.

Ref; 980251 (07/08/1998); Erection of 5/6 Storey residential development comprising 24 apartments with associated car parking at ground/basement level. Permitted.

Ref; 930087 (14/09/1993); Change of use from existing B1 consent to A2 consent. Permitted.

2.3 Preliminary UXO Risk Assessment

A preliminary UXO risk assessment has been carried out by 1st Line Defence and their report (ref EP5854-00, dated 10 January 2018) is included in the appendix. The risk assessment has been carried out in accordance with the guidelines provided by CIRIA, which state that the likelihood of encountering and detonating unexploded ordnance (UXO) below a site should be assessed along with establishing the consequences that may arise. The first phase comprises a preliminary risk assessment, which should be undertaken at an early stage of the development planning. If such an assessment identifies a high level of risk then a detailed risk assessment should be carried out by a UXO specialist, which will identify an appropriate course of action with regard to risk mitigation.

The preliminary UXO risk assessment indicated that there is no evidence in available historical ordnance survey maps that the site received any damage during WWII, such as areas of 'ruin(s)' or areas of missing buildings. During the war the site was occupied by residential and commercial properties and it is likely that the site received regular access and that evidence of bombs would have been noticed and recorded. The site was developed with the existing office block after the war, and the assessment concluded that there is a minimal risk that items of UXO will be encountered on the site and that no further research be carried out on the site.

2.4 Other Information

A search of public registers and databases has been made via the Envirocheck database and relevant extracts from the search are appended. Full results of the search can be provided if required.

The desk study research has indicated that there are no registered landfill, waste transfer, waste treatment, disposal or recorded infilled land sites within 250 m of the site. There are 26 pollution incidents to controlled waters within 250 m of the site, with the closest being 10 m northeast of the site, classed as category three (minor incident). This incident occurred in November 1994 and the pollutant was recorded as oils. Three discharge consents are recorded within 250 m of the site with the closest listed 176 m to the north. In total, there are 18 contemporary trade directory entries within 250 m of the site but there are no fuel station entries. The site is not listed as being within a Nitrate Vulnerable Zone or any other sensitive land use.

Reference to the National Radiological Protection Agency (NRPB, now part of the Health Protection Agency) Radon Atlas of England and Wales, indicates that the site falls within an area where less than 1% of homes are affected by radon emissions and therefore radon protective measures will not be necessary.

2.5 Geology

The British Geological Survey map of the area indicates that the site is directly underlain by River Terrace Deposits, overlying the Seaford Chalk Formation. Alluvium is shown to outcrop to the north of the site, associated with the River Kennet, and the Lambeth Group outcrops to the south of the chalk.

Chalk solution features are known to occur within the chalk close to the boundary with the Lambeth Group. A search of British Geological Survey records included in the Envirocheck report has indicated a very low risk of ground dissolution subsidence at the centre of the site, increasing to a high risk 72 m to the south of the centre of the site. There are no natural cavities recorded within 500 m of the site but there are seven within 500 m to 1000 m from the site.

The town of Reading is known for chalk mining and there are two recorded man-made cavities within 500 m of the site. The closest is located 189 m south of the centre of the site, with another 467 m to the southwest.

2.6 Hydrology and Hydrogeology

The River Terrace Deposits are classified as a Secondary 'A' Aquifer, defined by the Environment Agency (EA) as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. The underlying chalk is classified as a Principal Aquifer, defined as layers of rock or drift deposits that have high intergranular and / or fracture permeability.

A Groundwater Source Protection Zone is located 52 m northeast of the centre of the site, listed as Zone III. There are no recorded groundwater abstraction licences within 500 m of the site. The nearest surface water feature is the Kennet and Avon Canal, 49 m to the north of the site, and groundwater is expected to be flowing in a roughly northeasterly direction beneath the site.

The Environment Agency indicates the site to be located within an area at risk from flooding from rivers or sea (Zone III) and is identified to be at risk from groundwater flooding. A flood risk assessment has been completed by RPS as part of a previous application (report ref; HLEF53150/001R, dated June 2017) and a copy of this report is publicly available to view on Reading Borough Council's planning website.

2.7 Preliminary Risk Assessment

Part IIA of the Environmental Protection Act 1990, which was inserted into that Act by Section 57 of the Environment Act 1995, provides the main regulatory regime for the identification and remediation of contaminated land. The determination of contaminated sites is based on a "suitable for use" approach, which involves managing the risks posed by contaminated land by making risk-based decisions. This risk assessment is carried out on the basis of a source-pathway-receptor approach.

2.7.1 Source

The site was previously developed by terraced housing prior to 1879. A print works was present in the central western part of the site from some time between 1931 and 1957. All of the buildings on site were demolished between 1971 and 1989 and replaced with the existing office building and car park.

The former print works is a potentially contaminative use, although there is no ongoing source of contamination. The print works was located in the western half of the car park, which is currently not planned to be developed. The relevant DoE industry profile² indicates the main groups of potential contaminants associated with this site use to be metals and metalloids, inorganic ions, acids and organics, including solvents, with hydrocarbon fuels in fuel storage areas.

Demolition of the buildings previously present on the site is likely to have resulted in the presence of a moderately significant thickness of made ground, including a possibility of backfilled basements beneath the terrace houses. This would mostly be inert rubble but is likely to include small quantities of contaminants such as lead, present in paintwork and other metals. Asbestos is likely to have been present in building fabric/insulation.

Within 250 m of the site there have been saw mills, timber yard, gas works, breweries, wharves, works and warehouses, which are potentially contaminative land uses. However, most of these sites have been redeveloped and there are no ongoing sources of contamination. In addition, groundwater flow beneath the site is expected to be in a northeast direction and the site was located upstream and contamination is unlikely to have migrated onto the site.

A tank is present immediately to the west of the site within the grounds of Queen's Wharf. The tank has been shown on maps since 1991 and the contents of the tank are unknown and may represent a potential source of contamination.

The desk study has not identified any evidence of landfills within the vicinity of the site and made ground associated with demolition of the houses previously present on the site is likely to be predominantly inert demolition rubble. No potential sources of soil gas have, therefore, been identified.

² Great Britain. Department of Environment (1996). *Profile of Miscellaneous Industries, incorporating charcoal works, dry-cleaners, fibreglass and fibreglass resins manufacturing works, glass manufacturing, photographic processing industries and printing and book works.* (DOE Industry Profile)

2.7.2 Receptor

The proposed redevelopment of the site for residential purposes will result in the end users, together with vegetation in garden areas, representing relatively high sensitivity receptors. Buried services are likely to come into contact with any contaminants present within the soils through which they pass and site workers are likely to come into direct contact with any contaminants present in the soil during construction. The site is considered to be underlain by a Secondary 'A' Aquifer and therefore groundwater may be considered to be a high sensitive receptor. The chalk beneath the site is a Principal Aquifer and, as such, also represents a highly sensitive receptor.

2.7.3 Pathway

Within the site, end users will be isolated from direct contact with any contaminants present within the near surface soils by the presence of the building and the extent of the hardstanding, thus limiting potential contaminant exposure pathways. The construction will not create any new pathways for existing contaminants in the ground to reach end users, unless soft landscaped areas are to be incorporated.

The site is likely to be directly underlain by a Secondary 'A' Aquifer, overlying the Chalk which is a Principal Aquifer and a pathway may exist for groundwater through granular soils of the Secondary 'A' Aquifer to the Principal Aquifer of the chalk. considered likely to exist to both aquifers. Buried services may be exposed to any contaminants present within the soil through direct contact and site workers will come into contact with the soils during construction works. There is thus considered to be a low potential for a contaminant pathway to be present between any potential contaminant source and a target for the particular contaminant.

2.7.4 Preliminary Risk Appraisal

On the basis of the above it is considered that there is a LOW risk of there being a significant contaminant linkage at this site that would result in a requirement for major remediation work. As there is no evidence of filled ground within the vicinity of the site and no landfill sites, there is not considered to be a significant potential for hazardous soil gas to be present on or migrating towards the site.

3.0 EXPLORATORY WORK

In order to meet the objectives described in Section 1.2, a single cable percussion borehole was drilled to a depth of 30.00 m in the car park. This borehole was supplemented with four open-drive sampler boreholes advanced to a depth of up to 5 m, continued to 8.15 m by continuous probing, in view of the initial low blow counts in the top of the chalk. Standard Penetration Tests (SPTs) were carried out at regular intervals in the boreholes to provide additional quantitative data on the strength of the soils.

Standpipes (50 mm diameter) were installed into Borehole Nos 1, 2 and 3 to a depth of 5.00 m and groundwater monitoring has been carried out on two occasions to date, approximately two weeks and three weeks after installation.

Two trial pits were mechanically excavated, using a tracked mini-excavator, to a depth of 1.50 m to determine the configuration of the existing foundations of Nos 59 to 75 Queen's Road (Clarendon House) and Nos 1 to 24 Kennet Side (Grantley Heights).

All of the above work was carried out under the supervision of a geotechnical engineer from GEA.

A selection of the samples recovered from the boreholes and trial pits was submitted to a soil mechanics laboratory for a programme of geotechnical testing and an analytical laboratory for a programme of contamination testing.

The borehole records and results of the laboratory analyses are appended together with a site plan indicating the exploratory positions.

3.1 Sampling Strategy

The scope of the works was specified by the consulting engineers, with input from GEA.

The borehole and trial pit locations were agreed on site between the structural engineer and GEA on the morning of the fieldwork.

At the request of the client, concrete bollards were removed at two entrances to the site, using a mini-excavator.

Five samples of the made ground were subjected to analysis for a range of common industrial contaminants and contamination indicative parameters. For this investigation, the analytical suite for the soil included a range of metals, speciation of total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAH), total cyanide and monohydric phenols. In addition, the samples were screened for asbestos as a precautionary measure.

The soil samples were selected to provide a general view of the chemical conditions of the soils that are likely to be involved in a human exposure or groundwater pathway and to provide advice in respect of re-use or for waste disposal classification.

The contamination analyses were carried out at an MCERTs accredited laboratory with the majority of the testing suite accredited to MCERTS standards. Details of the MCERTs accreditation and test methods are included in the Appendix together with the analytical results.

A number of samples recovered from the boreholes were submitted to a geotechnical laboratory for a programme of testing that included soluble sulphate and pH level analysis. Selected samples of the chalk were also tested to determine their intact density and moisture content.

4.0 GROUND CONDITIONS

The investigation has generally confirmed the expected ground conditions, in that beneath a moderate to significant thickness of made ground, a cover of Superficial Deposits was encountered, overlying the Seaford Chalk Formation which was proved to the maximum depth investigated of 30.00 m.

4.1 Made Ground

The boreholes found the made ground to extend to depths of between 0.80 m and 2.60 m. In Borehole Nos 1, 3 and 4, the made ground extended to depths of 0.80 m, 1.35 m and 1.40 m respectively, with the greatest thicknesses of made ground in Borehole Nos 2 and 5, in the eastern half of the site, extending to depths of 2.60 m and 2.40 m respectively. These boreholes were located within area of the former terraced houses, which may have had basements.

A total of five samples were sent for contamination testing and the results are presented in Section 4.5.

4.2 Superficial Deposits

This stratum was encountered in all exploratory locations directly below the made ground and varied in thickness from 0.15 m to 2.30 m, extending to depths of between 1.75 m and 4.40 m. The Superficial Deposits generally comprised soft brown clayey silt with occasional gravel composed of flint and chalk. In Borehole No 4, between 1.40 m and 2.30 m, light brown gravelly fine sand was encountered.

Atterberg limit tests were carried out on three samples, which indicate these soils to be non-plastic.

These soils were observed to be free of any evidence of soil contamination.

4.3 Seaford Chalk Formation

On the basis of the inspection of recovered samples, the chalk has been classified in accordance with CIRIA Report C574 (2002), *Engineering in Chalk* with the chalk from the boreholes recovered as structureless chalk, composed of off-white with rare light brown staining gravelly slightly sandy silt with rare flint gravel (Grade Dm). The chalk was highly weathered to a depth of about 5 m with a brown clay infill noted. The sampling will however have resulted in disturbance of the material and the recovered samples are unlikely to be indicative of the insitu condition.

In situ testing from the boreholes has indicated either zero or low blow counts to depths of between 5 m and 6 m in the chalk and poor or no recovery of the chalk was noted in the open-drive sampler boreholes from depths of 2 m to 5 m. Further details on this are included on the borehole records in the appendix. Below a depth of about 6 m, the N values generally increase with depth and the N60 values in the cable percussion borehole range from 11 at a depth of 6.00 m to 102 at a depth of 29.50 m.

The results of laboratory analysis on three samples of chalk recovered from the cable percussion borehole at depths of 4.00 m, 17.50 m and 26.50 m indicate the chalk to be of low density and medium density with intact dry densities of between 1.55 Mg/m³ and 1.56 Mg/m³ and natural moisture contents of 27 % and 28 %.

No visual and olfactory evidence of contamination was observed within these natural soils.

4.4 Groundwater

Groundwater was not encountered during excavation of the foundation pits to depths of 1.50 m. However, groundwater was encountered during drilling in all five boreholes from within the chalk, generally at depths of between 3.90 m to 4.00 m and the water level rapidly rose up to depths of between 2.07 m and 2.38 m. Standpipes were installed in Borehole Nos 1, 2 and 3 to a depth of 5.00 m and the results of the groundwater monitoring on two occasions, roughly two weeks and three weeks after installation are shown in the table overleaf.

Date	Borehole No	Depth to water (m)
30/01/2018	1	1.98
	2	2.16
	3	2.12
05/02/2018	1	2.00
	2	2.18
	3	2.14

4.5 Soil Contamination

The following table sets out the values measured within five samples of made ground analysed. All concentrations are in mg/kg unless otherwise stated.

Determinant	BH2: 0.80- m	BH3: 0.80 m	BH4: 0.70 m	BH5: 0.60 m	TP2: 0.50m
pH	10.3	8.3	8.2	9.1	8.8
Arsenic	5.7	26	21	9.9	13
Cadmium	<0.2	<0.2	<0.2	0.6	<0.2
Chromium	10	22	21	83	23
Lead	45	260	190	290	62
Mercury	<0.3	1.0	1.1	0.4	<0.3
Selenium	<1.0	<1.0	<1.0	<1.0	<1.0
Copper	6.8	92	52	250	18
Nickel	9.5	26	21	14	11
Zinc	39	240	170	230	75
Total Cyanide	<1.0	<1.0	<1.0	<1.0	<1.0
Total Phenols	<1.0	<1.0	<1.0	<1.0	<1.0
Total PAH	55.5	10.6	4.30	<0.80	5.07
Sulphide	<1.0	1.1	<1.0	1.3	1.3
Benzo(a)pyrene	5.3	1.1	0.53	<0.05	0.55
Naphthalene	0.21	<0.05	<0.05	<0.05	<0.05
Total TPH (C10-C40)	260	62	<10	160	<10
Total Organic Carbon	0.3	2.0	1.4	0.7	0.5
Asbestos	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected

Note: Figure in bold indicates concentration in excess of risk-based soil guideline values, as discussed in Part 2 of this report

4.5.1 Generic Quantitative Risk Assessment

The use of a risk-based approach has been adopted to provide an initial screening of the test results to assess the need for subsequent site-specific risk assessments. Contaminants of concern have values in excess of generic human health risk based guideline values which are either the CLEA³ Soil Guideline Value where available, or a Generic Screening Value calculated using the CLEA UK Version 1.06⁴ software assuming a residential end use with plant uptake, or based on the DEFRA Category 4 Screening values⁵. The key generic assumptions for this end use are as follows:

- ❑ that groundwater will not be a critical risk receptor;
- ❑ that the critical receptor for human health will be a young female child aged 0 to 6 years old;
- ❑ that young children will not have prolonged exposure to the site;
- ❑ that the exposure duration will be six years;
- ❑ that the critical exposure pathways will be direct soil and indoor dust ingestion, skin contact with soils and dust, and inhalation of dust and vapours; and
- ❑ that the building type equates to a two-storey small terraced house.

It is considered that these assumptions are acceptable for this generic assessment of this site. The tables of generic screening values derived by GEA and an explanation of how each value has been derived are included in the Appendix.

Where contaminant concentrations are measured at concentrations below the generic screening value it is considered that they pose an acceptable level of risk and thus further consideration of these contaminant concentrations is not required. However, where concentrations are measured in excess of these generic screening values there is considered to be a potential that they could pose an unacceptable risk and thus further action will be required which could include;

- ❑ additional testing to zone the extent of the contaminated material and thus reduce the uncertainty with regard to its potential risk;
- ❑ site specific risk assessment to refine the assessment criteria and allow an assessment to be made as to whether the concentration present would pose an unacceptable risk at this site; or
- ❑ soil remediation or risk management to mitigate the risk posed by the contaminant to a degree that it poses an acceptable risk.

This assessment is based upon the potential for risk to human health, which at this site is considered to be the critical risk receptor.

The contamination results indicate slightly elevated lead above the screening values for a residential end use with plant uptake in two of the five samples of made ground tested. In

3 Updated Technical Background to the CLEA Model (Science Report SC050021/SR3) Jan 2009 and Soil Guideline Value reports for specific contaminants; all DEFRA and Environment Agency.
4 Contaminated Land Exposure Assessment (CL|EA) Software Version 1.06 Environment Agency 2009
5 CL:AIRE (2013) *Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination* Final Project Report SP1010 and DEFRA (2014) *Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination* Policy Companion Document SP1010

addition, benzo(a)pyrene was also slightly elevated in a single sample. No other contaminants were noted to be above the screening values and no asbestos was detected during routine laboratory screening. The significance of these results are discussed in Part 2 of this report.

4.6 Existing Foundations

A total of two trial pits were excavated to expose the foundations of the existing buildings and the findings are summarised in the table below. Trial pit records are included within the appendix.

Trial Pit No	Structure	Foundation Detail	Bearing Stratum
1	Neighbouring building	Concrete Top: 0.50 m Base: 1.38 m Lateral projection: 550 mm	Soft orange-brown silty sandy clay with rare coarse subangular flint gravel – possibly made ground
2	Office building	Concrete Top: GL Base: 1.46 m Lateral projection: 600 mm	Appears to be bearing on weathered chalk

Part 2: DESIGN BASIS REPORT

This section of the report provides an interpretation of the findings detailed in Part 1, in the form of a ground model, and then provides advice and recommendations with respect to the proposed extension.

5.0 INTRODUCTION

It is understood that it is proposed to convert the existing office building into residential units and add an extra two storeys at roof level. It is understood from the structural engineers that the loads changes associated with this conversion and roof extension will be negligible.

It is also proposed to construct a ten-storey extension in the eastern half of the car park which will need to be supported on piled foundation with loads expected to be around 3000 kN for external columns and 6000 kN for internal columns.

6.0 GROUND MODEL

The desk study has revealed that the site was previously developed with terraced houses with rear gardens, prior to 1879. A print works was located in the central western part of the site from some time between 1931 and 1957. The site was redeveloped by 1989 with the existing office building and car park to the rear. Within close proximity of the site, there has been works, factories, wharves, breweries, warehouse and printing works, which have subsequently been redeveloped. On the basis of the fieldwork, the ground conditions at this site can be characterised as follows.

- ❑ Beneath a nominal thickness of made ground, Superficial Deposits overlies the Seaford Chalk Formation and was proved to the maximum depth investigated of 30.00 m;
- ❑ the made ground extends to depths of between 0.80 m and 1.40 m in the central and western half of the proposed new building, with a greater thickness of made ground encountered in the east, close to Watlington Street and extends to depths of 2.40 m and 2.60 m;
- ❑ directly below the made ground, Superficial Deposits comprising soft brown clayey silt with occasional gravel, composed of chalk and flint was generally encountered, which extends to depths of between 1.75 m and 4.40 m;
- ❑ the chalk was highly weathered to a depth of about 6 m with a brown clay infill and SPT blow counts recorded between zero and two;
- ❑ the SPT 'N' values in the chalk show an increase with depth;
- ❑ groundwater was encountered during drilling at a depth of approximately 4.00 m from within the chalk, rising to 2.00 m;
- ❑ subsequent groundwater monitoring has measured water to be standing in the standpipes at a depth of about 2.00 m; and
- ❑ contamination testing has measured elevated lead and benzo(a)pyrene above the screening values for a residential end use with plant uptake.

7.0 ADVICE AND RECOMMENDATIONS

Given the proposed loadings of the new ten-storey building, piled foundations extending into the chalk will be required. Consideration will need to be given to the possibility of variations in the level and quality of the chalk for the design of piles.

It is also proposed to add an extra two-storeys to the existing office building of Clarendon House, which is supported on concrete footings at a depth of 1.46 m bearing on what appears to be chalk. The load changes are understood to be negligible and it should be possible to make the load changes without any modifications to the existing foundations. If there is an increase in load, a check should be undertaken to confirm that settlements will remain acceptable and in any case additional trial pits would be prudent to check the bearing stratum.

If solution features or anomalous ground conditions are encountered, work should be halted until reviewed by a suitably qualified geotechnical engineer.

7.1 Re-use of Existing Foundations

It is understood that the proposed alterations to the existing office building and extra two-storeys will not result in load changes to the existing foundations. There does not appear to be any indication of movement of the existing foundations or structural distress of the building. The office building was constructed by 1989 and the settlement that would occur as a result of the loading from the foundations of both buildings may be assumed to be complete.

7.2 Piled Foundations

For the ground conditions encountered at the site, some form of bored pile is likely to be the most suitable. The following parameters, based upon the guidance provided by CIRIA⁶ for piles in chalk, are considered suitable for the preliminary design of straight-shafted bored piles installed using cfa techniques.

The following table of ultimate coefficients may be used for the preliminary design of bored piles, based on the measured SPT / depth graph in the appendix. Groundwater has been assumed to be present at a depth of 2.00 m and the chalk is assumed to be fully saturated.

