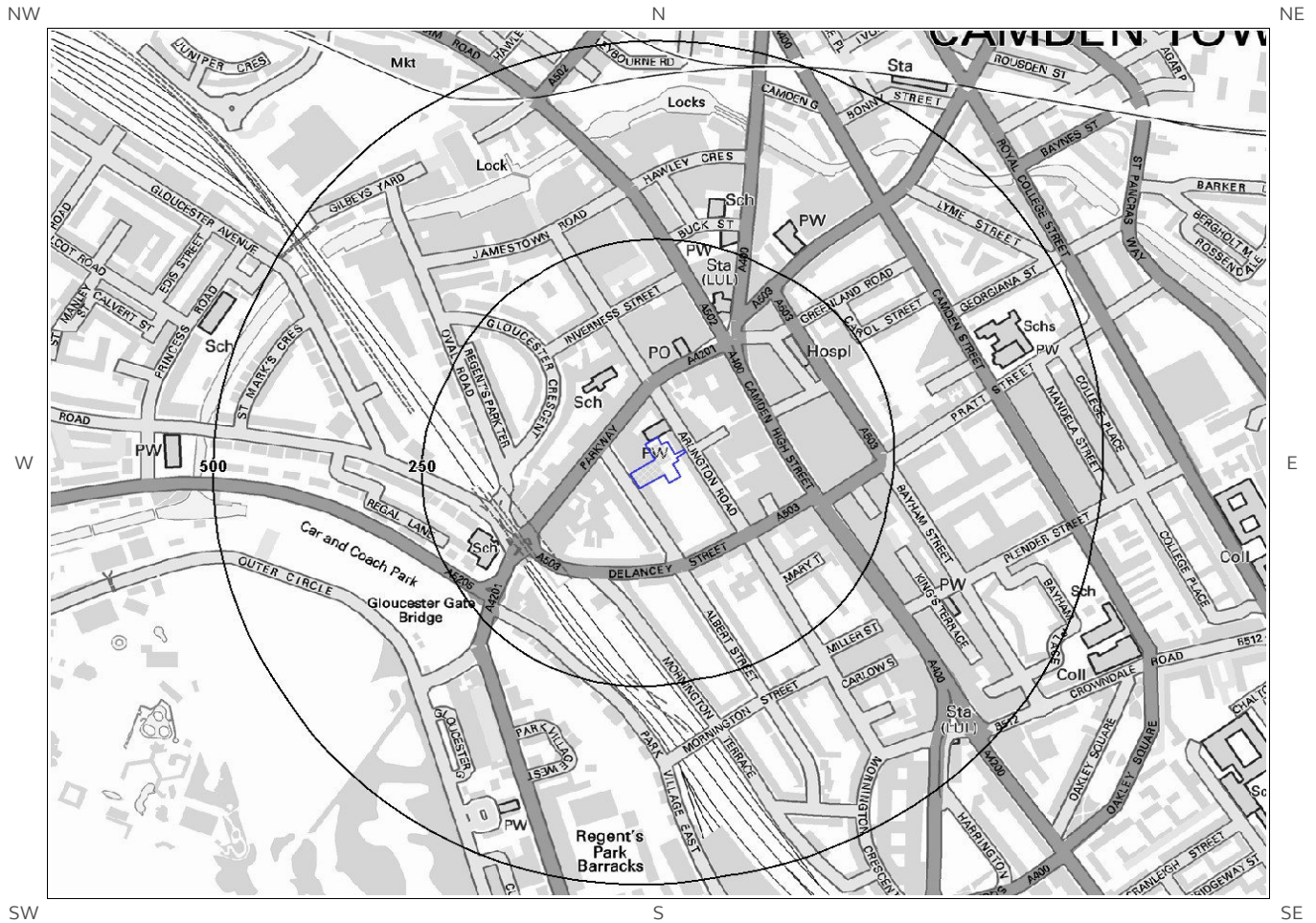
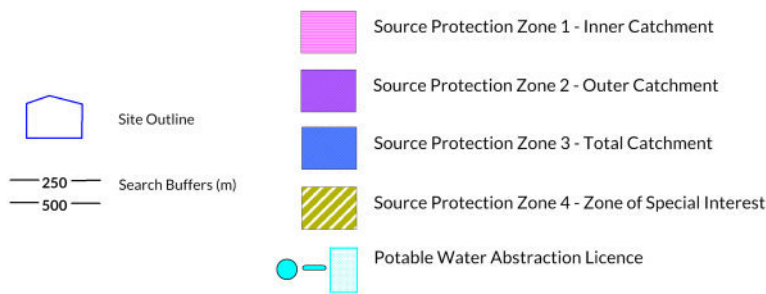


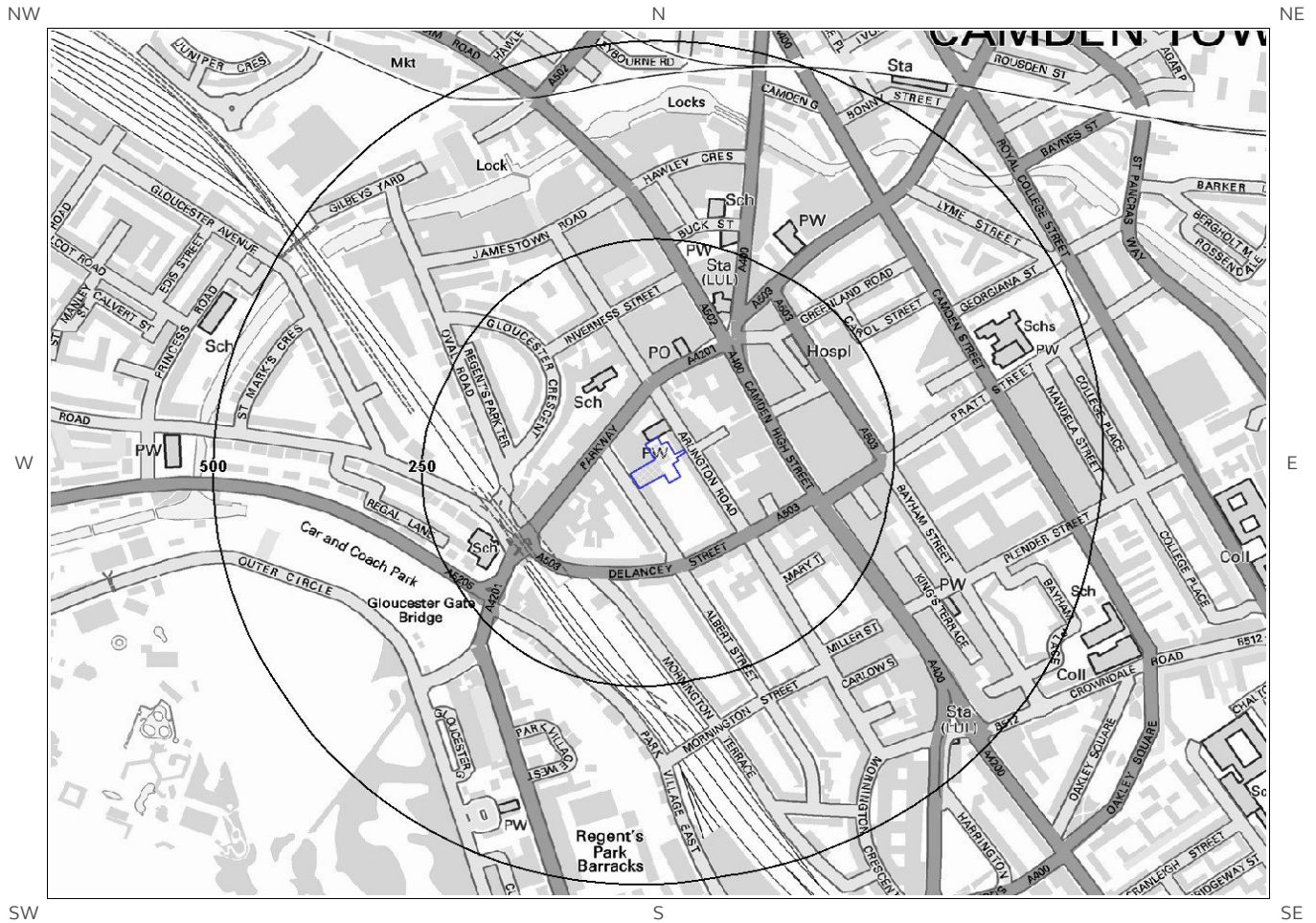
# 6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



