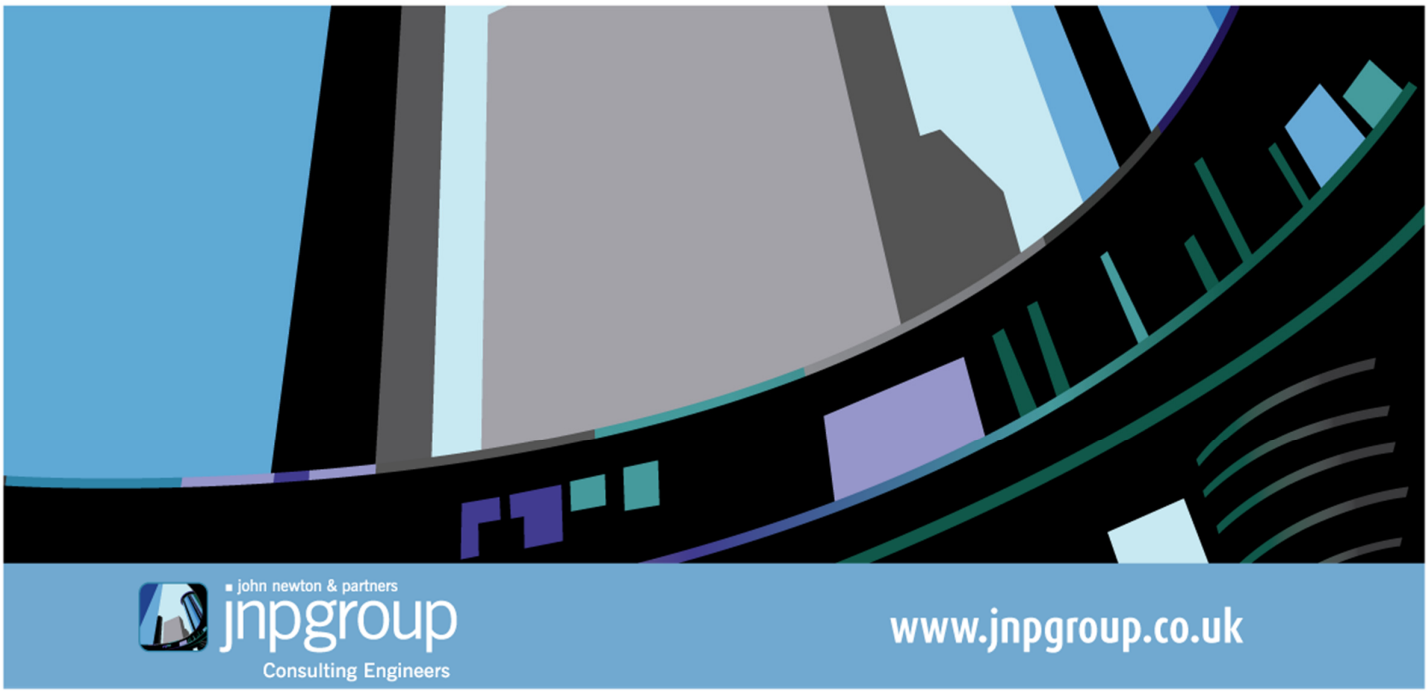

Phase 1 Geo-environmental Desk Study

Project: Dukesbridge House, Reading

Client: Lipman Properties

Reference: C86080-JNP-XX-XX-RP-C-1001-S2

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1 INTRODUCTION

1.1.1 jnpgroup was instructed by the client, Lipman Properties, to undertake a Phase 1 Geo-environmental Desk Study at Dukesbridge House, Reading (hereafter referred to as 'the site'). This report is subject to the limitations presented in Appendix A.

1.1.2 It is understood that there are currently a number of options been explored with regards to the redevelopment of the site for residential end use which include a change of use of the existing premises as well as potential new build.

1.1.3 Any comments given are based on the understanding that the proposed redevelopment will be as detailed above.

1.2 Objectives

1.2.1 The purpose of the investigation was to address geotechnical and geo-environmental issues relating to a proposed residential end-use of the site. The scope of work comprised desk study research. This report contains details of the site, development of an initial conceptual model, and a preliminary risk assessment with regard to contaminated land issues.

1.3 Methodology

1.3.1 This report has been compiled in accordance with the guidance given in the Environment Agency / Department of Environment, Food, and Rural Affairs (DEFRA) Contaminated Land Report 11 'Model Procedures for the Management of Land Contamination' (Environment Agency. 2004) and the Environment Agency's three reports entitled 'Guiding Principles for Land Contamination' (Environment Agency. 2010).

2 SITE DESCRIPTION

2.1.1 The site is located between Duke Street and Highbridge Wharf near the centre of Reading as shown in Figure 1. The centre of the site is located at National Grid Reference 471785, 173341. The site covers an area of approximately 0.34 hectares.

2.1.2 The site is situated in the centre of Reading and is bounded to the west by Duke Street to the north by commercial properties which are bounded by Kings Road, and to the east and south by Highbridge Wharf. The River Kennet is present to the south immediately beyond Highbridge Wharf. A range of commercial and retail properties are present beyond the site boundaries in all directions.

2.1.3 The site is currently occupied by Dukesbridge House, a large brick built building up to five stories high which surrounds a paved parking area which is accessed off Highbridge Wharf. Occasional trees and bushes are present around the periphery of the parking areas.

3 GEOLOGY, HYDROLOGY AND HYDROGEOLOGY

3.1 Geology

3.1.1 The geology of the site has been determined by reference to the 1:50,000 scale British Geological Survey (BGS) online Geoindex Tool (http://mapapps2.bgs.ac.uk/geoindex/home.html).

3.1.2 No artificial or Made Ground is indicated to be present underlying the site, however, from the aerial imagery viewed hardstanding or buildings are present across the entire site and made ground is anticipated to be present.

3.1.3 The superficial geology of the site to be is indicated to be Alluvium, which is described by the BGS as "*Normally soft to firm, consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel. A stronger, desiccated surface zone may be present*".

3.1.4 The underlying geology is indicated to be the Seaford and Newhaven Chalk Formation, which is described by the BGS as Chalk with flints.

3.1.5 There are no faults denoted within 500 m of the site.

3.1.6 The following table details the risk of geological hazard potential on or underlying the site as identified in the Groundsure Report (included in Appendix B).

Table 3.1: Geological Hazards

Hazard	Risk
Shrinking or swelling clay	Very Low
Landslide ground	Very Low
Ground dissolution	Very Low
Compressible soils	Moderate
Collapsible soils	Negligible
Running sand	Low

3.1.7 Based upon the above, geological hazards are not considered to present a constraint to development.

3.2 BGS Borehole Records

3.2.1 jnpgroup have consulted online borehole records held by the BGS. Numerous borehole records are present within 250m of the site however three boreholes exist within 100m. These boreholes encountered between 1.8m and 3.2m of Made Ground, consisting of brick, glass, tarmac, wood and flint. Underlying the Made Ground in borehole SU77SW342, which is the closest to the river and which is most likely to represent the onsite conditions, alluvial deposits of silty and sandy clay were recorded to a depth of 4.60m below ground level (bgl). Underlying the alluvial deposits, a chalk and flint gravel and slightly sandy clay, noted as Valley Gravel deposits, are recorded to 6.70m bgl. Underlying the Valley Gravel, Chalk was proven to a depth of 30.0m.

3.3 Background Soil Chemical Concentrations

3.3.1 The Groundsure Report (Appendix B) provides an indication to the background concentrations of a number of metallic contaminants commonly recorded in soils:

- arsenic 15 – 25 mg/kg;
- cadmium < 1.8 mg/kg;
- chromium 60 - 90 mg/kg;
- lead <100 mg/kg;
- nickel 15 – 30 mg/kg and; ??

3.3.2 In addition, the UK Soil Observatory map viewer (http://www.ukso.org/mapViewer.html) provides an indication to the background concentrations of a number of metallic contaminants commonly recorded in soils:

- arsenic 20 mg/kg;
- cadmium 0.5 mg/kg;
- chromium 69 mg/kg;
- copper 37 mg/kg
- lead 128 mg/kg;
- nickel 27 mg/kg;
- zinc 140 mg/kg

3.3.3 Therefore, naturally elevated concentrations of metals are not anticipated at the site or in close proximity.

3.4 Ground Workings, Mining History and Natural Cavities

- There are 8 No records of historic surface ground workings within 100m of the site and these are all related to the construction of the adjacent canal and associated Wharfs.
- No historic underground workings has occurred within 1 km of the site;
- No current ground workings have occurred within 750m of the site;
- No coal mining has occurred within 1 km of the site;
- Non-coal mining for chalk may have occurred within 20m to 260m of the site. These occurrences are reported to be either localised (unlikely) or infrequent (rare).
- There are three non-coal mining cavities located within 500m of the site, the nearest of which is 413m to the south in the Taplow Gravel;
- There are three natural cavities located within 250m of the site with the nearest recorded 191m to the west of the site and are recorded as a solution pipe;
- No brine or gypsum extraction has occurred within 1 km of the site;
- No tin or clay mining areas are recorded within 1 km of the site.

3.5 Hydrology

3.5.1 The nearest surface water features to the site are the Holy Brook, which is situated 6m to the north of the site, and the River Kennet, which is situated 6m to the south of the site. The Holy Brook appears to be culverted at this location and is not visible on aerial imagery.

3.5.2 River quality data indicates that the nearest section of the River Kennet recorded a chemical General Quality Assessment (GQA) of B (Good) in 2005, and a chemical GQA of A (Very Good) from 2006 to 2009.

3.5.3 The site lies in an area considered by the Environment Agency to be at a medium risk of fluvial flooding.

3.5.4 There are two current surface water abstraction licences with 1km of the site the nearest of which is situated 236m south west of the site and is associated with the Oracle Shopping Centre.

3.6 Hydrogeology

3.6.1 The Aquifer Maps contained in the Groundsure Report indicates that the Alluvial superficial deposits underlying the site are recorded as a Secondary A Aquifer. The underlying Chalk is recorded as a Principal Aquifer.

3.6.2 The Environment Agency define a Principal Aquifer as:

"These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer."

3.6.3 The Environment Agency define a Secondary-A Aquifer as:

"Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers."

3.6.4 The overlying soils are classified as having a high leaching potential, although this is uncertain, as a worst-case vulnerability classification is assumed by the Environment Agency (EA) for urban areas.

3.6.5 The Groundsure Report lists three groundwater water abstractions within 1km of the site. The nearest current groundwater abstraction is located 554m to the south of the site and is registered to the Primark Store.

3.6.6 There are two current potable water abstraction licences within 1km of the site, the nearest of which is located 554m to the south of the site and is registered to the Primark Store.

3.6.7 The site's proximity to groundwater Source Protection Zones (SPZs) was determined by reference to the Environment Agency's website. These zones show the risk of contamination from any activities that might cause pollution in the area, with the closer the activity, the greater the associated risk. The maps show three main zones (inner, outer and total catchment) to a groundwater source.

3.6.8 The site lies approximately 325 m to the south west of a Zone III (Total Catchment) Source Protection Zone.

3.6.9 The definition of a SPZ III is:

'The area around a source within which all groundwater recharge is presumed to be discharged at the source. In confined aquifers, the source catchment may be displaced some distance from the source. For heavily exploited aquifers, the final Source Catchment Protection Zone can be defined as the whole aquifer recharge area where the ratio of groundwater abstraction to aquifer recharge (average recharge multiplied by outcrop area) is > 0.75.'

4 SITE HISTORY

4.1.1 The history of the site and the surrounding area has been determined from historical map extracts. Copies of these extracts are included in Appendix C. The historical land uses on site and in close proximity to the site are summarised in the following table:

Table 4.1: Site History Summary

Date	On-site Historical Land Use	Off-site Historical Land Use
1879	The site is shown to be occupied by a number of different buildings which cover the majority of the site.	The River Kennet is shown directly to the south of the site. Beyond the site, in all directions, numerous roads and buildings are present. The building usage is varied and includes a mix of residential, commercial and industrial premises. A steam saw mill is present 90m to the south east with a Lead and Zinc Works and Brewery shown beyond. 160m to the south west, a gas works and an Iron and Brass foundry are recorded. 150m to the north east, a saw mill and timber yard are also recorded.
1900	Site buildings remain the same as previously, however the fire insurance plans from 1895 indicates that the buildings on site are recorded as the following uses: Cabinet Factory, Stables, Smithy, Stores (various) and a Tallow Chandlers.	The saw mill with the Lead and Zinc Works 90m to the south east are no longer recorded.
1912	No changes.	Tramway shown along Duke Street and King Street.
1931	No changes.	Gas works and foundry to the south west no-longer shown.
1956	Building layout remains the same however a Dance Hall is labelled on the site.	There is continued re-development of the buildings beyond the site boundary.
1962	A building on the southern boundary of the site, adjacent to Highbridge Wharf, is no-longer shown.	As above
1979	Buildings on the northern third of the site are no longer shown.	As above
1986 to Present	The buildings on site have been altered to meet the current configuration, with Dukesbridge Court labelled in the centre of the site. An electric substation is labelled on the south east corner of the site.	As above

4.2 Site History Summary

4.2.1 The site and surrounds were shown to be heavily developed on the earliest available maps. The site usage appeared to have been mainly commercial and small industrial works until 1986 when the site was redeveloped with commercial and office units in its current configuration.

4.2.2 The surrounding area was heavily urbanised and appears to have undergone continuous redevelopment up until the present day. Historically the surrounding area was a mix of commercial, residential and industrial properties with a Gas Works, Iron and Brass Foundry, numerous Saw Mills and a Lead and Zinc works shown within 250m of the site.

5 INFORMATION HELD BY STATUTORY AUTHORITIES

5.1.1 This section details any relevant information held in the registers maintained by statutory bodies as identified in the Groundsure Report (Appendix B).

5.2 Waste Management Facilities

5.2.1 The Groundsure Report identifies one licensed waste management facilities located within 1 km of the site as follow:

- Hopkins Recycling Limited located approximately 564 m to the east of the site. The site is used for recycling household, commercial and industrial waste.

5.2.2 There are no landfills recorded within 1km of the site.

5.3 Historic IPC, IPPC Part A and B Activities and Enforcements

5.3.1 The Groundsure Report indicates that:

- There are no historic IPC authorisations within 500 m of the study site;
- There are no Part A (1) and IPPC authorised activities within 1 km of the site;
- There are no Part A (2) and Part B activity and enforcements within 500 m of the site.

5.4 Pollution Incidents to Controlled Waters

5.4.1 Records held by the Environment Agency identified twelve pollution incidents to controlled waters within 500m of the site. With the exception of one incident recorded 44m to the north east of the site, which was recorded as a Category 2 significant water impact due to diesel, all the rest were recorded as minor or no impact.

5.5 Discharge Consents

5.5.1 The Groundsure Report identifies sixteen licensed discharge consents within 500m of the site however the status for all is recorded as revoked.

5.6 Fuel Sites

5.6.1 The Groundsure Report identifies no active fuel station entries within 500 m of the site.

5.7 Historical and Contemporary Industrial Data

5.7.1 The Groundsure Report identifies twenty-three potentially contaminative industrial sites within 250 m of the site. The nearest are summarised as follows:

- An electricity substation located on site and a further four present within 100m of the site.
- Lincoln Maritime Ltd located at 21 Duke Street and noted as on site, categorised as transport storage and delivery.
- Biotechnica Services Ltd recorded 4m north of the site and categorised as industrial products.

5.8 Radon

5.8.1 The Groundsure Report states that the Health Protection Agency identified less than 1% of homes above the action level. The British Geological Survey Information Services Group indicates that no radon protection measures are necessary.

5.8.2 Reference to BRE211 'Radon: guidance on protective measures for new dwellings' indicates that the site does not lie within an area where geological information indicates that basic radon protection may be required. Therefore no radon protection measures are considered necessary.

5.9 Environmentally Sensitive Areas

5.9.1 The sensitive land use map within the Groundsure Report indicates that the site is not within any environmentally sensitive areas.

6 UK CONTAMINATED LAND LEGISLATIVE FRAMEWORK

6.1 Legislation on Contaminated Land

6.1.1 Given that the site is being assessed with the potential for future development, the most applicable appraisal relates to the requirements of the Planning Regime as described in the National Planning Policy Framework. In order to proceed with an assessment of contamination issues it is essential that there is compliance with UK guidance as detailed within reports published by the Environment Agency 'Model Procedures for the Management of Land Contamination' (Environment Agency, 2004), and 'Guiding Principles for Land Contamination' (Environment Agency, 2010).

6.1.2 Part IIA of the Environmental Protection Act, 1990, which was enacted by Section 57 of the Environment Act 1995, and the associated Contaminated Land (England) Regulations 2000 (SI 2000/227), was introduced on 1 April 2000. It created a new statutory regime for the identification and remediation of land where contamination poses an unacceptable risk to human health and the environment. The guidance was subject to a review by DEFRA in 2012, and a revision was published.

6.1.3 Part IIA provides a statutory definition of contaminated land:

"any land which appears to the Local Authority in whose area it is situated to be in such a condition by reason of substances in, on or under the land, that significant harm is being caused, or that there is a significant possibility of significant harm being caused, or that pollution of controlled waters is being or is likely to be caused".

6.1.4 Controlled waters are considered to be all groundwaters, inland surface waters, and estuarine and coastal waters.

6.1.5 To determine whether land falls under the Part IIA definition of contaminated land, the site should be evaluated in the context of a risk based framework. The assessment of contaminated land is typically a two-phase process, which is initially based on a qualitative assessment of the likelihood of complete pollution linkages, with a quantitative element that seeks to determine the degree and the significance of the harm. Land is only defined as 'Contaminated Land' if a "significant pollutant linkage" is present.

6.1.6 A pollutant linkage must comprise the following:

Source - a contaminant at a concentration capable of causing adverse health or environmental effects.

Receptor - there must be a receptor (e.g. human, controlled waters, ecological, or property) present, which may be at risk of harm or impact from the source.