Stratum	Depth m	kN / m ²
Skin Friction		
Made Ground / Superficial Deposits	-	Ignore
Chalk ($\beta = 0.45$)	4.40 to 30.00	Increasing linearly from 8 to 115
End Bearing		
Chalk ($N \times 200$)	10.00 to 25.00	Increasing from 4000 to 10,000*(limit)

* the limiting value will need to be checked based on a limiting allowable bearing pressure for individual pile loads in accordance with CIRIA C574

The following pile capacities have been estimated and are presented in the table below, based on an overall factor of safety of 2.5.

6 Engineering in Chalk CIRIAC574 (2002)

Pile Diameter (mm)	Pile Depth (m)	Approximate Safe Working Load (kN)
450	25	1100
600	25	1650
750	25	2385

The above examples are not intended to constitute any form of recommendation with respect to pile size or type and the advice of specialist piling contractors should be consulted in this respect.

As with any site underlain by chalk, variations in the level and quality of the chalk may occur and the piling method should be able to deal with any such variations.

7.3 Shallow Excavations

On the basis of the trial pit findings, it is considered that shallow excavations for foundations and services that extend through the made ground and into the natural soils are likely to remain relatively stable in the short term. However, should deeper excavations be considered or if excavations are to remain open for prolonged periods it is recommended that provision be made for battered side slopes or lateral support. Where personnel are required to enter excavations, a risk assessment should be carried out and temporary lateral support or battering of the excavation sides considered in order to comply with normal safety requirements.

Significant groundwater inflows into shallow excavations of less than 2 m in depth are not generally anticipated, although seepages may be encountered from perched water tables within the made ground, particularly within the vicinity of existing foundations; such inflows should, however, be suitably controlled by sump pumping.

7.4 Ground Floor Slab

Following the removal of the made ground a ground bearing floor slab may be adopted on the Superficial Deposits or chalk, following a proof rolling exercise and the infilling of any soft spots with suitably compacted granular fill or lean mix concrete. If chalk is exposed at formation level, ground floor slabs of unheated or poorly insulated buildings should be constructed over a layer of well compacted, free draining material of at least 300 mm thickness. In heated well insulated buildings, ground floor slabs can be constructed directly on chalk although the formation should not be exposed during construction for more than five consecutive days if the mean daily air temperature is below freezing.

7.5 Effect of Sulphates

Elevated concentrations of sulphate are not normally found in chalk soils. Sulphate and pH tests were undertaken on five samples of made ground and three samples of Superficial Deposits. The results have measured a sulphate class for the made ground generally in Class DS-1 with an ACEC class of AC-1, however the sample tested from Borehole No 2, falls into DS-3, with an ACEC class of AC-3, which assumes mobile water. Testing of natural samples indicate a sulphate class of DS-1 and ACEC class of AC-1, assuming mobile groundwater. The guidelines contained in BRE Special Digest 1 Part C (2005) should be followed in the design of foundation concrete.

7.6 Site Specific Risk Assessment

The site was developed by terraced housing prior to 1879. A print works was present in the central western part of the site from some time between 1931 and 1957, and represents a potential source of contamination. The site was redeveloped by 1989 with the existing office building and car park. Off-site there have been saw mills, a timber yard, gas works, factories, breweries, wharves, works and warehouses, which are potentially contaminative uses. A tank of unknown contents has been located from 1991 until the present day within the grounds of Queen's Wharf and may represent a source of contamination.

Contamination testing was carried out on five samples from five different locations, within the footprint of the proposed new extension. The contamination results have measured slightly elevated lead above the screening values for a residential end use with plant uptake in two of the five samples of made ground tested. Lead concentrations have been measured at 260 mg/kg and 290 mg/kg, above the screening value of 200 mg/kg. In addition, benzo(a)pyrene was also slightly elevated in a single sample above the screening value of 4.4 mg/kg at 5.3 mg/kg. No other contaminants were noted to be above the screening values and no asbestos was detected during routine laboratory screening.

The source of the lead and benzo(a)pyrene is likely to be attributable to extraneous fragments of burnt coal and ash. The lead and benzo(a)pyrene are considered to be non-volatile or of a low volatility and does not thus present a significant vapour risk. In addition, these compounds are considered likely to be of low solubility and a risk to groundwater has not been identified. The contamination could, however, pose an unacceptable risk to human health within areas of soft landscaping or through direct contact, accidental ingestion or inhalation of soil or soil derived dust. Within any proposed soft landscaped areas clean topsoil should be imported for the planters to protect end users and to provide a suitable medium for plant growth. The thickness of the topsoil required will depend on the plant type and should be specified by a landscape architect. A geoenvironmental engineer should be consulted with regard to sourcing suitable topsoil and validating the remedial measures.

7.6.1 Site Workers

Site workers should be made aware of the lead and benzo(a)pyrene contamination and a programme of working should be identified to protect workers handling any soil. The method of site working should be in accordance with guidelines set out by HSE and CIRIA and the requirements of the Local Authority Environmental Health Officer. A watching brief should also be maintained during the groundwork, and if suspicious soils are encountered then a suitably qualified engineer should inspect the soils and further testing carried out if required.

7.7 Waste Disposal

Under the European Waste Directive, waste is classified as being either Hazardous or Non-Hazardous and landfills receiving waste are classified as accepting hazardous or non-hazardous wastes or the non-hazardous sub-category of inert waste in accordance with the Waste Directive. Waste classification is a staged process and this investigation represents the preliminary sampling exercise of that process. Once the extent and location of the waste that is to be removed has been defined, further sampling and testing may be necessary. The results from this ground investigation should be used to help define the sampling plan for such further testing, which could include WAC leaching tests where the totals analysis indicates the soil to be a hazardous waste or inert waste from a contaminated site. It should however be noted that the Environment Agency guidance WM3⁷ states that landfill WAC analysis, specifically leaching test results, must not be used for waste classification purposes.

7 Environment Agency 2015. *Guidance on the classification and assessment of waste*. Technical Guidance WM3 First Edition

Any spoil arising from excavations or landscaping works, which is not to be re-used in accordance with the CL:AIRE⁸ guidance, will need to be disposed of to a licensed tip. Waste going to landfill is subject to landfill tax at either the standard rate of £86.10 per tonne (about £155 per m³) or at the lower rate of £2.70 per tonne (roughly £5 per m³). However, the classifications for tax purposes and disposal purposes differ and currently all made ground and topsoil is taxable at the 'standard' rate and only naturally occurring soil and stones, which are accurately described as such in terms of the 2011 Order, would qualify for the 'lower rate' of landfill tax.

Based upon the technical guidance provided by the Environment Agency it is considered likely that the soils encountered during this ground investigation, as represented by the five chemical analyses carried out on samples of shallow soils, would be generally classified as shown in the table below.

Soil Type	Waste Classification (Waste Code)	WAC Testing Required Prior to Landfill Disposal?	Comments
Made ground	Non-hazardous (17 05 04)	No	
Natural Soils	Inert (17 05 04)	Should not be required but confirm with receiving landfill	-

Under the requirements of the European Waste Directive, all waste needs to be pre-treated prior to disposal. The pre-treatment process must be physical, thermal, chemical or biological, including sorting. It must change the characteristics of the waste in order to reduce its volume, hazardous nature, facilitate handling or enhance recovery. The waste producer can carry out the treatment but they will need to provide documentation to prove that this has been carried out. Alternatively, the treatment can be carried out by an approved contractor. The Environment Agency has issued a position paper⁹ which states that in certain circumstances, segregation at source may be considered as pre-treatment and thus excavated material may not have to be treated prior to landfilling if the soils can be segregated onsite prior to excavation by sufficiently characterising the soils insitu prior to excavation.

The above opinion with regard to the classification of the excavated soils is provided for guidance only and should be confirmed by the receiving landfill once the soils to be discarded have been identified.

The local waste regulation department of the Environment Agency (EA) should be contacted to obtain details of tips that are licensed to accept the soil represented by the test results. The tips will be able to provide costs for disposing of this material but may require further testing.

⁸ CL:AIRE March 2011. *The Definition of Waste: Development Industry Code of Practice* Version 2
⁹ Environment Agency 23 Oct 2007 *Regulatory Position Statement Treating non-hazardous waste for landfill - Enforcing the new requirement*

8.0 OUTSTANDING RISKS AND ISSUES

This section of the report aims to highlight areas where further work is required as a result of limitations on the scope of this investigation, or where issues have been identified by this investigation that warrant further consideration. The scope of risks and issues discussed in this section is by no means exhaustive but covers the main areas where additional work is considered to be required.

The ground is a heterogeneous natural material and variations will inevitably arise between the locations at which it is investigated. This report provides an assessment of the ground conditions based on the discrete points at which the ground was sampled, but the ground conditions should be subject to review as the work proceeds to ensure that any variations from the Ground Model are properly assessed by a suitably qualified person.

It would be prudent to consult the building control officer to determine if the local council have any records of solution features close to the site and if they have any specific requirements for foundation construction.

These areas of doubt should be drawn to the attention of prospective contractors and further investigation will be required or sufficient contingency should be provided to cover the outstanding risk.

APPENDIX

Borehole Records

SPT Summary Sheet

Trial Pit Records

Laboratory Geotechnical Test Results

Chemical Analyses (soil)

Generic Risk-Based Soil Guideline Values

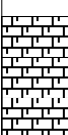
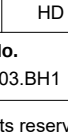
Envirocheck Extracts

Historical Maps

Preliminary UXO Risk Assessment

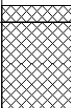
Site Plan

 Geotechnical & Environmental Associates Widbury Barn Widbury Hill Ware SG12 7QE							Site Royal Heights, Queen's Road, Reading, RG1 4BN		Borehole Number BH1
Boring Method Cable Percussion		Casing Diameter 150mm cased to 29.50m		Ground Level (mOD)		Client Reading Heights Limited		Job Number J18003	
		Location		Dates 16/01/2018-17/01/2018		Engineer Fluid Structures		Sheet 1/3	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.40	D1					0.07 (0.33)	MADE GROUND (macadam)		
						0.40 (0.40)	MADE GROUND (granular sub-base)		
0.80	D2					0.80	MADE GROUND (brown mottled orange-brown silty sandy clay with occasional flint gravel and rare chalk gravel, fragments of brick and rare ash)		
1.20-1.65 1.20	SPT(C) N60=32 B3	1.20	DRY	1,3/7,7,8,8			Soft orange-brown clayey sandy SILT with abundant fine to coarse subangular to subrounded flint gravel and rare medium subangular chalk gravel		
2.00-2.45 2.00	SPT(C) N60=11 B4	2.00	DRY	1,2/2,3,2,3		(2.30)			▼1
3.00-3.45 3.00	SPT(C) N60=9 B5	3.00	DRY	1,1/2,2,2,2		3.10	CHALK recovered as structureless chalk, composed of off-white with rare light brown staining gravelly slightly sandy SILT with brown clay infill. Gravel is very weak and weak, low density and medium density, off-white with rare blacks (Grade Dm)		▽1
4.00 4.00 4.00-4.45	B6 D7 SPT N60=3	4.00	3.50	Fast(1) at 3.90m, rose to 2.20m in 20 mins, not sealed. 1,0/1,1,1,0		4.00	CHALK recovered as structureless chalk, composed of off-white with rare light brown staining gravelly slightly sandy SILT. Gravel is very weak and weak, low density and medium density, off-white with rare black specks Grade Dm)		
5.00-5.45 5.00	SPT N60=4 D8	5.00	3.70	1,1/0,1,1,2					
6.00-6.45 6.00	SPT N60=11 D9	6.00	3.20	1,1/1,4,3,2					
7.50-7.95 7.50	SPT N60=15 D10	7.50	3.30	2,2/3,4,3,4			...rare fine subangular flint gravel		
9.00-9.45 9.00	SPT N60=18 D11	9.00		1,2/3,3,5,6			...rare medium to coarse subangular flint gravel		
Remarks Standpipe installed to a depth of 5.00 m Groundwater measured at a depth of 1.98 m on 30/01/2018 and 2.00 m on 05/02/2018								Scale (approx) 1:50	Logged By HD
								Figure No. J18003.BH1	

 GEA Geotechnical & Environmental Associates Widbury Barn Widbury Hill Ware SG12 7QE						Site Royal Heights, Queen's Road, Reading, RG1 4BN		Borehole Number BH1		
Boring Method Cable Percussion		Casing Diameter 150mm cased to 29.50m			Ground Level (mOD)		Client Reading Heights Limited		Job Number J18003	
		Location			Dates 16/01/2018-17/01/2018		Engineer Fluid Structures		Sheet 2/3	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
10.50-10.95 10.50	SPT N60=17 D12	10.50		3,3/3,4,4,5		(26.00)	...rare medium to coarse subangular flint gravel			
12.00-12.45 12.00	SPT N60=18 D13	12.00		3,2/4,3,5,5						
13.50-13.95 13.50	SPT N60=22 D14	13.50		3,3/5,5,6,5			...rare medium to coarse subangular flint gravel			
15.00-15.45 15.00	SPT N60=26 D15	15.00		3,4/4,6,7,7			...rare medium to coarse subangular flint gravel			
16.50-16.95 16.50	SPT N60=36 D16	16.50	3.50	8,8/8,8,8,10			...rare coarse subangular flint gravel			
17.50	B17									
18.00-18.45 18.00	SPT N60=46 D18	18.00	3.20	8,8/9,11,12,11			...rare fine subangular flint gravel			
19.50-19.95 19.50	SPT N60=51 D19	19.50	4.10	8,7/9,9,15,15						
Remarks Standpipe installed to a depth of 5.00 m Groundwater measured at a depth of 1.98 m on 30/01/2018 and 2.00 m on 05/02/2018								Scale (approx) 1:50	Logged By HD	
								Figure No. J18003.BH1		

 GEA Geotechnical & Environmental Associates Widbury Barn Widbury Hill Ware SG12 7QE							Site Royal Heights, Queen's Road, Reading, RG1 4BN		Borehole Number BH1
Boring Method Cable Percussion		Casing Diameter 150mm cased to 29.50m		Ground Level (mOD)		Client Reading Heights Limited		Job Number J18003	
		Location		Dates 16/01/2018-17/01/2018		Engineer Fluid Structures		Sheet 3/3	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
20.50	B20						...rare fine subangular flint gravel		
21.00-21.45 21.00	SPT N60=47 D21	21.00	4.70	7,7/8,10,12,14			...rare coarse subangular flint gravel		
22.50-22.95 22.50	SPT N60=42 D22	22.50	4.40	5,7/4,8,9,18					
23.50	B23								
24.00-24.45 24.00	SPT N60=59 D24	24.00	5.20	9,8/10,12,15,18					
25.50-25.53	SPT 35*/25	25.50	5.30	35/					
26.50	B25						...rare coarse subangular flint gravel and rare cobbles		
27.00-27.45 27.00	SPT N60=84 D26	27.00	6.00	8,11/13,15,24,27			...rare medium to coarse subangular flint gravel		
28.50-28.95 28.50	SPT N60=84 D27	28.50	6.80	10,10/14,18,22,25			...rare fine subangular flint gravel		
29.50-29.95 29.50	SPT N60=102 D28	29.50	7.00	11,16/15,22,26,33 17/01/2018:7.00m		30.00			
Remarks Standpipe installed to a depth of 5.00 m Groundwater measured at a depth of 1.98 m on 30/01/2018 and 2.00 m on 05/02/2018								Scale (approx) 1:50	Logged By HD
								Figure No. J18003.BH1	

 Geotechnical & Environmental Associates Widbury Barn Widbury Hill Ware SG12 7QE						Site Royal Heights, Queen's Road, Reading, RG1 4BN		Number BH2	
Excavation Method Open-drive sampler		Dimensions 118mm to 1.00m		Ground Level (mOD)		Client Reading Heights Limited		Job Number J18003	
		Location		Dates 15/01/2018		Engineer Fluid Structures		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.80	D1				0.07	MADE GROUND (macadam)			
1.00-1.45	SPT(C) N60=7		0,1/1,1,2,1		(0.33)	MADE GROUND (granular sub-base)			
1.30	D2				0.40				
1.50	D3				(0.20)	MADE GROUND (grey silty sandy clay with fragments of chalk)			
					0.70				
					(0.30)	MADE GROUND (light brown sand with occasional fragments of brick and chalk. Decaying wood at 0.70 m, overlying red plastic tile)			
					1.00				
					(0.44)	MADE GROUND (grey clayey silt with fragments of chalk, flint gravel and cobbles, brick and concrete. Half red brick at 1.00 m)			
					1.44				
					(0.36)	MADE GROUND (brown silty sandy clay with fragments of fine chalk, red brick and abundant ash)			
					1.80				
2.00-2.45	SPT(C) N60=3		0,0/0,0,1,1		(0.80)	MADE GROUND (light brown clayey silty sand with rare fragments of chalk, burnt coal and brick)			
2.00	D4								
2.60	D5				2.60	MADE GROUND (brown mottled grey silty sandy clay with occasional flint gravel, rare fragments of chalk, rare ash and red brick)			
					(0.15)				
					2.75				
3.00-3.45	SPT N60=8		3,2/2,1,2,1			Soft brown gravelly clayey fine sandy SILT with chalk fragments. Gravel is fine to coarse subangular flint gravel			
3.00	D6								
3.50	D7					CHALK recovered as structureless chalk, composed of off-white with rare light brown staining gravelly slightly sandy SILT with brown clay infill. Gravel is very weak, low density, off-white, with rare medium to coarse subangular flint gravel (Grade Dm)			
					(2.25)				
4.00-4.45	SPT(C) N60=3		Water strike(1) at 4.00m. 0,0/0,1,1,0						
4.50	D8								
5.00-5.45	SPT(C) N60=7		1,1/1,1,1,2		5.00	Complete at 8.15m			
5.90-6.35	SPT(C) N60=7		1,1/2,1,1,1						
6.35-6.80	SPT(C) N60=14		2,2/2,2,3,3						
6.80-7.25	SPT(C) N60=14		2,3/3,2,3,2						
7.25-7.70	SPT(C) N60=17		3,2/3,3,3,3						
7.70-8.15	SPT(C) N60=19		4,3/4,4,3,3						
Remarks 700 mm of soil recovered from 3.00 m to 4.00 m 300 mm of soil recovered from 4.00 m to 5.00 m Standpipe installed to a depth of 5.00 m - response zone from 2.00 m to 5.00 m Groundwater standing at a depth of 2.29 m at end of day (15/01/2018) Groundwater measured at a depth of 2.16 m on 30/01/2018 and 2.18 m on 05/02/2018 Borehole extended by continuous probing							Scale (approx) 1:50	Logged By HD	
							Figure No. J18003.BH2		

 GEA Geotechnical & Environmental Associates Widbury Barn Widbury Hill Ware SG12 7QE						Site Royal Heights, Queen's Road, Reading, RG1 4BN		Number BH3	
Excavation Method Open-drive sampler		Dimensions 118mm to 1.00m		Ground Level (mOD)		Client Reading Heights Limited		Job Number J18003	
		Location		Dates 15/01/2018		Engineer Fluid Structures		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.80	D1	0,1/2,2,4,7			0.11	MADE GROUND (macadam)			
1.00-1.45	SPT(C) N60=21				(0.59)	MADE GROUND (granular sub-base)			
1.20	D2				0.70	MADE GROUND (dark brown silty sandy clay with fragments of chalk and pottery. Red brick at 1.00 m)			
1.50	D3				(0.30)	MADE GROUND (brown silty sandy clay with occasional flint gravel, chalk fragments, and rare ash)			
					(0.35)	MADE GROUND (brown silty sandy clay with occasional flint gravel, chalk fragments, and rare ash)			
					1.35	Soft light brown clayey SILT with abundant chalk gravel and occasional coarse subangular flint gravel			
					(0.40)	Soft light brown clayey SILT with abundant chalk gravel and occasional coarse subangular flint gravel			
					1.75	CHALK recovered as structureless chalk, composed of off-white with rare light brown staining gravelly slightly sandy SILT with brown clay infill. Gravel is very weak, low density, off-white, with rare medium to coarse subangular flint gravel (Grade Dm)			
2.00-2.45	SPT N60=6	2,2/1,1,1,1							
2.00	D4								
2.50	D5								
3.00-3.45	SPT N60=7	0,0/1,0,1,3							
3.00	D6								
3.50	D7				(3.25)				
4.00	D8	Water strike(1) at 4.00m. 2,1/1,0,1,0							
4.00-4.45	SPT N60=3								
5.00-5.45	SPT(C) N60=8	1,1/2,1,1,2			5.00				
5.00	D9							Complete at 8.15m	
5.45-5.90	SPT(C) N60=14	3,3/2,3,2,3							
5.90-6.35	SPT(C) N60=18	3,3/3,3,3,4							
6.35-6.80	SPT(C) N60=32	5,4/4,5,7,7							
6.80-7.25	SPT(C) N60=29	6,6/6,6,5,4							
7.25-7.70	SPT(C) N60=33	6,6/5,6,6,7							
7.70-8.15	SPT(C) N60=40	8,7/8,8,7,6							
Remarks 630 mm of soil recovered between 2 m and 3 m 500 mm of soil recovered between 3 m and 4 m Standpipe installed to a depth of 5 m - response zone from 1.00 m to 5.00 m Groundwater standing at 2.22 m at end of day (15/01/2018) Groundwater measured at a depth of 2.12 m on 30/01/2018 and 2.14 m on 05/02/2018 Borehole extended by continuous probing							Scale (approx)	Logged By	
							1:50	HD	
							Figure No. J18003.BH3		