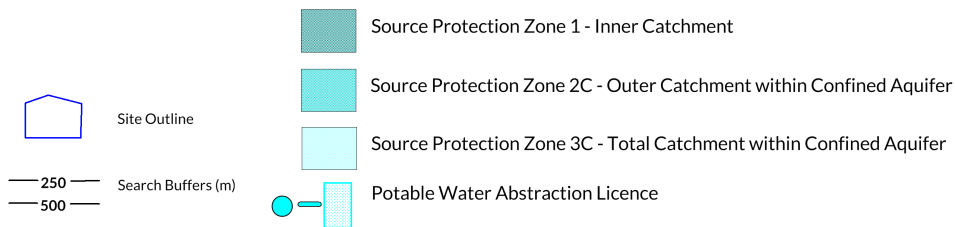
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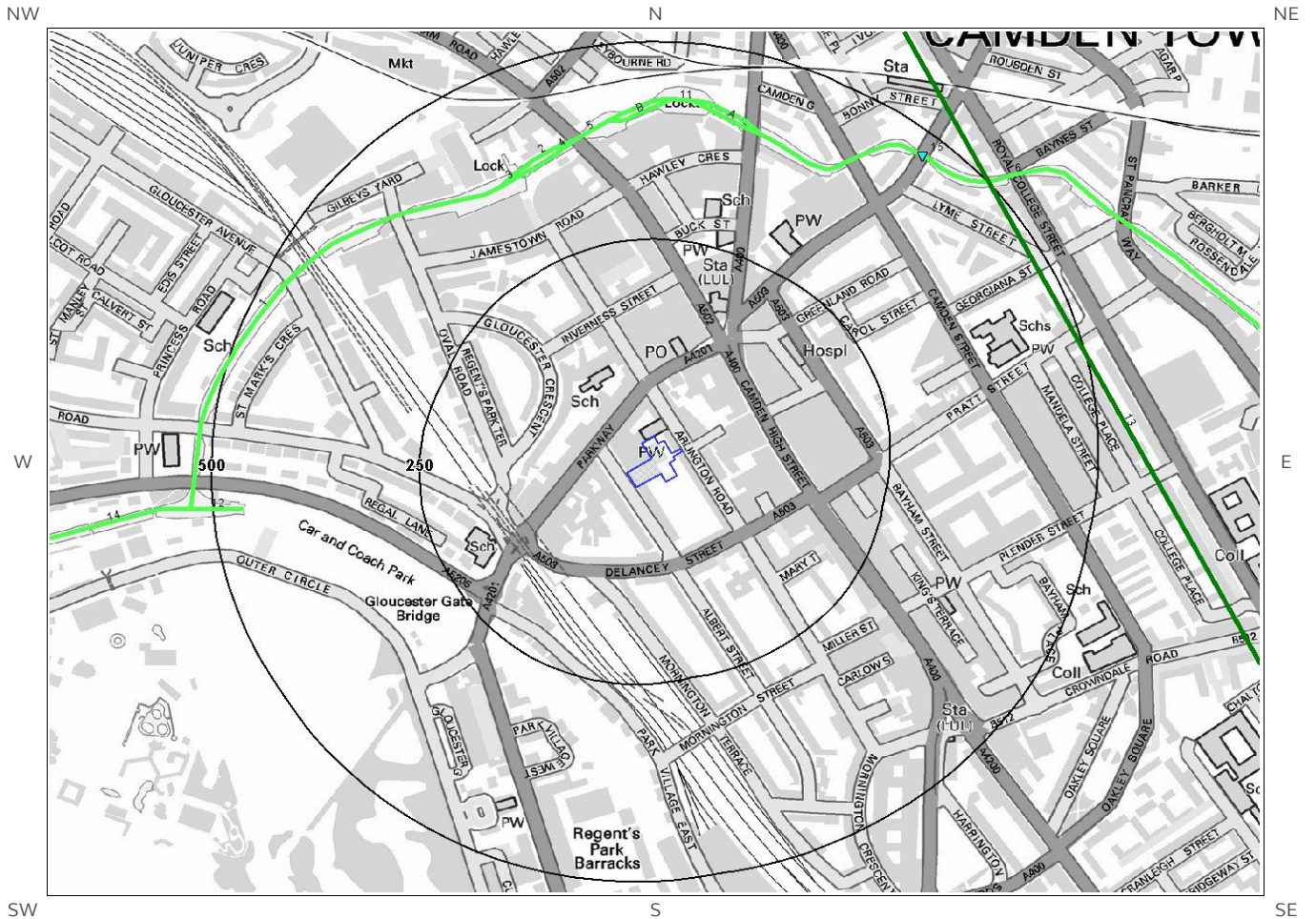
# 6d. Hydrogeology – Source Protection Zones within confined aquifer



















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



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- |                                                                                     |                    |                                                                                     |                                       |                                                                                      |                                     |
|-------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------|
|  | Site Outline       |  | Primary River                         |  | Canal                               |
|  | Search Buffers (m) |  | Secondary River                       |  | Canal Tunnel                        |
|  | 500                |  | Tertiary River                        |  | Culvert                             |
|                                                                                     | 250                |  | Lake/Reservoir                        |  | Multiple Channel Culvert            |
|                                                                                     |                    |  | Underground River (inferred)          |  | Underground River (Potential Sewer) |
|                                                                                     |                    |  | General Quality Assessment: Biology   |  | Underground River (local knowledge) |
|                                                                                     |                    |  | General Quality Assessment: Chemistry |                                                                                      |                                     |

# 6. Hydrogeology and Hydrology

## 6.1 Aquifer within Superficial Deposits

Are there records of strata classification within the superficial geology at or in proximity to the property? No

Database searched and no data found.

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.

## 6.2 Aquifer within Bedrock Deposits

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

From 1 April 2010, the Environment Agency/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	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