Pathway - there must be an exposure pathway through which the receptor comes into contact with the contamination source.

6.1.7 Each of these elements can exist independently, but they create risk only when they are linked together, so that a particular contaminant affects a particular receptor, through a particular pathway.

6.1.8 The responsible authority then needs to consider whether the identified pollution linkage:

- is resulting in significant harm being caused to the receptor in the pollutant linkage;
- presents a significant possibility of significant harm being caused to that receptor;
- is resulting in the pollution of controlled waters, which constitute the receptor; or is likely to result in such pollution.

6.1.9 If a pollutant linkage is demonstrated, then the Part IIA legislation provides powers for remedial action to be enforced by the Local Authority in whose area the contaminated land is situated.

6.1.10 In addition, jnpgroup has undertaken a preliminary risk assessment based on the **probability** of receptor exposure to the identified source and the **consequences** of such exposure.

6.1.11 **Risk management**, which can include site surfacing, formal management systems, legal requirements; is then considered to provide an overall residual risk. The categories of environmental risk used by jnpgroup are given in Table 6.1 that follows.

Table 6.1: Risk Matrix

Environmental Risks		
HIGH		Issues within this category likely to provide a significant cost or liability. Further detailed investigation may be required to clarify the risk.
MEDIUM		It is possible that issues within this category may provide a cost or liability. Further investigation may be required to clarify the risk.
LOW		It is unlikely that issues within this category will provide a significant cost or liability. Basic investigation may be required to clarify the risk.
NONE		No source – pathway – receptor linkage present.

7 CONCEPTUAL MODEL AND PRELIMINARY RISK ASSESSMENT

7.1 General

7.1.1 This section uses information from desk-based sources to provide a conceptual model and qualitative assessment of the potential risks posed to human health and environmental receptors from potential on-site and off-site sources of contamination. The assessment is presented as a 'source-pathway-receptor' model in accordance with Part IIA of the Environmental Protection Act 1990.

7.1.2 The conceptual model has been developed assuming that the site will be redeveloped for residential apartments without private gardens.

7.2 Potential Sources of Contamination

Potential On-site Sources of Contamination

- The site is shown as developed on the earliest available map with a number of buildings shown across the site. The historical fire insurance plans show that in 1895, the buildings on site had a range of uses including a factory, stables, smithy and candle makers. More recently the site was utilised as commercial cabinet and office premises.
- Heavy metals,Volatile Organic Compounds, Semi Volatile Organic Compounds hydrocarbons, asbestos and soil gas associated with a potentially significant depth of Made Ground may be present as a result of previous phases of development including imported and site generated fill materials.
- In accordance with C733 guidance, any structure built, refurbished or modified during the Twentieth Century has the potential to contain asbestos containing materials (ACM). In addition, any demolition material either stockpiled or used as backfill on site also has the potential to contain asbestos containing materials (intact or broken up).

Potential Off-Site Sources of Contamination

- Historical land use within 200m of the site included residential, commercial and industrial premises. The industrial processes include a Gas Works, Timber Yard, Iron and Brass Foundry and a Lead and Zinc works. The closest of these industries is 90mto the south east and is unlikely to have led to significant contamination of the site.

7.3 Receptors

7.3.1 The site is to be redeveloped for a residential end use without private gardens. At this stage, the final scheme for the site is still to be determined but it is likely to involve a change of use of the existing office building to residential apartments and it may also include extensions and areas of new build. Based on the current proposals, the primary receptors considered to be potentially at risk from any identified contamination are as follows:

Human Health

- Construction workers during the redevelopment phase;
- Residential end users.

Controlled Waters

- The Alluvial deposits beneath the site is classified as a Secondary-A Aquifer overlying a Principal Chalk aquifer. Jnpgroup consider groundwater to be a sensitive receptor;
- The nearest controlled surface waters are the Holy Brook and the River Kennet which are situated 6m to the north and south respectively. jnpgroup consider these both to be sensitive receptors.

Ecological

- The site is not located within an environmentally designated sensitive area;
- Given the site setting, sensitive species are considered unlikely to be present at the site (subject to any ecological survey undertaken).

Property

- Concrete sulphate attack;
- Build-up of gases with potential for explosion.

7.4 Pathways

7.4.1 Potential contaminant migration pathways considered relevant to the site are:

Human Health

- Ingestion of contaminated soils and dust particles;
- Direct physical contact with near surface soils and contaminated dust particles;
- Inhalation of wind-blown contaminated dust;
- Inhalation of vapours and gases, migrating vertically into the atmosphere;
- Inhalation of vapours and gases, migrating into buildings and confined spaces;

Infrastructure

- Water supply pipework.

Controlled Waters

- Leaching of contaminants in Made Ground;
- Lateral migration of contaminated groundwater into the River Kennet or Holy Brook.
- Vertical migration of contaminated shallow groundwater impacting deeper groundwater in the aquifer sequence;
- Run-off of site-derived contamination into the River Kennet and Holy Brook during construction.

Ecological

- Migration of contamination through groundwater and subsequent uptake by plant roots;
- Direct contact between ecological receptors and contaminated surface water;
- Direct contact between ecological receptors and contaminated soils;
- Ingestion of contaminated soils/surface waters by ecological receptors;
- Inhalation of vapours or wind-blown dust by ecological receptors.

7.5 Pollutant Linkages

7.5.1 A 'pollutant linkage' describes the relationship between a contaminant, a pathway and a receptor, a 'pollutant' being the contaminant in a pollutant linkage. A contaminant, pathway and receptor must all be present for a pollutant linkage to exist, which forms the basis for determination that a piece of land is Contaminated Land. Potential sources, pathways and receptors have been assessed. The following table summarises the significant pollutant linkages potentially active at the site.

Table 7.1: Potential Source-Pathway-Receptor Linkages for Human Health Risk Assessment

Source	Pathway	Receptor
Contaminated soils	Dermal contact	On site female child: 0 - 6 yrs old
		On site construction worker
	Dermal contact with household dust	On site female child: 0 - 6 yrs old
	Inhalation of fugitive soil dust	On site construction worker
		On site female child: 0 - 6 yrs old
	Inhalation of fugitive household dust	On site female child: 0 - 6 yrs old
	Inhalation of vapours in outdoor air	On site female child: 0 - 6 yrs old
		On site construction worker
	Inhalation of vapours in indoor air	On site female child: 0 - 6 yrs old
	Contact with contaminated soils	Water supply pipework
Ground Gas	Vertical and Lateral Migration	End Users
		Residential Housing
		Services and Infrastructure

Table 7.2: Source Pathway Receptor Linkages for Controlled Waters Risk Assessment

Source	Pathway	Receptor
Contaminated soils	Leaching Mechanisms	Groundwater stored in the Alluvium and Seaford and Newhaven Chalk Formation
	Runoff during construction works	River Kennett and Holy Brook
Contaminated groundwater	Vertical migration	Groundwater stored in the Alluvium Seaford and Newhaven Chalk Formation
Contaminated groundwater	Lateral and vertical migration (baseflow)	River Kennett and Holy Brook

7.6 Preliminary Risk Assessment

7.6.1 From the information obtained from the desk study jnpgroup has undertaken a preliminary risk assessment.

Table 7.3: Preliminary Risk Assessment

Issue	Risk		Justification
LAND	MEDIUM		Historic land use (various commercial and light industrial units) suggests potential sources of contamination present on site. Potential for direct contact / inhalation of vapours or gases with residential receptors.
GROUNDWATER	HIGH		The site is located on productive strata (Secondary A and Principal Aquifer)
SURFACE WATER	HIGH		The nearest surface watercoursescareadjacent to the northern and southern boundary.
ECOLOGY	NONE		Based on the assumption that there are no sensitive/ protected species on site (subject to any ecological survey undertaken).

7.6.2 The conceptual model has been refined and the plausible pollutant linkages evaluated against generic criteria in accordance with joint DEFRA / Environment Agency publication 'Model Procedures for the Management of Land Contamination' (Environment Agency. 2004).

8 PRELIMINARY ENGINEERING ASSESSMENT

8.1 General

8.1.1 The following assessment of the ground conditions expected on site is based solely on the desk study information. It is, therefore, subject to confirmation or otherwise through appropriate intrusive ground investigation.

- Made ground anticipated up to a depth of 3.5m;
- Alluvial Deposits anticipated beneath the Made Ground consisting of soft to firm silt and clay;
- Chalk is anticipated to be encountered at a depth of 7.5m;

8.2 Earthworks

8.2.1 It is anticipated that excavations should be readily achieved using conventional plant, such as a wheeled backhoe excavator. Pits will likely require shoring due to Made Ground, all excavations should be carried out in accordance with CIRIA Report 97 “Trenching Practice”, 2001. Shallow groundwater is anticipated due to the close proximity of the River Kennett and Holy Brook, therefore it is likely that groundwater may pose an issue for shallow excavations.

8.3 Foundations

8.3.1 The following assessment of the likely foundation types is based solely on the desk study and is therefore subject to confirmation or otherwise through appropriate intrusive ground investigation techniques. The assessment also assumes that ground levels will remain similar to those at present. If this is not the case then some amendments to the recommendations given may be required.

8.3.2 Historical borehole records adjacent to the site indicate that deep Made Ground may be present beneath the site. In addition, it is anticipated that shallow groundwater will be encountered beneath the site. As such, it is proposed at this stage that the most suitable foundation solution for any new build will be piled foundations. This is subject to the results of any ground investigation.

8.4 Geotechnical Considerations & Risks

8.4.1 From the desk study review, the geotechnical risks that may affect the final development are considered to be:

- Made Ground anticipated to depths of up to 3.5m begl across the site.

Due to the variable nature and quality of material, it is likely to generate difficulties for excavation, earthworks and foundation construction. The nature and quantity of Made Ground should be understood to develop suitable foundations and assess any disposal / treatment requirements.

- Instability during excavation

Due to the potential variable nature and quality of Made Ground on site and also the presence of loose sands, there is the potential for instability during construction. Support systems during temporary works may be required to prevent collapse of excavations.

- Ground movement resulting from excavation

It is possible that some ground movement could result from the excavations representing a risk to the stability of surrounding infrastructure and structures. Consultations with the relevant third parties should be undertaken to ensure an appropriate methodology is adopted which complies with relevant standards and asset owners requirements.

- Chemical attack on structures.

Chemical composition of Made Ground deposits at the site may result in thaumasite attack and degradation of buried concrete at the site. Appropriate soil and groundwater chemical testing should be undertaken to allow determination of an appropriate class of concrete in accordance with the guidance set out in BRE Concrete in Aggressive Ground (2005).

- Buried private and public services.

Where services are present at the site there remains a risk of damage through service strikes and the possible requirement to realign services to satisfy statutory authority providers. Service information to be obtained prior to the commencement of any ground investigation works followed by appropriate service clearance prior to breaking ground.

9 CONCLUSIONS

9.1 Conclusions

9.1.1 The desk study has identified that the geological succession below the site is likely to comprise Made Ground overlying alluvial deposits with the Seaford and Newhaven Chalk Formation encountered beneath. The site is recorded as occupied from at least the 1870's and is likely to have had a number of contaminative uses as detailed below:

- The historical fire insurance plans show that in 1895 the buildings on site had a range of uses includinga cabinet factory, stables, smithy and candle makers. More recently the site was utilised as commercial and office premises.
- Heavy metals, Volatile Organic Compounds, Semi Volatile Organic Compounds, hydrocarbons, asbestos and soil gas associated with a potentially significant depth of Made Ground may be present as a result of previous phases of development including imported and site generated fill materials.

9.1.2 Based on information contained within the desk study, it is the opinion of jnpgroup that the potential site conditions provide a **MEDIUM** environmental risk and dependent on the final development proposal for the site further investigation and assessment are likely to be required.

9.1.3 With regards the existing building and the proposed change of use from offices to residential, given the building is already constructed, the main issue is likely to be in relation to the potential for generation of ground gas due to the anticipated presence of deep Made Ground. It is unknown if the existing building has gas protection measures installed which would be suitable for a residential development. Should the ground investigation confirm the presence of ground gas then retrofitting of gas protection measures are likely to be required.

9.1.4 For areas of proposed new development, a Phase 2 ground investigation would be required in order to confirm the underlying ground conditions.

9.2 Recommendations

9.2.1 Based on the conclusions from the desk study and the intended redevelopment of the site jnpgroup recommend that the following intrusive works are undertaken initially:

<u>Change of Use Only</u>

- Installation of gas monitoring wells and a phase of gas monitoring for a very low gas generation source with a moderate sensitivity for flats. This would require a minimum of six monitoring visits over a two month period.

<u>New Development</u>

- Ground investigation to confirm underlying ground conditions. This is likely to require deeper cable percussive drilling due to the likely requirement for piled foundations. The works should include a range of chemical analysis covering a range of determinants including, heavy metals, PAH's, asbestos, TPH and PCB's as a minimum. Volatile Organic Compounds, Semi Volatile Organic Compounds may also be required, subject to ground observations.
- The installation of gas monitoring standpipes with six monitoring visits undertaken over two or three months depending upon the proposed scheme.

9.2.2 jnpgroup recommend that the scope of the intrusive works is agreed with the Regulatory Authorities as they may have particular requirements that need to be taken into account.

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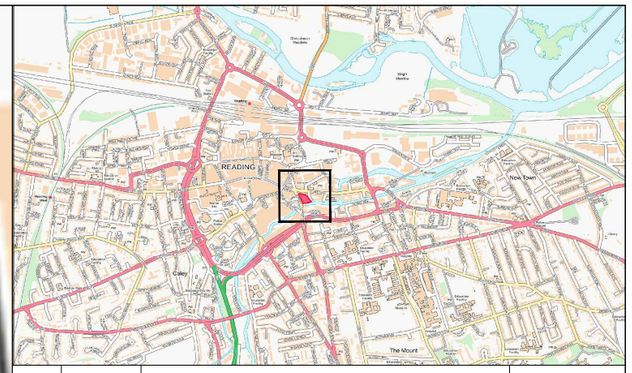
Figures / Drawings



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Appendix A

Limitations

Introduction

This report is confidential and has been prepared solely for the benefit of the client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from jnpgroup; a charge may be levied against such approval. jnpgroup accepts no responsibility or liability for the consequences of this document being used for any purpose or project other than for which it was commissioned, and: this document to any third party with whom and agreement has not been executed.

Any comments given within this report are based on the understanding that the proposed works to be undertaken will be as described in the introduction and the information referred to and provided by others and will be assumed to be correct and will not have been checked by jnpgroup and jnpgroup will not accept any liability or responsibility for any inaccuracy in such information.

Any deviation from the recommendations or conclusions contained in this report should be referred to jnpgroup in writing for comment and jnpgroup reserve the right to reconsider their recommendations and conclusions contained within. jnpgroup will not accept any liability or responsibility for any changes or deviations from the recommendations noted in this report without prior consultation and our full approval.

The details contained within this report reflect the site conditions prevailing at the time of investigation. jnpgroup warrants the accuracy of this report up to and including that date. Additional information, improved practice or changes in legislation may necessitate this report having to be reviewed in whole or in part after that date. If necessary, this report should be referred back to jnpgroup for re-assessment and, if necessary, re-appraisal.

This report is only valid when used in its entirety. Any information or advice included in the report should not be relied upon until considered in the context of the whole report. Whilst this report and the opinion made herein are correct to the best of jnpgroups' belief, jnpgroup cannot guarantee the accuracy or completeness of any information provided by third parties.

The report represents the finding and opinions of experience geotechnical and geo-environmental engineers. jnpgroup does not provide legal advice and the advice of lawyers may also be required.

It should be noted that the following were not included as part of the agreed scope of works with the client: detailed ecological surveys and assessment; groundwater monitoring and sampling; geotechnical requirements etc.

jnpgroup has provided advice and made recommendations based on the findings of the work undertaken, however this is subject to the approval / acceptance by the relevant Regulatory Authorities.