 GEA Geotechnical & Environmental Associates Widbury Barn Widbury Hill Ware SG12 7QE						Site Royal Heights, Queen's Road, Reading, RG1 4BN		Number BH4
Excavation Method Open-drive sampler		Dimensions 118mm to 1.00m		Ground Level (mOD)		Client Reading Heights Limited		Job Number J18003
		Location		Dates 15/01/2018		Engineer Fluid Structures		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.70	D1				(0.13)	MADE GROUND (macadam)		
1.00-1.45	SPT(C) N60=7		1,1/1,1,1,2		0.13 (0.30) 0.43	MADE GROUND (granular sub-base)		
1.20	D2				(0.57)	MADE GROUND (brown mottled dark brown silty sandy clay with partings of orange-brown sand, chalk fragments, burnt coal, brick and concrete)		
1.60	D3				1.00 (0.40)	MADE GROUND (brown silty sandy clay with rare chalk fragments, shells, rare flint gravel, brick and ash)		
2.00-2.45	SPT(C) N60=28		4,6/6,5,5,4		1.40	Light brown fine SAND with rare fine to coarse subangular flint gravel and fragments of chalk		
2.40	D4				(0.90)			
3.00-3.45	SPT N60=28		2,2/2,5,6,7		2.30	Soft brown clayey SILT with occasional white chalk, rare coarse subangular flint gravel		
3.00	D5				(1.40)			
3.50	D6				3.70	CHALK recovered as structureless chalk, composed of off-white with rare light brown staining gravelly slightly sandy SILT with brown clay infill. Gravel is very weak, low density, off-white, with rare medium to coarse subangular flint gravel (Grade Dm)		
4.00	D7		Water strike(1) at 4.00m.		(1.30)			
4.00-4.45	SPT N60=12		4,4/3,2,2,2					
4.50	D8				5.00	Complete at 8.15m		
5.00-5.45	SPT(C) N60=10		3,1/2,2,1,2					
5.00	D9							
5.45-5.90	SPT(C) N60=12		2,2/3,2,2,2					
5.90-6.35	SPT(C) N60=15		2,2/2,2,3,4					
6.35-6.80	SPT(C) N60=22		5,5/3,4,5,4					
6.80-7.25	SPT(C) N60=24		3,4/4,3,5,5					
7.25-7.70	SPT(C) N60=50		8,8/8,9,10,9					
7.70-8.15	SPT(C) N60=54		9,8/10,10,9,10					
Remarks Water standing at 2.07 m at end of day (15/01/2018) Borehole extended by continuous probing							Scale (approx) 1:50	Logged By HD
							Figure No. J18003.BH4	

 GEA Geotechnical & Environmental Associates Widbury Barn Widbury Hill Ware SG12 7QE						Site Royal Heights, Queen's Road, Reading, RG1 4BN		Number BH5	
Excavation Method Open-drive sampler		Dimensions 118mm to 1.00m		Ground Level (mOD)		Client Reading Heights Limited		Job Number J18003	
		Location		Dates 15/01/2018		Engineer Fluid Structures		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.60	D1				0.10 (0.30) 0.40 0.50 (0.20) 0.70	MADE GROUND (macadam)			
						MADE GROUND (granular sub-base)			
						MADE GROUND (grey silty sandy clay with rare flint gravel, brick and ash)			
					(0.40)	MADE GROUND (dark reddish brown sand)			
1.00-1.45	SPT(C) N60=6		2,1/1,1,1,1		1.10	MADE GROUND (crushed brick with ash. Red brick at 1.00 m)			
1.50	D2					MADE GROUND (brown becoming orange-brown silty sandy clay with flint gravel, shell fragments, chalk, black specks and brick. Clump of wire at 1.95 m)			
					(1.30)				
2.00-2.45	SPT(C) N60=22		0,0/3,4,4,5						
2.20	D3				2.40				
2.50	D4					Soft orange-brown fine sandy SILT with fine to coarse subangular fragments of chalk, and rare medium to coarse well rounded to subangular flint gravel			
3.00-3.45	SPT(C) N60=14		0,2/2,3,2,3						
3.00	D5				(2.00)				
3.50	D6								
4.00-4.45	SPT N60=6		0,0/0,2,1,1						
4.00	D7								
4.50	D8		Water strike(1) at 4.50m.		4.40 (0.60)	CHALK recovered as structureless chalk, composed of off-white with rare light brown staining gravelly slightly sandy SILT with brown clay infill. Gravel is very weak, low density, off-white, with rare medium to coarse subangular flint gravel (Grade Dm)		Σ1	
5.00-5.45	SPT(C) N60=1		0,0/0,0,0,1		5.00				
5.00	D9					Complete at 8.15m			
5.45-5.90	SPT(C) N60=4		1,2/1,1,1,0						
5.90-6.35	SPT(C) N60=6		1,0/1,1,1,1						
6.35-6.80	SPT(C) N60=12		3,3/3,2,2,2						
6.80-7.25	SPT(C) N60=10		2,2/2,2,1,2						
7.25-7.70	SPT(C) N60=17		2,2/3,3,3,3						
7.70-8.15	SPT(C) N60=19		3,4/3,4,3,4						
Remarks 700 mm of soil recovered from 3.00 m to 4.00 m 900 mm of soil recovered from 4.00 m to 5.00 m Groundwater standing at 2.38 m on completion (15/01/2018) Borehole extended by continuous probing							Scale (approx) 1:50	Logged By HD	
							Figure No. J18003.BH5		

 GEA Geotechnical & Environmental Associates Widbury Barn Widbury Hill Ware SG12 7QE							Standard Penetration Test Results					
Site : Royal Heights, Queen's Road, Reading, RG1 4BN												Job Number J18003
Client : Reading Heights Limited												Sheet 1 / 2
Engineer : Fluid Structures												
Borehole Number	Base of Borehole (m)	End of Seating Drive (m)	End of Test Drive (m)	Test Type	Seating Blows per 75mm		Blows for each 75mm penetration				Result	Comments
					1	2	1	2	3	4		
BH1	1.20	1.35	1.65	CPT	1	3	7	7	8	8	N60=32	
BH1	2.00	2.15	2.45	CPT	1	2	2	3	2	3	N60=11	
BH1	3.00	3.15	3.45	CPT	1	1	2	2	2	2	N60=9	
BH1	4.00	4.15	4.45	SPT	1	0	1	1	1	0	N60=3	
BH1	5.00	5.15	5.45	SPT	1	1	0	1	1	2	N60=4	
BH1	6.00	6.15	6.45	SPT	1	1	1	4	3	2	N60=11	
BH1	7.50	7.65	7.95	SPT	2	2	3	4	3	4	N60=15	
BH1	9.00	9.15	9.45	SPT	1	2	3	3	5	6	N60=18	
BH1	10.50	10.65	10.95	SPT	3	3	3	4	4	5	N60=17	
BH1	12.00	12.15	12.45	SPT	3	2	4	3	5	5	N60=18	
BH1	13.50	13.65	13.95	SPT	3	3	5	5	6	5	N60=22	
BH1	15.00	15.15	15.45	SPT	3	4	4	6	7	7	N60=26	
BH1	16.50	16.65	16.95	SPT	8	8	8	8	8	10	N60=36	
BH1	18.00	18.15	18.45	SPT	8	8	9	11	12	11	N60=46	
BH1	19.50	19.65	19.95	SPT	8	7	9	9	15	15	N60=51	
BH1	21.00	21.15	21.45	SPT	7	7	8	10	12	14	N60=47	
BH1	22.50	22.65	22.95	SPT	5	7	4	8	9	18	N60=42	
BH1	24.00	24.15	24.45	SPT	9	8	10	12	15	18	N60=59	
BH1	25.50	25.53	25.53	SPT	35						35*/25mm	
BH1	27.00	27.15	27.45	SPT	8	11	13	15	24	27	N60=84	
BH1	28.50	28.65	28.95	SPT	10	10	14	18	22	25	N60=84	
BH1	29.50	29.65	29.95	SPT	11	16	15	22	26	33	N60=102	
BH2	1.00	1.15	1.45	CPT	0	1	1	1	2	1	N60=7	
BH2	2.00	2.15	2.45	CPT	0	0	0	0	1	1	N60=3	
BH2	3.00	3.15	3.45	SPT	3	2	2	1	2	1	N60=8	
BH2	4.00	4.15	4.45	CPT	0	0	0	1	1	0	N60=3	
BH2	5.00	5.15	5.45	CPT	1	1	1	1	1	2	N60=7	
BH2	5.90	6.05	6.35	CPT	1	1	2	1	1	1	N60=7	
BH2	6.35	6.50	6.80	CPT	2	2	2	2	3	3	N60=14	
BH2	6.80	6.95	7.25	CPT	2	3	3	2	3	2	N60=14	
BH2	7.25	7.40	7.70	CPT	3	2	3	3	3	3	N60=17	
BH2	7.70	7.85	8.15	CPT	4	3	4	4	3	3	N60=19	
BH3	1.00	1.15	1.45	CPT	0	1	2	2	4	7	N60=21	
BH3	2.00	2.15	2.45	SPT	2	2	1	1	1	1	N60=6	
BH3	3.00	3.15	3.45	SPT	0	0	1	0	1	3	N60=7	
BH3	4.00	4.15	4.45	SPT	2	1	1	0	1	0	N60=3	
BH3	5.00	5.15	5.45	CPT	1	1	2	1	1	2	N60=8	
BH3	5.45	5.60	5.90	CPT	3	3	2	3	2	3	N60=14	
BH3	5.90	6.05	6.35	CPT	3	3	3	3	3	4	N60=18	
BH3	6.35	6.50	6.80	CPT	5	4	4	5	7	7	N60=32	
BH3	6.80	6.95	7.25	CPT	6	6	6	6	5	4	N60=29	
BH3	7.25	7.40	7.70	CPT	6	6	5	6	6	7	N60=33	
BH3	7.70	7.85	8.15	CPT	8	7	8	8	7	6	N60=40	



GEA

Geotechnical & Environmental Associates
Widbury Barn | Widbury Hill | Ware | SG12 7QE

Standard Penetration Test Results

Site : Royal Heights, Queen's Road, Reading, RG1 4BN

Client : Reading Heights Limited

Engineer : Fluid Structures

Job Number
J18003

Sheet
2 / 2

Borehole Number	Base of Borehole (m)	End of Seating Drive (m)	End of Test Drive (m)	Test Type	Seating Blows per 75mm		Blows for each 75mm penetration				Result	Comments
					1	2	1	2	3	4		
BH4	1.00	1.15	1.45	CPT	1	1	1	1	1	2	N60=7	
BH4	2.00	2.15	2.45	CPT	4	6	6	5	5	4	N60=28	
BH4	3.00	3.15	3.45	SPT	2	2	2	5	6	7	N60=28	
BH4	4.00	4.15	4.45	SPT	4	4	3	2	2	2	N60=12	
BH4	5.00	5.15	5.45	CPT	3	1	2	2	1	2	N60=10	
BH4	5.45	5.60	5.90	CPT	2	2	3	2	2	2	N60=12	
BH4	5.90	6.05	6.35	CPT	2	2	2	2	3	4	N60=15	
BH4	6.35	6.50	6.80	CPT	5	5	3	4	5	4	N60=22	
BH4	6.80	6.95	7.25	CPT	3	4	4	3	5	5	N60=24	
BH4	7.25	7.40	7.70	CPT	8	8	8	9	10	9	N60=50	
BH4	7.70	7.85	8.15	CPT	9	8	10	10	9	10	N60=54	
BH5	1.00	1.15	1.45	CPT	2	1	1	1	1	1	N60=6	
BH5	2.00	2.15	2.45	CPT	0	0	3	4	4	5	N60=22	
BH5	3.00	3.15	3.45	CPT	0	2	2	3	2	3	N60=14	
BH5	4.00	4.15	4.45	SPT	0	0	0	2	1	1	N60=6	
BH5	5.00	5.15	5.45	CPT	0	0	0	0	0	1	N60=1	
BH5	5.45	5.60	5.90	CPT	1	2	1	1	1	0	N60=4	
BH5	5.90	6.05	6.35	CPT	1	0	1	1	1	1	N60=6	
BH5	6.35	6.50	6.80	CPT	3	3	3	2	2	2	N60=12	
BH5	6.80	6.95	7.25	CPT	2	2	2	2	1	2	N60=10	
BH5	7.25	7.40	7.70	CPT	2	2	3	3	3	3	N60=17	
BH5	7.70	7.85	8.15	CPT	3	4	3	4	3	4	N60=19	



GEA

Widbury Barn
Widbury Hill
Ware
Herts SG12 7QE

Site
Royal Heights, Queen's Road, Reading,
RG1 4BN

Trial Pit
Number
1

Excavation Method
Mechanical using a tracked mini-
excavator

Dimensions
700 x 1200 x 1500

Ground Level (m OD)

Client
Reading Heights Limited

Job
Number
J18003

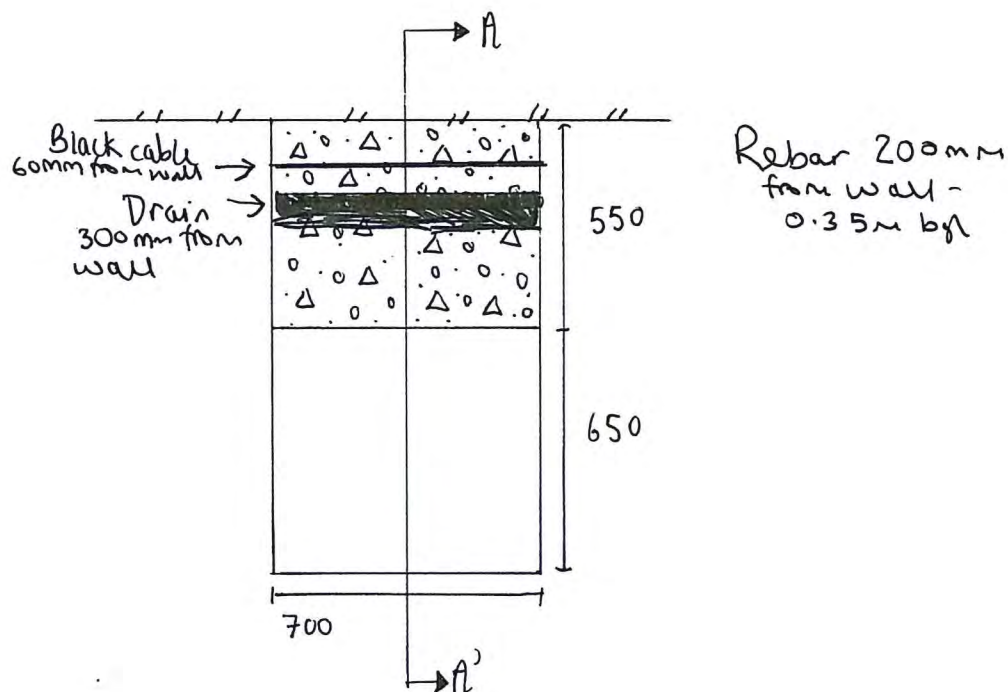
Location

Dates
15/01/2018

Engineer
Fluid Structures

Sheet

PLAN



Remarks:

All dimensions in millimetres

Sides of trial pit remained relatively stable during excavation

Groundwater: Not encountered

Scale:

1:20

Logged by:

HD



GEA

Widbury Barn
Widbury Hill
Ware
Herts SG12 7QE

Site

Royal Heights, Queen's Road, Reading,
RG1 4BN

Trial Pit
Number
1

Excavation Method

Mechanical using a tracked mini-
excavator

Dimensions

700 x 1200 x 1500

Ground Level (m OD)

Dates

15/01/2018

Client

Reading Heights Limited

Engineer

Fluid Structures

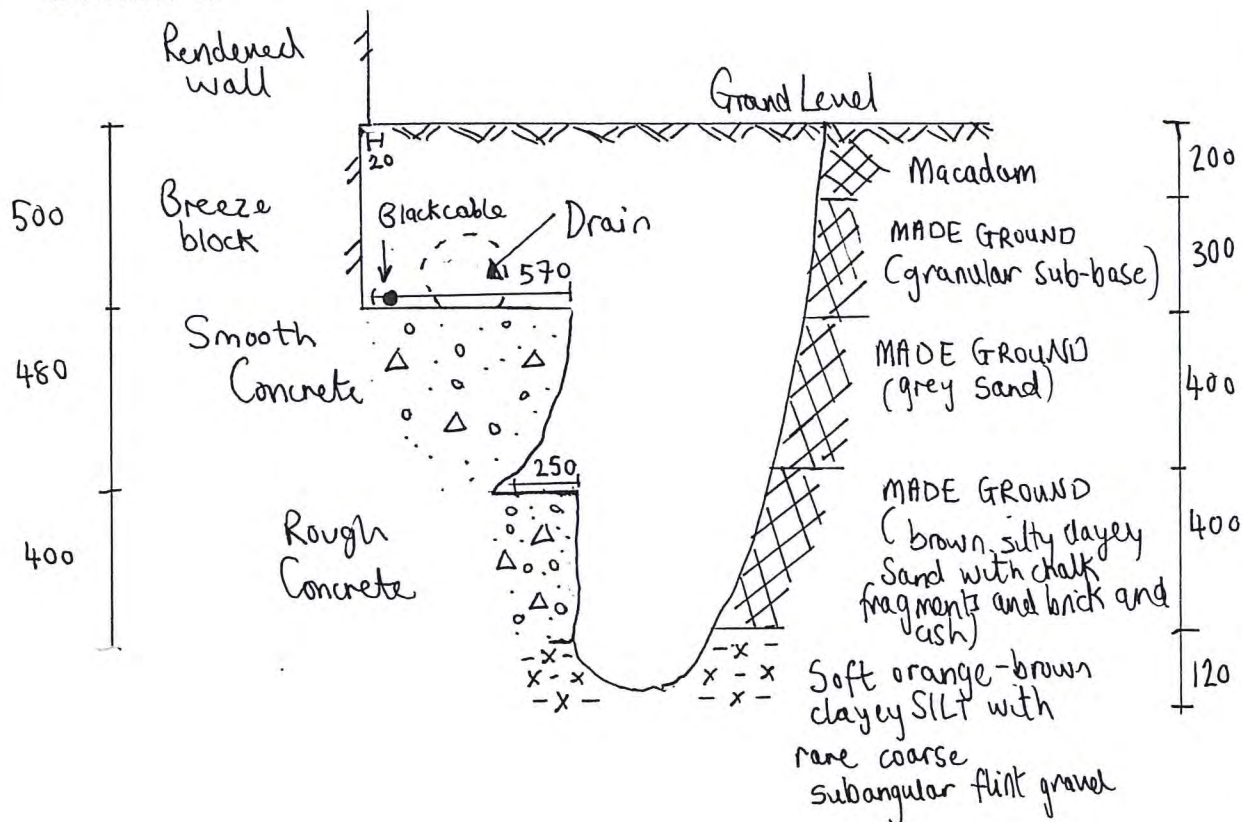
Job

Number

J18003

Sheet

SECTION A - A'



Remarks:

All dimensions in millimetres

Sides of trial pit remained relatively stable during excavation

Groundwater: Not encountered

Scale:

1:20

Logged by:

HD

Site Royal Heights, Queen's Road, Reading, RG1 4BN

Client Reading Heights Limited

Engineer Fluid Structures

Job Number
J18003

Sheet

Location of Trial Pit 1



View of foundations and services encountered in Trial Pit No 1





GEA

Widbury Barn
Widbury Hill
Ware
Herts SG12 7QE

Site
Royal Heights, Queen's Road, Reading,
RG1 4BN

**Trial Pit
Number**
2

Excavation Method
Mechanical using a tracked mini-
excavator

Dimensions
1570 x 900 x 1500

Ground Level (m OD)

Client
Reading Heights Limited

**Job
Number**
J18003

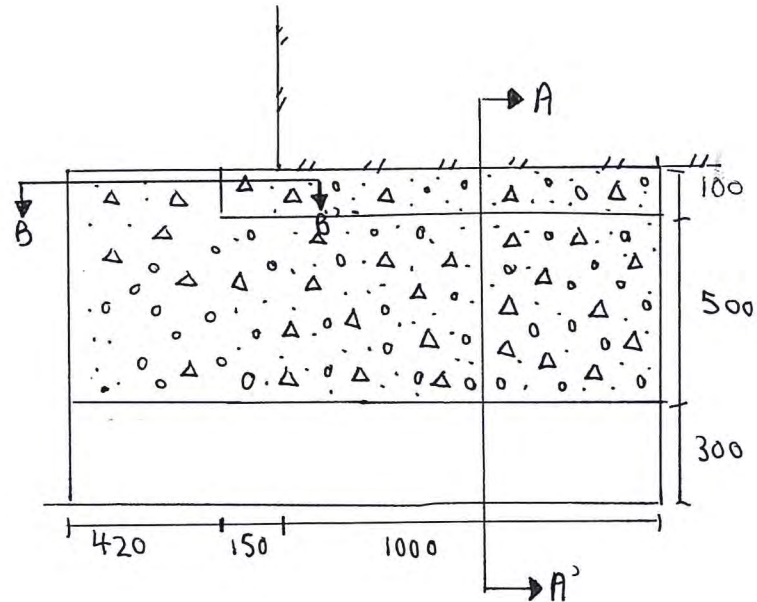
Location

Dates
15/01/2018

Engineer
Fluid Structures

Sheet

PLAN



Remarks:

All dimensions in millimetres

Sides of trial pit remained relatively stable during excavation

Groundwater: Not encountered

Scale:

1:20

Logged by:

HD



GEA

Widbury Barn
Widbury Hill
Ware
Herts SG12 7QE

Site

Royal Heights, Queen's Road, Reading,
RG1 4BN

Trial Pit

Number

2

Excavation Method

Mechanical using a tracked mini-
excavator

Dimensions

1570 x 900 x 1500

Ground Level (m OD)