## 6.3 Groundwater Abstraction Licences

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

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

ID	Distance (m)	Direction	NGR	Details
Not shown	850	W	528000 183400	Status: Historical Licence No: 28/39/39/0035 Details: Animal Watering & General Use in non Farming situations Direct Source: Thames Groundwater Point: Borehole At Regent's Park, London Nw1 Data Type: Point Name: ZOOLOGICAL SOCIETY OF LONDON Annual Volume (m <sup>3</sup> ): 681.9 Max Daily Volume (m <sup>3</sup> ): 59 Original Application No: - Original Start Date: 4/4/1966 Expiry Date: - Issue No: 100 Version Start Date: 4/4/1966 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	956	N	528800 184700	Status: Historical Licence No: 28/39/39/0091 Details: Process Water Direct Source: Thames Groundwater Point: Two Bores At Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LTD	Annual Volume (m <sup>3</sup> ): 94506 Max Daily Volume (m <sup>3</sup> ): 1813.8 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: 5/4/2012 Version End Date:
Not shown	956	N	528800 184700	Status: Active Licence No: 28/39/39/0091 Details: Process Water Direct Source: Thames Groundwater Point: Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LIMITED	Annual Volume (m <sup>3</sup> ): 17997 Max Daily Volume (m <sup>3</sup> ): 604.6 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: 25/5/2012 Version End Date:
Not shown	956	N	528800 184700	Status: Historical Licence No: 28/39/39/0091 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Two Bores At Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LTD	Annual Volume (m <sup>3</sup> ): 94506 Max Daily Volume (m <sup>3</sup> ): 1813.8 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: 5/4/2012 Version End Date:
Not shown	956	N	528800 184700	Status: Historical Licence No: 28/39/39/0091 Details: Laundry Use Direct Source: Thames Groundwater Point: Two Bores At Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LTD	Annual Volume (m <sup>3</sup> ): 94506 Max Daily Volume (m <sup>3</sup> ): 1813.8 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: 5/4/2012 Version End Date:
Not shown	956	N	528800 184700	Status: Active Licence No: 28/39/39/0091 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LIMITED	Annual Volume (m <sup>3</sup> ): 17997 Max Daily Volume (m <sup>3</sup> ): 604.6 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: 25/5/2012 Version End Date:
Not shown	1104	E	529920 184040	Status: Historical Licence No: 28/39/39/0222 Details: General Use Relating To Secondary Category (High Loss) Direct Source: Thames Groundwater Point: Kings Cross Concrete Plant-borehole Data Type: Point Name: HANSON QUARRY PRODUCTS EUROPE LTD	Annual Volume (m <sup>3</sup> ): 55200 Max Daily Volume (m <sup>3</sup> ): 200 Original Application No: GEN/39/ Original Start Date: 31/8/2006 Expiry Date: 31/3/2010 Issue No: 1 Version Start Date: 31/8/2006 Version End Date:
Not shown	1104	E	529920 184040	Status: Active Licence No: TH/039/0039/027 Details: General Use Relating To Secondary Category (High Loss) Direct Source: Thames Groundwater Point: Kings Cross Concrete Plant-borehole Data Type: Point Name: HANSON QUARRY PRODUCTS EUROPE LTD	Annual Volume (m <sup>3</sup> ): 33400 Max Daily Volume (m <sup>3</sup> ): 200 Original Application No: NPS/WR/011609 Original Start Date: 21/4/2010 Expiry Date: 31/3/2019 Issue No: 2 Version Start Date: 13/8/2012 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1155	W	527640 183690	Status: Historical Licence No: 28/39/39/0202 Details: Potable Water Supply - Direct Direct Source: Thames Groundwater Point: Barrow Hill Pumping Station - Borehole Data Type: Point Name: THAMES WATER UTILITIES LTD	Annual Volume (m <sup>3</sup> ): 631000 Max Daily Volume (m <sup>3</sup> ): 2000 Original Application No: WRA/2/2(24) Original Start Date: 26/9/2002 Expiry Date: 31/3/2007 Issue No: 1 Version Start Date: 26/9/2002 Version End Date:
Not shown	1155	W	527640 183690	Status: Historical Licence No: 28/39/39/0231 Details: Potable Water Supply - Direct Direct Source: Thames Groundwater Point: Barrow Hill Pumping Station - Borehole Data Type: Point Name: THAMES WATER UTILITIES LTD	Annual Volume (m <sup>3</sup> ): 631000 Max Daily Volume (m <sup>3</sup> ): 2000 Original Application No: WRA/R/1026 Original Start Date: 1/4/2007 Expiry Date: 31/3/2013 Issue No: 1 Version Start Date: 1/4/2007 Version End Date:
Not shown	1159	W	527636 183697	Status: Active Licence No: TH/039/0039/058 Details: Potable Water Supply - Direct Direct Source: Thames Groundwater Point: Borehole At Barrow Hill Data Type: Point Name: THAMES WATER UTILITIES LTD	Annual Volume (m <sup>3</sup> ): 631000 Max Daily Volume (m <sup>3</sup> ): 2000 Original Application No: NPS/WR/009229 Original Start Date: 1/4/2013 Expiry Date: 31/3/2025 Issue No: 1 Version Start Date: 1/4/2013 Version End Date:
Not shown	1511	S	528407 182223	Status: Active Licence No: TH/039/0039/022 Details: Heat Pump Direct Source: Thames Groundwater Point: Doric Villa, York Terrace East, London Data Type: Point Name: Ritblat	Annual Volume (m <sup>3</sup> ): 118260 Max Daily Volume (m <sup>3</sup> ): 324 Original Application No: NPS/WR/002585 Original Start Date: 26/2/2010 Expiry Date: 31/3/2019 Issue No: 1 Version Start Date: 26/2/2010 Version End Date:
Not shown	1511	S	528407 182223	Status: Historical Licence No: TH/039/0039/022 Details: Heat Pump Direct Source: Thames Groundwater Point: Confined Chalk, Doric Villa, York Terrace East, London Data Type: Point Name: Ritblat	Annual Volume (m <sup>3</sup> ): 118260 Max Daily Volume (m <sup>3</sup> ): 324 Original Application No: NPS/WR/002585 Original Start Date: 26/2/2010 Expiry Date: 31/3/2019 Issue No: 1 Version Start Date: 26/2/2010 Version End Date:
Not shown	1545	SE	530052 182718	Status: Historical Licence No: TH/039/0039/001 Details: Heat Pump Direct Source: Thames Groundwater Point: Bidborough House 20 Mabledon Place London Data Type: Point Name: LONDON BOROUGH OF CAMDEN	Annual Volume (m <sup>3</sup> ): 327600 Max Daily Volume (m <sup>3</sup> ): 1260 Original Application No: NPSWR000003 Original Start Date: 9/4/2009 Expiry Date: 31/3/2013 Issue No: 1 Version Start Date: 9/4/2009 Version End Date:
Not shown	1545	SE	530052 182718	Status: Historical Licence No: TH/039/0039/001 Details: Heat Pump Direct Source: Thames Groundwater Point: Borehole At Bidborough House 20 Mabledon Place London Data Type: Point Name: LONDON BOROUGH OF CAMDEN	Annual Volume (m <sup>3</sup> ): 327600 Max Daily Volume (m <sup>3</sup> ): 1260 Original Application No: NPSWR000003 Original Start Date: 9/4/2009 Expiry Date: 31/3/2013 Issue No: 1 Version Start Date: 9/4/2009 Version End Date:
Not shown	1545	SE	530052 182718	Status: Active Licence No: TH/039/0039/064 Details: Heat Pump Direct Source: Thames Groundwater Point: Borehole At Bidborough House, 20 Mabledon Place, London Data Type: Point Name: University College London	Annual Volume (m <sup>3</sup> ): 327600 Max Daily Volume (m <sup>3</sup> ): 1440 Original Application No: NPS/WR/017625 Original Start Date: 16/4/2013 Expiry Date: 31/3/2019 Issue No: 2 Version Start Date: 21/11/2014 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1565	E	530368 183294	Status: Active Licence No: TH/039/0039/055 Details: Heat Pump Direct Source: Thames Groundwater Point: Regent Quarter - Borehole A Data Type: Point Name: BNP Paribas Jersey Trust Corp Ltd and Anley Trustees Ltd	Annual Volume (m <sup>3</sup> ): 323612 Max Daily Volume (m <sup>3</sup> ): 2160 Original Application No: NPS/WR/015663 Original Start Date: 6/2/2013 Expiry Date: 31/3/2025 Issue No: 2 Version Start Date: 25/6/2014 Version End Date:
Not shown	1745	SW	527420 182620	Status: Active Licence No: 28/39/39/0115 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Thames Groundwater Point: Abbey Lodge, Park Road, London Nw8-two Boreholes Data Type: Point Name: ABBEY LODGE RTM COMPANY LIMITED	Annual Volume (m <sup>3</sup> ): 28640 Max Daily Volume (m <sup>3</sup> ): 100 Original Application No: - Original Start Date: 5/9/1966 Expiry Date: - Issue No: 101 Version Start Date: 1/6/2006 Version End Date:
Not shown	1745	SW	527420 182620	Status: Historical Licence No: 28/39/39/0115 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Thames Groundwater Point: Two Boreholes At Abbey Lodge, Park Road, London Nw8 Data Type: Point Name: WOOD MANAGEMENT TRUSTEES LTD	Annual Volume (m <sup>3</sup> ): 28640 Max Daily Volume (m <sup>3</sup> ): 100 Original Application No: - Original Start Date: 5/9/1966 Expiry Date: - Issue No: 100 Version Start Date: 28/11/1991 Version End Date:
Not shown	1780	S	528830 181900	Status: Active Licence No: TH/039/0039/068 Details: Heat Pump Direct Source: Thames Groundwater Point: 10 Weymouth Street, Ridgeford Properties Data Type: Point Name: Ridgeford Properties Limited	Annual Volume (m <sup>3</sup> ): 50000 Max Daily Volume (m <sup>3</sup> ): 400 Original Application No: NPSWR009221 Original Start Date: 1/4/2013 Expiry Date: 31/3/2025 Issue No: 1 Version Start Date: 1/4/2013 Version End Date:
Not shown	1780	S	528830 181900	Status: Historical Licence No: TH/039/0039/010 Details: Heat Pump Direct Source: Thames Groundwater Point: 10 Weymouth Street, Ridgeford Properties Data Type: Point Name: Ridgeford Properties Limited	Annual Volume (m <sup>3</sup> ): 50000 Max Daily Volume (m <sup>3</sup> ): 400 Original Application No: NPSWR001161 Original Start Date: 13/8/2009 Expiry Date: 31/3/2013 Issue No: 1 Version Start Date: 13/8/2009 Version End Date:
Not shown	1780	S	528480 181930	Status: Historical Licence No: 28/39/39/0215 Details: Non-Evaporative Cooling Direct Source: Thames Groundwater Point: 3-5 Devonshire Place-borehole A Data Type: Point Name: TRUSTEES OF THE LONDON CLINIC LIMITED	Annual Volume (m <sup>3</sup> ): 122400 Max Daily Volume (m <sup>3</sup> ): 511 Original Application No: WRA/N/1383 Original Start Date: 24/2/2005 Expiry Date: 31/3/2013 Issue No: 1 Version Start Date: 24/2/2005 Version End Date:
Not shown	1784	S	528460 181930	Status: Historical Licence No: 28/39/39/0215 Details: Non-Evaporative Cooling Direct Source: Thames Groundwater Point: 3-5 Devonshire Place-borehole B Data Type: Point Name: TRUSTEES OF THE LONDON CLINIC LIMITED	Annual Volume (m <sup>3</sup> ): 122400 Max Daily Volume (m <sup>3</sup> ): 511 Original Application No: WRA/N/1383 Original Start Date: 24/2/2005 Expiry Date: 31/3/2013 Issue No: 1 Version Start Date: 24/2/2005 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1790	S	528480 181920	<p>Status: Historical Licence No: 28/39/39/0215 Details: Non-Evaporative Cooling Direct Source: Thames Groundwater Point: 20 Devonshire Place, London-borehole A Data Type: Point Name: TRUSTEES OF THE LONDON CLINIC LIMITED</p> <p>Annual Volume (m<sup>3</sup>): - Max Daily Volume (m<sup>3</sup>): - Original Application No: WRA/N/1383 Original Start Date: 24/2/2005 Expiry Date: 31/3/2013 Issue No: 1 Version Start Date: 24/2/2005 Version End Date:</p>
Not shown	1802	S	528470 181910	<p>Status: Historical Licence No: 28/39/39/0215 Details: Non-Evaporative Cooling Direct Source: Thames Groundwater Point: 20 Devonshire Place, London-borehole B Data Type: Point Name: TRUSTEES OF THE LONDON CLINIC LIMITED</p> <p>Annual Volume (m<sup>3</sup>): - Max Daily Volume (m<sup>3</sup>): - Original Application No: WRA/N/1383 Original Start Date: 24/2/2005 Expiry Date: 31/3/2013 Issue No: 1 Version Start Date: 24/2/2005 Version End Date:</p>
Not shown	1847	SW	527850 182100	<p>Status: Historical Licence No: 28/39/39/0070 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Abbey House, Baker Street- Borehole Data Type: Point Name: BASKERVILLE ESTATES (GP) LIMITED</p> <p>Annual Volume (m<sup>3</sup>): - Max Daily Volume (m<sup>3</sup>): - Original Application No: - Original Start Date: 13/6/1966 Expiry Date: - Issue No: 102 Version Start Date: 19/12/2003 Version End Date:</p>
Not shown	1874	SW	527800 182100	<p>Status: Historical Licence No: 28/39/39/0070 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Borehole At Abbey House, Baker Street, London Nw1 Data Type: Point Name: ABBEY NATIONAL PLC</p> <p>Annual Volume (m<sup>3</sup>): - Max Daily Volume (m<sup>3</sup>): - Original Application No: - Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: 2/5/2000 Version End Date:</p>
Not shown	1959	SW	527800 182000	<p>Status: Historical Licence No: 28/39/39/0021 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Thames Groundwater Point: Two Boreholes At Dorset House, Gloucester Place, London. W1 Data Type: Point Name: BELLNORTH LIMITED</p> <p>Annual Volume (m<sup>3</sup>): 56370 Max Daily Volume (m<sup>3</sup>): 318 Original Application No: - Original Start Date: 13/12/1965 Expiry Date: - Issue No: 101 Version Start Date: 10/1/1994 Version End Date:</p>
Not shown	1959	SW	527800 182000	<p>Status: Active Licence No: 28/39/39/0021 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Thames Groundwater Point: Dorset House, London- 2 Boreholes Data Type: Point Name: Dorset House Residential Limited</p> <p>Annual Volume (m<sup>3</sup>): 56370 Max Daily Volume (m<sup>3</sup>): 318 Original Application No: NPS/WR/017647 Original Start Date: 13/12/1965 Expiry Date: - Issue No: 103 Version Start Date: 20/11/2014 Version End Date:</p>