Objectives

The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources (including the Client), together with (where appropriate) a brief walk over inspection of the site. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, jnpgroup reserves the right to review such information and, if warranted, to modify the opinions accordingly. It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Appendix B

Groundsure Report

Groundsure
LOCATION INTELLIGENCE

JNP Group

J N P,UNIT 1, MEADOWHALL ROAD,
SHEFFIELD, S9 1BW

Groundsure Reference:	GS-5923758
Your Reference:	C86080
Report Date	4 Apr 2019
Report Delivery Method:	Email - pdf

Enviro Insight

Address: DUKESBRIDGE COURT, DUKE STREET, READING, RG1 4SA

Dear Sir/ Madam,

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

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

Managing Director
Groundsure Limited

Enc.
Groundsure Enviroinsight

Enviro Insight

Address:	**DUKESBRIDGE COURT, DUKE STREET, READING, RG1 4SA**
Date:	**4 Apr 2019**
Reference:	**GS-5923758**
Client:	**JNP Group**

NW N NE

W E

SW S SE

Aerial Photograph Capture date:	20-Apr-2015
Grid Reference:	471776,173356
Site Size:	0.3360ha

Report Reference: GS-5923758
Client Reference: C86080

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Overview of Findings

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

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	0	5	36	126
1.2 Additional Information – Historical Tank Database	0	0	52	70
1.3 Additional Information – Historical Energy Features Database	3	2	48	71
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	3
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	6	8	30
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	2	5	7	1

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	0
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	6	8	2
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	2	6	4
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	0	4
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	1	6

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	2	3	18	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Records of Artificial Ground and Made Ground present beneath the study site	None identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	Identified
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology	0-500m
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	3	11
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	2	0	1	3
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	2	3
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	1	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	1	Not searched	Not searched

Groundsure
LOCATION INTELLIGENCE

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	Yes	No	Yes	Yes
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	0	14	22	30	Not searched	Not searched
6.11 Surface water features within 250m of the study site	Yes	Yes	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Enviroment Agency Zone 2 floodplains within 250m of the study site	Identified
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	Identified
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	High
7.4 Flood Defences within 250m of the study site	None identified
7.5 Areas benefiting from Flood Defences within 250m of the study site	None identified
7.6 Areas used for Flood Storage within 250m of the study site	None identified
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Potential at Surface
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	High

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	0
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	1	0	2
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards

9.1 Maximum risk of natural ground subsidence	Moderate
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Very Low
9.1.2 Maximum Landslides hazard rating identified on the study site	Very Low
9.1.3 Maximum Soluble Rocks hazard rating identified on the study site	Low
9.1.4 Maximum Compressible Ground hazard rating identified on the study site	Moderate
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	Very Low
9.1.6 Maximum Running Sand hazard rating identified on the study site	Low
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining

10.1 Coal mining areas within 75m of the study site	None identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	Identified
10.3 Brine affected areas within 75m of the study site	None identified

Using this report

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

1. Historical Industrial Sites

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

2. Environmental Permits, Incidents and Registers

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

3. Landfills and Other Waste Sites

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

4. Current Land Uses

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

5. Geology

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

6. Hydrogeology and Hydrology

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

7. Flooding

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

8. Designated Environmentally Sensitive Sites

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

9. Natural Hazards

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

10. Mining

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

11. Contacts

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

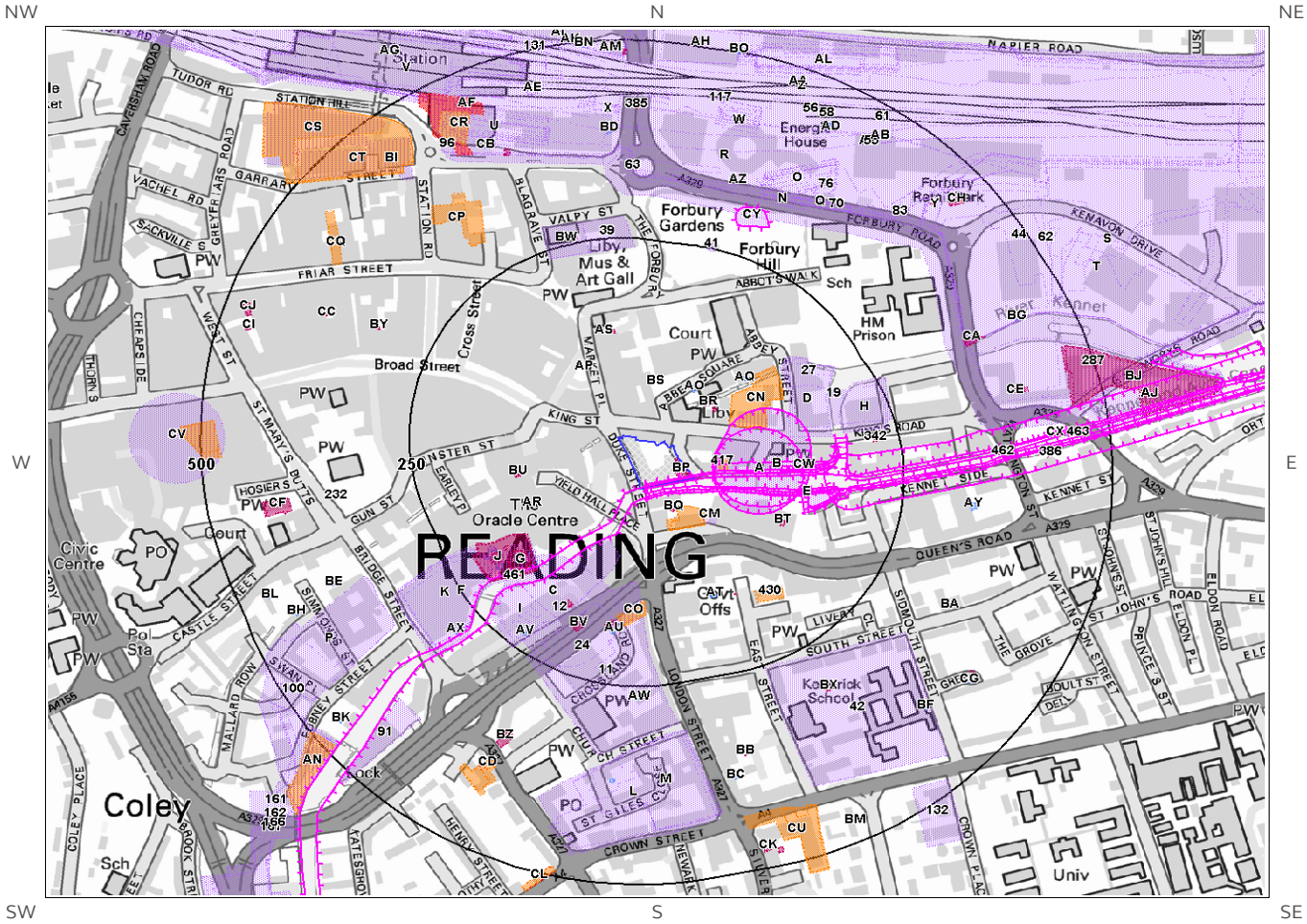
Note: Maps

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

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

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

1. Historical Land Use



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Site Outline

250
500
Search Buffers (m)

Historical 1:10,000 and 1:10,560 scale mapping

Industrial Land Use

Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping

Energy Features

Petrol Stations

Historical military sites

Tanks

Garages

1. Historical Industrial Sites

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

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

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 167

ID	Distance [m]	Direction	Use	Date
1A	22	E	Unspecified Wharf	1938
2A	23	E	Unspecified Wharf	1994
3B	24	E	Unspecified Wharf	1938
4B	24	E	Unspecified Wharf	1938
5CM	42	S	Smithy	1913
6C	73	SW	Unspecified Depot	1977
7C	73	SW	Unspecified Depot	1994
8C	73	SW	Unspecified Depot	1989
9E	83	E	Unspecified Disused Wharf	1933
10CW	103	E	Unspecified Wharf	1989
11	116	S	Unspecified Factory	1977
12	121	SW	Unspecified Mill	1898
13D	125	NE	Sawmills	1938
14D	125	NE	Sawmills	1913
15D	125	NE	Sawmills	1898
16E	137	E	Unspecified Wharf	1938
17E	137	E	Unspecified Wharf	1938
18E	137	E	Unspecified Wharf	1938
19	137	NE	Sawmill	1938
20F	146	SW	Unspecified Commercial/Industrial	1898
21F	146	SW	Brewery	1938
22F	146	SW	Brewery	1913
23F	147	SW	Brewery	1933
24	153	S	Unspecified Factory	1971
25G	158	SW	Unspecified Tank	1913
26G	158	SW	Unspecified Tank	1898
27	159	NE	Sawmills	1933
28H	186	E	Sawmills	1938
29H	186	E	Sawmills	1898
30H	186	E	Sawmills	1913
31J	186	SW	Unspecified Tank	1898
32I	188	SW	Unspecified Commercial/Industrial	1933

33I	189	SW	Railway Sidings	1933
34J	189	SW	Unspecified Tanks	1971
35J	189	SW	Unspecified Tanks	1977
36K	204	SW	Brewery	1977
37K	204	SW	Brewery	1971
38K	205	SW	Brewery	1938
39	235	N	Police Station	1971
40BW	235	N	Telegraph House	1971
41	247	N	Unspecified Tank	1971
42	252	S	Biscuit Factory	1913
43CY	286	N	Unspecified Heap	1933
44	300	N	Unspecified Factory	1962
45M	309	S	Tin Works	1933
46L	310	S	Tin Works	1913
47L	310	S	Tin Works	1938
48M	310	S	Tin Works	1938
49L	316	S	Unspecified Commercial/Industrial	1977
50L	316	S	Unspecified Commercial/Industrial	1989
51L	316	S	Unspecified Works	1962
52L	316	S	Unspecified Commercial/Industrial	1971
53AB	319	N	Railway Sidings	1898
54N	325	N	Railway Buildings	1898
55	325	N	Railway Sidings	1938
56	325	N	Railway Sidings	1962
57AC	327	N	Railway Sidings	1913
58	330	N	Railway Sidings	1938
59O	332	NE	Railway Building	1962
60N	333	N	Goods Sheds	1913
61	333	N	Railway Sidings	1933
62	333	N	Biscuit Factory	1933
63	335	N	Railway Building	1913
64O	337	NE	Goods Sheds	1938
65O	338	N	Railway Building	1898
66Q	338	NE	Goods Sheds	1938
67P	339	SW	Brewery	1971
68P	339	SW	Brewery	1977
69Q	340	NE	Goods Sheds	1938
70	341	NE	Goods Sheds	1913
71Q	343	NE	Railway Building	1962
72O	344	N	Goods Sheds	1913
73O	345	NE	Goods Sheds	1933
74Q	354	NE	Railway Building	1898
75T	358	E	Biscuit Factory	1898
76	360	NE	Goods Sheds	1913

77R	361	N	Railway Building	1913
78R	361	N	Railway Building	1938
79S	363	NE	Biscuit Factory	1913
80S	363	NE	Biscuit Factory	1938
81T	364	E	Unspecified Factory	1971
82T	364	E	Unspecified Factory	1977
83	365	NE	Goods Sheds	1938
84S	366	NE	Biscuit Factory	1938
85U	378	N	Terminus	1898
86V	383	N	Railway Station	1962
87BD	383	N	Railway Building	1913
88U	385	N	Terminus	1913
89U	385	N	Terminus	1938
90U	388	N	Terminus	1938
91	391	SW	Hospitals	1898
92U	392	N	Terminus	1933
93V	400	NW	Railway Station	1994
94W	402	N	Railway Building	1898
95X	405	N	Railway Building	1913
96	406	NW	Railway Building	1962
97W	406	N	Railway Building	1962
98X	407	N	Railway Building	1938
99CT	408	NW	Garage	1971
100	409	SW	Unspecified Commercial/Industrial	1933
101Y	409	NE	Goods Shed	1913
102Y	409	NE	Goods Sheds	1938
103W	410	N	Engine Shed	1938
104W	410	N	Engine Shed	1913
105X	410	N	Railway Buildings	1938
106Z	411	N	Railway Sidings	1989
107Z	411	N	Railway Sidings	1994
108X	412	N	Railway Building	1938
109AA	412	N	Railway Sidings	1977
110AA	412	N	Railway Sidings	1971
111W	413	N	Engine Shed	1938
112CR	416	NW	Garage	1971
113W	418	N	Engine Shed	1933
114AB	423	N	Railway Building	1898
115AC	430	N	Railway Building	1938
116AB	430	N	Railway Building	1913
117	433	N	Railway Building	1898
118AD	435	NE	Railway Building	1898
119AD	443	NE	Railway Building	1913
120AD	443	NE	Railway Building	1938
121AE	443	N	Railway Building	1938

122AE	444	N	Railway Building	1938
123AE	444	N	Railway Building	1913
124AF	450	NW	Railway Building	1913
125AF	450	NW	Railway Building	1938
126V	451	N	Railway Station	1989
127AK	452	N	Railway Works	1898
128AG	462	N	Railway Station	1933
129V	467	N	Railway Station	1977
130V	467	N	Railway Station	1971
131	469	N	Railway Sidings	1933
132	469	SE	Nursery	1898
133AG	470	N	Railway Station	1913
134V	470	N	Railway Station	1938
135AJ	470	E	Gas Works	1898
136CV	471	W	Smithy	1913
137V	471	N	Railway Station	1938
138V	473	NW	Railway Station	1898
139CS	475	NW	Bus Station	1994
140AH	476	N	Unspecified Depot	1989
141AH	476	N	Unspecified Depot	1994
142AI	478	N	Unspecified Works	1971
143AI	478	N	Unspecified Works	1962
144AI	478	N	Unspecified Works	1977
145AJ	479	E	Sawmills	1913
146AK	479	N	Railway Works	1938
147AL	479	N	Goods Shed	1938
148AL	479	N	Railway Building	1898
149AJ	480	E	Unspecified Commercial/Industrial	1938
150AK	480	N	Railway Works	1913
151AJ	480	E	Unspecified Commercial/Industrial	1933
152AM	481	N	Railway Building	1989
153AM	481	N	Railway Building	1994
154AK	482	N	Unspecified Works	1938
155AN	483	SW	Unspecified Commercial/Industrial	1933
156AL	484	N	Goods Shed	1938
157AL	485	N	Railway Building	1962
158AL	485	N	Railway Building	1971
159AL	486	N	Goods Shed	1977
160AL	486	N	Goods Shed	1913
161	486	SW	Railway Sidings	1938
162	486	SW	Railway Sidings	1913
163AM	488	N	Railway Building	1933
164AL	488	N	Goods Shed	1933
165AN	494	SW	Railway Building	1938

166	496	SW	Railway Sidings	1933
167	496	SW	Railway Sidings	1938

1.2 Additional Information – Historical Tank Database

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

Records of historical tanks within 500m of the search boundary: 122

ID	Distance (m)	Direction	Use	Date
168AO	70	NE	Unspecified Tank	1988
169AO	72	NE	Unspecified Tank	1997
170AP	95	NW	Tank or Trough	1879
171AP	95	NW	Tank or Trough	1879
172AQ	116	NE	Unspecified Tank	1979
173AQ	116	NE	Unspecified Tank	1988
174AQ	116	NE	Unspecified Tank	1968
175AQ	116	NE	Unspecified Tank	1988
176AQ	117	NE	Unspecified Tank	1997
177AR	131	SW	Tanks	1879
178AR	131	SW	Tanks	1879
179AS	131	N	Pump and Tank	1879
180AS	132	N	Pump and Tank	1879
181J	146	SW	Gas Works	1879
182AT	147	S	Unspecified Tank	1956
183AT	148	S	Unspecified Tank	1957
184AT	148	S	Unspecified Tank	1958
185J	148	W	Gas Works	1879
186J	148	W	Gas Works	1879
187J	149	SW	Gas Works	1912
188J	149	SW	Gas Works	1900
189G	152	SW	Tanks	1979
190G	153	SW	Tanks	1957
191G	153	SW	Tanks	1958
192G	154	SW	Tanks	1962
193G	154	SW	Tanks	1956
194G	154	SW	Tanks	1968
195G	155	SW	Tanks	1979
196G	156	SW	Tanks	1968
197G	156	SW	Tanks	1962
198G	157	SW	Gasometer	1879
199J	159	SW	Gasometer	1879
200J	159	SW	Gasometer	1879

201J	160	SW	Gasometer	1912
202J	160	SW	Gasometer	1900
203AU	179	S	Unspecified Tank	1979
204AU	179	S	Unspecified Tank	1968
205J	186	SW	Gasometer	1879
206J	187	SW	Gasometer	1879
207J	187	SW	Gasometer	1879
208G	188	SW	Unspecified Tank	1956
209G	188	SW	Unspecified Tank	1957
210G	188	SW	Unspecified Tank	1958
211J	188	SW	Tanks	1979
212J	188	SW	Gasometer	1900
213J	189	SW	Tanks	1957
214J	189	SW	Tanks	1958
215J	189	SW	Tanks	1968
216J	189	SW	Tanks	1962
217J	189	SW	Tanks	1956
218AV	227	SW	Unspecified Tank	1879
219AV	227	SW	Unspecified Tank	1900
220AW	264	S	Tanks	1968
221AW	264	S	Tanks	1962
222AX	286	SW	Tank or Trough	1879
223AX	286	SW	Tank or Trough	1879
224AX	286	SW	Tank or Trough	1879
225AY	330	E	Tanks	1989
226AY	331	E	Unspecified Tank	1991
227AZ	338	N	Tank or Trough	1879
228AZ	338	N	Tank or Trough	1879
229AZ	338	N	Tank or Trough	1879
230BA	343	SE	Unspecified Tank	1879
231BA	343	SE	Unspecified Tank	1879
232	345	W	Unspecified Tank	1931
233BB	350	S	Unspecified Tank	1969
234BB	350	S	Unspecified Tank	1982
235BB	350	S	Unspecified Tank	1968
236L	368	S	Unspecified Tank	1912
237L	368	S	Unspecified Tank	1900
238BC	380	S	Unspecified Tank	1968
239BC	380	S	Unspecified Tank	1982
240BC	380	S	Unspecified Tank	1969
241BC	380	S	Unspecified Tank	1979
242BC	380	S	Unspecified Tank	1982
243BD	382	N	Unspecified Tank	1931
244BE	385	W	Unspecified Tank	1970
245BE	385	W	Unspecified Tank	1980
246BD	385	N	Unspecified Tank	1962

247BD	385	N	Unspecified Tank	1956
248BD	386	N	Unspecified Tank	1957
249BD	386	N	Unspecified Tank	1958
250BF	397	SE	Unspecified Tank	1989
251BF	398	SE	Unspecified Tank	1991
252CB	398	NW	Unspecified Tank	1988
253CG	415	SE	Unspecified Tank	1991
254BG	433	NE	Unspecified Tank	1956
255BG	433	NE	Unspecified Tank	1956
256AD	439	NE	Unspecified Tank	1900
257AD	439	NE	Unspecified Tank	1879
258BH	439	W	Unspecified Tank	1970
259AD	439	NE	Unspecified Tank	1879
260BH	439	W	Unspecified Tank	1980
261BI	441	NW	Tank or Trough	1879
262BI	441	NW	Tank or Trough	1879
263BI	441	NW	Tank or Trough	1879
264AD	442	NE	Unspecified Tank	1879
265AD	442	NE	Unspecified Tank	1956
266AD	442	NE	Unspecified Tank	1962
267AD	442	NE	Unspecified Tank	1931
268AD	442	NE	Unspecified Tank	1912
269AD	443	NE	Unspecified Tank	1958
270AD	443	NE	Unspecified Tank	1957
271BJ	460	E	Gas Works	1879
272BJ	460	E	Gas Works	1879
273BJ	462	E	Gas Works	1879
274BK	462	SW	Unspecified Tank	1980
275BK	463	SW	Unspecified Tank	1970
276BL	463	SW	Unspecified Tank	1980
277BK	463	SW	Unspecified Tank	1988
278BL	463	SW	Unspecified Tank	1970
279BM	474	SE	Unspecified Tank	1879
280BM	474	SE	Unspecified Tank	1879
281BN	493	N	Unspecified Tank	1912
282BN	493	N	Unspecified Tank	1931
283BN	494	N	Unspecified Tank	1962
284BN	494	N	Unspecified Tank	1956
285BN	495	N	Unspecified Tank	1958
286BN	495	N	Unspecified Tank	1957
287	497	E	Unspecified Tank	1879
288BO	497	N	Unspecified Tank	1986
289BO	498	N	Unspecified Tank	1971