Location

Dates
15/01/2018

Client

Reading Heights Limited

Engineer

Fluid Structures

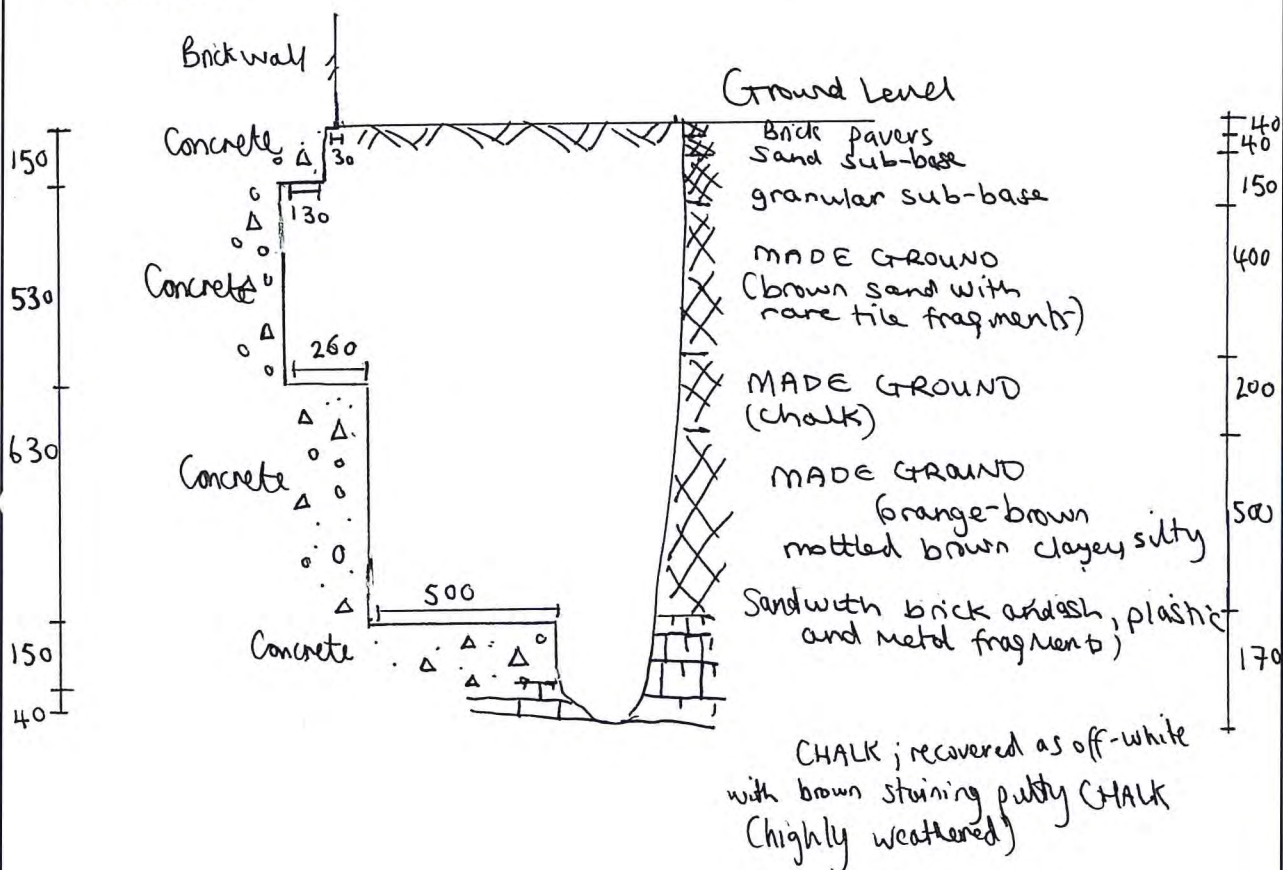
Job

Number

J18003

Sheet

SECTION A - A'



Remarks:

All dimensions in millimetres

Sides of trial pit remained relatively stable during excavation

Groundwater: Not encountered

Scale:

1:20

Logged by:

HD



Site
Royal Heights, Queen's Road, Reading,
RG1 4BN

**Trial Pit
Number**
2

Dimensions
1570 x 900 x 1500

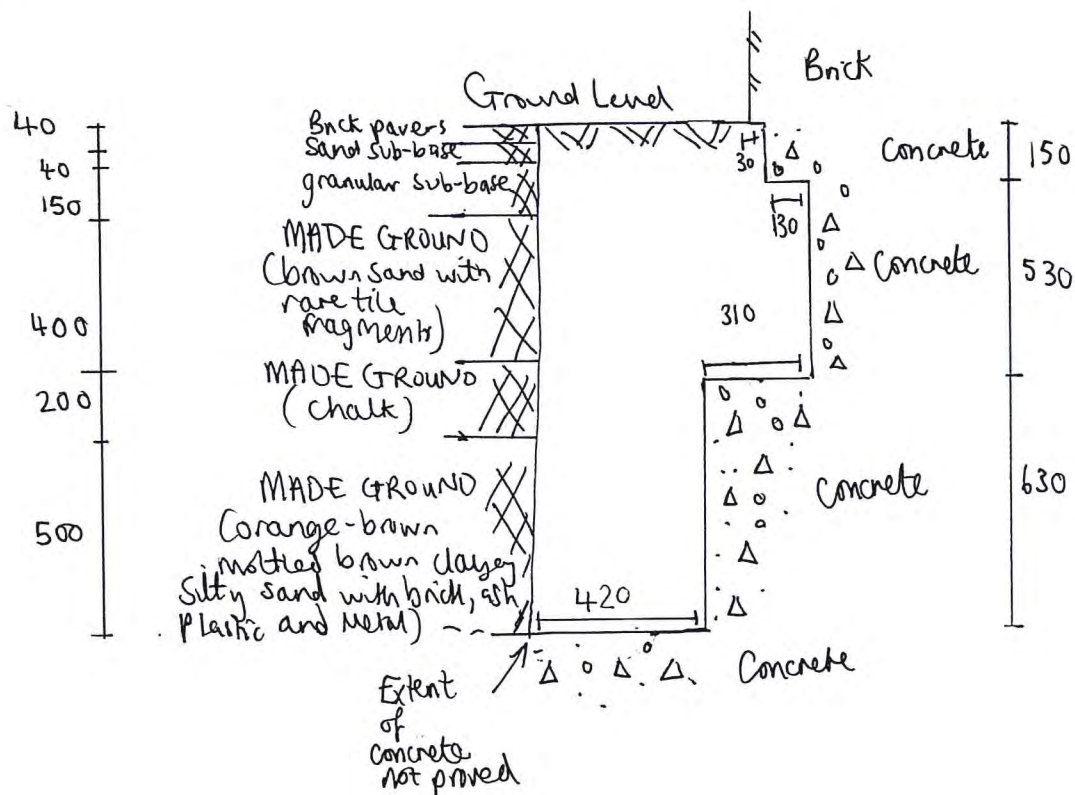
Dates
15/01/2018

Engineer
Fluid Structures

Job Number	J18003
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Sheet

SECTION B - B'



Groundwater: Not encountered

1:20

HD

Site Royal Heights, Queen's Road, Reading, RG1 4BN

Client Reading Heights Limited

Engineer Fluid Structures

Job Number
J18003

Sheet

Location of Trial Pit 2



View of foundations and services encountered in Trial Pit No 2



Summary of Natural Moisture Content, Liquid Limit and Plastic Limit Results

Job No.	Project Name	Programme	
23950	Royal Heights, Queen's Road, Reading, RG1 4BN	Samples received	17/01/2018
		Schedule received	25/01/2018
Project No.	Client	Project started	26/01/2018
J18003	GEA	Testing Started	02/02/2018

[illegible]

Test Methods: BS1377: Part 2: 1990:
Natural Moisture Content : clause 3.2
Atterberg Limits: clause 4.3 and 5.0

Test Report by K4 SOILS LABORATORY
Unit 8 Olds Close Olds Approach
Watford Herts WD18 9RU

Tel: 01923 711 288
Email: James@k4soils.com

Checked and
Approved

Initials J.P

Date: 13/02/2018

MSF-5-R1(b)

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

					Saturation Moisture Content - Summary of Results Tested in accordance with BS1377 : Part 2 : 1990, clause 3.3 unless annotated otherwise.					
Job No.		Project Name Royal Heights, Queen's Road, Reading, RG1 4BN							Programme	
23950									Samples received	17/01/2018
									Schedule received	25/01/2018
Project No.		Client GEA							Project started	
J18003									26/01/2018	
									Testing Started	
Hole No.	Sample				Description	SMC %	NMC %	Bulk Density Mg/m3	Dry Density Mg/m3	Remarks - Sample size complies with BS1377:1990: Part 2 (Yes/No)
	Ref	Top m	Base m	Type						
BH1	6	4.00	-	B	Off white putty CHALK with occasional fmc intact chalk fragments	27	27	1.98	1.56	No
BH1	17	17.50	-	B	Off white putty CHALK with occasional fm intact chalk fragments and fmc flint gravel	28	26	1.95	1.55	No
BH1	25	26.50	-	B	Off white putty CHALK with occasional fmc intact chalk fragments and fmc flint gravel	27	26	1.96	1.56	No
 Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU Tel: 01923 711 288 Email: James@k4soils.com Checked and Approved Initials J.P Date: 13/02/2018										
2519	Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)									MSF-5-R18



PARTICLE SIZE DISTRIBUTION

Job Ref 23950

Borehole/Pit No. BH1

Site Name Royal Heights, Queen's Road, Reading, RG1 4BN

Sample No. 3

Project No. J18003 Client GEA

Depth Top 1.20 m

Soil Description

Brown very clayey very sandy GRAVEL with occasional putty chalk pockets and fm intact chalk fragments (gravel is fmc and angular to rounded)

Depth Base - m

Sample Type B

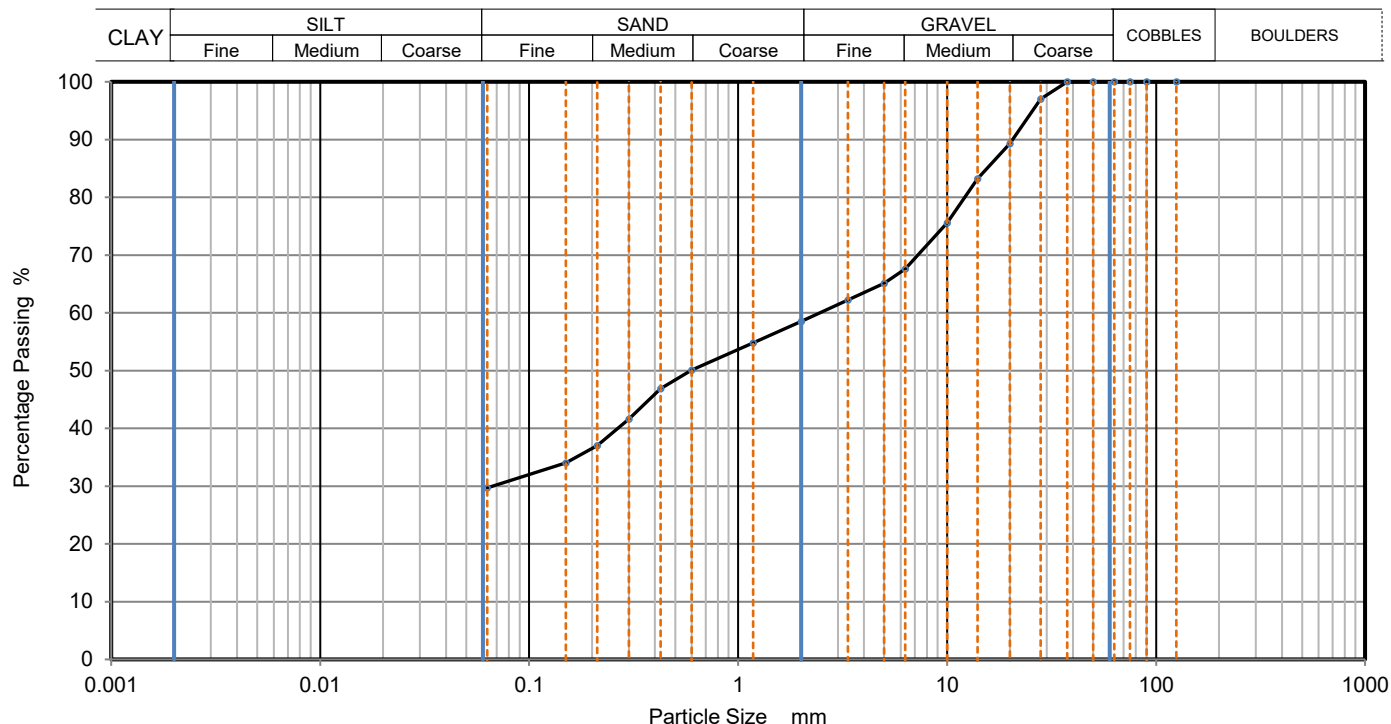
Samples received 17/01/2018

Schedules received 25/01/2018

Test Method BS1377:Part 2: 1990, clause 9.0

Project started 26/01/2018

Date tested 08/02/2018



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	97		
20	89		
14	83		
10	76		
6.3	68		
5	65		
3.35	62		
2	59		
1.18	55		
0.6	50		
0.425	47		
0.3	42		
0.212	37		
0.15	34		
0.063	30		

Dry Mass of sample, g

2727

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	41.5
Sand	28.8
Fines <0.063mm	29.7

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

Preparation and testing in accordance with BS1377 unless noted below



2519

K4 Soils Laboratory

Unit 8, Olds Close, Watford, Herts, WD18 9RU

Email: james@k4soils.com

Tel: 01923 711288

Checked and Approved

Initials: J.P

Date: 13/02/2018

MSF-5-R3

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)



PARTICLE SIZE DISTRIBUTION

Job Ref 23950

Borehole/Pit No. BH1

Site Name Royal Heights, Queen's Road, Reading, RG1 4BN

Sample No. 5

Project No. J18003 Client GEA

Depth Top 3.00 m

Soil Description Off white putty CHALK with occasional fmc intact chalk fragments and fm sub-angular flint gravel

Depth Base - m

Sample Type B

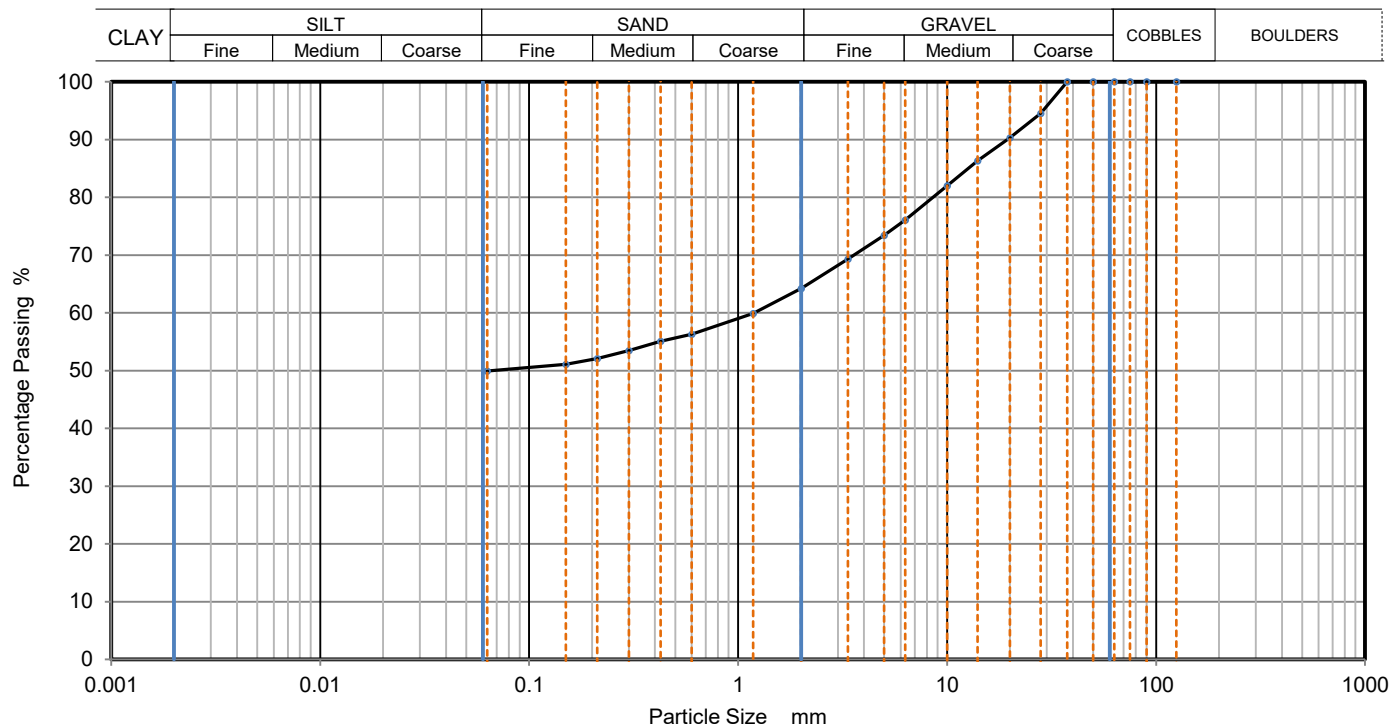
Samples received 17/01/2018

Schedules received 25/01/2018

Test Method BS1377:Part 2: 1990, clause 9.0

Project started 26/01/2018

Date tested 08/02/2018



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	95		
20	90		
14	86		
10	82		
6.3	76		
5	73		
3.35	69		
2	64		
1.18	60		
0.6	56		
0.425	55		
0.3	54		
0.212	52		
0.15	51		
0.063	50		

Dry Mass of sample, g 1290

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	35.8
Sand	14.3
Fines <0.063mm	49.9

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

Preparation and testing in accordance with BS1377 unless noted below



2519

K4 Soils Laboratory

Unit 8, Olds Close, Watford, Herts, WD18 9RU

Email: james@k4soils.com

Tel: 01923 711288

Checked and Approved

Initials: J.P

Date: 13/02/2018

MSF-5-R3

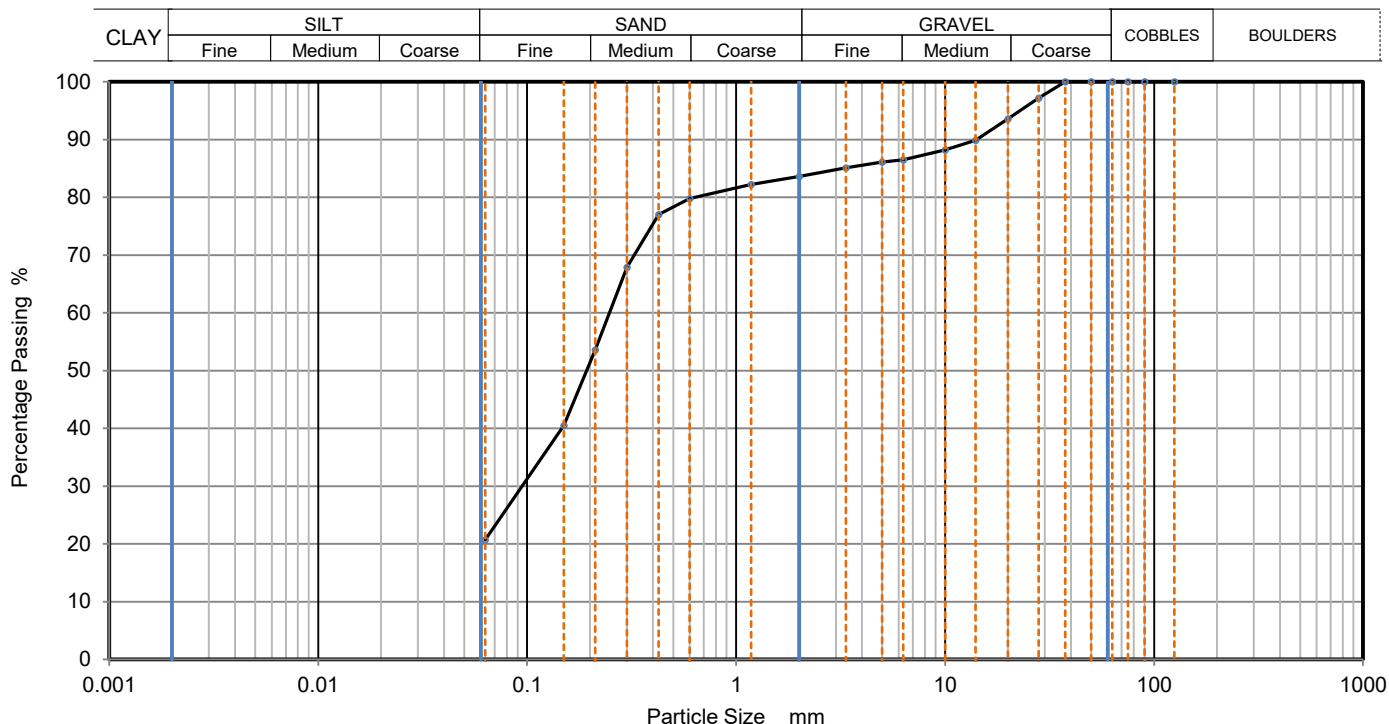
Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)



PARTICLE SIZE DISTRIBUTION

Job Ref	23950
Borehole/Pit No.	BH4
Sample No.	3
Depth Top	1.60 m
Depth Base	- m
Sample Type	D
Samples received	17/01/2018
Schedules received	25/01/2018
Project started	26/01/2018
Date tested	08/02/2018

Site Name	Royal Heights, Queen's Road, Reading, RG1 4BN		
Project No.	J18003	Client	GEA
Soil Description	Brown gravelly very clayey SAND (gravel is fmc and sub-angular to rounded)		
Test Method	BS1377:Part 2: 1990, clause 9.0		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	97		
20	94		
14	90		
10	88		
6.3	87		
5	86		
3.35	85		
2	84		
1.18	82		
0.6	80		
0.425	77		
0.3	68		
0.212	54		
0.15	41		
0.063	21		