## 6.4 Surface Water Abstraction Licences

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

Yes

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

ID	Distance (m)	Direction	NGR	Details
31A	423	NW	528500 184020	Status: Active Licence No: 28/39/39/0164 Details: Non-Evaporative Cooling Direct Source: Thames Surface Water - Non Tidal Point: Southampton Bridge, London, Nw8 - Regents Canal Data Type: Point Name: Canal and River Trust Annual Volume (m <sup>3</sup> ): 7010000 Max Daily Volume (m <sup>3</sup> ): 19520 Application No: - Original Start Date: 18/7/1980 Expiry Date: - Issue No: 101 Version Start Date: 17/12/2007 Version End Date:
32A	430	NW	528490 184020	Status: Historical Licence No: 28/39/39/0173 Details: Non-Evaporative Cooling Direct Source: Thames Surface Water - Non Tidal Point: Oval Road, Camden - Grand Union Regents Canal Data Type: Point Name: BRITISH WATERWAYS BOARD Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Application No: - Original Start Date: 8/12/1994 Expiry Date: - Issue No: 100 Version Start Date: 8/12/1994 Version End Date:
Not shown	898	E	529750 183600	Status: Historical Licence No: 28/39/39/0172 Details: Make-Up or Top Up Water Direct Source: Thames Surface Water - Non Tidal Point: Camley Street Nature Park, London Data Type: Point Name: BRITISH WATERWAYS BOARD Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 18/9/1991 Version End Date:
Not shown	898	E	529750 183600	Status: Historical Licence No: 28/39/39/0172 Details: Make-Up or Top Up Water Direct Source: Thames Surface Water - Non Tidal Point: Grand Union Canal At Camley Street Nature Park, London Data Type: Point Name: BRITISH WATERWAYS BOARD Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Application No: - Original Start Date: 18/9/1991 Expiry Date: - Issue No: 100 Version Start Date: 18/9/1991 Version End Date:
Not shown	1463	E	530310 183520	Status: Active Licence No: 28/39/39/0164 Details: Non-Evaporative Cooling Direct Source: Thames Surface Water - Non Tidal Point: Maiden Lane Bridge, London, Nw1 - Regents Canal Data Type: Point Name: Canal and River Trust Annual Volume (m <sup>3</sup> ): 7010000 Max Daily Volume (m <sup>3</sup> ): 19520 Application No: - Original Start Date: 18/7/1980 Expiry Date: - Issue No: 101 Version Start Date: 17/12/2007 Version End Date:

## 6.5 Potable Water Abstraction Licences

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

Yes

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

ID	Distance (m)	Direction	NGR	Details
Not shown	956	N	528800 184700	<p>Status: Active Licence No: 28/39/39/0091 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LIMITED</p> <p>Annual Volume (m<sup>3</sup>): 17997 Max Daily Volume (m<sup>3</sup>): 604.6 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:</p>
Not shown	956	N	528800 184700	<p>Status: Historical Licence No: 28/39/39/0091 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Two Bores At Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LTD</p> <p>Annual Volume (m<sup>3</sup>): 94506 Max Daily Volume (m<sup>3</sup>): 1813.8 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:</p>
Not shown	1155	W	527640 183690	<p>Status: Historical Licence No: 28/39/39/0202 Details: Potable Water Supply - Direct Direct Source: Thames Groundwater Point: Barrow Hill Pumping Station - Borehole Data Type: Point Name: THAMES WATER UTILITIES LTD</p> <p>Annual Volume (m<sup>3</sup>): 631000 Max Daily Volume (m<sup>3</sup>): 2000 Original Application No: WRA/2/2(24) Original Start Date: 26/9/2002 Expiry Date: 31/3/2007 Issue No: 1 Version Start Date: Version End Date:</p>
Not shown	1155	W	527640 183690	<p>Status: Historical Licence No: 28/39/39/0231 Details: Potable Water Supply - Direct Direct Source: Thames Groundwater Point: Barrow Hill Pumping Station - Borehole Data Type: Point Name: THAMES WATER UTILITIES LTD</p> <p>Annual Volume (m<sup>3</sup>): 631000 Max Daily Volume (m<sup>3</sup>): 2000 Original Application No: WRA/R/1026 Original Start Date: 1/4/2007 Expiry Date: 31/3/2013 Issue No: 1 Version Start Date: Version End Date:</p>
Not shown	1159	W	527636 183697	<p>Status: Active Licence No: TH/039/0039/058 Details: Potable Water Supply - Direct Direct Source: Thames Groundwater Point: Borehole At Barrow Hill Data Type: Point Name: THAMES WATER UTILITIES LTD</p> <p>Annual Volume (m<sup>3</sup>): 631000 Max Daily Volume (m<sup>3</sup>): 2000 Original Application No: NPS/WR/009229 Original Start Date: 1/4/2013 Expiry Date: 31/3/2025 Issue No: 1 Version Start Date: Version End Date:</p>
Not shown	1745	SW	527420 182620	<p>Status: Active Licence No: 28/39/39/0115 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Thames Groundwater Point: Abbey Lodge, Park Road, London Nw8-two Boreholes Data Type: Point Name: ABBEY LODGE RTM COMPANY LIMITED</p> <p>Annual Volume (m<sup>3</sup>): 28640 Max Daily Volume (m<sup>3</sup>): 100 Original Application No: - Original Start Date: 5/9/1966 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:</p>

ID	Distance (m)	Direction	NGR	Details
Not shown	1745	SW	527420 182620	<p>Status: Historical Licence No: 28/39/39/0115 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Thames Groundwater Point: Two Boreholes At Abbey Lodge, Park Road, London Nw8 Data Type: Point Name: WOOD MANAGEMENT TRUSTEES LTD</p> <p>Annual Volume (m<sup>3</sup>): 28640 Max Daily Volume (m<sup>3</sup>): 100 Original Application No: - Original Start Date: 5/9/1966 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:</p>
Not shown	1847	SW	527850 182100	<p>Status: Historical Licence No: 28/39/39/0070 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Abbey House, Baker Street- Borehole Data Type: Point Name: BASKERVILLE ESTATES (GP) LIMITED</p> <p>Annual Volume (m<sup>3</sup>): - Max Daily Volume (m<sup>3</sup>): - Original Application No: - Original Start Date: 13/6/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:</p>
Not shown	1874	SW	527800 182100	<p>Status: Historical Licence No: 28/39/39/0070 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Borehole At Abbey House, Baker Street, London Nw1 Data Type: Point Name: ABBEY NATIONAL PLC</p> <p>Annual Volume (m<sup>3</sup>): - Max Daily Volume (m<sup>3</sup>): - Original Application No: - Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:</p>
Not shown	1959	SW	527800 182000	<p>Status: Active Licence No: 28/39/39/0021 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Thames Groundwater Point: Dorset House, London- 2 Boreholes Data Type: Point Name: Dorset House Residential Limited</p> <p>Annual Volume (m<sup>3</sup>): 56370 Max Daily Volume (m<sup>3</sup>): 318 Original Application No: NPS/WR/017647 Original Start Date: 13/12/1965 Expiry Date: - Issue No: 103 Version Start Date: Version End Date:</p>
Not shown	1959	SW	527800 182000	<p>Status: Historical Licence No: 28/39/39/0021 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Thames Groundwater Point: Two Boreholes At Dorset House, Gloucester Place, London. W1 Data Type: Point Name: BELLNORTH LIMITED</p> <p>Annual Volume (m<sup>3</sup>): 56370 Max Daily Volume (m<sup>3</sup>): 318 Original Application No: - Original Start Date: 13/12/1965 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:</p>

## 6.6 Source Protection Zones

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

No

Database searched and no data found.

## 6.7 Source Protection Zones within Confined Aquifer

Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site? No

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

Database searched and no data found.

## 6.8 Groundwater Vulnerability and Soil Leaching Potential

Is there any Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site? No

Database searched and no data found.

## 6.9 River Quality

Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site? Yes

### 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
15	471	NE	529150 184100	River Name: Grand Union Canal (paddington Arm) Reach: Canal Feeder - Camden Road End/Start of Stretch: End of Stretch NGR	F	F	F	F	E

### 6.9.2 Chemical Quality:

Database searched and no data found.