1.3 Additional Information – Historical Energy Features Database

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

Records of historical energy features within 500m of the search boundary: 124

ID	Distance (m)	Direction	Use	Date
290BP	0	On Site	Electricity Substation	1988
291BP	0	On Site	Electricity Substation	1997
292BP	0	On Site	Electricity Substation	1988
293BQ	31	S	Electricity Substation	1997
294BQ	32	S	Electricity Substation	1988
295BR	63	NE	Electricity Substation	1988
296BR	63	NE	Electricity Substation	1968
297AO	64	NE	Electricity Substation	1997
298BR	64	NE	Electricity Substation	1979
299BR	65	NE	Electricity Substation	1988
300BS	70	N	Electricity Substation	1988
301BS	72	N	Electricity Substation	1988
302BS	73	N	Electricity Substation	1997
303BT	115	SE	Electricity Substation	1979
304BT	116	SE	Electricity Substation	1968
305BT	116	SE	Electricity Substation	1988
306BU	127	W	Electricity Substation	1988
307BU	127	W	Electricity Substation	1979
308BU	128	W	Electricity Substation	1997
309BU	128	W	Electricity Substation	1968
310BU	128	W	Electricity Substation	1988
311AS	130	N	Electricity Substation	1993
312AS	130	N	Electricity Substation	1986
313AS	131	N	Electricity Substation	1988
314AS	131	N	Electricity Substation	1979
315AS	131	N	Electricity Substation	1988
316G	146	SW	Gas Works	1879
317G	148	W	Gas Works	1879
318G	148	W	Gas Works	1879
319G	149	SW	Gas Works	1900
320G	149	SW	Gas Works	1912
321AT	153	S	Electricity Substation	1997
322G	157	SW	Gasometer	1879
323G	159	SW	Gasometer	1879
324G	159	SW	Gasometer	1879
325G	160	SW	Gasometer	1912
326G	160	SW	Gasometer	1900

327C	165	SW	Electricity Substation	1997
328C	165	SW	Electricity Substation	1988
329C	165	SW	Electricity Substation	1988
330AU	168	S	Electricity Substation	1988
331AU	169	S	Electricity Substation	1988
332C	170	SW	Electricity Substation	1979
333AU	170	S	Electricity Substation	1997
334J	174	SW	Electricity Substation	1979
335J	176	SW	Electricity Substation	1968
336BV	181	SW	Electricity Substation	1979
337BV	183	SW	Electricity Substation	1968
338J	186	SW	Gasometer	1879
339J	187	SW	Gasometer	1879
340J	187	SW	Gasometer	1879
341J	188	SW	Gasometer	1900
342	218	E	Electricity Substation	1971
343BW	255	N	Electricity Substation	1993
344BW	255	N	Electricity Substation	1986
345BW	256	N	Electricity Substation	1971
346BW	257	N	Electricity Substation	1988
347BW	257	N	Electricity Substation	1979
348BW	257	N	Electricity Substation	1988
349BX	306	SE	Electricity Substation	1997
350BX	307	SE	Electricity Substation	1988
351BY	316	NW	Electricity Substation	1986
352BY	316	NW	Electricity Substation	1969
353BY	316	NW	Electricity Substation	1996
354BY	316	NW	Electricity Substation	1994
355BY	317	NW	Electricity Substation	1993
356BY	317	NW	Electricity Substation	1988
357BY	317	NW	Electricity Substation	1979
358BZ	345	SW	Electricity Substation	1982
359BB	350	S	Electricity Substation	1979
360BZ	358	SW	Electricity Substation	1982
361CA	364	NE	Electricity Substation	1989
362CA	365	NE	Electricity Substation	1971
363CA	365	NE	Electricity Substation	1956
364CA	365	NE	Electricity Substation	1956
365CB	379	N	Electricity Substation	1971
366CB	379	N	Electricity Substation	1979
367CB	380	N	Electricity Substation	1986
368CC	380	NW	Electricity Substation	1986
369CC	380	NW	Electricity Substation	1996
370CC	380	NW	Electricity Substation	1994
371CC	381	NW	Electricity Substation	1993
372CC	381	NW	Electricity Substation	1988

373CD	385	SW	Electricity Substation	1982
374CD	395	SW	Electricity Substation	1982
375CD	395	SW	Electricity Substation	1979
376CE	397	E	Electricity Substation	1989
377CE	397	E	Electricity Substations	1991
378CE	398	E	Electricity Substation	1971
379CE	398	E	Electricity Substation	1956
380CE	398	E	Electricity Substation	1956
381CF	402	W	Electricity Substation	1980
382CF	403	W	Electricity Substation	1988
383CG	409	SE	Electricity Substation	1989
384CG	411	SE	Electricity Substation	1991
385	414	N	Electricity Substation	1971
386	422	E	Electricity Substation	1971
387CF	429	W	Electricity Substation	1970
388Y	432	NE	Electricity Substation	1988
389Y	432	NE	Electricity Substation	1990
390CH	447	NE	Electricity Substation	1956
391CH	448	NE	Electricity Substation	1956
392CH	448	NE	Electricity Substation	1973
393CI	460	W	Electricity Substation	1994
394CI	460	W	Electricity Substation	1996
395BJ	460	E	Gas Works	1879
396BJ	460	E	Gas Works	1879
397CI	462	W	Electricity Substation	1993
398BJ	462	E	Gas Works	1879
399CJ	465	W	Electricity Substation	1986
400CJ	465	W	Electricity Substation	1969
401CI	465	W	Electricity Substation	1988
402CI	465	W	Electricity Substation	1979
403CI	465	W	Electricity Substation	1993
404CJ	467	W	Electricity Substation	1996
405CJ	467	W	Electricity Substation	1994
406CK	472	S	Electricity Substation	1968
407CK	473	S	Electricity Substation	1969
408CK	477	S	Electricity Substation	1982
409CK	477	S	Electricity Substation	1982
410CK	477	S	Electricity Substation	1979
411AM	481	N	Electricity Substation	1993
412AM	485	N	Electricity Substation	1986
413AM	485	N	Electricity Substation	1979

1.4 Additional Information – Historical Petrol and Fuel Site Database

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

Records of historical petrol stations and fuel sites within 500m of the search boundary: 3

ID	Distance (m)	Direction	Use	Date
414AF	397	NW	Filling Station	1979
415CL	489	S	Filling Station	1968
416CL	489	S	Filling Station	1969

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

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

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 44

ID	Distance (m)	Direction	Use	Date
417	30	E	Garage	1968
418CM	32	S	Garage	1956
419CM	32	S	Garage	1962
420CM	32	S	Garage	1957
421CM	32	S	Garage	1958
422CM	33	S	Garage	1968
423CN	70	E	Garage	1968
424CN	70	E	Garage	1962
425CN	70	E	Garage	1956
426CN	71	E	Garage	1957
427CN	71	E	Garage	1958
428CO	141	S	Police Garage	1979
429CO	142	S	Police Garage	1968
430	159	SE	Garage	1988
431CP	293	NW	Garage	1971
432CP	293	NW	Garage	1956
433CP	293	NW	Garage	1962
434CP	293	NW	Garage	1957
435CP	293	NW	Garage	1958
436CD	384	SW	Garage	1959
437CD	385	SW	Garage	1957
438CQ	396	NW	Garage	1957
439CQ	396	NW	Garage	1969
440CQ	396	NW	Garage	1962
441CQ	396	NW	Garage	1958
442CQ	396	NW	Garage	1957
443CD	402	SW	Garage	1957

444CR	412	NW	Garage	1971
445CS	421	NW	Garage	1957
446CS	422	NW	Garage	1957
447CS	422	NW	Garage	1958
448CT	422	NW	Garage	1962
449CT	422	NW	Garage	1969
450CU	428	S	Garage	1957
451CU	430	S	Garage	1959
452CU	432	S	Garage	1957
453CV	476	W	Garage	1958
454CV	476	W	Garage	1957
455CV	477	W	Garage	1957
456CV	477	W	Garage	1962
457CL	488	S	Garage	1959
458CL	489	S	Garage	1957
459AN	489	SW	Depot and Destructor Works	1957
460CL	498	S	Garage	1957

1.6 Historical military sites

Certain military installations were not noted on historic mapping for security reasons. Whilst not all military land is necessarily of concern, Groundsure has researched and digitised a number of Ordnance Factories and other military industrial features (e.g. Ordnance Depots, Munitions Testing Grounds) which may be of contaminative concern. This research was drawn from a number of different sources, and should not be regarded as a definitive or exhaustive database of potentially contaminative military installations. The boundaries of sites within this database have been estimated from the best evidence available to Groundsure at the time of compilation.

Records of historical military sites within 500m of the search boundary: 0

Database searched and no data found.

1.7 Potentially Infilled Land

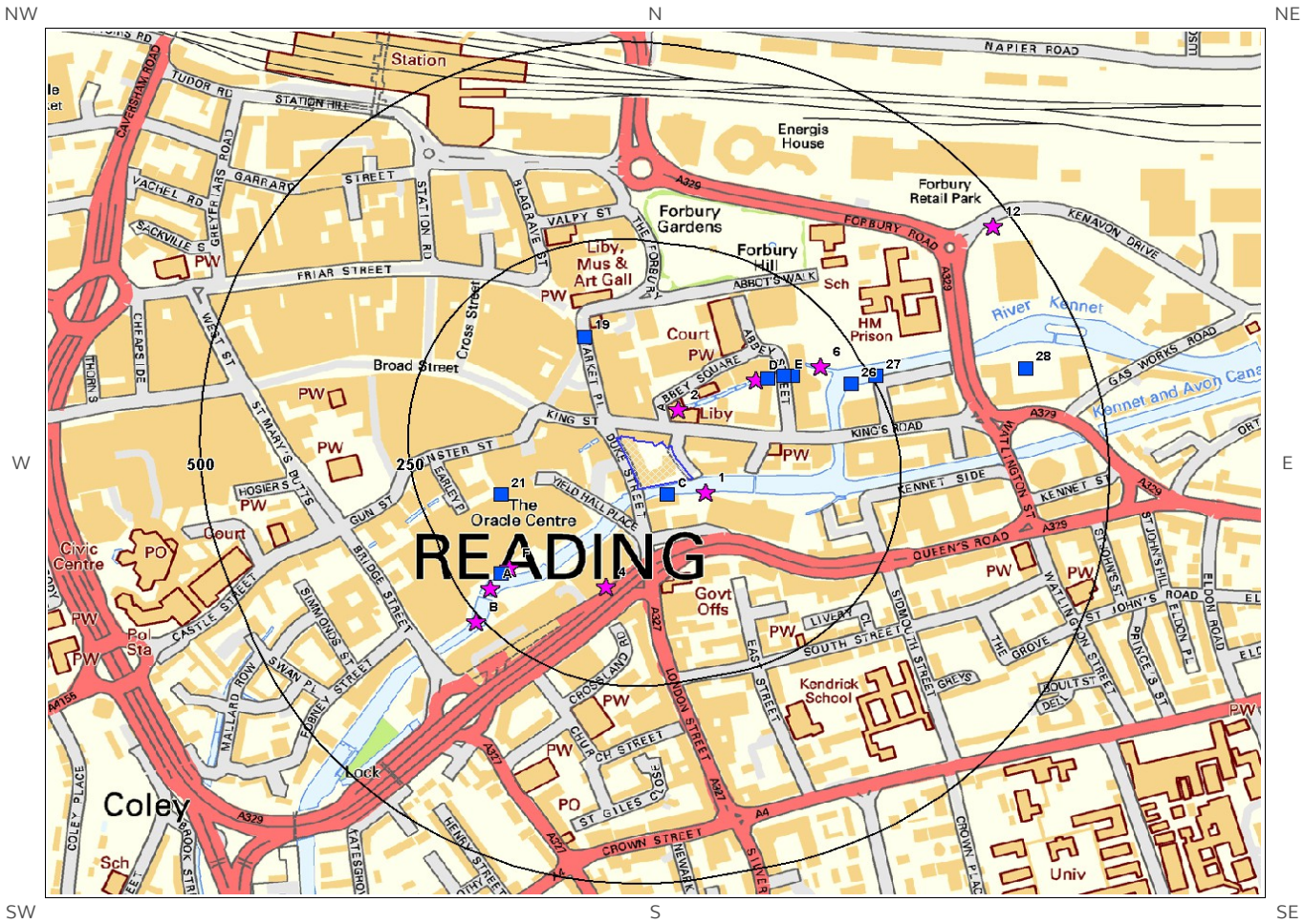
Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 15

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

ID	Distance(m)	Direction	Use	Date
461	0	On Site	Canal	1938
462	0	On Site	Canal	1933
463	1	S	Canal	1938
464A	22	E	Unspecified Wharf	1938
465A	23	E	Unspecified Wharf	1994
466A	24	E	Unspecified Wharf	1938
467A	24	E	Unspecified Wharf	1938
468E	83	E	Unspecified Disused Wharf	1933

469CW	103	E	Unspecified Wharf	1989
470E	137	E	Unspecified Wharf	1938
471E	137	E	Unspecified Wharf	1938
472E	137	E	Unspecified Wharf	1938
473CX	154	E	Canal	1994
474CX	154	E	Canal	1989
475CY	286	N	Unspecified Heap	1933

2. Environmental Permits, Incidents and Registers Map



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Site Outline

250 — 500 — Search Buffers (m)

Recorded Pollution Incident

Dangerous Substances (List 1)

Dangerous Substances (List 2)

Water Industry Referrals

Licenced Discharge Consents

Red List Discharge Consents

RAS 3 & 4 Authorisations

Part A(1) Authorised Processes and Historic IPC Authorisations

Part A(2) and Part B Authorised Processes

COMAH / NIHHS Sites

Sites Determined as Contaminated Land

Hazardous Substance Consents and Enforcements

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

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

16

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

ID	Distance (m)	Direction	NGR	Details	
13C	14	S	471800 173300	Address: PREMISES, KINGS RD, READING, BERKS, PREMISES, KINGS RD, READING, BER, KS Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCP.0296 Permit Version: 1	Receiving Water: R KENNET Status: REVOKED - UNSPECIFIED Issue date: 12/02/1964 Effective Date: 12-Feb-1964 Revocation Date: 04/02/1986
14C	14	S	471800 173300	Address: PREMISES, KINGS RD, READING, BERKS, PREMISES, KINGS RD, READING, BER, KS Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCP.0295 Permit Version: 1	Receiving Water: R KENNET Status: REVOKED - UNSPECIFIED Issue date: 12/02/1964 Effective Date: 12-Feb-1964 Revocation Date: 04/02/1986
15C	14	S	471800 173300	Address: FACTORY AT READING, BERKS, FACTORY AT READING, BERKS Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCR.0508 Permit Version: 1	Receiving Water: KENNET Status: REVOKED - UNSPECIFIED Issue date: 22/03/1962 Effective Date: 22-Mar-1962 Revocation Date: 03/04/1987
16C	14	S	471800 173300	Address: PREMISES, KINGS RD, READING, BERKS, PREMISES, KINGS RD, READING, BER, KS Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCP.0298 Permit Version: 1	Receiving Water: R KENNET Status: REVOKED - UNSPECIFIED Issue date: 12/02/1964 Effective Date: 12-Feb-1964 Revocation Date: 04/02/1986
17C	14	S	471800 173300	Address: PREMISES, KINGS RD, READING, BERKS, PREMISES, KINGS RD, READING, BER, KS Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCP.0299 Permit Version: 1	Receiving Water: R KENNET Status: REVOKED - UNSPECIFIED Issue date: 12/02/1964 Effective Date: 12-Feb-1964 Revocation Date: 04/02/1986
18C	14	S	471800 173300	Address: PREMISES, KINGS RD, READING, BERKS, PREMISES, KINGS RD, READING, BER, KS	Receiving Water: R KENNET Status: REVOKED - UNSPECIFIED Issue date: 12/02/1964