Dry Mass of sample, g

927

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	16.4
Sand	63.0
Fines <0.063mm	20.7

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

Preparation and testing in accordance with BS1377 unless noted below



K4 Soils Laboratory
Unit 8, Olds Close, Watford, Herts, WD18 9RU
Email: james@k4soils.com
Tel: 01923 711288

Checked and Approved

Initials: J.P
Date: 13/02/2018



Sulphate Content (Gravimetric Method) for 2:1 Soil: Water Extract and pH Value - Summary of Results

Tested in accordance with BS1377 : Part 3 : 1990, clause 5.3 and clause 9

Job No.	Project Name	Programme	
23950	Royal Heights, Queen's Road, Reading, RG1 4BN	Samples received	17/01/2018
		Schedule received	25/01/2018
Project No.	Client	Project started	26/01/2018
J18003	GEA	Testing Started	02/02/2018

[illegible]

Test Report by K4 SOILS LABORATORY

Unit 8 Olds Close Olds Approach

Watford Herts WD18 9RU

Tel: 01923 711 288

Email: James@k4soils.com

Checked and
Approved

Initials J.P

Date: 13/02/2018

2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5-R29



GEA

www.gea-ltd.co.uk

Herts | 01727 824666 Notts | 01509 674888

SPT / Depth Graph

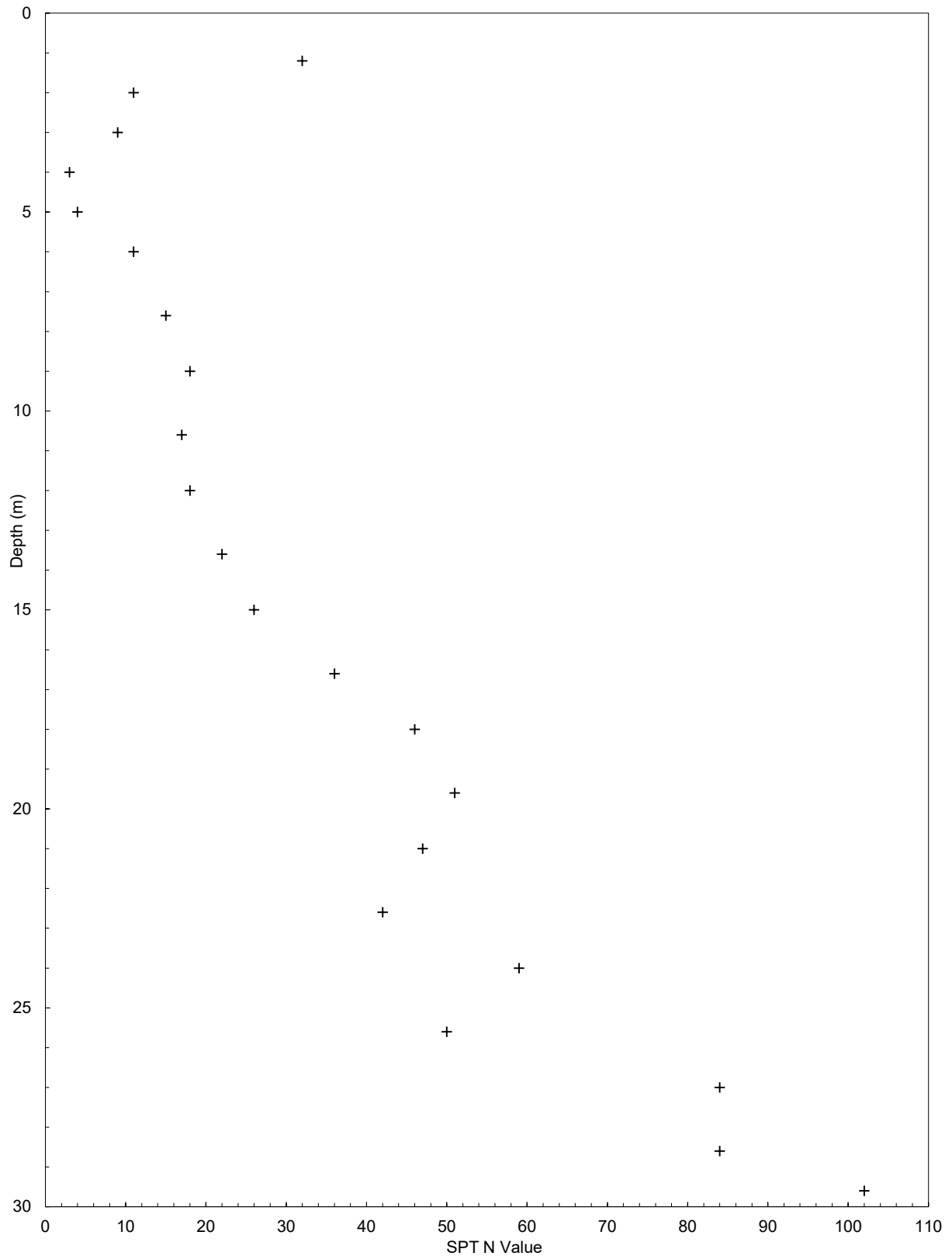
Site Royal Heights, Queen's Road, Reading, RG1 4BN

Client Reading Heights Limited

Engineer Fluid Structures

Job Number
J18003

Sheet
1 / 1



+ - SPT 'N' values

**Hannah Dashfield**

Geotechnical & Environmental Associates
Widbury Barn
Widbury Hill
Ware
Hertfordshire
SG127QE

e: Hannah@gea-ltd.co.uk

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7 Woodshots Meadow,
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WD18 8YS

t: 01923 225404
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e: reception@i2analytical.com

Analytical Report Number : 18-73130

Project / Site name:	Royal Heights, Reading	Samples received on:	17/01/2018
Your job number:	J18003	Samples instructed on:	17/01/2018
Your order number:	J18003	Analysis completed by:	24/01/2018
Report Issue Number:	1	Report issued on:	24/01/2018
Samples Analysed:	5 soil samples		

Signed:

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.



Analytical Report Number: 18-73130

Project / Site name: Royal Heights, Reading

Your Order No: J18003

Lab Sample Number				890365	890366	890367	890368	890369
Sample Reference				BH2	BH3	BH4	BH5	TP2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.80	0.70	0.60	0.50
Date Sampled				15/01/2018	15/01/2018	15/01/2018	15/01/2018	15/01/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	36
Moisture Content	%	N/A	NONE	9.5	16	13	10	15
Total mass of sample received	kg	0.001	NONE	1.2	1.3	1.4	1.0	1.8

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
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General Inorganics

pH - Automated	pH Units	N/A	MCERTS	10.3	8.3	8.2	9.1	8.8
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO ₄	mg/kg	50	MCERTS	5200	850	740	1500	920
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	1.6	0.035	0.053	0.21	0.044
Sulphide	mg/kg	1	MCERTS	< 1.0	1.1	< 1.0	1.3	1.3
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	32	40	8.3	9.9	12
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.3	2.0	1.4	0.7	0.5

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.21	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.49	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.12	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.26	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	5.6	0.76	0.22	< 0.05	0.35
Anthracene	mg/kg	0.05	MCERTS	1.6	0.16	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	11	2.0	0.64	< 0.05	0.77
Pyrene	mg/kg	0.05	MCERTS	8.9	1.7	0.56	< 0.05	0.66
Benzo(a)anthracene	mg/kg	0.05	MCERTS	5.6	1.2	0.46	< 0.05	0.52
Chrysene	mg/kg	0.05	MCERTS	3.8	0.77	0.42	< 0.05	0.38
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	5.3	1.1	0.57	< 0.05	0.53
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	2.1	0.57	0.30	< 0.05	0.44
Benzo(a)pyrene	mg/kg	0.05	MCERTS	5.3	1.1	0.53	< 0.05	0.55
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	2.4	0.57	0.30	< 0.05	0.36
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.38	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.6	0.61	0.30	< 0.05	0.51

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	55.5	10.6	4.30	< 0.80	5.07
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.7	26	21	9.9	13
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.6	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	10	22	21	83	23
Copper (aqua regia extractable)	mg/kg	1	MCERTS	6.8	92	52	250	18
Lead (aqua regia extractable)	mg/kg	1	MCERTS	45	260	190	290	62
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	1.0	1.1	0.4	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	9.5	26	21	14	11
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	39	240	170	230	75

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	260	62	< 10	160	< 10
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	7.4	< 4.0	< 4.0	6.0	< 4.0
TPH (C16 - C21)	mg/kg	1	MCERTS	76	18	5.0	40	3.5
TPH (C21 - C35)	mg/kg	1	MCERTS	160	35	4.5	110	5.3



Analytical Report Number: 18-73130

Project / Site name: Royal Heights, Reading

Your Order No: J18003

Lab Sample Number				890365	890366	890367	890368	890369
Sample Reference				BH2	BH3	BH4	BH5	TP2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.80	0.70	0.60	0.50
Date Sampled				15/01/2018	15/01/2018	15/01/2018	15/01/2018	15/01/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					



Analytical Report Number : 18-73130

Project / Site name: Royal Heights, Reading

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
890365	BH2	None Supplied	0.80	Red rubble with brick. **
890366	BH3	None Supplied	0.80	Brown clay and sand with gravel.
890367	BH4	None Supplied	0.70	Brown clay and sand with gravel.
890368	BH5	None Supplied	0.60	Brown clay and sand with gravel and brick.
890369	TP2	None Supplied	0.50	Brown clay and sand with gravel and stones.

**Non MCERTS matrix.

Analytical Report Number : 18-73130

Project / Site name: Royal Heights, Reading

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests. 2:1 extraction.	L082-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding.	L076-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding.	L076-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Site	Royal Heights, Queen's Road, Reading, RG1 4BN	Job Number J18003
Client	Reading Heights Limited	Sheet 1 / 1
Engineer	Fluid Structures	

Proposed End Use Residential with plant uptake

Soil pH 8

Soil Organic Matter content % 2.5

Contaminant	Screening Value mg/kg	Data Source	Contaminant	Screening Value mg/kg	Data Source
Metals			Anions		
Arsenic	37	C4SL	Soluble Sulphate	500 mg/l	Structures
Cadmium	26	C4SL	Sulphide	50	Structures
Chromium (III)	3000	LQM/CIEH	Chloride	400	Structures
Chromium (VI)	21	C4SL	Others		
Copper	2,330	LQM/CIEH	Organic Carbon (%)	6	Methanogenic potential
Lead	200	C4SL	Total Cyanide	140	WRAS
Elemental Mercury	1	SGV	Total Mono Phenols	290	SGV
Inorganic Mercury	170	SGV	PAH		
Nickel	97	LQM/CIEH	Naphthalene	5.30	C4SL exp & LQM/CIEH
Selenium	350	SGV	Acenaphthylene	400	LQM/CIEH
Zinc	3,750	LQM/CIEH	Acenaphthene	480	LQM/CIEH
Hydrocarbons			Fluorene	380	LQM/CIEH
Benzene	0.34	C4SL	Phenanthrene	200	LQM/CIEH
Toluene	320	SGV	Anthracene	4,900	LQM/CIEH
Ethyl Benzene	180	SGV	Fluoranthene	460	LQM/CIEH
Xylene	120	SGV	Pyrene	1,000	LQM/CIEH
Aliphatic C5-C6	55	LQM/CIEH	Benzo(a) Anthracene	6.7	C4SL exp & LQM/CIEH
Aliphatic C6-C8	160	LQM/CIEH	Chrysene	11	C4SL exp & LQM/CIEH
Aliphatic C8-C10	46	LQM/CIEH	Benzo(b) Fluoranthene	9.5	C4SL exp & LQM/CIEH
Aliphatic C10-C12	230	LQM/CIEH	Benzo(k) Fluoranthene	14.1	C4SL exp & LQM/CIEH
Aliphatic C12-C16	1700	LQM/CIEH	Benzo(a) pyrene	4.40	C4SL
Aliphatic C16-C35	64,000	LQM/CIEH	Indeno(1 2 3 cd) Pyrene	5.6	C4SL exp & LQM/CIEH
Aromatic C6-C7	See Benzene	LQM/CIEH	Dibenzo(a h) Anthracene	1.27	C4SL exp & LQM/CIEH
Aromatic C7-C8	See Toluene	LQM/CIEH	Benzo (g h i) Perylene	69	C4SL exp & LQM/CIEH
Aromatic C8-C10	65	LQM/CIEH	Screening value for PAH	62.9	B(a)P / 0.15
Aromatic C10-C12	160	LQM/CIEH	Chlorinated Solvents		
Aromatic C12-C16	310	LQM/CIEH	1,1,1 trichloroethane (TCA)	27.2	LQM/CIEH
Aromatic C16-C21	480	LQM/CIEH	tetrachloroethane (PCA)	1.25	LQM/CIEH
Aromatic C21-C35	1100	LQM/CIEH	tetrachloroethene (PCE)	2.32	LQM/CIEH
PRO (C ₅ –C ₁₀)	646	Calc	trichloroethene (TCE)	0.308	LQM/CIEH
DRO (C ₁₂ –C ₂₈)	66,490	Calc	1,2-dichloroethane (DCA)	0.008	LQM/CIEH
Lube Oil (C ₂₈ –C ₄₄)	65,100	Calc	vinyl chloride (Chloroethene)	0.000184	LQM/CIEH
TPH	1000	Trigger for speciated testing	tetrachloromethane (Carbon tetra	0.039	LQM/CIEH
			trichloromethane (Chloroform)	1.99	LQM/CIEH

Notes

Concentrations measured below the above values may be considered to represent 'uncontaminated conditions' which pose 'LOW' risk to human health. Concentrations measured in excess of these values indicate a potential risk which require further, site specific risk assessment.

SGV - Soil Guideline Value, derived from the CLEA model and published by Environment Agency 2009

LQM/CIEH - Generic Assessment Criteria for Human Health Risk Assessment 2nd edition (2009) derived using CLEA 1.04 model 2009

C4SL - Defra Category 4 Screening value based on Low Level of Toxicological Risk

C4SL exp & LQM/CIEH calculated using C4SL revisions to exposure assessment but LQM/CIEH health criteria values

Calc - sum of nearest available carbon range specified including BTEX for PRO fraction

B(a)P / 0.15 - GEA experience indicates that Benzo(a) pyrene (one of the most common and most carcinogenic of the PAHs) rarely exceeds 15% of the total

PAH concentration, hence this Total PAH threshold is regarded as being conservative

Envirocheck[®] Report:

Datasheet

Order Details:

Order Number:

152113190_1_1

Customer Reference:

J18003

National Grid Reference:

472190, 173290

Slice:

A

Site Area (Ha):

0.01

Search Buffer (m):

1000

Site Details:

57

Queens Road

READING

RG1 4BN

Client Details:

Mr S Branch

GEA Ltd

Widbury Barn

Widbury Hill

Ware

Herts

SG12 7QE

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	60
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Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination. For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes		Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1		3	11	18
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 9			3	3
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 10		Yes		
Pollution Incidents to Controlled Waters	pg 10		26	19	111
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances	pg 36			13	
River Quality	pg 38			1	1
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points	pg 39				3
Substantiated Pollution Incident Register	pg 41			1	1
Water Abstractions	pg 42				4 (*26)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 49	Yes	n/a	n/a	n/a
Drift Deposits			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 49	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 49	Yes	n/a	n/a	n/a
Source Protection Zones	pg 49		1	1	
Extreme Flooding from Rivers or Sea without Defences	pg 49	Yes	Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 50		Yes	n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 50		10	9	62

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 60				1
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 60	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites	pg 60				1
Potentially Infilled Land (Non-Water)	pg 60				1
Potentially Infilled Land (Water)	pg 60				6
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)	pg 61				3
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)	pg 61				1
Planning Hazardous Substance Consents	pg 61				4
Planning Hazardous Substance Enforcements					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 62	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 62	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 63				3
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities	pg 63		1	1	9
Natural Cavities	pg 65				7
Non Coal Mining Areas of Great Britain	pg 66		Yes	n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 66	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 66		Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 67	Yes	Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 67	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 67	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 67		Yes	n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 68		18	76	117
Fuel Station Entries	pg 85			2	1
Points of Interest - Commercial Services	pg 86		2	10	20
Points of Interest - Education and Health	pg 88		1	5	3
Points of Interest - Manufacturing and Production	pg 89		1	7	13
Points of Interest - Public Infrastructure	pg 91			6	17
Points of Interest - Recreational and Environmental	pg 93		1	4	2
Gas Pipelines					
Underground Electrical Cables					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 94			1	
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (NE)	0	1	472194 173288
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (SW)	279	1	472050 173050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SE (S)	289	1	472194 173000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NE (S)	339	1	472200 172950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (SW)	341	1	471950 173050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (SE)	499	1	472600 173000
1	Discharge Consents Operator: Nabisco Group Ltd. 121 Kings Road, Reading. Berksh Property Type: Undefined Or Other Location: Nabisco Brands Ltd. Kings Road Reading Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctwc.0435 Permit Version: 1 Effective Date: 18th October 1985 Issued Date: 18th October 1985 Revocation Date: 8th May 1991 Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Freshwater Stream/River Environment: Receiving Water: River Kennet Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m	A13NE (N)	176	2	472230 173460
2	Discharge Consents Operator: Mepc Projects Ltd Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Blakes Cottages, Reading Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctwc.0514 Permit Version: 1 Effective Date: 19th November 1985 Issued Date: 19th November 1985 Revocation Date: 25th April 1991 Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Freshwater Stream/River Environment: Receiving Water: River Kennet Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m	A13NW (NW)	217	2	472050 173450
2	Discharge Consents Operator: Mepc Plc Property Type: Undefined Or Other Location: Abbey Garden Development, Phaseiii, Reading, Berks Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctwc.2738 Permit Version: 1 Effective Date: 15th August 1988 Issued Date: 15th August 1988 Revocation Date: 25th February 1991 Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Freshwater Stream/River Environment: Receiving Water: River Kennet Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m	A13NW (NW)	231	2	472020 173440

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	Discharge Consents Operator: Pfa Invest International Property Type: Undefined Or Other Location: The Abbey Gardens Development, Phase Ii, Reading Berks Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: Ctwc.0563 Permit Version: 1 Effective Date: 20th January 1986 Issued Date: 20th January 1986 Revocation Date: 5th September 1997 Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Freshwater Stream/River Environment: Receiving Water: Holy Brook Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	293	2	471950 173450
3	Discharge Consents Operator: Pfa Invest International Property Type: Undefined Or Other Location: The Abbey Gardens Development, Phase Ii, Reading Berks Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: Ctwc.0564 Permit Version: 1 Effective Date: 20th January 1986 Issued Date: 20th January 1986 Revocation Date: 11th July 1997 Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Freshwater Stream/River Environment: Receiving Water: Holy Brook Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m	A13NW (NW)	293	2	471950 173450
3	Discharge Consents Operator: Mepc Plc Property Type: Undefined Or Other Location: Abbey Gardens, Phase 1, Reading, Berks Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctwc.0662 Permit Version: 1 Effective Date: 11th February 1986 Issued Date: 11th February 1986 Revocation Date: 19th March 1991 Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Freshwater Stream/River Environment: Receiving Water: The Holy Brook Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m	A13NW (NW)	301	2	471940 173450
3	Discharge Consents Operator: John Graham Construction Limited Property Type: CONSTRUCTION OF BUILDINGS Location: Dewatering Works Serv Kings House Kings House 33 Kings Road Reading Berkshire Rg1 3bu Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Eprdb3097al Permit Version: 1 Effective Date: 7th October 2015 Issued Date: 7th October 2015 Revocation Date: 21st February 2017 Discharge Type: Trade Effluent Discharge-Site Drainage Discharge: Freshwater Stream/River Environment: Receiving Water: Holy Brook Status: Surrendered under EPR 2010 Positional Accuracy: Located by supplier to within 10m	A13NW (NW)	317	2	471920 173447