## 6.10 Detailed River Network

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

Yes

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

ID	Distance (m)	Direction	Details
1	366	NW	River Name: Grand Union Canal Regent's Canal Welsh River Name: - Alternative Name: - River Type: Canal Main River Status: Currently Undefined
2	366	NW	River Name: Grand Union Canal Regent's Canal Welsh River Name: - Alternative Name: - River Type: Canal Main River Status: Currently Undefined
3	366	NW	River Name: Grand Union Canal Regent's Canal Welsh River Name: - Alternative Name: - River Type: Canal Main River Status: Currently Undefined
4	369	NW	River Name: Grand Union Canal Regent's Canal Welsh River Name: - Alternative Name: - River Type: Canal Main River Status: Currently Undefined
5	388	N	River Name: Grand Union Canal Regent's Canal Welsh River Name: - Alternative Name: - River Type: Canal Main River Status: Currently Undefined
6	393	NE	River Name: Grand Union Canal Regent's Canal Welsh River Name: - Alternative Name: - River Type: Canal Main River Status: Currently Undefined
7B	402	N	River Name: Grand Union Canal Regent's Canal Welsh River Name: - Alternative Name: - River Type: Canal Main River Status: Currently Undefined
8A	403	N	River Name: Grand Union Canal Regent's Canal Welsh River Name: - Alternative Name: - River Type: Canal Main River Status: Currently Undefined
9A	403	N	River Name: Grand Union Canal Regent's Canal Welsh River Name: - Alternative Name: - River Type: Canal Main River Status: Currently Undefined
10B	404	N	River Name: Grand Union Canal Regent's Canal Welsh River Name: - Alternative Name: - River Type: Canal Main River Status: Currently Undefined
11	428	N	River Name: Grand Union Canal Regent's Canal Welsh River Name: - Alternative Name: - River Type: Canal Main River Status: Currently Undefined
12	463	W	River Name: Cumberland Basin Welsh River Name: - Alternative Name: - River Type: Canal Main River Status: Currently Undefined
13	485	NE	River Name: - Welsh River Name: - Alternative Name: - River Type: Culvert Main River Status: Currently Undefined

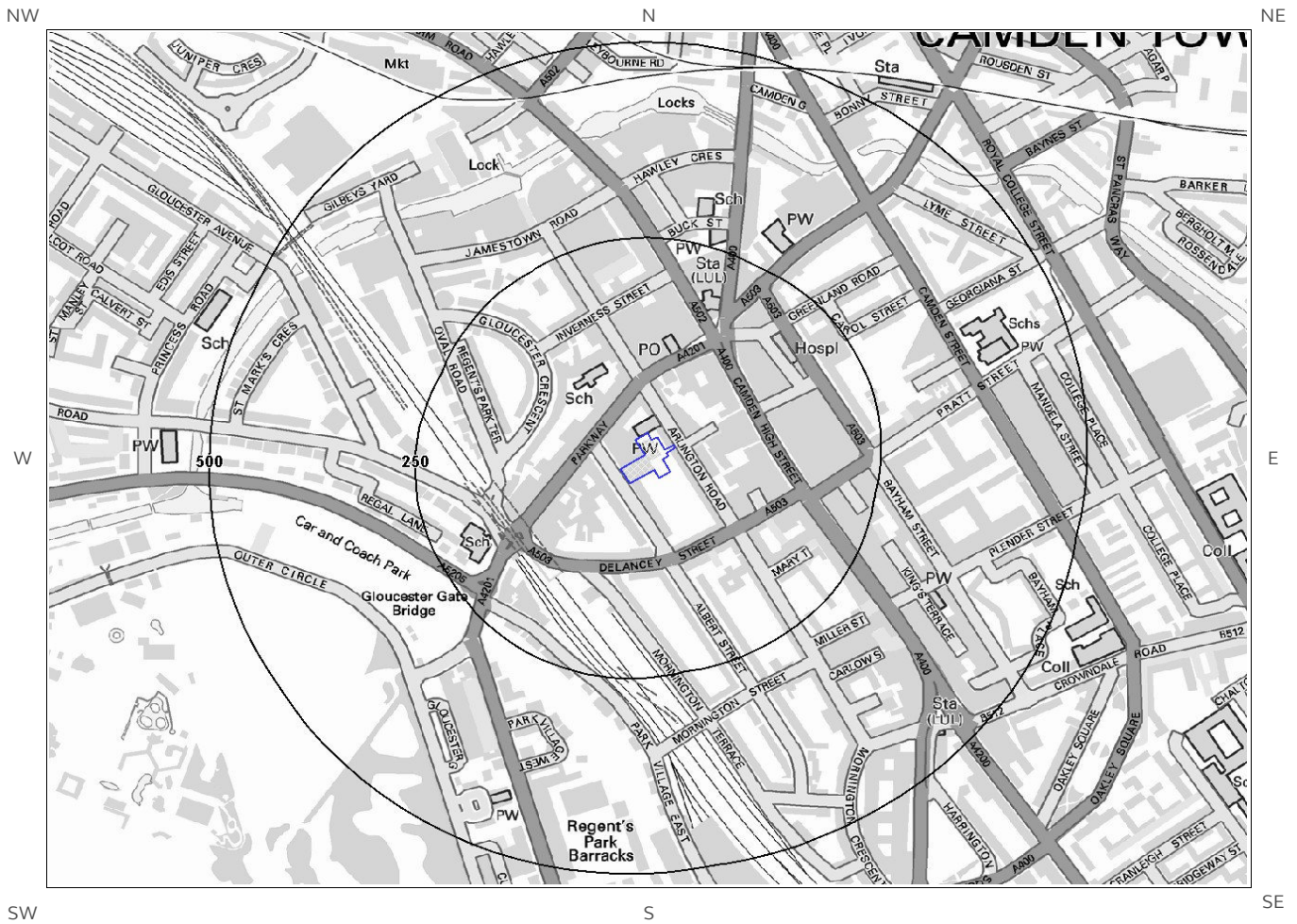
## 6.11 Surface Water Features

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

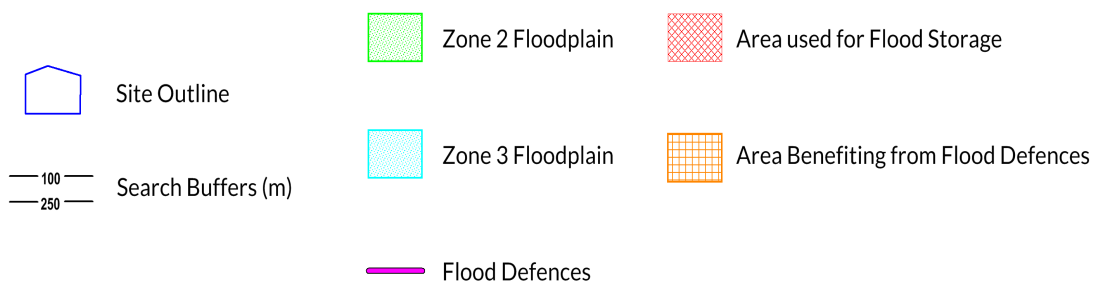
No

Database searched and no data found.