ID	Distance (m)	Direction	NGR	Details	
				Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCP.0297 Permit Version: 1	Effective Date: 12-Feb-1964 Revocation Date: 04/02/1986
19	133	N	471700 173500	Address: FACTORY PREMISES, KINGS ROAD, READI, FACTORY PREMISES, KINGS ROAD, RE, ADING, BERKS Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCP.0294 Permit Version: 1	Receiving Water: R KENNET Status: REVOKED - UNSPECIFIED Issue date: 12/02/1964 Effective Date: 12-Feb-1964 Revocation Date: 04/02/1986
20D	143	NE	471920 173447	Address: DEWATERING WORKS SERV KINGS HOUSE, KINGS HOUSE, 33 KINGS ROAD, READING, BERKSHIRE, RG1 3BU Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: EPRDB3097AL Permit Version: 1	Receiving Water: HOLY BROOK Status: SURRENDERED UNDER EPR 2010 Issue date: 07/10/2015 Effective Date: 07-Oct-2015 Revocation Date: 21/02/2017
21	156	SW	471600 173300	Address: 17/23 KING STREET, READING, BERKSHI, 17/23 KING STREET, READING, BERK, SHIRE Effluent Type: MISCELLANEOUS DISCHARGES - UNSPECIFIED Permit Number: CTWC.3315 Permit Version: 1	Receiving Water: HOLY BROOK Status: REVOKED - UNSPECIFIED Issue date: 12/06/1989 Effective Date: 12-Jun-1989 Revocation Date: 27/06/1991
22E	161	NE	471940 173450	Address: ABBEY GARDENS, PHASE 1, READING, BE, ABBEY GARDENS, PHASE 1, READING, BERKS Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.0662 Permit Version: 1	Receiving Water: THE HOLY BROOK Status: REVOKED - UNSPECIFIED Issue date: 11/02/1986 Effective Date: 11-Feb-1986 Revocation Date: 19/03/1991
23E	169	NE	471950 173450	Address: THE ABBEY GARDENS DEVELOPMENT, PHAS, THE ABBEY GARDENS DEVELOPMENT, P, HASE II, READING BERKS Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.0564 Permit Version: 1	Receiving Water: HOLY BROOK Status: REVOKED - UNSPECIFIED Issue date: 20/01/1986 Effective Date: 20-Jan-1986 Revocation Date: 11/07/1997
24E	169	NE	471950 173450	Address: THE ABBEY GARDENS DEVELOPMENT, PHAS, THE ABBEY GARDENS DEVELOPMENT, P, HASE II, READING BERKS Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.0563 Permit Version: 1	Receiving Water: HOLY BROOK Status: REVOKED - UNSPECIFIED Issue date: 20/01/1986 Effective Date: 20-Jan-1986 Revocation Date: 05/09/1997
25F	197	SW	471600 173200	Address: THE BREWERY, READING, BERKS, THE BREWERY, READING, BERKS Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCR.0211 Permit Version: 1	Receiving Water: KENNET Status: REVOKED - UNSPECIFIED Issue date: 19/12/1955 Effective Date: 19-Dec-1955 Revocation Date: 12/06/1990
26	224	NE	472020 173440	Address: ABBEY GARDEN DEVELOPMENT, PHASE III, ABBEY GARDEN DEVELOPMENT, PHASE, III, READING, BERKS Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.2738 Permit Version: 1	Receiving Water: RIVER KENNET Status: REVOKED - UNSPECIFIED Issue date: 15/08/1988 Effective Date: 15-Aug-1988 Revocation Date: 25/02/1991
27	255	NE	472050 173450	Address: BLAKES COTTAGES, READING, BLAKES COTTAGES, READING Effluent Type: MISCELLANEOUS	Receiving Water: RIVER KENNET Status: REVOKED - UNSPECIFIED Issue date: 19/11/1985

ID	Distance (m)	Direction	NGR	Details	
				DISCHARGES - SURFACE WATER Permit Number: CTWC.0514 Permit Version: 1	Effective Date: 19-Nov-1985 Revocation Date: 25/04/1991
28	423	E	472230 173460	Address: NABISCO BRANDS LTD. KINGS ROAD READ, NABISCO BRANDS LTD. KINGS ROAD R, EADING Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.0435 Permit Version: 1	Receiving Water: RIVER KENNET Status: REVOKED - UNSPECIFIED Issue date: 18/10/1985 Effective Date: 18-Oct-1985 Revocation Date: 08/05/1991

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

0

Database searched and no data found.

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

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

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

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

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

12

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

ID	Distance (m)	Direction	NGR	Details	
1	22	SE	471845.0 173303.0	Incident Date: 18-Jun-2003 Incident Identification: 166999.0 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
2	44	NE	471812.0 173408.0	Incident Date: 28-Jun-2005 Incident Identification: 324802.0	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact)

ID	Distance (m)	Direction	NGR	Details	
				Pollutant: Oils and Fuel Pollutant Description: Diesel	Air Impact: Category 4 (No Impact)
3D	130	NE	471905.0 173445.0	Incident Date: 15-Jul-2002 Incident Identification: 91618.0 Pollutant: Specific Waste Materials Pollutant Description: Other Specific Waste Material	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
4	130	S	471725.0 173184.0	Incident Date: 11-Oct-2003 Incident Identification: 195650.0 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
5F	186	SW	471609.0 173207.0	Incident Date: 19-Aug-2001 Incident Identification: 25215.0 Pollutant: Organic Chemicals/Products Pollutant Description: Hydrocarbons	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
6	204	NE	471983.0 173463.0	Incident Date: 21-May-2003 Incident Identification: 159849.0 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
7A	219	SW	471587.0 173181.0	Incident Date: 04-Oct-2001 Incident Identification: 34522.0 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
8A	219	SW	471587.0 173181.0	Incident Date: 04-Oct-2001 Incident Identification: 34522.0 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
9B	258	SW	471570.0 173139.0	Incident Date: 17-Aug-2001 Incident Identification: 24937.0 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
10B	258	SW	471570.0 173139.0	Incident Date: 17-Aug-2001 Incident Identification: 24937.0 Pollutant: Organic Chemicals/Products Pollutant Description: Solvents	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
11B	258	SW	471570.0 173139.0	Incident Date: 17-Aug-2001 Incident Identification: 24937.0 Pollutant: Organic Chemicals/Products:Pollutant Not Identified Pollutant Description: Solvents:Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
12	475	NE	472190.0 173640.0	Incident Date: 01-Nov-2002 Incident Identification: 118072.0 Pollutant: Oils and Fuel Pollutant Description: Gas and Fuel Oils	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

0

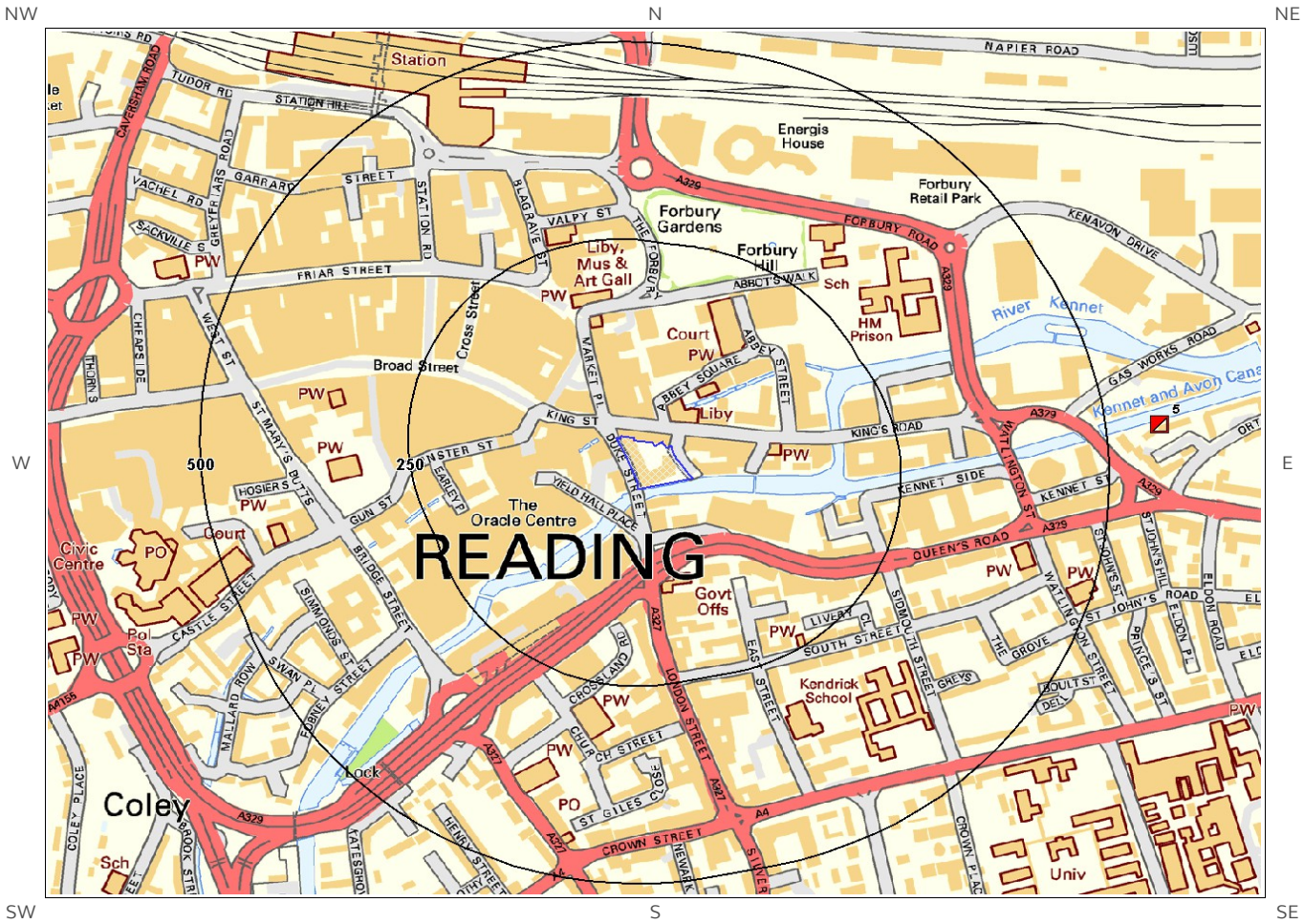
Database searched and no data found.

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

Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site	0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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Site Outline

250 — 500 — Search Buffers (m)

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

4

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

ID	Distance (m)	Direction	NGR	Details	
Not shown	1025	NE		Site Address: Napier Road, Reading, Berkshire Waste Licence: - Site Reference: TP0266, RDG3 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	1242	S		Site Address: Waterloo Meadows, Reading, Berkshire Waste Licence: - Site Reference: TP0154, RDG8 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	1317	NW		Site Address: Richfield Avenue, Reading, Berkshire Waste Licence: - Site Reference: RDG11, TP0122 Waste Type: Commercial, Household, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: 31-Dec-1970 Last Recorded: 31-Dec-1979
Not shown	1365	NE		Site Address: Deans Farm, Redlands Pit, Reading, Caversham, Berkshire Waste Licence: Yes Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 01-Jun-1992 Licence Surrendered: 13-Apr-2010 Licence Holder Address: Howbery Park, Wallingford, Oxfordshire Operator: Deans Farm Licence Holder: Deans Farm First Recorded: - Last Recorded: -

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

0

Database searched and no data found.

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

0

Database searched and no data found.

3.2 Other Waste Sites

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

0

Database searched and no data found.

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

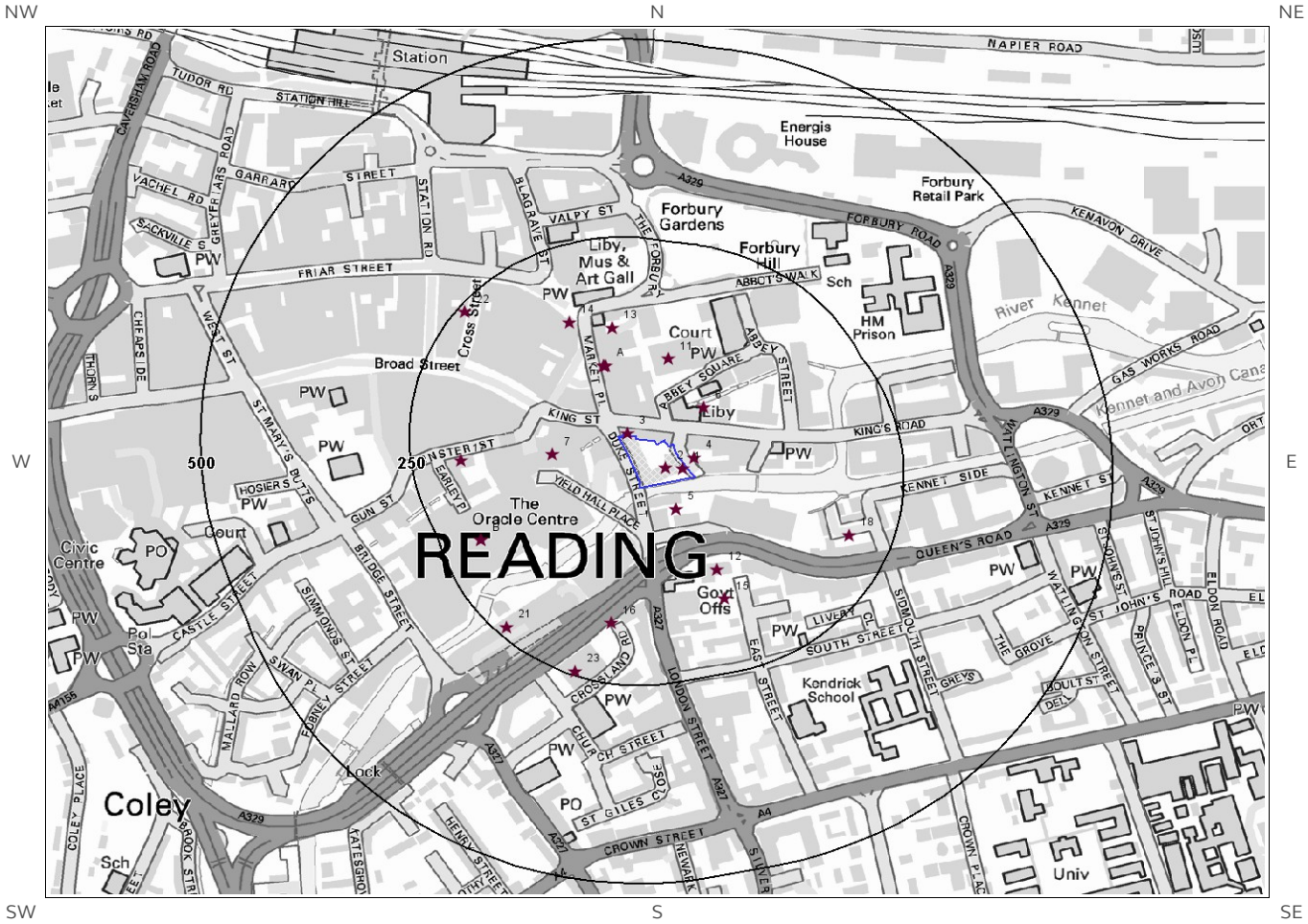
7

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

ID	Distance (m)	Direction	NGR	Details	
5	564	E	472390 173390	Site Address: Omega Park, Alton, Hampshire, GU34 2QE Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HOP003 EPR reference: - Operator: Hopkins Recycling Ltd Waste Management licence No: 83406 Annual Tonnage: 4910.0	Issue Date: 15/10/2002 Effective Date: - Modified: 17/12/2004 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Alton House Waste Recycling Centre Correspondence Address: Hopkins Recycling Limited, Unit 10, Bridge Farm, Curbridge, Botley, Southampton, Hampshire, SO30 2HB
Not shown	1265	NE	472833 174100	Site Address: Environment Agency West Area_____, Deans Farm, Redlands Pit, Caversham, Reading, Berkshire, RG4 5JZ Type: Landfill taking other wastes Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: EAW001	Issue Date: 01/06/1992 Effective Date: - Modified: - Surrendered Date: Apr 13 2010 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Deans Farm

ID	Distance (m)	Direction	NGR	Details	
				EPR reference: EA/EPR/CP3494LR/S001 Operator: Environment Agency Waste Management licence No: 86148 Annual Tonnage: 0.0	Correspondence Address: -
Not shown	1265	NE	472833 174100	Site Address: Environment Agency West Area_____, Deans Farm, Redlands Pit, Caversham, Reading, Berks, RG4 5JZ Type: Landfill taking other wastes Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: EAW001 EPR reference: - Operator: Environment Agency Waste Management licence No: 86148 Annual Tonnage: 400.0	Issue Date: 01/06/1992 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Closure Site Name: Deans Farm Correspondence Address: Environment Agency, Isis House, Howbery Park, Wallingford, Oxon, 0X10 8BD
Not shown	1358	W	470400 173600	Site Address: E.G.W Carter, 54, Gower Street, Reading, Berkshire, RG1 7PE Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CAR001 EPR reference: EA/EPR/LP3699EF/S004 Operator: E G W Carter Waste Management licence No: 86001 Annual Tonnage: 9322.0	Issue Date: 19/03/1996 Effective Date: - Modified: - Surrendered Date: Jul 23 1999 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: E G W Carter Correspondence Address: -
Not shown	1474	NW	470497 174166	Site Address: 128, Cardiff Road, Reading, Berkshire, RG1 8PQ Type: 75kte Materials Recycling Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MCO003 EPR reference: EP3893VZ/A001 Operator: M Collard Waste Management Services Ltd Waste Management licence No: 101199 Annual Tonnage: 0.0	Issue Date: 11/02/2010 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: M Collard Waste Management Services Ltd Correspondence Address: -
Not shown	1475	NW	470500 174174	Site Address: 128, Cardiff Road, Reading, Berkshire, RG1 8PQ Type: 75kte HCI Waste TS + treatment Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MCO003 EPR reference: EA/EPR/EP3893VZ/V002 Operator: M Collard Waste Management Services Ltd Waste Management licence No: 101199 Annual Tonnage: 74999.0	Issue Date: 11/02/2010 Effective Date: - Modified: 09/07/2010 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: M Collard Waste Management Services Ltd Correspondence Address: -
Not shown	1475	NW	470500 174174	Site Address: 128, Cardiff Road, Reading, Berkshire, RG1 8PQ Type: 75kte HCI Waste TS + treatment Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RCO001 EPR reference: EA/EPR/EB3500KB/V002 Operator: R Collard Limited Waste Management licence No: 101199 Annual Tonnage: 74999.0	Issue Date: 11/02/2010 Effective Date: 11/10/2016 Modified: 16/10/2018 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: R Collard Limited Correspondence Address: -

4. Current Land Use Map



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Site Outline

Search Buffers (m)