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	Discharge Consents Operator: Huntley & Palmers Ltd Property Type: Undefined Or Other Location: Premises, Kings Rd, Reading, Berks Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctcp.0296 Permit Version: 1 Effective Date: 12th February 1964 Issued Date: 12th February 1964 Revocation Date: 4th February 1986 Discharge Type: Trade Discharges - Cooling Water Discharge: Freshwater Stream/River Environment: Receiving Water: R Kennet Status: Authorisation revokedRevoked Positional Accuracy: Manually corrected supplier location	A12NE (W)	394	2	471800 173300
4	Discharge Consents Operator: Huntley & Palmers Ltd Property Type: Undefined Or Other Location: Premises, Kings Rd, Reading, Berks Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctcp.0295 Permit Version: 1 Effective Date: 12th February 1964 Issued Date: 12th February 1964 Revocation Date: 4th February 1986 Discharge Type: Trade Discharges - Cooling Water Discharge: Freshwater Stream/River Environment: Receiving Water: R Kennet Status: Authorisation revokedRevoked Positional Accuracy: Manually corrected supplier location	A12NE (W)	394	2	471800 173300
4	Discharge Consents Operator: Huntley & Palmers Ltd Property Type: Undefined Or Other Location: Premises, Kings Rd, Reading, Berks Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctcp.0297 Permit Version: 1 Effective Date: 12th February 1964 Issued Date: 12th February 1964 Revocation Date: 4th February 1986 Discharge Type: Trade Discharges - Cooling Water Discharge: Freshwater Stream/River Environment: Receiving Water: R Kennet Status: Authorisation revokedRevoked Positional Accuracy: Manually corrected supplier location	A12NE (W)	394	2	471800 173300
4	Discharge Consents Operator: Huntley & Palmers Ltd Property Type: Undefined Or Other Location: Premises, Kings Rd, Reading, Berks Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctcp.0298 Permit Version: 1 Effective Date: 12th February 1964 Issued Date: 12th February 1964 Revocation Date: 4th February 1986 Discharge Type: Trade Discharges - Cooling Water Discharge: Freshwater Stream/River Environment: Receiving Water: R Kennet Status: Authorisation revokedRevoked Positional Accuracy: Manually corrected supplier location	A12NE (W)	394	2	471800 173300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	Discharge Consents Operator: Huntley & Palmers Ltd Property Type: Undefined Or Other Location: Premises, Kings Rd, Reading, Berks Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctcp.0299 Permit Version: 1 Effective Date: 12th February 1964 Issued Date: 12th February 1964 Revocation Date: 4th February 1986 Discharge Type: Trade Discharges - Cooling Water Discharge: Freshwater Stream/River Environment: Receiving Water: R Kennet Status: Authorisation revokedRevoked Positional Accuracy: Manually corrected supplier location	A12NE (W)	394	2	471800 173300
4	Discharge Consents Operator: Huntley & Palmers Ltd, King'S Road, Reading, Berks Property Type: Undefined Or Other Location: Factory At Reading, Berks Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Cctr.0508 Permit Version: 1 Effective Date: 22nd March 1962 Issued Date: 22nd March 1962 Revocation Date: 3rd April 1987 Discharge Type: Trade Discharges - Cooling Water Discharge: Freshwater Stream/River Environment: Receiving Water: Kennet Status: Authorisation revokedRevoked Positional Accuracy: Manually corrected supplier location	A12NE (W)	394	2	471800 173300
5	Discharge Consents Operator: British Gas Plc Southern Property Type: SUB-STATION/ELECTRICITY/GAS/AIR CONDITIONING SUPPLY Location: Reading Gasworks Site, Off Kenavon Drive, Reading, Berks Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: Ctwc.1649 Permit Version: 1 Effective Date: 9th June 1987 Issued Date: 9th June 1987 Revocation Date: 1st October 1996 Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Freshwater Stream/River Environment: Receiving Water: River Kennet Status: Lapsed (under Environment Act 1995, Schedule 23) Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	434	2	472560 173520
6	Discharge Consents Operator: Thames Water Utilities Ltd Property Type: PUMPING STATION ON SEWERAGE NETWORK (WATER COMPANY) Location: Reading, Blakes Lockreadingblakes Lock Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Temp.1768 Permit Version: 2 Effective Date: 3rd September 2010 Issued Date: 3rd September 2010 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Holly Brook Status: Temporary Consents (Water Act 1989, Section 113) Positional Accuracy: Located by supplier to within 100m	A14NW (E)	519	2	472700 173400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
18	Discharge Consents Operator: Tesco Stores Limited Property Type: SHOP INCL GARDEN CENTRE/RETAIL TRADE(NOT MOTOR VEHICLE) Location: Tesco Superstore, Kings Meadow, Reading, Berkshire Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CNTW.0610 Permit Version: 1 Effective Date: 19th July 1990 Issued Date: 19th July 1990 Revocation Date: Not Supplied Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Freshwater Stream/River Environment: Receiving Water: River Thames Status: Transferred from Water Act 1989 Positional Accuracy: Located by supplier to within 100m	A19NW (NE)	920	2	472750 174020
19	Prosecutions Relating to Controlled Waters Location: Holy Brook, Broad Street, READING, RG1 Prosecution Text: Allowing diesel to enter a water drainage system Prosecution Act: Wra91 S85(1) Hearing Date: 4th May 2006 Verdict: Guilty Fine: 12000 Cost: 2032 Positional Accuracy: Manually positioned within the geographical locality	A12NW (W)	683	2	471514 173350
20	Prosecutions Relating to Controlled Waters Location: Pumping Station, Nugent House, Vastern Road, READING, Berkshire, RG1 8DB Prosecution Text: Environment Action Issue 2 (June / July 1996), Polluting three miles of the River Brent with oil due to a switch failure at the pumping station. Prosecution Act: WRA91 Hearing Date: Not Supplied Verdict: Guilty Fine: 15000 Cost: 460 Positional Accuracy: Manually positioned to the address or location	A17NE (NW)	861	2	471714 174003
21	Local Authority Pollution Prevention and Controls Name: Murco Petroleum Ltd Location: 69 London Road, READING, Berkshire, RG1 5BW Authority: Reading Borough Council, Environmental Health Department Permit Reference: EPA/PAR.B/26/98/P1 Dated: 18th May 1999 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station Status: Permitted Positional Accuracy: Automatically positioned to the address	A13SE (SE)	293	3	472319 173024
22	Local Authority Pollution Prevention and Controls Name: RBC Location: 21 South Street, READING, Berkshire, RG1 4QU Authority: Reading Borough Council, Environmental Health Department Permit Reference: EPA/PAR.B/01/91/1 Dated: 14th October 1992 Process Type: Local Authority Air Pollution Control Description: PG5/2 Crematoria Status: Authorised Positional Accuracy: Manually positioned to the address or location	A13SW (SW)	322	3	471930 173105
23	Local Authority Pollution Prevention and Controls Name: Kings Road Garage Location: 191 Kings Road, Reading, Berkshire, RG1 4EX Authority: Reading Borough Council, Environmental Health Department Permit Reference: Epa/Par.B/45/98 Dated: 24th August 1999 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station Status: Authorisation revokedRevoked Positional Accuracy: Automatically positioned to the address	A14NW (E)	403	3	472594 173330
24	Local Authority Pollution Prevention and Controls Name: Sketchley Dry Cleaners Location: 41 Market Place, Reading, Rg1 2de Authority: Reading Borough Council, Environmental Health Department Permit Reference: EPA/PAR.B/DC16/P1 Dated: Not Supplied Process Type: Local Authority Air Pollution Control Description: PG6/46 Dry cleaning Status: Application Not Yet Authorised Positional Accuracy: Manually positioned to the address or location	A12NE (W)	557	3	471662 173451

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
25	Local Authority Pollution Prevention and Controls Name: Tesco Service Station Location: Napier Road, Reading, Berkshire, RG1 8DF Authority: Reading Borough Council, Environmental Health Department Permit Reference: EPA/PA.R.B/29/98/P2 Dated: 18th June 1999 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station Status: Permitted Positional Accuracy: Automatically positioned to the address	A19NW (NE)	819	3	472632 173979
26	Local Authority Pollution Prevention and Controls Name: A To Z Cleaners Location: 32 Erleigh Road, Reading, Rg1 5na Authority: Reading Borough Council, Environmental Health Department Permit Reference: EPA/PA.R.B/DC8/P2 Dated: 1st January 2009 Process Type: Local Authority Air Pollution Control Description: PG6/46 Dry cleaning Status: Permitted Positional Accuracy: Manually positioned to the address or location	A9NE (SE)	940	3	472996 172799
	Nearest Surface Water Feature	A13NW (N)	49	-	472183 173335
27	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 11th November 1994 Incident Reference: WE940387 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	10	2	472200 173295
27	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 2nd February 1995 Incident Reference: WE950040 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	14	2	472205 173295
27	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 23rd January 1989 Incident Reference: WE890031 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	14	2	472200 173300
27	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: General Note: Not Supplied Incident Date: 18th August 1998 Incident Reference: THWE1998040101 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	17	2	472205 173300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
27	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 19th March 1996 Incident Reference: WE960076 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (W)	46	2	472150 173300
27	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 10th August 1994 Incident Reference: WE940294 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (N)	63	2	472200 173350
28	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: General Note: Not Supplied Incident Date: 29th December 1996 Incident Reference: THWE1996026442 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Unknown	A13NE (E)	78	2	472270 173300
29	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Kennetside Authority: Environment Agency, Thames Region Pollutant: General Note: Not Supplied Incident Date: 16th April 1998 Incident Reference: 38419 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (W)	95	2	472100 173300
30	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 6th October 1996 Incident Reference: WE960350 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (N)	108	2	472200 173395
30	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Kennet Side, READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 15th July 1996 Incident Reference: WE960305 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (N)	113	2	472200 173400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
31	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 9th November 1993 Incident Reference: WE930352 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	139	2	472105 173395
31	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 18th August 1992 Incident Reference: WE920495 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	143	2	472100 173395
31	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Not Supplied Incident Date: 6th August 1991 Incident Reference: WE910446 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	146	2	472100 173400
32	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 16th February 1995 Incident Reference: WE950058 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	151	2	472300 173395
32	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 6th September 1994 Incident Reference: WE940321 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	155	2	472300 173400
33	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 12th October 1996 Incident Reference: WE960354 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (N)	168	2	472150 173450

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
34	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 10th July 1995 Incident Reference: WE950271 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (W)	194	2	472000 173295
34	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Chemicals - Unknown Note: Confirmed As A Pollution Incident Incident Date: 6th April 1995 Incident Reference: WE950146 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (W)	195	2	472000 173300
35	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 29th October 1993 Incident Reference: WE930368 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	217	2	472005 173395
35	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Other Note: Not Supplied Incident Date: 16th August 1996 Incident Reference: WE960300 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	220	2	472005 173400
35	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Other Note: Not Supplied Incident Date: 21st August 1996 Incident Reference: WE960309 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	222	2	472005 173405
35	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 28th November 1991 Incident Reference: WE910657 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	222	2	472000 173395

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
35	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 5th September 1991 Incident Reference: WE910504 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	224	2	472000 173400
35	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Other Note: Not Supplied Incident Date: Not Supplied Incident Reference: WE960163 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	227	2	472000 173405
36	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 13th January 1998 Incident Reference: 37310 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	232	2	472100 173500
37	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 14th January 1995 Incident Reference: WE950014 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	238	2	472300 173500
38	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 3rd March 1992 Incident Reference: WE920135 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	256	2	472350 173490
39	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 27th April 1994 Incident Reference: WE940136 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	296	2	472400 173500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
40	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 9th April 1998 Incident Reference: 38265 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (W)	313	2	471900 173395
40	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 9th September 1991 Incident Reference: WE910493 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (W)	315	2	471900 173400
41	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 4th August 1995 Incident Reference: WE950314 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	363	2	471900 173500
42	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 21st October 1993 Incident Reference: WE930358 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	370	2	472500 173495
42	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 28th July 1992 Incident Reference: WE920445 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	373	2	472500 173500
42	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 16th December 1993 Incident Reference: WE930414 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	374	2	472505 173495

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
43	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Storm Sewage Note: Not Supplied Incident Date: 17th January 1997 Incident Reference: THWE1997031344 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (W)	394	2	471800 173295
43	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 2nd October 1992 Incident Reference: WE920562 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (W)	394	2	471800 173300
44	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 19th May 1994 Incident Reference: WE940164 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (W)	408	2	471800 173395
44	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 2nd April 1991 Incident Reference: WE910175 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (W)	410	2	471800 173400
45	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 9th April 1993 Incident Reference: WE930119 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	413	2	472550 173495
45	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Blakes Lane, READING Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 6th March 1992 Incident Reference: WE920140 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	415	2	472550 173500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
45	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Chemicals - Unknown Note: Not Supplied Incident Date: 27th June 1997 Incident Reference: THWE1997029446 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Unknown	A14NW (NE)	432	2	472570 173500
46	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 8th December 1994 Incident Reference: WE940420 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (W)	444	2	471750 173300
46	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 20th February 1989 Incident Reference: WE890083 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (W)	494	2	471700 173300
47	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 11th April 1995 Incident Reference: WE950138 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (NW)	445	2	471800 173495
47	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 4th September 1990 Incident Reference: WE900553 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (NW)	448	2	471800 173500
48	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: General Note: Not Supplied Incident Date: 21st January 1998 Incident Reference: 37294 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (W)	501	2	471705 173395

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
83	Pollution Incidents to Controlled Waters Property Type: Not Given Location: READING Authority: Environment Agency, Thames Region Pollutant: Chemicals - Unknown Note: Confirmed As A Pollution Incident Incident Date: 10th November 1990 Incident Reference: WE900632 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	988	2	471400 172700
84	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Caversham Petrol Station Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 6th April 1990 Incident Reference: WE900235 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18NW (N)	993	2	471950 174250
85	Registered Radioactive Substances Name: Royal Berkshire Nhs Foundation Trust Location: London Road, Reading, RG1 5AN Authority: Environment Agency, Thames Region Permit Reference: BZ9642 Dated: 6th September 2006 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Substantial variation to a registration under the Act of an open source which is also the subject of an authorisation Status: Application has been authorised and any conditions apply to the operator Positional Accuracy: Automatically positioned to the address	A13SE (SE)	388	2	472458 173005
85	Registered Radioactive Substances Name: Royal Berkshire Nhs Foundation Trust Location: London Road, Reading, RG1 5AN Authority: Environment Agency, Thames Region Permit Reference: BZ9669 Dated: 6th September 2006 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Substantial variation to authorisation under RSA Status: Application has been authorised and any conditions apply to the operator Positional Accuracy: Automatically positioned to the address	A13SE (SE)	388	2	472458 173005
85	Registered Radioactive Substances Name: Royal Berkshire Nhs Foundation Trust Location: London Road, Reading, Berkshire, RG1 5AN Authority: Environment Agency, Thames Region Permit Reference: By1654 Dated: 12th October 2004 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Minor variation to a registration under the Act of an open source which is also the subject of an authorisation Status: Authorisation superseded by a substantial or non substantial variation Positional Accuracy: Automatically positioned to the address	A13SE (SE)	388	2	472458 173005
85	Registered Radioactive Substances Name: Royal Berkshire Nhs Foundation Trust Location: London Road, Reading, Berkshire, RG1 5AN Authority: Environment Agency, Thames Region Permit Reference: By1638 Dated: 12th October 2004 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Minor variation to authorisation under RSA Status: Authorisation superseded by a substantial or non substantial variation Positional Accuracy: Automatically positioned to the address	A13SE (SE)	388	2	472458 173005

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
85	Registered Radioactive Substances Name: Royal Berkshire Nhs Foundation Trust Location: London Road, Reading, Berkshire, RG1 5AN Authority: Environment Agency, Thames Region Permit Reference: Bw3605 Dated: 1st December 2003 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Minor variation to authorisation under RSA Status: Authorisation superseded by a substantial or non substantial variationSuperseded Positional Accuracy: Automatically positioned to the address	A13SE (SE)	388	2	472458 173005
85	Registered Radioactive Substances Name: Royal Berkshire Nhs Foundation Trust Location: London Road, Reading, Berkshire, RG1 5AN Authority: Environment Agency, Thames Region Permit Reference: Bm7898 Dated: 16th May 2002 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Substantial variation to authorisation under RSA Status: Authorisation superseded by a substantial or non substantial variationSuperseded Positional Accuracy: Automatically positioned to the address	A13SE (SE)	388	2	472458 173005
85	Registered Radioactive Substances Name: Royal Berkshire Nhs Foundation Trust Location: Medical Physics Department, Royal Berkshire Hospital, London Road, Reading, Berkshire, RG1 5AN Authority: Environment Agency, Thames Region Permit Reference: BI5687 Dated: 24th October 2001 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Substantial variation to a registration under the Act of an open source which is also the subject of an authorisation Status: Authorisation superseded by a substantial or non substantial variationSuperseded Positional Accuracy: Automatically positioned to the address	A13SE (SE)	388	2	472458 173005
85	Registered Radioactive Substances Name: Royal Berkshire Nhs Foundation Trust Location: London Road, Reading, Berkshire, RG1 5AN Authority: Environment Agency, Thames Region Permit Reference: AS4885 Dated: 24th August 1995 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Substantial variation to authorisation under RSA Status: Authorisation superseded by a substantial or non substantial variationSuperseded Positional Accuracy: Automatically positioned to the address	A13SE (SE)	388	2	472458 173005
85	Registered Radioactive Substances Name: Royal Berkshire Nhs Foundation Trust Location: London Road, Reading, Berkshire, RG1 5AN Authority: Environment Agency, Thames Region Permit Reference: AN2528 Dated: 17th August 1994 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Substantial variation to authorisation under RSA Status: Authorisation superseded by a substantial or non substantial variationSuperseded Positional Accuracy: Automatically positioned to the address	A13SE (SE)	388	2	472458 173005
85	Registered Radioactive Substances Name: Royal Berkshire Nhs Foundation Trust Location: Medical Physics Department, Royal Berkshire Hospital, London Road, READING, Berkshire, RG1 5AN Authority: Environment Agency, Thames Region Permit Reference: AB4362 Dated: 1st July 1992 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA Status: Authorisation superseded by a substantial or non substantial variationSuperseded Positional Accuracy: Automatically positioned to the address	A13SE (SE)	388	2	472458 173005

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
86	Registered Radioactive Substances Name: University Of Reading Location: London Road, READING, Berkshire, RG1 5AQ Authority: Environment Agency, Thames Region Permit Reference: AD6897 Dated: 31st March 1991 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA Status: Authorisation either revoked or cancelledCancelled Positional Accuracy: Unknown	A8NE (S)	399	2	472305 172905
86	Registered Radioactive Substances Name: Wyeth Research (uk) Ltd Location: Building L33, University Of Reading, London Road, READING, Berkshire, RG1 5AQ Authority: Environment Agency, Thames Region Permit Reference: AK1304 Dated: 1st December 1993 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA Status: Authorisation either revoked or cancelledCancelled Positional Accuracy: Unknown	A8NE (S)	403	2	472300 172900
87	Registered Radioactive Substances Name: Royal Berkshire And Battle Hospitals NHS Trust Location: Medical Physics Department, Royal Berkshire Hospital, London Road, READING, Berkshire, RG1 5AN Authority: Environment Agency, Thames Region Permit Reference: AJ2089 Dated: 31st March 1991 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Registration under the Act of an open source which is also the subject of an authorisation Status: Authorisation superseded by a substantial or non substantial variationSuperseded Positional Accuracy: Manually positioned to the address or location	A8NE (SE)	423	2	472425 172935
	River Quality Name: Kennet GQA Grade: River Quality B Reach: Holy Bk - Thames Estimated Distance (km): 1.3 Flow Rate: Flow less than 20 cumecs Flow Type: River Year: 2000	A18SW (N)	466	2	472161 173752
	River Quality Name: Thames GQA Grade: River Quality B Reach: Whitchurch Stw - Kennet Estimated Distance (km): 12.6 Flow Rate: Flow less than 40 cumecs Flow Type: River Year: 2000	A18NW (N)	795	2	472100 174077

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
88	River Quality Chemistry Sampling Points Name: Thames Reach: Whitchurch Sewage Treatment Works To Kennet Estimated Distance: 12.60 Objective: Not Supplied Positional Accuracy: Located by supplier to within 10m Year: 1990 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1993 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1994 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 1995 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 1996 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1997 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1998 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1999 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2000 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2001 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2002 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2003 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2004 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2005 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2006 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2007 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2008 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2009 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied	A18NW (N)	768	2	472135 174053

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
90	River Quality Chemistry Sampling Points Name: Kennet Reach: Foudry Brook To Holy Brook Estimated Distance: 2.80 Objective: Not Supplied Positional Accuracy: Located by supplier to within 10m Year: 1990 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1993 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1994 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1995 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 1996 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 1997 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1998 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1999 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2000 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2001 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2002 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2003 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2004 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2005 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2006 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2007 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2008 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2009 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied	A7NW (SW)	971	2	471351 172807
91	Substantiated Pollution Incident Register Authority: Environment Agency - Thames Region, South East Area Incident Date: 28th June 2005 Incident Reference: 324802 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Oils - Diesel (Including Agricultural)	A12NE (W)	401	2	471812 173408
92	Substantiated Pollution Incident Register Authority: Environment Agency - Thames Region, South East Area Incident Date: 22nd April 2006 Incident Reference: 392777 Water Impact: Category 1 - Major Incident Air Impact: Category 4 - No Impact Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Pollutant Not Identified: Not Identified	A18NW (N)	757	2	471956 174006

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
93	Water Abstractions Operator: Royal Berkshire Hospital Licence Number: 28/39/22/0521 Permit Version: 100 Location: Royal Berkshire Hospital Authority: Environment Agency, Thames Region Abstraction: Hospitals: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 350 Yearly Rate (m3): 127750 Details: Royal Berkshire Hospital, Reading Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th January 1992 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A8NE (SE)	530	2	472400 172800
94	Water Abstractions Operator: M J Gleeson Group Plc Licence Number: 28/39/22/0600 Permit Version: 1 Location: Former Gasworks, Kenavon Drive, Reading (5 Boreholes) Authority: Environment Agency, Thames Region Abstraction: Environmental: Pump & Treat: Pollution Remediation Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Former Gasworks, Kenavon Drive Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 31st July 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	595	2	472700 173600
95	Water Abstractions Operator: Oracle Shopping Centre Ltd Licence Number: 28/39/22/0594 Permit Version: 1 Location: St.Giles Stream At The Oracle Centre, Reading Authority: Environment Agency, Thames Region Abstraction: Amenity: Lake And Pond Throughflow Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: The Oracle Shopping Centre, Reading Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 16th February 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12SE (W)	620	2	471590 173150
96	Water Abstractions Operator: The Reading Sustainability Centre Cic Licence Number: Th/039/0023/022 Permit Version: 1 Location: River Thames At Caversham Weir Authority: Environment Agency, Thames Region Abstraction: Other Environmental Improvements: Transfer between sources Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 19th February 2016 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A18NW (N)	906	2	472072 174185