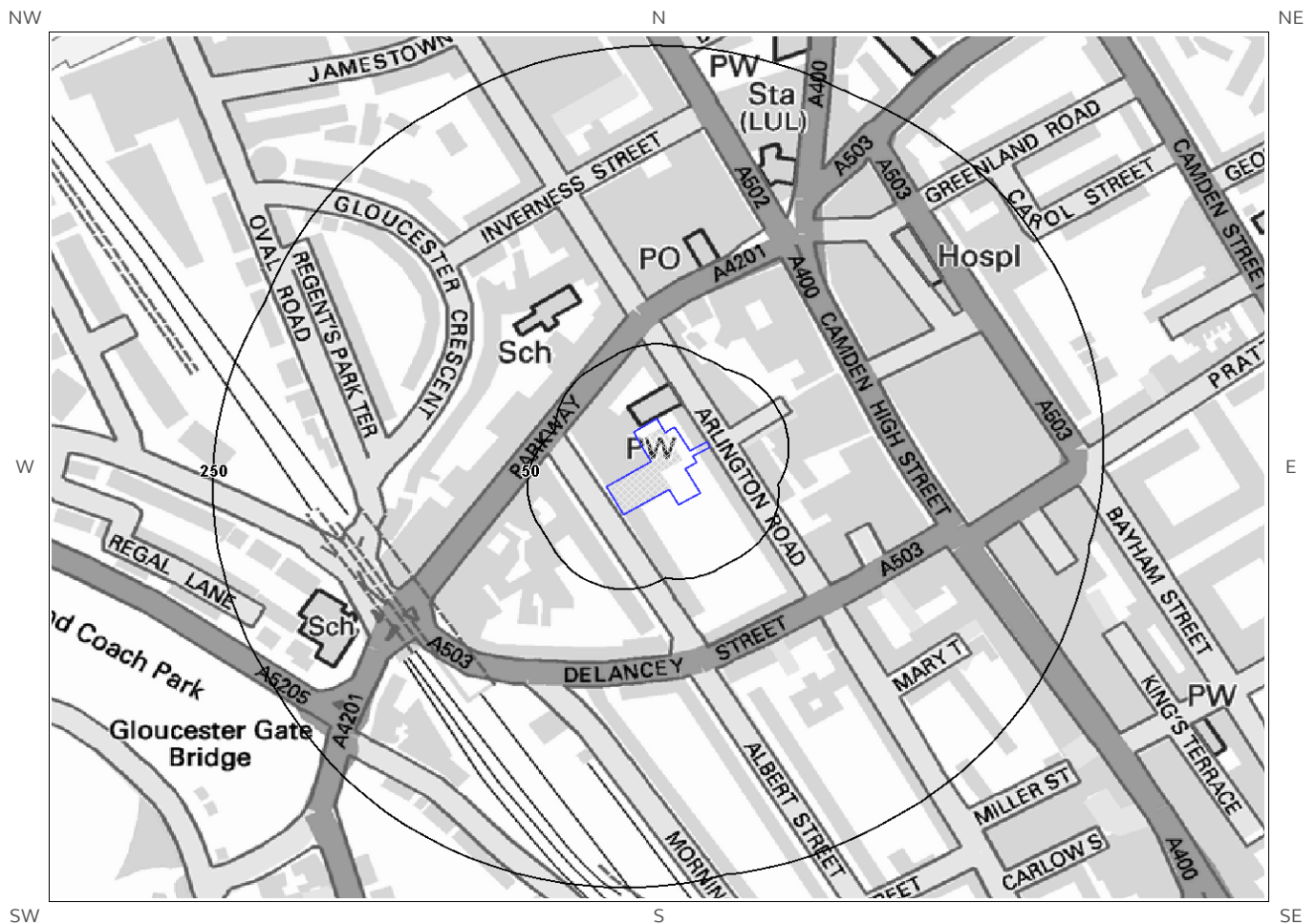
# 7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



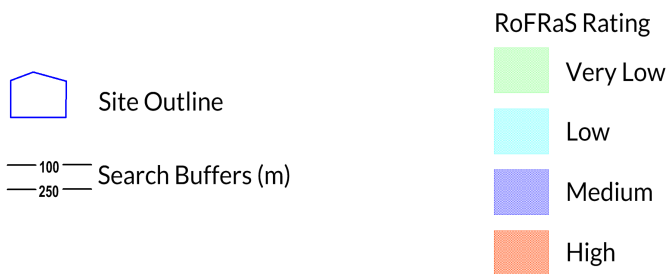
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# 7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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# 7 Flooding

## 7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 2 floodplain? No

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:

Database searched and no data found.

---

## 7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 3 floodplain? No

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.

Database searched and no data found.

---

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

What is the highest risk of flooding onsite? Very Low

The Environment Agency/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 Very Low (less than 1 in 1000) chance of flooding in any given year.

---

## 7.4 Flood Defences

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

---

## 7.5 Areas benefiting from Flood Defences

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

---



## 7.6 Areas benefiting from Flood Storage

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

No

---

## 7.7 Groundwater Flooding Susceptibility Areas

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

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

---

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

Not Prone

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

---

## 7.8 Groundwater Flooding Confidence Areas

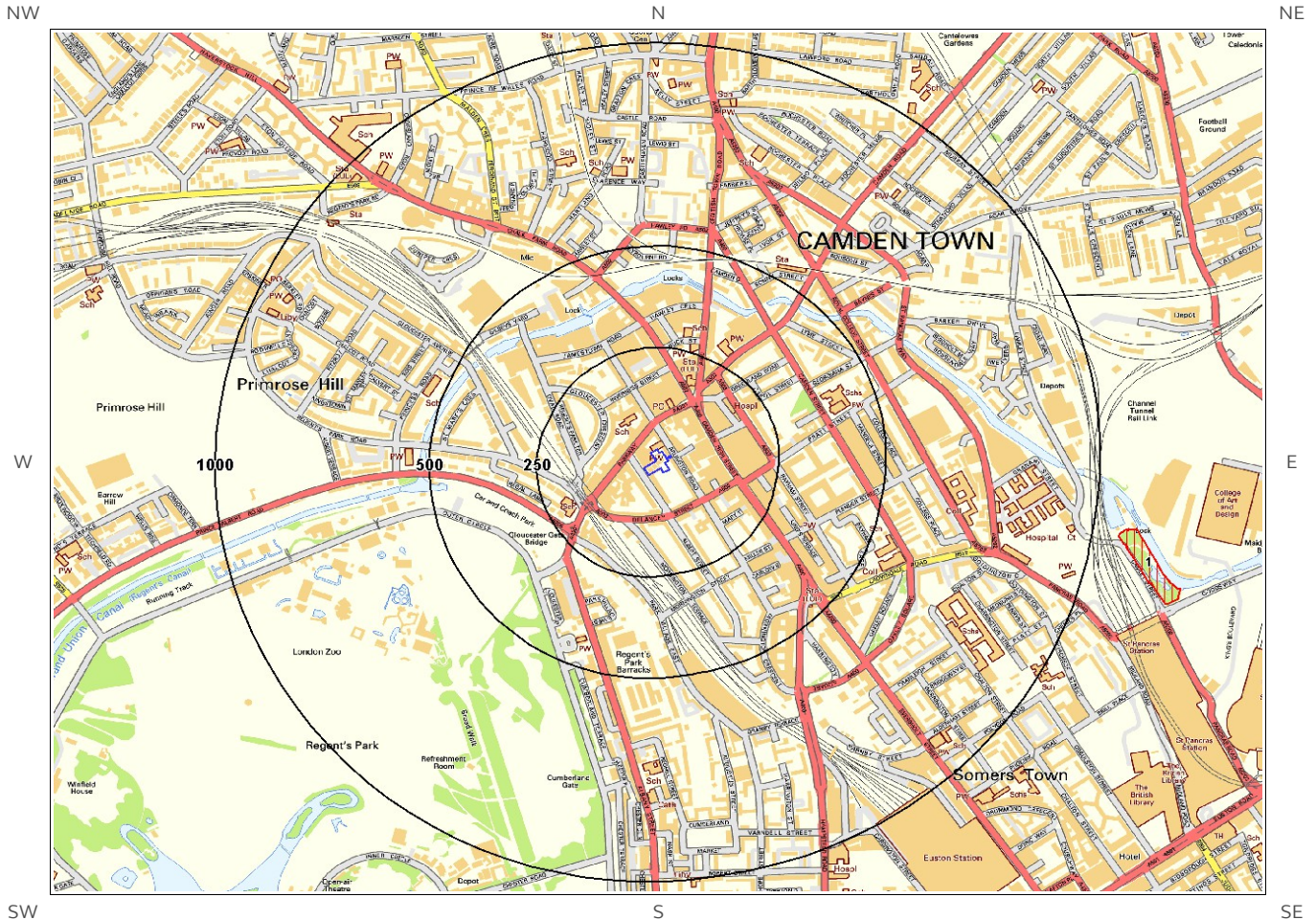
What is the British Geological Survey confidence rating in this result?