Current Industrial Sites

Petrol & Fuel Sites

Electricity Transmission Cables

Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 23

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	0	On Site	Electricity Sub Station	471816 173332	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
2	0	On Site	Lincoln Maritime Ltd	471795 173333	21, Duke Street, Reading, Berkshire, RG1 4SA	Distribution and Haulage	Transport, Storage and Delivery
3	4	N	Biotechnica Services Ltd	471749 173377	4, Kings Road, Reading, Berkshire, RG1 3AA	Colours, Chemicals and Water Softeners and Supplies	Industrial Products
4	15	NE	Electricity Sub Station	471829 173346	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
5	34	S	Electricity Sub Station	471808 173281	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
6	59	NE	Electricity Sub Station	471841 173409	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
7	82	W	Electricity Sub Station	471660 173350	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
8A	91	N	Justice Fire & Security	471723 173462	6-8, Market Place, Reading, Berkshire, RG1 2EG	Electronic Equipment	Industrial Products
9A	91	N	Vertex Systems Engineering Ltd	471721 173462	6-8, Market Place, Reading, Berkshire, RG1 2EG	Civil Engineers	Engineering Services
10A	91	N	Paul Kaipah Estates	471721 173462	6-8, Market Place, Reading, Berkshire, RG1 2EG	Civil Engineers	Engineering Services
11	104	N	Dr Boilers	471798 173471	Davidson House Forbury Square, The Forbury, Reading, Berkshire, RG1 3EU	Industrial Repairs and Servicing	Repair and Servicing
12	118	S	Capita Medical Reporting	471857 173205	1 New Century Place, East Street, Reading, Berkshire, RG1 4ET	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products
13	137	N	Electricity Sub Station	471731 173510	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
14	156	N	Select Car Leasing	471680 173517	23-24, Market Place, Reading, Berkshire, RG1 2DE	Vehicle Hire and Rental	Hire Services
15	156	S	Electricity Sub Station	471866 173168	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
16	174	S	Electricity Sub Station	471730 173137	Berkshire, RG1	Electrical Features	Infrastructure and Facilities

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
17	191	W	carvalet.co.uk	471550 173342	41, Minster Street, Reading, Berkshire, RG1 2JB	Vehicle Cleaning Services	Personal, Consumer and Other Services
18	198	E	Electricity Sub Station	472015 173248	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
19B	202	W	Boots Hearing Care	471574 173242	Unit 5 Upper Ground Level, The Oracle Centre, Reading, Berkshire, RG1 2AH	Disability and Mobility Equipment	Consumer Products
20B	202	W	The Car Wash Co	471574 173242	Management Suite Riverside Level, The Oracle Centre, Reading, Berkshire, RG1 2AG	Vehicle Cleaning Services	Personal, Consumer and Other Services
21	238	SW	Shopmobility	471605 173132	Unit 4 Riverside Level, The Oracle Centre, Reading, Berkshire, RG1 2AG	Disability and Mobility Equipment	Consumer Products
22	242	NW	Expro	471555 173530	14, Cross Street, Reading, Berkshire, RG1 1SN	Special Purpose Machinery and Equipment	Industrial Products
23	244	S	Depot	471687 173076	Berkshire, RG1	Container and Storage	Transport, Storage and Delivery

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 0

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

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

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

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

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

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

5.2 Superficial Ground and Drift Geology

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

Lex Code	Description	Rock Type
ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
TPGR-XSV	TAPLOW GRAVEL MEMBER	SAND AND GRAVEL

5.3 Bedrock and Solid Geology

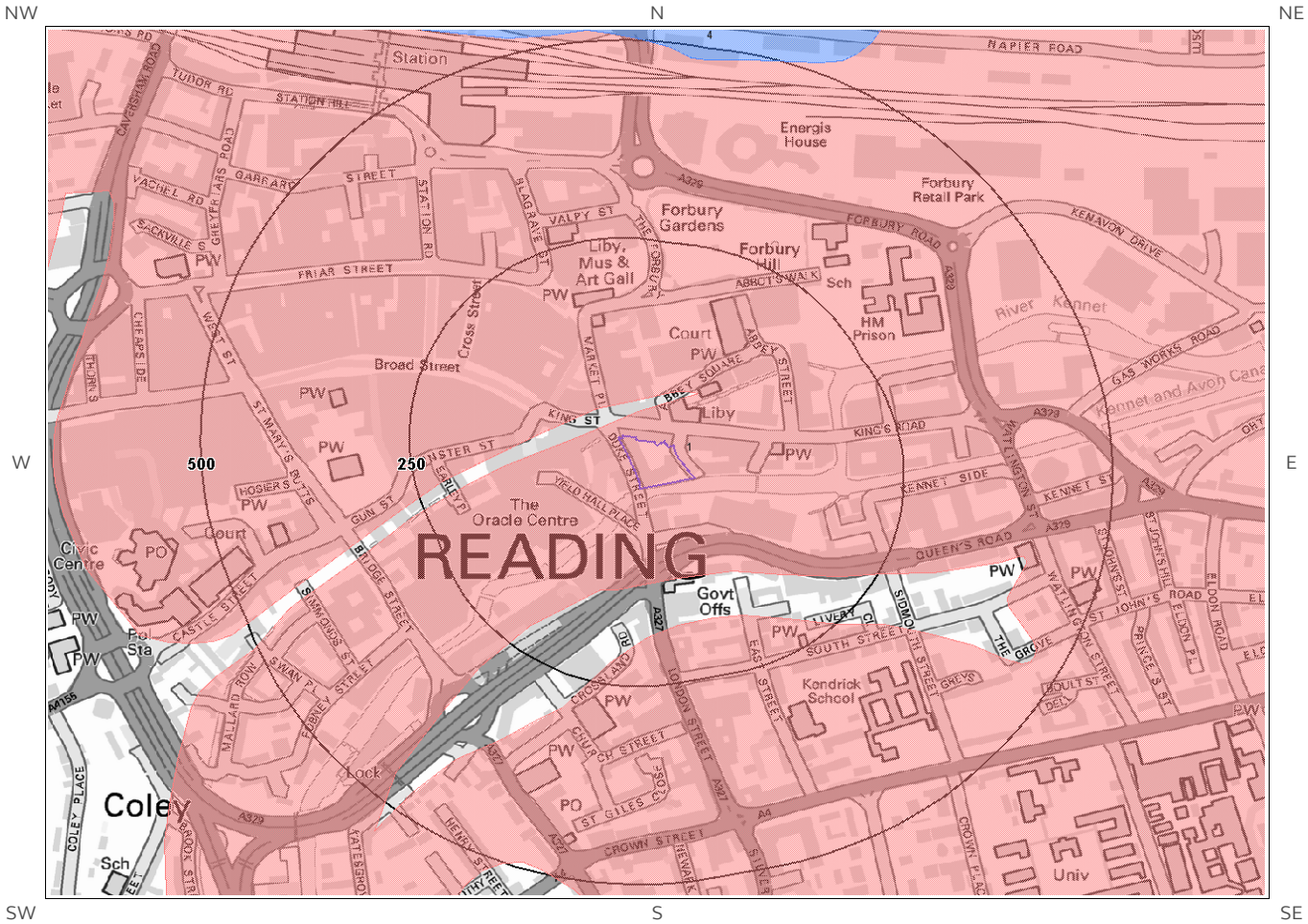
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
SNCK-CHLK	SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION (UNDIFFERENTIATED)	CHALK

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

6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



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Site Outline

250 Search Buffers (m)
500

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

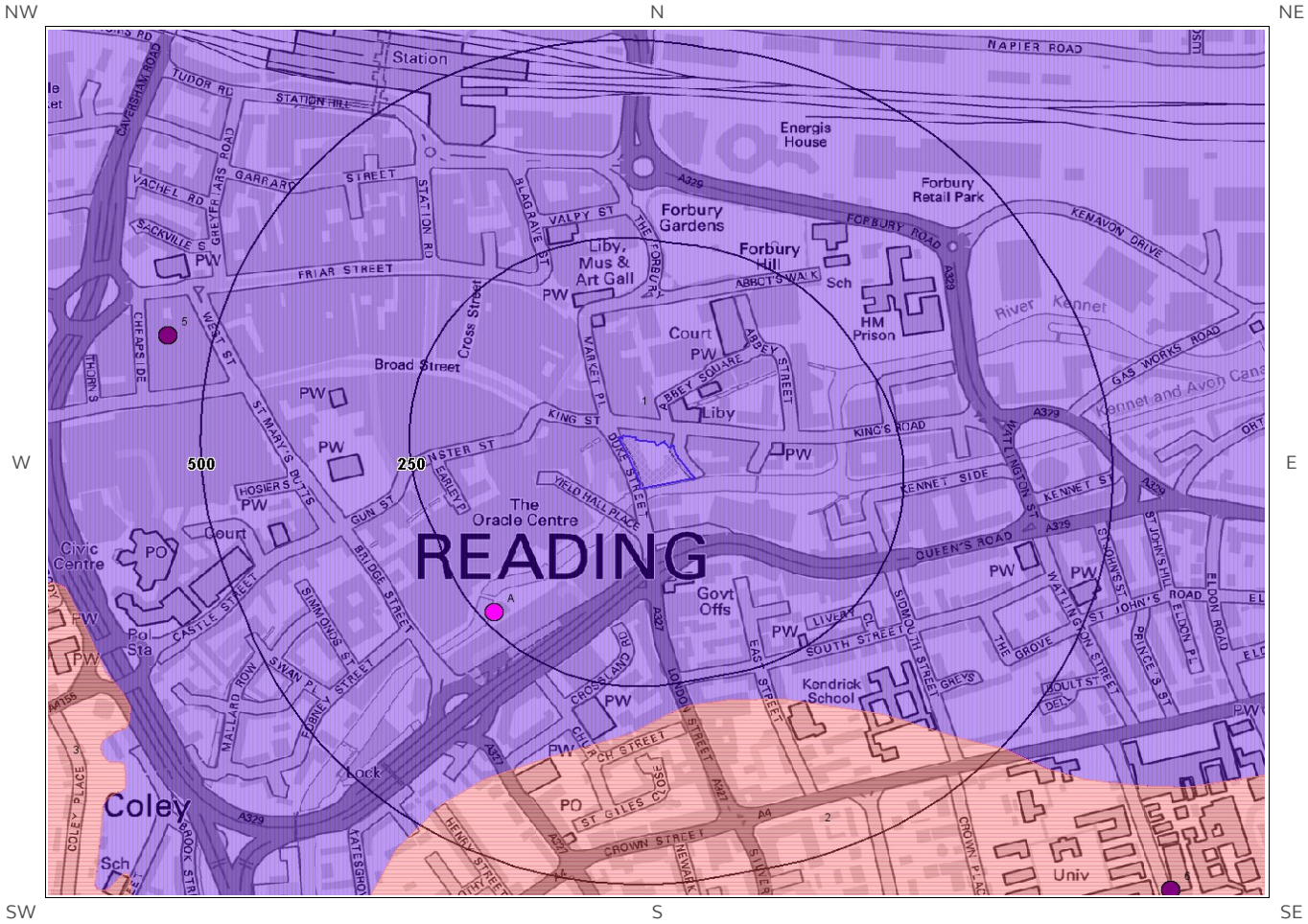
Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

6b. Aquifer Within Bedrock Geology and Abstraction Licences



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Site Outline

250 — 500 — Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

Secondary (B) Aquifer - Lower Permeability Layers

Groundwater Abstraction Licence

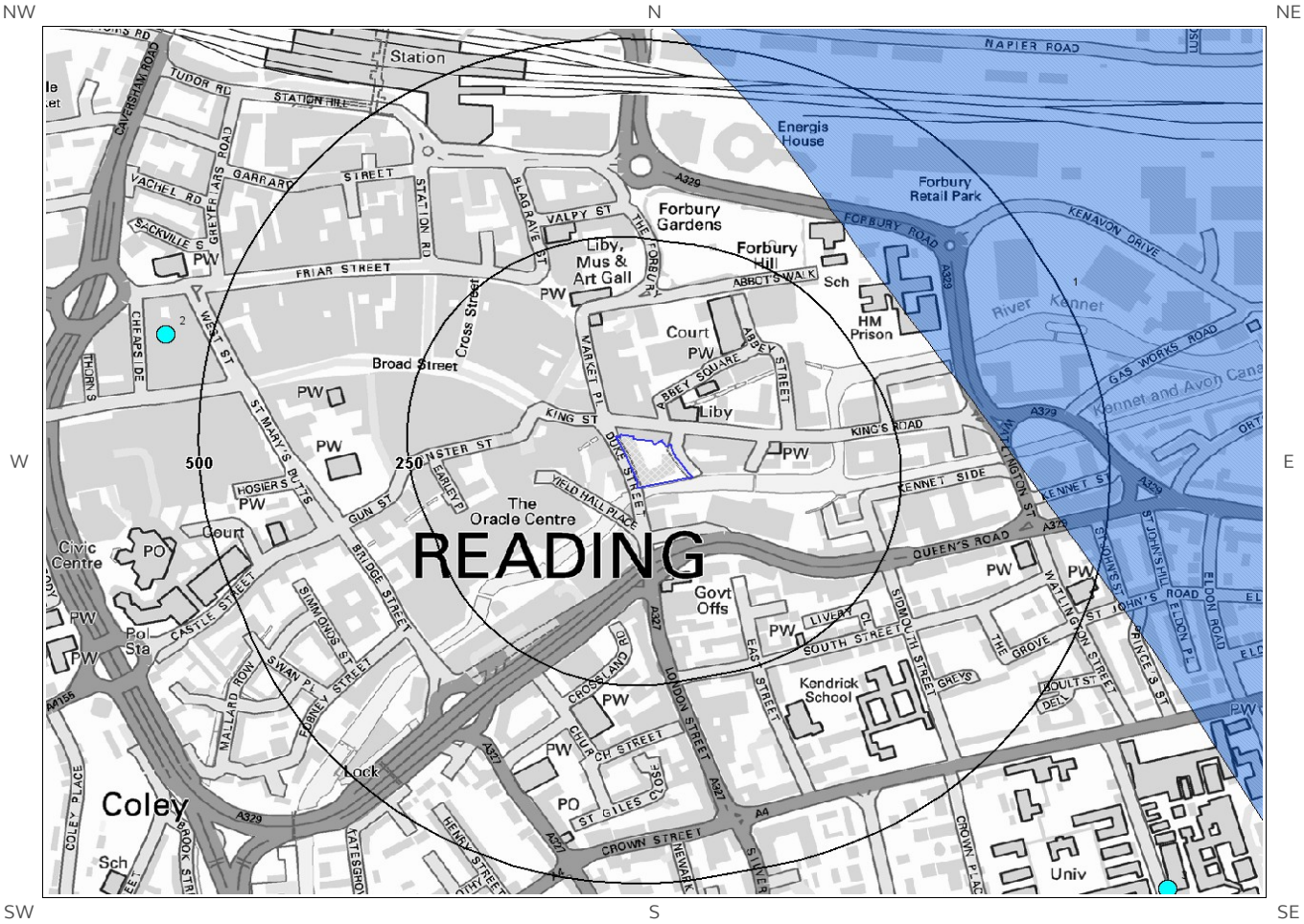
Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

Surface Water Abstraction Licence

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



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Site Outline

250
500
Search Buffers (m)

Source Protection Zone 1 - Inner Catchment

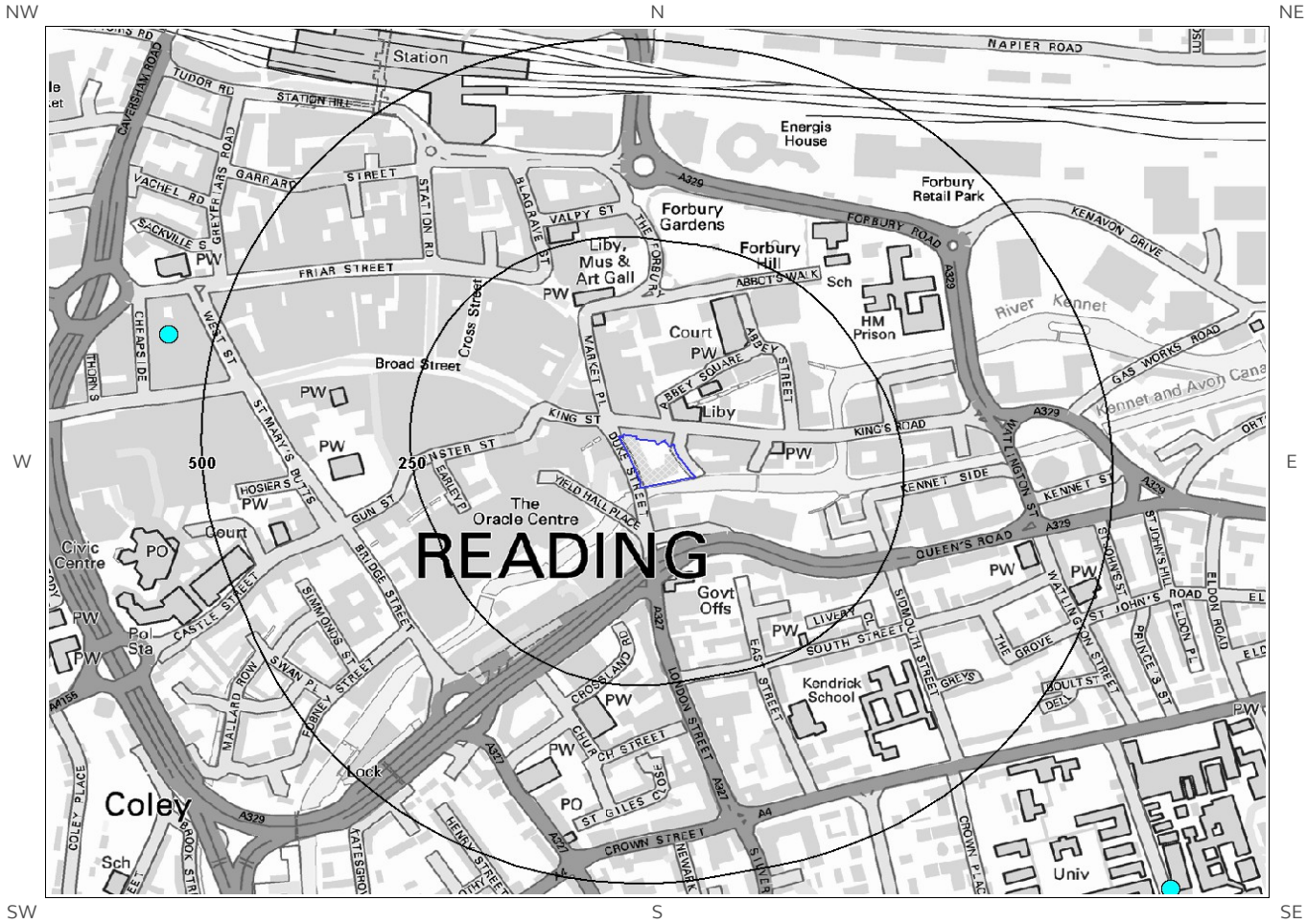
Source Protection Zone 2 - Outer Catchment