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Thames Valley Park Manco Ltd Licence Number: 28/39/23/0175 Permit Version: 101 Location: Thames Valley Park, Reading - Borehole 'A' Authority: Environment Agency, Thames Region Abstraction: Business Parks: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Thames Valley Park, Reading Authorised Start: 01 April Authorised End: 31 October Permit Start Date: 1st October 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(E)	1946	2	474030 173930
	Water Abstractions Operator: Hillier Group Of Companies Licence Number: 28/39/23/0128 Permit Version: 100 Location: Cardiff Road, Reading Point A Authority: Environment Agency, Thames Region Abstraction: Metal: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 27 Yearly Rate (m3): 6682 Details: Cardiff Road, Reading Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(NW)	1969	2	470400 174100
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise Map Sheet: Sheet 39 West London Scale: 1:100,000	A13NE (NE)	0	2	472194 173288
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	A13NE (NE)	0	1	472194 173288
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13NE (NE)	0	1	472194 173288
97	Source Protection Zones Name: Reading University Source: Environment Agency, Head Office Reference: Th200 Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	A13NE (NE)	52	2	472236 173317
98	Source Protection Zones Name: Reading University Source: Environment Agency, Head Office Reference: Th200 Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	A14SW (SE)	476	2	472583 173015
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NE (NE)	0	2	472194 173288
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models and Fluvial Events Boundary Accuracy: As Supplied	A13NE (NE)	159	2	472327 173374
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models and Fluvial Events Boundary Accuracy: As Supplied	A13NW (N)	189	2	472167 173475

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NW (NW)	40	2	472174 173322
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NE (N)	60	2	472199 173347
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NW (W)	110	2	472087 173310
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NW (N)	185	2	472174 173472
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NE (N)	197	2	472194 173485
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NE (N)	210	2	472199 173497
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NE (NE)	213	2	472299 173472
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
99	OS Water Network Lines Watercourse Form: Canal Watercourse Length: 487.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Kennet and Avon Canal Catchment Name: Thames Primacy: 1	A13NW (N)	56	4	472181 173342
100	OS Water Network Lines Watercourse Form: Canal Watercourse Length: 9.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Kennet and Avon Canal Catchment Name: Thames Primacy: 2	A13NW (W)	188	4	472007 173311
101	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 15.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Gunter's Brook Catchment Name: Thames Primacy: 1	A13NW (W)	188	4	472007 173311
102	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 43.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Gunter's Brook Catchment Name: Thames Primacy: 1	A13NW (W)	191	4	472003 173296

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
103	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 333.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Kennet Catchment Name: Thames Primacy: 1	A13NW (N)	191	4	472140 173471
104	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 135.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Kennet Catchment Name: Thames Primacy: 1	A13NW (W)	196	4	472003 173335
105	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 514.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Kennet Catchment Name: Thames Primacy: 1	A13NW (W)	197	4	471999 173316
106	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 57.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A13NE (N)	223	4	472265 173499
107	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 72.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Holy Brook Catchment Name: Thames Primacy: 2	A13NW (NW)	243	4	472010 173446
108	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 162.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Kennet Catchment Name: Thames Primacy: 1	A13NE (NE)	248	4	472322 173500
109	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 16.9 Watercourse Level: Underground Permanent: True Watercourse Name: Holy Brook Catchment Name: Thames Primacy: 2	A13NW (NW)	306	4	471944 173463
110	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 118.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Holy Brook Catchment Name: Thames Primacy: 2	A13NW (NW)	314	4	471928 173455
111	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 32.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 2	A13NE (NE)	318	4	472476 173432

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
112	OS Water Network Lines Watercourse Form: Canal Watercourse Length: 296.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Kennet and Avon Canal Catchment Name: Thames Primacy: 1	A13NE (NE)	318	4	472476 173432
113	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 394.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Kennet Catchment Name: Thames Primacy: 1	A13NE (NE)	326	4	472468 173463
114	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 21.1 Watercourse Level: Underground Permanent: True Watercourse Name: Holy Brook Catchment Name: Thames Primacy: 2	A12NE (W)	394	4	471819 173410
115	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 2.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Holy Brook Catchment Name: Thames Primacy: 2	A12NE (W)	411	4	471800 173402
116	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 87.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Holy Brook Catchment Name: Thames Primacy: 2	A12NE (W)	413	4	471797 173401
117	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 27.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Holy Brook Catchment Name: Thames Primacy: 2	A12NE (W)	485	4	471716 173370
118	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 181.1 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Holy Brook Catchment Name: Thames Primacy: 2	A12NE (W)	505	4	471694 173355
119	OS Water Network Lines Watercourse Form: Canal Watercourse Length: 86.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Kennet and Avon Canal Catchment Name: Thames Primacy: 1	A14NW (NE)	612	4	472751 173539
120	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 152.8 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 2	A12SE (W)	638	4	471579 173120

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
180	Historical Landfill Sites Licence Holder: Not Supplied Location: Reading, Berkshire Name: Napier Road Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHL13277 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste: Deposited Waste included Inert and Industrial Waste Type: EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 0345/0169 BGS Ref: Not Supplied Other Ref: TP0266, RDG3	A19SW (NE)	764	2	472709 173851
	Local Authority Landfill Coverage Name: Reading Unitary Council - Has supplied landfill data		0	5	472194 173288
	Local Authority Landfill Coverage Name: Oxfordshire County Council - Has supplied landfill data		941	7	472672 174099
	Local Authority Landfill Coverage Name: South Oxfordshire District Council - Landfill data has been supplied by another authority		941	6	472672 174099
	Local Authority Landfill Coverage Name: Wokingham District Council - Has supplied landfill data		944	8	473037 173711
181	Local Authority Recorded Landfill Sites Location: Napier Road Landfill Reference: Not Supplied Authority: Reading Borough Council, Planning Last Reported Status: Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Located by supplier to within 100m Boundary Quality: Not Applicable	A19SE (NE)	935	5	472900 173900
182	Potentially Infilled Land (Non-Water) Bearing Ref: SW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1995	A7SE (SW)	818	-	471817 172563
183	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1900	A12SE (W)	509	-	471691 173208
184	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1900	A12SE (W)	553	-	471663 173137
185	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1962	A12SE (W)	610	-	471609 173116
186	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1931	A18NW (NW)	747	-	471901 173975
187	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1995	A17SW (NW)	890	-	471426 173738
188	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1900	A8SW (S)	994	-	471935 172329

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
189	Control of Major Accident Hazards Sites (COMAH) Name: Transco Plc Location: Kenavon Drive, READING, RG1 3DJ Reference: 1021523 Type: Upper Tier Status: Active Positional Accuracy: Automatically positioned to the address	A19SW (NE)	643	9	472697 173688
190	Control of Major Accident Hazards Sites (COMAH) Name: Transco Plc Location: Reading Holder Station, Kenavon Drive, Reading, Berkshire, RG1 3DH Reference: 1021948 Type: Lower Tier Status: Active Positional Accuracy: Manually positioned to the address or location	A19SE (NE)	794	9	472880 173686
190	Control of Major Accident Hazards Sites (COMAH) Name: Southern Gas Networks Plc Location: Reading Holder Station, Kenavon Drive, Reading, Berkshire, Rg1 3DH Reference: Not Supplied Type: Upper Tier Status: Active Positional Accuracy: Manually positioned to the address or location	A19SE (NE)	802	9	472892 173682
191	Notification of Installations Handling Hazardous Substances (NIHHS) Name: British Gas TransCo Location: Reading Holder Station (4&5 Sites), Gas Works Road ; Kennet Mouth, London Road, READING, Berkshire, RG1 3DJ Status: Not Active Positional Accuracy: Automatically positioned to the address	A19SW (NE)	644	9	472702 173683
192	Planning Hazardous Substance Consents Name: Royal Berkshire Nhs Foundation Trust Location: Royal Berkshire Hospital, London Road, Reading, Rg1 5an Authority: Reading Borough Council, Planning Application Ref: 11/01974/HAZARD Hazardous Substance: Liquefied extremely flammable gas (including LPG) and natural gas (whether liquefied or not) Maximum Quantity: 0 Application date: 21st December 2011 Decision: Withdrawn Positional Accuracy: Manually positioned to the address or location	A8NE (SE)	587	5	472494 172784
193	Planning Hazardous Substance Consents Name: British Gas Plc Location: Kenavon Drive, Reading, Rg1 3dj Authority: Reading Borough Council, Planning Application Ref: 99/00038/HAZARD Hazardous Substance: Liquefied extremely flammable gas (including LPG) and natural gas (whether liquefied or not) Maximum Quantity: 0 Application date: 15th December 1998 Decision: Deemed Consent Granted Positional Accuracy: Manually positioned to the address or location	A19SE (NE)	804	5	472895 173680
193	Planning Hazardous Substance Consents Name: British Gas Plc Location: Kenavon Drive, Reading, Rg1 3dj Authority: Reading Borough Council, Planning Application Ref: 92/00884/HAZARD Hazardous Substance: Liquefied extremely flammable gas (including LPG) and natural gas (whether liquefied or not) Maximum Quantity: 0 Application date: 12th November 1992 Decision: Deemed Consent Granted Positional Accuracy: Manually positioned to the address or location	A19SE (NE)	804	5	472895 173680
193	Planning Hazardous Substance Consents Name: British Gas Plc Location: Kenavon Drive, Reading, Rg1 3dj Authority: Reading Borough Council, Planning Application Ref: 00/01175/HAZARD Hazardous Substance: Liquefied extremely flammable gas (including LPG) and natural gas (whether liquefied or not) Maximum Quantity: 0 Application date: 8th September 2000 Decision: Withdrawn Positional Accuracy: Manually positioned to the address or location	A19SE (NE)	806	5	472895 173685

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: White Chalk Subgroup	A13NE (NE)	0	1	472194 173288
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (NE)	0	1	472194 173288
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (S)	71	1	472216 173221
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NW (NW)	263	1	472000 173466
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NW (NE)	548	1	472699 173498
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SW (SW)	778	1	471892 172571
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NW (SW)	914	1	471437 172777

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A7SE (SW)	990	1	471542 172544
194	BGS Recorded Mineral Sites Site Name: Ivy Bridge Brick Field Location: The Mount, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 36342 Type: Opencast Status: Ceased Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Head (Brickearth) Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A7SE (SW)	893	1	471778 172498
195	BGS Recorded Mineral Sites Site Name: Katesgrove Kilns Location: The Mount, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 36343 Type: Opencast Status: Ceased Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Palaeocene Geology: Lambeth Group Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A7SE (SW)	957	1	471540 172590
196	BGS Recorded Mineral Sites Site Name: Ivy Bridge Brick Field Location: The Mount, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 234922 Type: Opencast Status: Ceased Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Head (Brickearth) Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A7SE (SW)	979	1	471686 172452
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Man-Made Mining Cavities Easting: 472200 Northing: 173100 Distance: 189 Quadrant Reference: A13 Quadrant Reference: SE Bearing Ref: S Cavity Type: Historical Chalk/Lime Quarry-Potential Chalk Mining Commodity: Chalk Solid Geology Detail: Chalk Group Superficial Geology: Taplow Gravel Detail:	A13SE (S)	189	10	472200 173100

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Man-Made Mining Cavities Easting: 471950 Northing: 172890 Distance: 467 Quadrant Reference: A8 Quadrant Reference: NW Bearing Ref: SW Cavity Type: Brick/Tile Kiln Discovered-Potential Chalk Mining Commodity: Chalk Solid Geology Detail: Chalk Group Superficial Geology Taplow Gravel Detail:	A8NW (SW)	467	10	471950 172890
	Man-Made Mining Cavities Easting: 471700 Northing: 172900 Distance: 628 Quadrant Reference: A7 Quadrant Reference: NE Bearing Ref: SW Cavity Type: Subsidence-Over Possible Excavation/Shallow Bell Pit Commodity: Chalk Solid Geology Detail: Lambeth Group, Upper Chalk Formation Superficial Geology Taplow Gravel Detail:	A7NE (SW)	628	10	471700 172900
	Man-Made Mining Cavities Easting: 471900 Northing: 172700 Distance: 658 Quadrant Reference: A8 Quadrant Reference: NW Bearing Ref: SW Cavity Type: Historical Brick Kiln-Potential Chalk Mining Commodity: Chalk Solid Geology Detail: Lambeth Group, Upper Chalk Formation Superficial Geology No Details Detail:	A8NW (SW)	658	10	471900 172700
	Man-Made Mining Cavities Easting: 471790 Northing: 172750 Distance: 673 Quadrant Reference: A7 Quadrant Reference: NE Bearing Ref: SW Cavity Type: Crown Hole Collapse Commodity: Chalk Solid Geology Detail: Lambeth Group, Upper Chalk Formation Superficial Geology No Details Detail:	A7NE (SW)	673	10	471790 172750
	Man-Made Mining Cavities Easting: 471700 Northing: 172700 Distance: 768 Quadrant Reference: A7 Quadrant Reference: NE Bearing Ref: SW Cavity Type: Chalkwell/Possible Shaft Entry Pillar and Stall Chalk Mine Commodity: Chalk Solid Geology Detail: Lambeth Group, Upper Chalk Formation Superficial Geology No Details Detail:	A7NE (SW)	768	10	471700 172700
	Man-Made Mining Cavities Easting: 471700 Northing: 172650 Distance: 807 Quadrant Reference: A7 Quadrant Reference: NE Bearing Ref: SW Cavity Type: Historical Brick Works/Extensive Clay Excavations-Potential Chalk Mining Commodity: Chalk Solid Geology Detail: Lambeth Group, Upper Chalk Formation Superficial Geology No Details Detail:	A7NE (SW)	807	10	471700 172650

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Man-Made Mining Cavities Easting: 471850 Northing: 172500 Distance: 860 Quadrant Reference: A7 Quadrant Reference: SE Bearing Ref: SW Cavity Type: Historical Brick Kiln-References to Chalk Mining Commodity: Chalk Solid Geology Detail: London Clay, Lambeth Group, Upper Chalk Formation Superficial Geology No Details Detail:	A7SE (SW)	860	10	471850 172500
	Man-Made Mining Cavities Easting: 471700 Northing: 172500 Distance: 930 Quadrant Reference: A7 Quadrant Reference: SE Bearing Ref: SW Cavity Type: Historical Brick Works-Potential Chalk Mining Commodity: Chalk Solid Geology Detail: London Clay, Lambeth Group, Upper Chalk Formation Superficial Geology Boyn Hill Gravel Detail:	A7SE (SW)	930	10	471700 172500
	Man-Made Mining Cavities Easting: 471500 Northing: 172650 Distance: 943 Quadrant Reference: A7 Quadrant Reference: NW Bearing Ref: SW Cavity Type: Historical Brickworks-Multiple References to Chalk Mining Commodity: Chalk Solid Geology Detail: Lambeth Group, Upper Chalk Formation Superficial Geology Worked Ground Detail:	A7NW (SW)	943	10	471500 172650
	Man-Made Mining Cavities Easting: 471500 Northing: 172600 Distance: 978 Quadrant Reference: A7 Quadrant Reference: SW Bearing Ref: SW Cavity Type: Shaft described-for Pillar and Stall Chalk Mine Commodity: Chalk Solid Geology Detail: Lambeth Group, Upper Chalk Formation Superficial Geology Worked Ground Detail:	A7SW (SW)	978	10	471500 172600
	Natural Cavities Easting: 471550 Northing: 173400 Distance: 654 Quadrant Reference: A12 Quadrant Reference: NE Bearing Ref: W Cavity Type: Solution Pipe x 5 Solid Geology Detail: Chalk Group Superficial Geology Taplow Gravel Detail:	A12NE (W)	654	10	471550 173400
	Natural Cavities Easting: 471500 Northing: 173300 Distance: 694 Quadrant Reference: A12 Quadrant Reference: NW Bearing Ref: W Cavity Type: Solution Pipe Solid Geology Detail: Chalk Group Superficial Geology Taplow Gravel Detail:	A12NW (W)	694	10	471500 173300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Natural Cavities Easting: 471500 Northing: 173400 Distance: 703 Quadrant Reference: A12 Quadrant Reference: NW Bearing Ref: W Cavity Type: Solution Pipe x 3 Solid Geology Detail: Chalk Group Superficial Geology: Taplow Gravel Detail:	A12NW (W)	703	10	471500 173400
	Natural Cavities Easting: 472900 Northing: 173200 Distance: 712 Quadrant Reference: A14 Quadrant Reference: SE Bearing Ref: E Cavity Type: Solution Pipe x 3 Solid Geology Detail: Chalk Group Superficial Geology: Taplow Gravel Detail:	A14SE (E)	712	10	472900 173200
	Natural Cavities Easting: 471600 Northing: 172800 Distance: 769 Quadrant Reference: A7 Quadrant Reference: NE Bearing Ref: SW Cavity Type: Unknown Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology: No Details Detail:	A7NE (SW)	769	10	471600 172800
	Natural Cavities Easting: 471400 Northing: 173200 Distance: 799 Quadrant Reference: A12 Quadrant Reference: SW Bearing Ref: W Cavity Type: Solution Pipe x 2 Solid Geology Detail: Chalk Group Superficial Geology: Taplow Gravel Detail:	A12SW (W)	799	10	471400 173200
	Natural Cavities Easting: 473100 Northing: 173000 Distance: 951 Quadrant Reference: A14 Quadrant Reference: SE Bearing Ref: E Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology: Taplow Gravel Detail:	A14SE (E)	951	10	473100 173000
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	161	1	472350 173250
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	472194 173288
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	35	1	472183 173321
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	208	1	472150 173491
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	472194 173288
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	35	1	472183 173321

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	208	1	472150 173491
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	472194 173288
	Potential for Ground Dissolution Stability Hazards Hazard Potential: High Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	72	1	472200 173217
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	72	1	472204 173217
	Potential for Ground Dissolution Stability Hazards Hazard Potential: High Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	76	1	472226 173219
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	219	1	472179 173506
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	241	1	472039 173472
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	472194 173288
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	71	1	472216 173221
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	472194 173288
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	35	1	472183 173321
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	71	1	472216 173221
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	208	1	472150 173491
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	472194 173288
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	35	1	472183 173321
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	208	1	472150 173491
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	472194 173288
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	472194 173288

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
197	Contemporary Trade Directory Entries Name: Acheson Industries (Europe) Ltd Location: Sun Life House, 85, Queens Road, Reading, RG1 4PT Classification: Chemicals & Allied Products Status: Inactive Positional Accuracy: Automatically positioned to the address	A13SE (E)	60	-	472253 173287
197	Contemporary Trade Directory Entries Name: U T P Merchant Services Ltd Location: Sapphire Plaza, Watlington Street, Reading, RG1 4RE Classification: Cash Registers & Check-Out Equipment Status: Active Positional Accuracy: Automatically positioned to the address	A13NE (NE)	72	-	472254 173325
197	Contemporary Trade Directory Entries Name: Universal Transaction Processing Location: Sapphire Plaza, Watlington Street, Reading, RG1 4RE Classification: Cash Registers & Check-Out Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NE (NE)	72	-	472254 173325
198	Contemporary Trade Directory Entries Name: Reading Tyre Centre Location: Kings Point, 120, Kings Road, Reading, RG1 3DA Classification: Tyre Dealers Status: Active Positional Accuracy: Automatically positioned to the address	A13NW (N)	75	-	472166 173357
198	Contemporary Trade Directory Entries Name: Kwik-Fit Location: 120, Kings Road, Reading, RG1 3DB Classification: Tyre Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NW (N)	75	-	472166 173357
198	Contemporary Trade Directory Entries Name: Reading Tyre Centre Ltd Location: Kings Point, 120, Kings Road, Reading, RG1 3DA Classification: Tyre Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NW (N)	75	-	472166 173357
199	Contemporary Trade Directory Entries Name: Silverwire Ltd Location: 1, Wesley Gate, Queens Road, Reading, Berkshire, RG1 4AP Classification: Photo & Digital Imaging Bureaus Status: Inactive Positional Accuracy: Manually positioned to the address or location	A13SW (SW)	80	-	472154 173219
200	Contemporary Trade Directory Entries Name: All In One Windows & Conservatories Location: 96a, Queens Road, Reading, RG1 4DG Classification: Window Frame Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address	A13SE (SE)	105	-	472290 173248
200	Contemporary Trade Directory Entries Name: Pride Of Place Location: 100, Queens Road, Reading, RG1 4DG Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A13SE (E)	110	-	472297 173253
201	Contemporary Trade Directory Entries Name: Q Tek Tyre Centre Location: A, 4, Kennet Street, Reading, RG1 4AA Classification: Tyre Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NE (E)	138	-	472329 173310
202	Contemporary Trade Directory Entries Name: Skip It Location: B, 53, South Street, Reading, Berkshire, RG1 4RA Classification: Waste Disposal Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A13SW (SW)	143	-	472124 173164
203	Contemporary Trade Directory Entries Name: Pack & Send Location: 91-93, Kings Road, READING, RG1 3DD Classification: Freight Forwarders Status: Active Positional Accuracy: Automatically positioned to the address	A13NW (NW)	148	-	472112 173411