Not Applicable

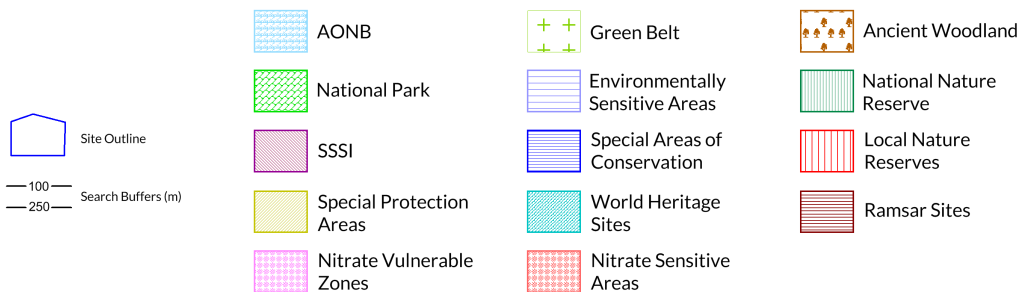
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

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

# 8. Designated Environmentally Sensitive Sites Map



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# 8. Designated Environmentally Sensitive Sites

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

---

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

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:

Database searched and no data found.

0

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

3

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

ID	Distance (m)	Direction	LNR Name	Data Source
1	1062	E	Camley Street Nature Park	Natural England
Not shown	1784	SW	St John's Wood Church Grounds	Natural England
Not shown	1971	NW	Belsize Wood	Natural England

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

Database searched and no data found.

0

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

Database searched and no data found.

0

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

Database searched and no data found.

0

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

Database searched and no data found.

0

**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:**

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

# 9. Natural Hazards Findings

## 9.1 Detailed BGS GeoSure Data

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

### 9.1.1 Shrink Swell

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

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

Hazard
Ground conditions predominantly high plasticity. Do not plant or remove trees or shrubs near to buildings without expert advice about their effect and management. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a probable increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a probable increase in insurance risk during droughts or where vegetation with high moisture demands is present.

### 9.1.2 Landslides

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

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

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

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

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

### 9.1.4 Compressible Ground

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

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

---

**Hazard**

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

---

### 9.1.5 Collapsible Rocks

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

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

---

**Hazard**

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

---

### 9.1.6 Running Sand

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

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

---

**Hazard**

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

---

## 9.2 Radon

### 9.2.1 Radon Affected Areas

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

---



---

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

### 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

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

Database searched and no data found.

---

## 10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary? No

Database searched and no data found.

---

## 10.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? No  
Guidance: No Guidance Required.

---

# Contact Details

**Groundsure Helpline**  
Telephone: 08444 159 000  
info@groundsure.com

**British Geological Survey Enquiries**

Kingsley Dunham Centre  
Keyworth, Nottingham NG12 5GG  
Tel: 0115 936 3143.  
Fax: 0115 936 3276.  
Email:

Web: [www.bgs.ac.uk](http://www.bgs.ac.uk)

BGS Geological Hazards Reports and general geological enquiries:  
[enquiries@bgs.ac.uk](mailto:enquiries@bgs.ac.uk)

**Environment Agency**

National Customer Contact Centre, PO Box 544  
Rotherham, S60 1BY  
Tel: 03708 506 506

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

Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)

**Public Health England**

Public information access office  
Public Health England, Wellington House  
133-155 Waterloo Road, London, SE1 8UG  
[www.gov.uk/phe](http://www.gov.uk/phe)

Email: [enquiries@phe.gov.uk](mailto:enquiries@phe.gov.uk)  
Main switchboard: 020 7654 8000

**The Coal Authority**

200 Lichfield Lane  
Mansfield  
Notts NG18 4RG  
Tel: 0345 7626 848  
DX 716176 Mansfield 5  
[www.coal.gov.uk](http://www.coal.gov.uk)

**Ordnance Survey**

Adanac Drive, Southampton  
SO16 0AS  
Tel: 08456 050505

**Local Authority**

Authority: London Borough of Camden  
Phone: 020 7974 4444  
Web: <http://www.camden.gov.uk/>  
Address: Camden Town Hall, Judd Street, London, WC1H 9JE

**Gemapping PLC**

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



Public Health  
England



The Coal  
Authority



## **APPENDIX 3**

### **CLASSIFICATION OF AGGRESSIVE CHEMICAL ENVIRONMENT FOR BURIED CONCRETE**

## TABLE C2 – AGGRESSIVE CHEMICAL ENVIRONMENT FOR CONCRETE

### (ACEC) CLASSIFICATION FOR BROWNFIELD LOCATIONS<sup>a</sup>

Table C2 Aggressive Chemical Environment for Concrete (ACEC) classification for brownfield locations<sup>a</sup>

Sulfate and magnesium			Groundwater			Groundwater		ACEC Class for location
Design Sulfate Class for location	2:1 water/soil extract <sup>b</sup>		Groundwater		Total potential sulfate <sup>c</sup>	Static water	Mobile water	
1	2	3	4	5	6	7	8	9
	(SO <sub>4</sub> mg/l)	(Mg mg/l)	(SO <sub>4</sub> mg/l)	(Mg mg/l)	(SO <sub>4</sub> %)	(pH) <sup>d</sup>	(pH) <sup>d</sup>	
DS-1	< 500		< 400		< 0.24	≥ 2.5		AC-1s
							> 6.5 <sup>d</sup>	AC-1
							5.5–6.5	AC-2z
							4.5–5.5	AC-3z
DS-2	500–1500		400–1400		0.24–0.6	> 5.5	2.5–4.5	AC-4z
								AC-1s
							> 6.5	AC-2
								AC-2s
							5.5–6.5	AC-3z
DS-3	1600–3000		1500–3000		0.7–1.2	> 5.5	4.5–5.5	AC-4z
							2.5–5.5	AC-5z
								AC-2s
							> 6.5	AC-3
							2.5–5.5	AC-3s
DS-4	3100–6000	≤ 1200	3100–6000	≤ 1000	1.3–2.4	> 5.5	5.5–6.5	AC-4
							2.5–5.5	AC-5
								AC-3s
							> 6.5	AC-4
DS-4m	3100–6000	> 1200 <sup>e</sup>	3100–6000	> 1000 <sup>e</sup>	1.3–2.4	> 5.5	2.5–6.5	AC-4s
								AC-5
							> 6.5	AC-3s
							2.5–5.5	AC-4m
DS-5	> 6000	≤ 1200	> 6000	≤ 1000	> 2.4	> 5.5	2.5–6.5	AC-5m
							≥ 2.5	AC-4s
								AC-5
							2.5–5.5	AC-4s
DS-5m	> 6000	> 1200 <sup>e</sup>	> 6000	> 1000 <sup>e</sup>	> 2.4	> 5.5	≥ 2.5	AC-4ms
							2.5–5.5	AC-5m

#### Notes

- a Brownfield locations are those sites, or parts of sites, that might contain chemical residues produced by or associated with industrial production (Section C5.1.3).
- b The limits of Design Sulfate Classes based on 2:1 water/soil extracts have been lowered from previous Digests (Box C7).
- c Applies only to locations where concrete will be exposed to sulfate ions (SO<sub>4</sub>), which may result from the oxidation of sulfides such as pyrite, following ground disturbance (Appendix A1 and Box C8).
- d An additional account is taken of hydrochloric and nitric acids by adjustment to sulfate content (Section C5.1.3).
- e The limit on water-soluble magnesium does not apply to brackish groundwater (chloride content between 12 000 mg/l and 17 000 mg/l). This allows 'm' to be omitted from the relevant ACEC classification. Seawater (chloride content about 18 000 mg/l) and stronger brines are not covered by this table.

#### Explanation of suffix symbols to ACEC Class

- Suffix 's' indicates that the water has been classified as static.
- Concrete placed in ACEC Classes that include the suffix 'z' have primarily to resist acid conditions and may be made with any of the cements in Table D2 on page 42.
- Suffix 'm' relates to the higher levels of magnesium in Design Sulfate Classes 4 and 5.

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