Source Protection Zone 3 - Total Catchment

Source Protection Zone 4 - Zone of Special Interest

Potable Water Abstraction Licence

6d. Hydrogeology – Source Protection Zones within confined aquifer



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Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2C - Outer Catchment within Confined Aquifer

Source Protection Zone 3C - Total Catchment within Confined Aquifer

Site Outline

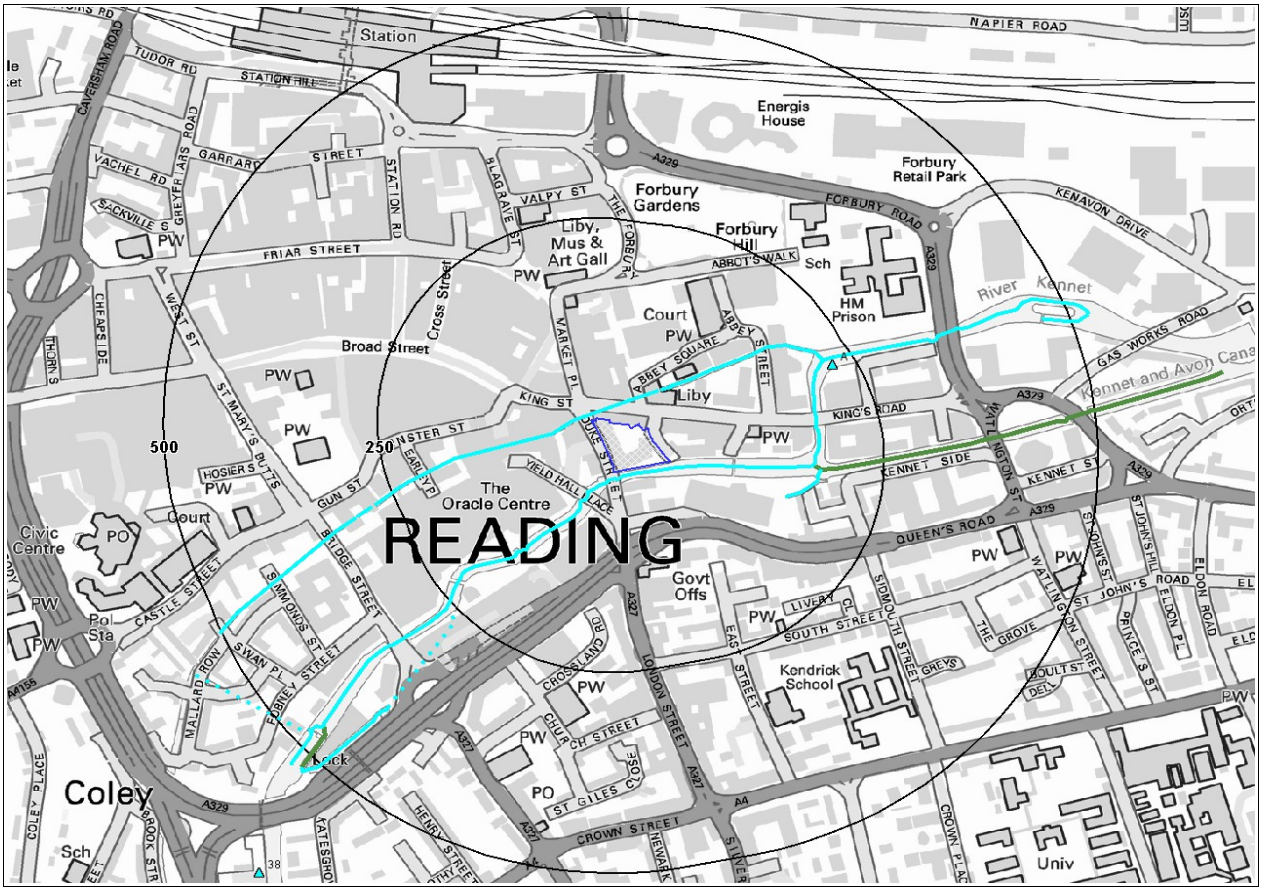
250
500
Search Buffers (m)

Potable Water Abstraction Licence

6e. Hydrology – Watercourse Network and River Quality

NW N NE

W E



SW S SE

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Site Outline

250 Search Buffers (m)
500

Watercourse type

- Tidal River
- Inland River
- Canal
- Lock or Flight of Locks
- Lake, Reservoir, or Marsh
- Foreshore
- Drain or Transfer

Watercourse level

- On ground surface
- Underground or Elevated
- Level unknown

General Quality Assessment: Biology

General Quality Assessment: Chemistry

6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property Yes

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

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

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	484	N	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

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

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

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	280	S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site — Identified

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

ID	Distance (m)	Direction	NGR	Details	
5	554	W	471200 173500	Status: Active Licence No: 28/39/23/0042 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: CHEAPSIDE, READING, BERKSHIRE Data Type: Point Name: PRIMARK STORES LIMITED	Annual Volume (m^3): 14933 Max Daily Volume (m^3): 40.91 Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date:
6	771	SE	472400 172800	Status: Active Licence No: 28/39/22/0521 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: ROYAL BERKSHIRE HOSPITAL Data Type: Point Name: ROYAL BERKSHIRE HOSPITAL	Annual Volume (m^3): 127750 Max Daily Volume (m^3): 350 Original Application No: - Original Start Date: 17/01/1992 Expiry Date: - Issue No: 100 Version Start Date: 17/01/1992 Version End Date:
Not shown	913	E	472700 173600	Status: Historical Licence No: 28/39/22/0600 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: FORMER GASWORKS, KENAVON DRIVE, READING (5 BOREHOLES) Data Type: Point Name: M J GLEESON GROUP PLC	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 31/07/2000 Expiry Date: 31/08/2001 Issue No: 1 Version Start Date: 31/07/2000 Version End Date:
Not shown	1038	N	471900 174400	Status: Active Licence No: 28/39/23/0020 Details: Laundry Use Direct Source: THAMES GROUNDWATER Point: 72 GEORGE STREET, CAVERSHAM, - BOREHOLE 'A' Data Type: Point Name: Berendsen UK Limited	Annual Volume (m^3): 68190 Max Daily Volume (m^3): 300.04 Original Application No: - Original Start Date: 09/05/1966 Expiry Date: - Issue No: 102 Version Start Date: 12/01/2016 Version End Date:
Not shown	1110	NW	470900 174100	Status: Active Licence No: 28/39/23/0167 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: MEADOW ROAD, READING, BERKSHIRE Data Type: Point Name: MANROSE MANUFACTURING LTD	Annual Volume (m^3): 90920 Max Daily Volume (m^3): 727.4 Original Application No: - Original Start Date: 23/01/1990 Expiry Date: - Issue No: 101 Version Start Date: 30/06/2006 Version End Date:
Not shown	1110	NW	470900 174100	Status: Active Licence No: 28/39/23/0167 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: MEADOW ROAD, READING, BERKSHIRE Data Type: Point Name: MANROSE MANUFACTURING LTD	Annual Volume (m^3): 90920 Max Daily Volume (m^3): 727.4 Original Application No: - Original Start Date: 23/01/1990 Expiry Date: - Issue No: 101 Version Start Date: 30/06/2006 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1110	NW	470900 174100	Status: Historical Licence No: 28/39/23/0041 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: CARDIFF ROAD, READING, BERKSHIRE Data Type: Point Name: COX & WYMAN LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/07/1966 Version End Date:
Not shown	1110	NW	470900 174100	Status: Historical Licence No: 28/39/23/0041 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: CARDIFF ROAD, READING, BERKSHIRE Data Type: Point Name: COX & WYMAN LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/07/1966 Version End Date:
Not shown	1300	NW	470600 174000	Status: Active Licence No: 28/39/23/0128 Details: Process Water Direct Source: THAMES GROUNDWATER Point: CARDIFF ROAD, READING POINT B Data Type: Point Name: HILLIER GROUP OF COMPANIES	Annual Volume (m^3): 6682 Max Daily Volume (m^3): 27.28 Original Application No: - Original Start Date: 22/01/1975 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date:
Not shown	1524	NW	470400 174100	Status: Active Licence No: 28/39/23/0128 Details: Process Water Direct Source: THAMES GROUNDWATER Point: CARDIFF ROAD, READING POINT A Data Type: Point Name: HILLIER GROUP OF COMPANIES	Annual Volume (m^3): 6682 Max Daily Volume (m^3): 27.28 Original Application No: - Original Start Date: 22/01/1975 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date:
Not shown	1767	E	473500 173900	Status: Historical Licence No: 28/39/23/0016 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: THAMES GROUNDWATER Point: READING UNIVERSITY RESEARCH SITE, READING, - WELL 'A' Data Type: Point Name: UNIVERSITY OF READING	Annual Volume (m^3): 1136 Max Daily Volume (m^3): 22.73 Original Application No: - Original Start Date: 14/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date:
Not shown	1837	E	473560 173940	Status: Active Licence No: 28/39/23/0191 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT WATERSIDE CENTRE, THAMES VALLEY PARK ROAD Data Type: Point Name: WOKINGHAM WATERSIDE CENTRE LTD	Annual Volume (m^3): 2600 Max Daily Volume (m^3): 25 Original Application No: - Original Start Date: 21/12/2000 Expiry Date: - Issue No: 3 Version Start Date: 01/04/2008 Version End Date:
Not shown	1883	NW	470100 174300	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: LITTLE JOHN'S FARM, READING (E) Data Type: Point Name: DRAYTON	Annual Volume (m^3): 9819 Max Daily Volume (m^3): 26.82 Original Application No: - Original Start Date: 09/01/1967 Expiry Date: - Issue No: 100 Version Start Date: 09/01/1967 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1998	SE	473000 171700	Status: Historical Licence No: 28/39/22/0077 Details: General use relating to Secondary Category (Medium Loss) Direct Source: THAMES GROUNDWATER Point: WHITEKNIGHTS PARK, READING Data Type: Point Name: UNIVERSITY OF READING	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 26/04/1993 Version End Date:

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site Identified

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

ID	Distance (m)	Direction	NGR	Details	
19A	236	SW	471590 173150	Status: Historical Licence No: 28/39/22/0594 Details: Lake & Pond Throughflow Direct Source: THAMES SURFACE WATER - NON TIDAL Point: THE ORACLE CENTRE, READING Data Type: Point Name: ORACLE SHOPPING CENTRE LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 16/02/2000 Expiry Date: - Issue No: 1 Version Start Date: 16/02/2000 Version End Date:
20A	236	SW	471590 173150	Status: Active Licence No: 28/39/22/0594 Details: Lake & Pond Throughflow Direct Source: THAMES SURFACE WATER - NON TIDAL Point: ST.GILES STREAM AT THE ORACLE CENTRE, READING Data Type: Point Name: ORACLE SHOPPING CENTRE LTD	Annual Volume (m^3): 737856 Max Daily Volume (m^3): 2016 Application No: - Original Start Date: 16/02/2000 Expiry Date: - Issue No: 1 Version Start Date: 16/02/2000 Version End Date:
Not shown	864	N	472072 174185	Status: Active Licence No: TH/039/0023/022 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: THAMES SURFACE WATER - NON TIDAL Point: RIVER THAMES AT CAVERSHAM WEIR Data Type: Point Name: The Reading Sustainability Centre CIC	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 19/02/2016 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 19/02/2016 Version End Date:
Not shown	1118	N	471440 174450	Status: Historical Licence No: 28/39/23/0196 Details: Lake & Pond Throughflow Direct Source: THAMES SURFACE WATER - NON TIDAL Point: THAMES AT CHRISTCHURCH MEADOW Data Type: Point Name: READING BOROUGH COUNCIL	Annual Volume (m^3): 31536 Max Daily Volume (m^3): 86.4 Application No: - Original Start Date: 12/05/2003 Expiry Date: 31/03/2016 Issue No: 1 Version Start Date: 01/04/2006 Version End Date:
Not shown	1118	N	471440 174450	Status: Historical Licence No: 28/39/23/0196 Details: Transfer between sources Direct Source: THAMES SURFACE WATER - NON TIDAL Point: THAMES AT CHRISTCHURCH MEADOW Data Type: Point Name: READING BOROUGH COUNCIL	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 12/05/2003 Expiry Date: 31/03/2016 Issue No: 1 Version Start Date: 12/05/2003 Version End Date:
Not	1118	N	471440	Status: Historical	Annual Volume (m^3): 1.752e+006

ID	Distance (m)	Direction	NGR	Details	
shown			174450	Licence No: 28/39/23/0199/TR Details: Transfer Between Sources (Post Water Act 2003) Direct Source: THAMES SURFACE WATER - NON TIDAL Point: RIVER THAMES - CHRISTCHURCH MEADOWS Data Type: Point Name: READING BOROUGH COUNCIL	Max Daily Volume (m^3): 4800 Application No: - Original Start Date: 10/09/2008 Expiry Date: 31/03/2016 Issue No: 1 Version Start Date: 10/09/2008 Version End Date:

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site Identified

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (6c):

ID	Distance (m)	Direction	NGR	Details	
2	554	W	471200 173500	Status: Active Licence No: 28/39/23/0042 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: CHEAPSIDE, READING, BERKSHIRE Data Type: Point Name: PRIMARK STORES LIMITED	Annual Volume (m^3): 14933 Max Daily Volume (m^3): 40.91 Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:
3	771	SE	472400 172800	Status: Active Licence No: 28/39/22/0521 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: ROYAL BERKSHIRE HOSPITAL Data Type: Point Name: ROYAL BERKSHIRE HOSPITAL	Annual Volume (m^3): 127750 Max Daily Volume (m^3): 350 Original Application No: - Original Start Date: 17/01/1992 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:
Not shown	1110	NW	470900 174100	Status: Active Licence No: 28/39/23/0167 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: MEADOW ROAD, READING, BERKSHIRE Data Type: Point Name: MANROSE MANUFACTURING LTD	Annual Volume (m^3): 90920 Max Daily Volume (m^3): 727.4 Original Application No: - Original Start Date: 23/01/1990 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:
Not shown	1110	NW	470900 174100	Status: Historical Licence No: 28/39/23/0041 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: CARDIFF ROAD, READING, BERKSHIRE Data Type: Point Name: COX & WYMAN LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:
Not shown	1837	E	473560 173940	Status: Active Licence No: 28/39/23/0191 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER	Annual Volume (m^3): 2600 Max Daily Volume (m^3): 25 Original Application No: - Original Start Date: 21/12/2000 Expiry Date: - Issue No: 3

ID	Distance (m)	Direction	NGR	Details	
				Point: BOREHOLE AT WATERSIDE CENTRE, THAMES VALLEY PARK ROAD Data Type: Point Name: WOKINGHAM WATERSIDE CENTRE LTD	Version Start Date: Version End Date:

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site Identified

The following Source Protection Zones records are represented on the SPZ and Potable Water Abstraction Map (6c):

ID	Distance (m)	Direction	Zone	Description
1	325	NE	3	Total catchment

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site None identified

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

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Major Aquifer/High Leaching Potential	H1	Soils which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.
263	S	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site Identified

6.9.1 Biological Quality:

Biological Quality data describes water quality in terms of 83 groups of macroinvertebrates, some of which are pollution sensitive. The results are graded from A ('Very Good') to F ('Bad').