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
204	Contemporary Trade Directory Entries Name: Oven Glow Reading Location: 65, Watlington Street, Reading, RG1 4RQ Classification: Oven cleaning Status: Inactive Positional Accuracy: Automatically positioned to the address	A13SE (SE)	190	-	472306 173135
205	Contemporary Trade Directory Entries Name: Berkshire Valet Supplies Location: B, 190, Kings Road, Reading, RG1 4NH Classification: Janitorial Equipment - Servicing & Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address	A13SE (E)	204	-	472396 173265
206	Contemporary Trade Directory Entries Name: Boiler Installation (Reading) Location: Flat 4, Kings Oak Court, Queens Road, Reading, Berkshire, RG1 4PX Classification: Boilers - Servicing, Replacements & Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address	A13SW (W)	209	-	471995 173222
207	Contemporary Trade Directory Entries Name: Calmec Building Services Ltd Location: 49, South Street, Reading, RG1 4QU Classification: Air Conditioning & Refrigeration Contractors Status: Inactive Positional Accuracy: Automatically positioned to the address	A13SW (SW)	224	-	472032 173134
208	Contemporary Trade Directory Entries Name: Fereday & Pocock Location: 3, Princes Street, Reading, RG1 4EG Classification: Blinds, Awnings & Canopies Status: Inactive Positional Accuracy: Automatically positioned to the address	A13SE (SE)	235	-	472378 173144
209	Contemporary Trade Directory Entries Name: Berkshire Roofing.Co.Uk Location: 15, Crane Wharf, Reading, RG1 3AY Classification: Fascias and Soffits Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NW (W)	244	-	471955 173337
210	Contemporary Trade Directory Entries Name: B P Service Station Location: 69, London Road, Reading, RG1 5BW Classification: Petrol Filling Stations Status: Active Positional Accuracy: Automatically positioned to the address	A13SE (SE)	293	-	472319 173024
211	Contemporary Trade Directory Entries Name: 8el Ltd Location: Kings Reach, 38-50, Kings Road, Reading, Berkshire, RG1 3AA Classification: Telecommunications Equipment & Systems Status: Inactive Positional Accuracy: Manually positioned to the address or location	A13NW (W)	312	-	471890 173354
212	Contemporary Trade Directory Entries Name: Osprey Printing Management Ltd Location: London Road, Reading, Berkshire, RG1 5AQ Classification: Printers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A13SE (S)	313	-	472247 172980
213	Contemporary Trade Directory Entries Name: Specialised Steelwork Ltd Location: 10, Southern Court, South Street, Reading, RG1 4QS Classification: Ornamental Metalwork Status: Active Positional Accuracy: Automatically positioned to the address	A13SW (SW)	321	-	471949 173081
214	Contemporary Trade Directory Entries Name: Scrap My Car Now For Money Reading Kws Location: 60, The Meridian, Kenavon Drive, READING, RG1 3DQ Classification: Car Breakers & Dismantlers Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NE (NE)	331	-	472421 173528
215	Contemporary Trade Directory Entries Name: Impact Solutions Group Ltd Location: 181-183, Kings Road, Reading, Berkshire, RG1 4EX Classification: Oil & Gas Exploration Supplies & Services Status: Inactive Positional Accuracy: Manually positioned to the address or location	A13NE (E)	332	-	472525 173301

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
293	Contemporary Trade Directory Entries Name: Bags Direct International Ltd Location: 29, Whitley Street, READING, RG2 0EG Classification: Bags, Belts & Accessories - Manufacturers & Suppliers Status: Inactive Positional Accuracy: Automatically positioned to the address	A8SW (S)	952	-	471996 172358
294	Contemporary Trade Directory Entries Name: Contract Ironing Location: 9, Phoebe Court, Reading, RG1 2NA Classification: Ironing & Home Laundry Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A7NW (SW)	953	-	471432 172717
295	Contemporary Trade Directory Entries Name: Oven Cleaners Reading Location: 41, Waldeck Street, Reading, RG1 2RF Classification: Oven cleaning Status: Inactive Positional Accuracy: Automatically positioned to the address	A7SE (SW)	962	-	471760 172430
296	Contemporary Trade Directory Entries Name: Kennet Joinery Ltd Location: 2a, Cumberland Road, Reading, RG1 3LB Classification: Joinery Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address	A14SE (E)	966	-	473159 173249
296	Contemporary Trade Directory Entries Name: Reading Stained Glass Ltd Location: 213, London Road, Reading, RG1 3NY Classification: Stained Glass Designers & Producers Status: Active Positional Accuracy: Automatically positioned to the address	A14SE (E)	975	-	473166 173225
297	Contemporary Trade Directory Entries Name: Level Location: 14, Westerham Walk, READING, RG2 0BA Classification: Fireplaces & Mantelpieces Status: Inactive Positional Accuracy: Automatically positioned to the address	A8SW (S)	967	-	471904 172366
297	Contemporary Trade Directory Entries Name: Sunset Care Services For The Elderly Location: Westerham Walk, Reading, Berkshire, RG2 0BA Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A8SW (S)	969	-	471884 172370
298	Contemporary Trade Directory Entries Name: Mavisat Ltd Location: 2-4, Wokingham Road, Reading, Berkshire, RG6 1JG Classification: Telecommunications Equipment & Systems Status: Inactive Positional Accuracy: Automatically positioned to the address	A14SE (E)	981	-	473165 173153
299	Contemporary Trade Directory Entries Name: Crystal Clean Location: 104, Waldeck Street, Reading, RG1 2RE Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A7SE (SW)	1000	-	471672 172436
300	Fuel Station Entries Name: Reading Service Station Location: 69, London Road, Reading, RG1 5BW Brand: Bp Premises Type: Petrol Station Status: Open Positional Accuracy: Automatically positioned to the address	A13SE (SE)	293	-	472319 173024
301	Fuel Station Entries Name: Kings Road Filling Station Location: 191, Kings Road, READING, Berkshire, RG1 4JL Brand: Obsolete Premises Type: Not Applicable Status: Obsolete Positional Accuracy: Manually positioned to the address or location	A14SW (E)	398	-	472591 173280

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
302	Fuel Station Entries Name: Tesco Reading Extra Location: Napier Road, Reading, RG1 8DF Brand: Tesco Extra Premises Type: Hypermarket Status: Open Positional Accuracy: Manually positioned to the address or location	A19SW (NE)	757	-	472611 173919
303	Points of Interest - Commercial Services Name: Hand Car Wash Location: Kings Point 120, Kings Road, Reading, RG1 3DA Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A13NW (N)	75	11	472166 173357
304	Points of Interest - Commercial Services Name: Car Cleaning Centre Location: 4 Kennet Street, Reading, RG1 4AA Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A13NE (E)	138	11	472329 173310
305	Points of Interest - Commercial Services Name: Reading Service Station Location: 69 London Road, Reading, RG1 5BW Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A13SE (SE)	292	11	472318 173024
305	Points of Interest - Commercial Services Name: Car Wash Location: 69 London Road, Reading, RG1 5BW Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A13SE (SE)	293	11	472319 173024
306	Points of Interest - Commercial Services Name: Specialised Steelwork Ltd Location: 10 Southern Court, South Street, Reading, RG1 4QS Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A13SW (SW)	321	11	471949 173081
307	Points of Interest - Commercial Services Name: Q Tek Car Cleaning Centre Location: 14 Eldon Terrace, Reading, RG1 4DX Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13SE (E)	351	11	472521 173163
308	Points of Interest - Commercial Services Name: Lincoln Maritime Ltd Location: 21 Duke Street, Reading, RG1 4SA Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A12NE (W)	402	11	471795 173333
309	Points of Interest - Commercial Services Name: Pest Solutions Ltd Location: Davidson House, The Forbury, Reading, RG1 3EU Category: Contract Services Class Code: Pest and Vermin Control Positional Accuracy: Positioned to address or location	A12NE (NW)	436	11	471798 173471
310	Points of Interest - Commercial Services Name: Intascope Ltd Location: 54 London Street, Reading, RG1 4SQ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A12SE (W)	457	11	471772 173114
311	Points of Interest - Commercial Services Name: Shareplan Leaflet Distribution Location: 105 London Street, Reading, RG1 4QD Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A13SW (SW)	461	11	471871 172960
311	Points of Interest - Commercial Services Name: Cargo On Hold Ltd Location: 105 London Street, Reading, RG1 4QD Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A13SW (SW)	461	11	471871 172960

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
320	Points of Interest - Commercial Services Name: Car Wash Location: Napier Road, Reading, RG1 8DF Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A19SW (NE)	757	11	472611 173919
321	Points of Interest - Commercial Services Name: 4 Bays Location: 50 Mount Pleasant, Reading, RG1 2TD Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SW (S)	768	11	471919 172571
321	Points of Interest - Commercial Services Name: 4 Bays Location: 50 Mount Pleasant, Reading, RG1 2TD Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SW (S)	769	11	471919 172570
322	Points of Interest - Commercial Services Name: Reading Borough Council - Pest Control Location: Civic Offices, Bridge Street, Reading, RG1 2LU Category: Contract Services Class Code: Pest and Vermin Control Positional Accuracy: Positioned to address or location	A12SW (W)	789	11	471417 173150
323	Points of Interest - Commercial Services Name: Gemini Elite Autovaleting (UK) Ltd Location: 1 Short Street, Reading, RG1 2PS Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A7NE (SW)	797	11	471765 172617
323	Points of Interest - Commercial Services Name: Chestermans Garage Location: A 1 Chesterman Street, Reading, RG1 2PR Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NE (SW)	798	11	471740 172633
323	Points of Interest - Commercial Services Name: Chestermans Garage Location: 1a Chesterman Street, Reading, RG1 2PR Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NE (SW)	799	11	471739 172632
324	Points of Interest - Commercial Services Name: Economy Locks & Hardware Location: 13 Whitley Street, Reading, RG2 0EG Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SW (S)	915	11	471983 172398
325	Points of Interest - Commercial Services Name: Hills Meadow Car Wash Ltd Location: George Street, Caversham, Reading, RG4 8DH Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A18NW (N)	927	11	471899 174166
326	Points of Interest - Education and Health Name: Care (UK) Location: 57 Kings Road, Reading, RG1 3DD Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A13NW (NW)	201	11	472032 173407
327	Points of Interest - Education and Health Name: Royal Berkshire Hospital Location: London Road, Reading, RG1 5AN Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A13SE (SE)	388	11	472458 173005
327	Points of Interest - Education and Health Name: Royal Berkshire Hospital Location: London Road, Reading, RG1 5AN Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A13SE (SE)	388	11	472458 173005

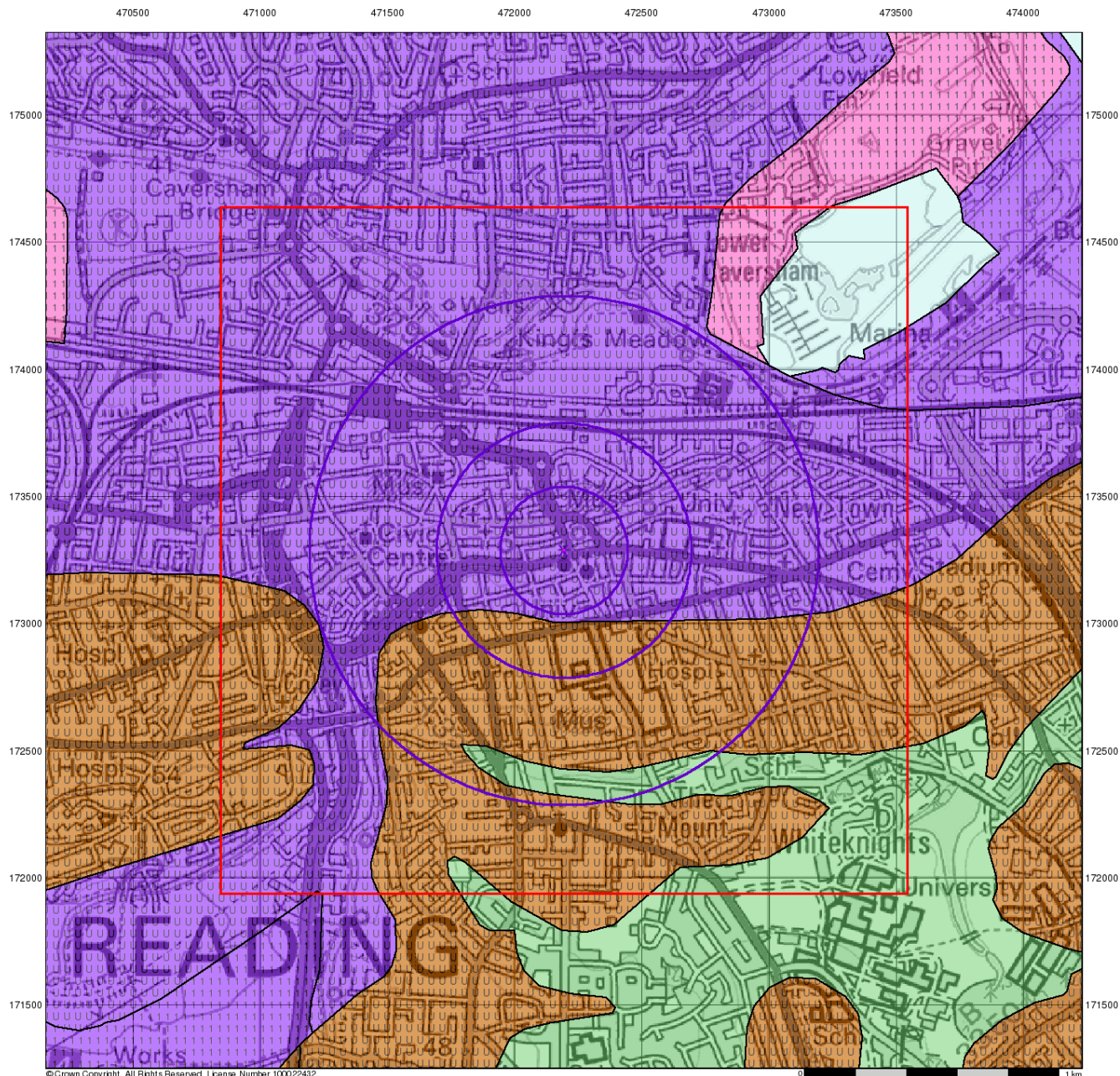
Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
327	Points of Interest - Education and Health Name: Royal Berkshire Hospital Location: London Road, Reading, RG1 5AN Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A13SE (SE)	388	11	472458 173005
327	Points of Interest - Education and Health Name: Royal Berkshire Hospital Location: London Road, Reading, RG1 5AN Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A13SE (SE)	388	11	472458 173005
327	Points of Interest - Education and Health Name: Royal Berkshire Hospital Location: London Road, Reading, RG1 5AN Category: Health Practitioners and Establishments Class Code: Accident & Emergency Department Positional Accuracy: Positioned to address or location	A13SE (SE)	388	11	472458 173005
328	Points of Interest - Education and Health Name: BUPA Wellness Clinic Location: Centurion Court 64, London Road, Reading, RG1 5AS Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A14SW (SE)	557	11	472698 173052
328	Points of Interest - Education and Health Name: Maple Tree Clinic Location: Unit 6 & 7 , Centurion Court, 64 London Rd, Reading, Berkshire, RG1 5AS Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A14SW (SE)	557	11	472698 173052
329	Points of Interest - Education and Health Name: Royal Berkshire Hospital Location: London Road, Reading, RG1 5AN Category: Health Practitioners and Establishments Class Code: Accident & Emergency Department Positional Accuracy: Positioned to address or location	A8NE (SE)	617	11	472520 172765
330	Points of Interest - Manufacturing and Production Name: Tank Location: RG1 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A13SW (W)	22	11	472172 173285
331	Points of Interest - Manufacturing and Production Name: Tank Location: RG1 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A13SW (S)	268	11	472106 173035
332	Points of Interest - Manufacturing and Production Name: Tank Location: RG1 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	320	11	472440 173491
332	Points of Interest - Manufacturing and Production Name: Tanks Location: RG1 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	328	11	472430 173515
332	Points of Interest - Manufacturing and Production Name: Tank Location: RG1 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	372	11	472495 173506
333	Points of Interest - Manufacturing and Production Name: Tank Location: RG1 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	415	11	472513 173553

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
358	Nitrate Vulnerable Zones Name: Thames Wallingford To Caversham Nvz Description: Surface Water Source: Environment Agency, Head Office	A18SE (N)	462	13	472194 173750

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	 British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
Centre for Ecology and Hydrology	 Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	Reading Borough Council - Environmental Health Department Civic Centre, Reading, Hampshire, RG1 7DT	Telephone: 0118 939 9099 Fax: 0118 958 9770 Website: www.reading.gov.uk
4	Ordnance Survey Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
5	Reading Borough Council - Planning Civic Centre, READING, Hampshire, RG1 7TD	Telephone: 0118 939 0900 Fax: 0118 958 9770 Website: www.reading.gov.uk
6	South Oxfordshire District Council - Environmental Health Department Council Offices, P O Box 92, Crowmarsh, Wallingford, Oxfordshire, OX10 8NY	Telephone: 01491 823000 Fax: 01491 823001 Email: env.health@southoxon.gov.uk Website: www.southoxon.gov.uk
7	Oxfordshire County Council County Hall, New Road, Oxford, Oxfordshire, OX1 1ND	Telephone: 01865 792422 Fax: 01865 810106 Email: environmental.services@oxfordshire.gov.uk Website: www.oxfordshire.gov.uk
8	Wokingham District Council - Environmental Health Department Council Offices, Shute End, Wokingham, Surrey, RG40 1BN	Telephone: 0118 974 6000 Fax: 0118 974 5053 Website: www.wokingham.gov.uk
9	Health and Safety Executive 5S.2 Redgrave Court, Merton Road, Bootle, L20 7HS	Website: www.hse.gov.uk
10	Peter Brett Associates Caversham Bridge House, Waterman Place, Reading, Berkshire, RG1 8DN	Telephone: 0118 950 0761 Fax: 0118 959 7498 Email: reading@pba.co.uk Website: www.pba.co.uk
11	PointX 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
12	Natural England County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
13	Environment Agency - Head Office Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
-	Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk



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0 1 km



GEA

Groundwater Vulnerability

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

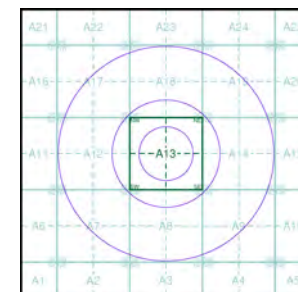
Agency and Hydrological

Geological Classes

- Major Aquifer (Highly Permeable)
 - High (H) 1, 2, 3, U
 - Intermediate (I) 1, 2
 - Low
- Minor Aquifer (Variably Permeable)
 - High (H) 1, 2, 3, U
 - Intermediate (I) 1, 2
 - Low
- Non Aquifer (Negligibly Permeable)
- Water or Sea
- Drift Deposit

Soil Classes

Site Sensitivity Context Map - Slice A



Order Details

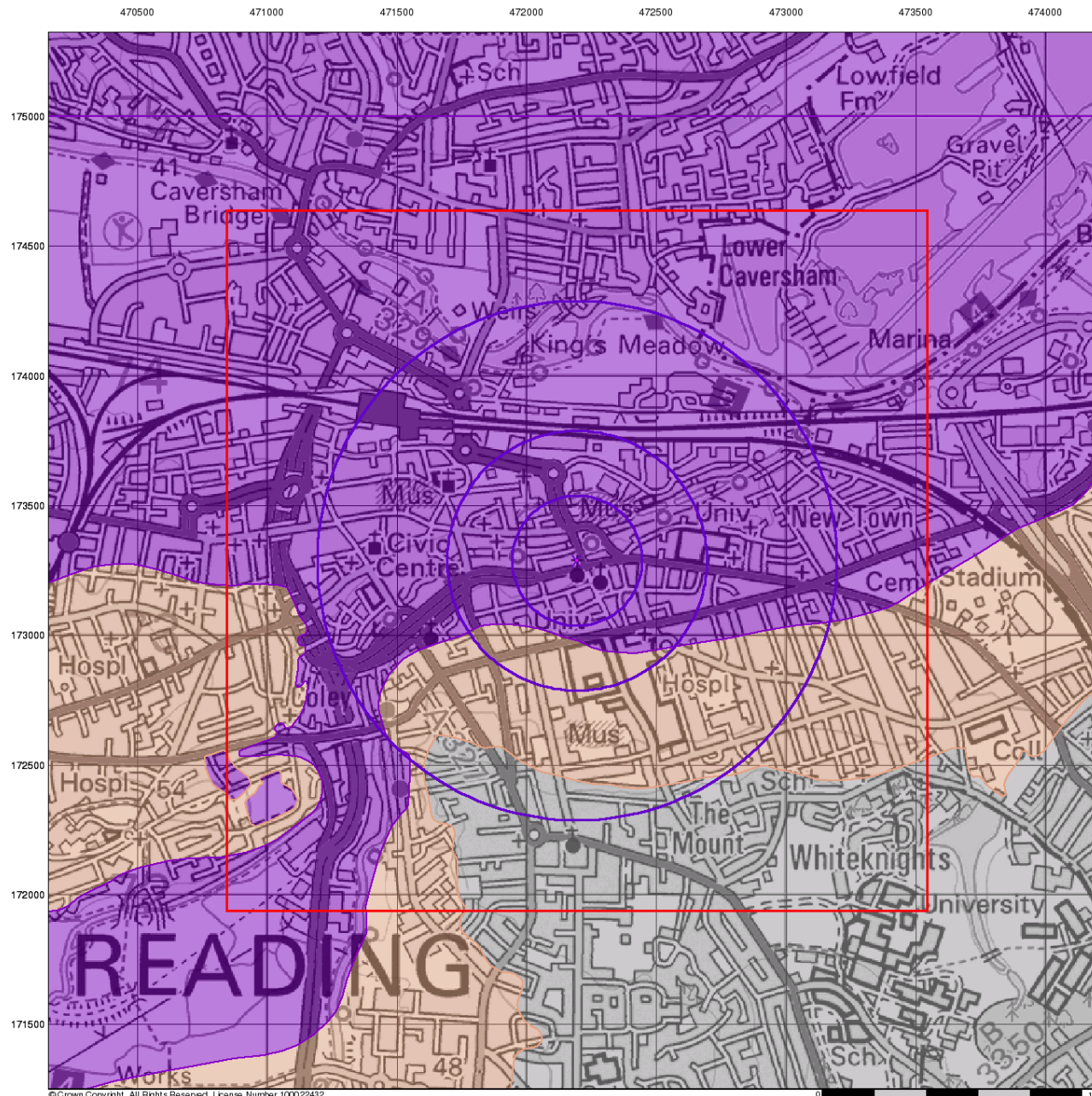
Order Number: 152113190_1_1
 Customer Ref: J18003
 National Grid Reference: 472190, 173290
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

57, Queens Road, READING, RG1 4BN



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GEA

Bedrock Aquifer Designation

General

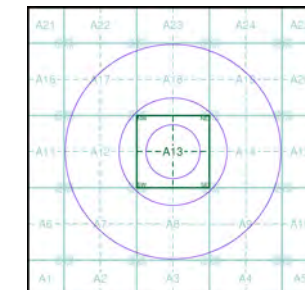
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

Order Number: 152113190_1_1
 Customer Ref: J18003
 National Grid Reference: 472190, 173290
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

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