The following Biological Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
Not shown	1387	NE	473100 173880	River Name: Thames (w Area) Reach: Whitchurch Stw - Kennet End/Start of Stretch: End of Stretch NGR	A	A	A	A	A
Not shown	1387	NE	473100 173880	River Name: Thames (w Area) Reach: Kennet - Loddon End/Start of Stretch: Start of Stretch NGR	B	B	B	A	A

6.9.2 Chemical Quality:

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

The following Chemical Quality records are shown on the Hydrology Map (6e):

					Chemical Quality Grade				
ID	Distance (m)	Direction	NGR	River Quality Grade	2005	2006	2007	2008	2009
36A	224	NE	472020 173440	River Name: Kennet Reach: Holy Brook - Thames End/Start of Stretch: Start of Stretch NGR	B	A	A	A	A
37A	224	NE	472020 173440	River Name: Kennet Reach: Foudry Brook - Holy Brook End/Start of Stretch: End of Stretch NGR	B	A	A	A	A
38	650	SW	471351 172807	River Name: Kennet Reach: Foudry Brook - Holy Brook End/Start of Stretch: Sample Point NGR	B	A	A	A	A
Not shown	766	NE	472135 174053	River Name: Thames Reach: Whitchurch Stw - Kennet End/Start of Stretch: Sample Point NGR	A	A	A	A	A
Not shown	1244	E	473015 173702	River Name: Kennet Reach: Holy Brook - Thames End/Start of Stretch: Sample Point NGR	B	A	A	A	A
Not shown	1387	NE	473100 173880	River Name: Kennet Reach: Holy Brook - Thames End/Start of Stretch: End of Stretch NGR	B	A	A	A	A
Not shown	1387	NE	473100 173880	River Name: Thames Reach: Kennet - Loddon End/Start of Stretch: Start of Stretch NGR	A	A	A	A	A
Not shown	1387	NE	473100 173880	River Name: Thames Reach: Whitchurch Stw - Kennet End/Start of Stretch: End of Stretch NGR	A	A	A	A	A

6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
1	6 N	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
2	6 S	River Kennet	Inland river not influenced by normal tidal action.	Catchment Area: Avon Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 13.9
51	6 N	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
52	6 S	River Kennet	Inland river not influenced by normal tidal action.	Catchment Area: Avon Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 13.9
3	23 W	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
53	23 W	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
4	35 N	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.4
54	35 N	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.4
5	36 N	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
55	36 N	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
6	48 W	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
56	48 W	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
7	49 NE	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.8
57	49 NE	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.8
8	142 E	Gunter's Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.2
58	142 E	Gunter's Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.2
9	154 NE	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
59	154 NE	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
10	169 E	River Kennet	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 17.3
11	169 E	Kennet and Avon Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Avon Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 16.1
60	169 E	River Kennet	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 17.3
61	169 E	Kennet and Avon Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Avon Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 16.1
12	171 NE	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
62	171 NE	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
13	173 E	Gunter's Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.1
63	173 E	Gunter's Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.1
14	177 E	Kennet and Avon Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Avon Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 14.0
64	177 E	Kennet and Avon Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Avon Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 14.0
15	218 NE	River Kennet	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 19.7
65	218 NE	River Kennet	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 19.7
16	228 W	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3
66	228 W	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3
17	242 W	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
67	242 W	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
18	247 W	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.3
68	247 W	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.3
19	259	-	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Not provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	SW			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
69	259 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
20	260 SW	River Kennet	Inland river not influenced by normal tidal action.	Catchment Area: Avon Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 16.0
70	260 SW	River Kennet	Inland river not influenced by normal tidal action.	Catchment Area: Avon Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 16.0
21	274 SW	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
71	274 SW	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
22	296 SW	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.7
72	296 SW	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.7
23	299 SW	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
73	299 SW	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
24	318 SW	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
74	318 SW	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
25	328 SW	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
75	328 SW	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
26	395 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.9
Not shown	395 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.9
27	464 SW	River Kennet	Inland river not influenced by normal tidal action.	Catchment Area: Avon Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 13.2
28	464 SW	River Kennet	Canal. A manmade watercourse for inland navigation.	Catchment Area: Avon Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 5.0
Not shown	464 SW	River Kennet	Inland river not influenced by normal tidal action.	Catchment Area: Avon Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 13.2
Not shown	464 SW	River Kennet	Canal. A manmade watercourse for inland navigation.	Catchment Area: Avon Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 5.0
29	469 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 14.0
Not shown	469 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 14.0
30	472 W	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
Not shown	472 W	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
31	476 SW	River Kennet	Inland river not influenced by normal tidal action.	Catchment Area: Avon Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 18.6

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
32	476 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	476 SW	River Kennet	Inland river not influenced by normal tidal action.	Catchment Area: Avon Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 18.6
Not shown	476 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
33	494 SW	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	494 SW	Holy Brook	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

6.11 Surface Water Features

Surface water features within 250m of the study site Identified

The following surface water records are not represented on mapping:

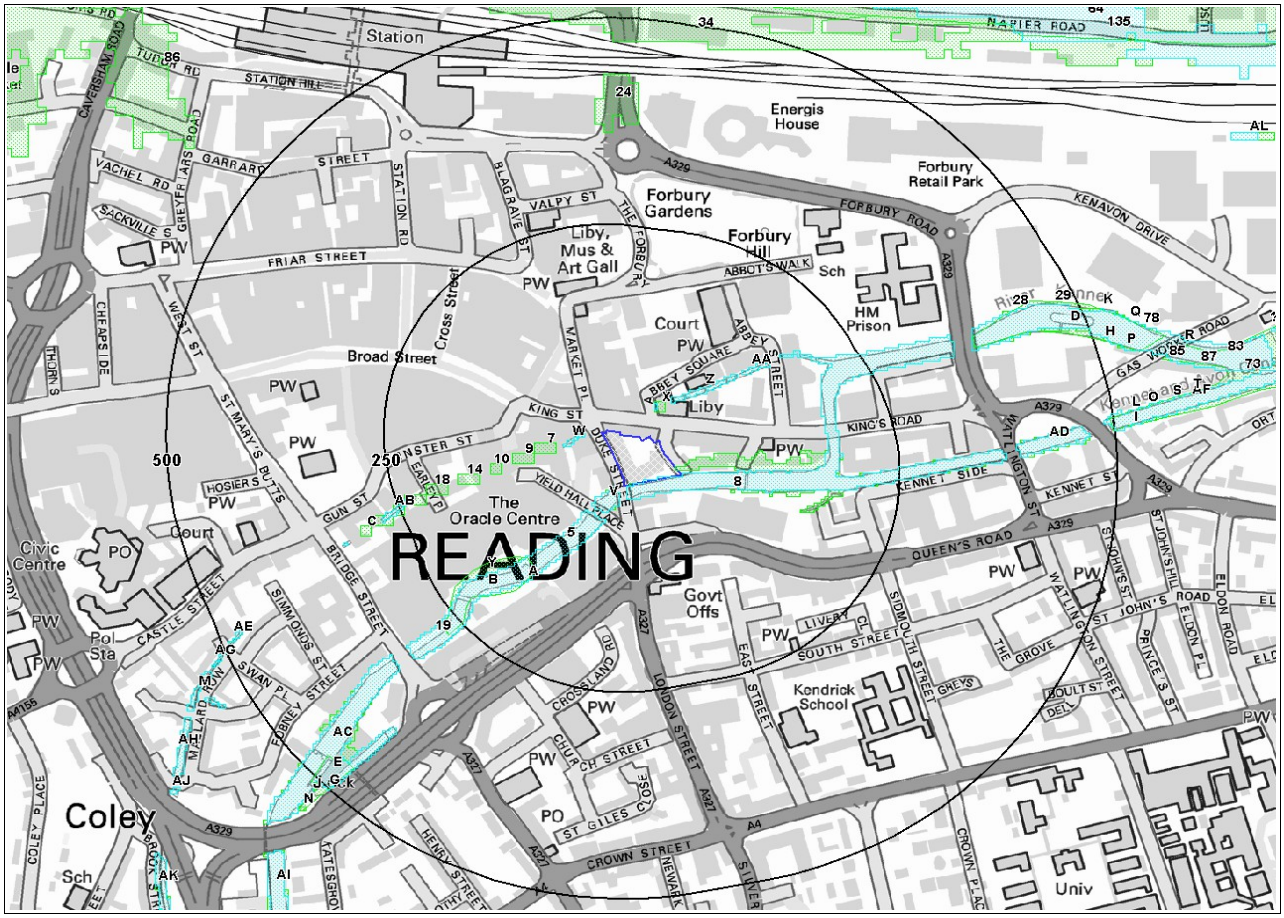
Distance (m)	Direction
0	On Site
10	W
48	SW
175	E

7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)

NW N NE

W E

SW S SE



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Site Outline

100
250
Search Buffers (m)

Zone 2 Floodplain

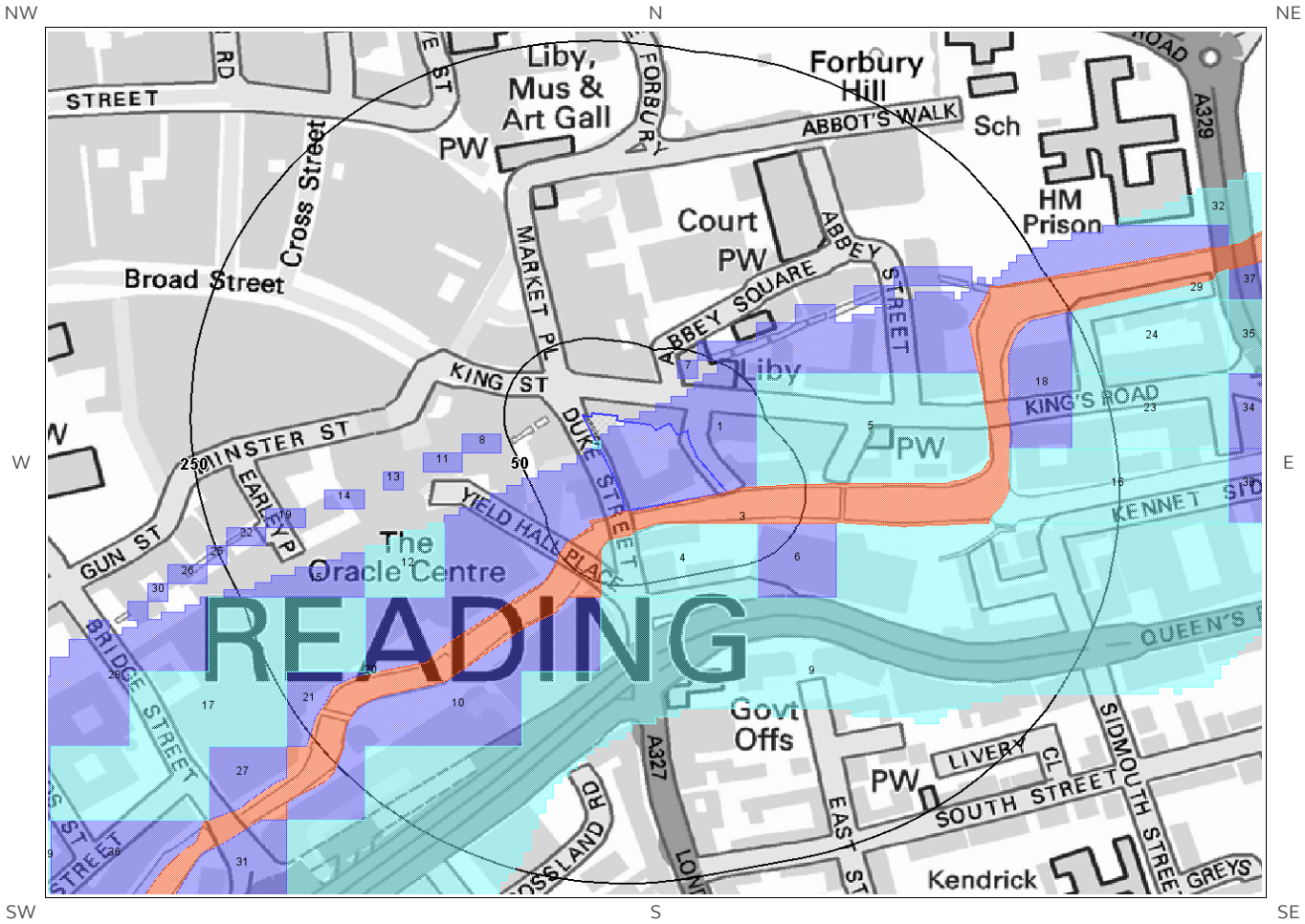
Zone 3 Floodplain

Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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Site Outline

100 250 Search Buffers (m)

RoFRaS Rating

- Very Low
- Low
- Medium
- High

7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m — Identified

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

ID	Distance (m)	Direction	Update	Type
1U	0	On Site	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
2V	10	W	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
3W	20	W	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
4X	30	N	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
5	46	SW	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
6Z	46	NE	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
7	54	W	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
8	59	E	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
9	81	W	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
10	121	W	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
11AA	123	NE	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
12B	142	SW	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
13Y	144	SW	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
14	148	W	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
15A	158	SW	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
16A	163	SW	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
17B	169	SW	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
18	188	W	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)
19	214	SW	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)

20AB	216	W	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m — Identified

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

ID	Distance (m)	Direction	Update	Type
1U	0	On Site	21-Feb-2019	Zone 3 - (Fluvial /Tidal Models)
2V	10	W	21-Feb-2019	Zone 3 - (Fluvial /Tidal Models)
3W	20	W	21-Feb-2019	Zone 3 - (Fluvial /Tidal Models)
4X	32	N	21-Feb-2019	Zone 3 - (Fluvial /Tidal Models)
5	46	SW	21-Feb-2019	Zone 3 - (Fluvial /Tidal Models)
6Z	46	NE	21-Feb-2019	Zone 3 - (Fluvial /Tidal Models)
7	123	NE	21-Feb-2019	Zone 3 - (Fluvial /Tidal Models)
8	229	W	21-Feb-2019	Zone 3 - (Fluvial /Tidal Models)

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

Highest risk of flooding onsite — High

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

RoFRaS data for the study site indicates the property is in an area with a High (1 in 30 or greater) chance of flooding in any given year.

Any relevant data within 250m is represented on the RoFRaS Flood map. Data to 50m is reported in the table below.

ID	Distance (m)	Direction	RoFRas flood Risk
1	0.0	On Site	Medium
2	0.0	On Site	Low
3	0.0	On Site	High
4	11.0	S	Low
5	20.0	E	Low

6	28.0	SE	Medium
7	30.0	N	Medium

7.4 Flood Defences

Flood Defences within 250m of the study site — None identified

Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site — None identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site — None identified

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site — Identified

Clearwater Flooding or Superficial Deposits Flooding — Clearwater Flooding

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

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Potential at Surface

Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

7.8 Groundwater Flooding Confidence Areas

British Geological Survey confidence rating in this result	High

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

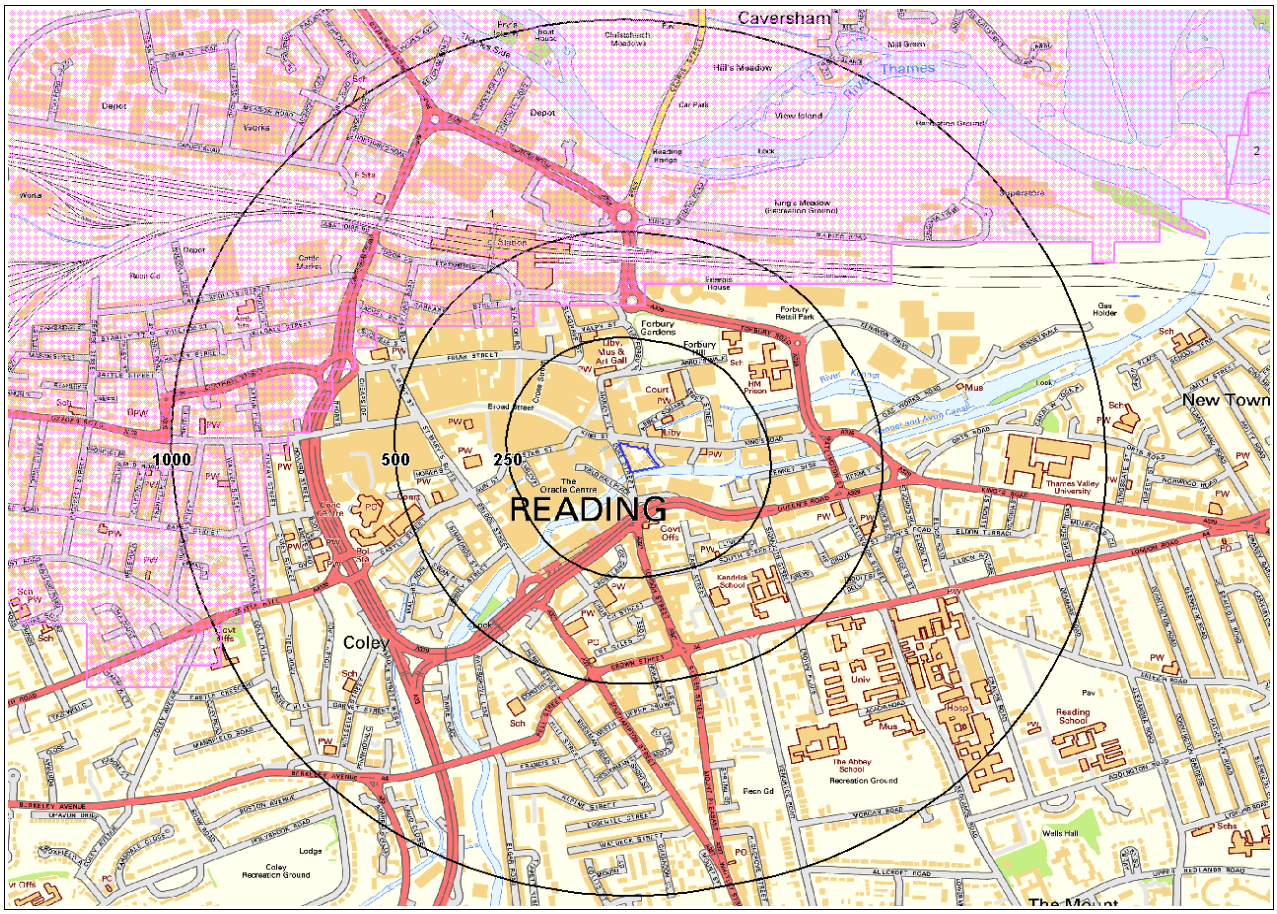
The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a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

8. Designated Environmentally Sensitive Sites Map

NW N NE

W E

SW S SE



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Site Outline

100 250 Search Buffers (m)

AONB

National Park

SSSI

Special Protection Areas

Nitrate Vulnerable Zones

Green Belt

Environmentally Sensitive Areas

Special Areas of Conservation

World Heritage Sites

Nitrate Sensitive Areas

Ancient Woodland

National Nature Reserve

Local Nature Reserves

Ramsar Sites

8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site	Identified

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

3

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

ID	Distance (m)	Direction	NVZ Name	Data Source
1	326	N	Existing	DEFRA
2	1417	NE	Existing	DEFRA
Not shown	1739	W	Existing	DEFRA

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

0

Database searched and no data found.

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

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

9.1.1 Shrink Swell

Maximum Shrink-Swell*[*] hazard rating identified on the study site — Very Low

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

Hazard
Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

9.1.2 Landslides

Maximum Landslide* hazard rating identified on the study site — Very Low

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

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

9.1.3 Soluble Rocks

Maximum Soluble Rocks* hazard rating identified on the study site — Low

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

Hazard
Significant soluble rocks are present. Low possibility of subsidence occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow. Consider implications for stability when changes to drainage or new construction are planned. For new build site investigation should consider potential for dissolution problems on the site and its surroundings. Care should be taken with local drainage into the bedrock. Some possibility groundwater pollution. For existing property possible increase in insurance risk due to soluble rocks.

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

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site — Moderate

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

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

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site — Very Low

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

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

9.1.6 Running Sand

Maximum Running Sand** hazard rating identified on the study site — Low

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

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

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

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

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

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site — None identified

Database searched and no data found.

10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary — Identified

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

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

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

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site — None identified
Guidance: No Guidance Required.

Contact Details

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