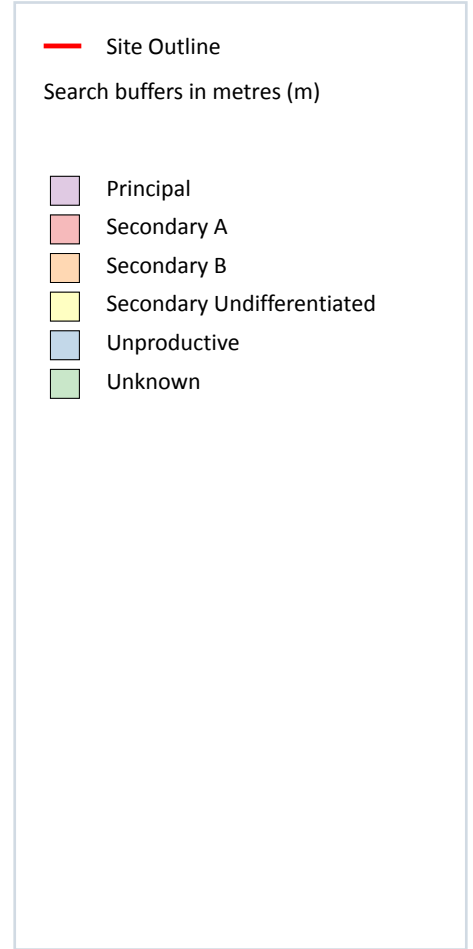
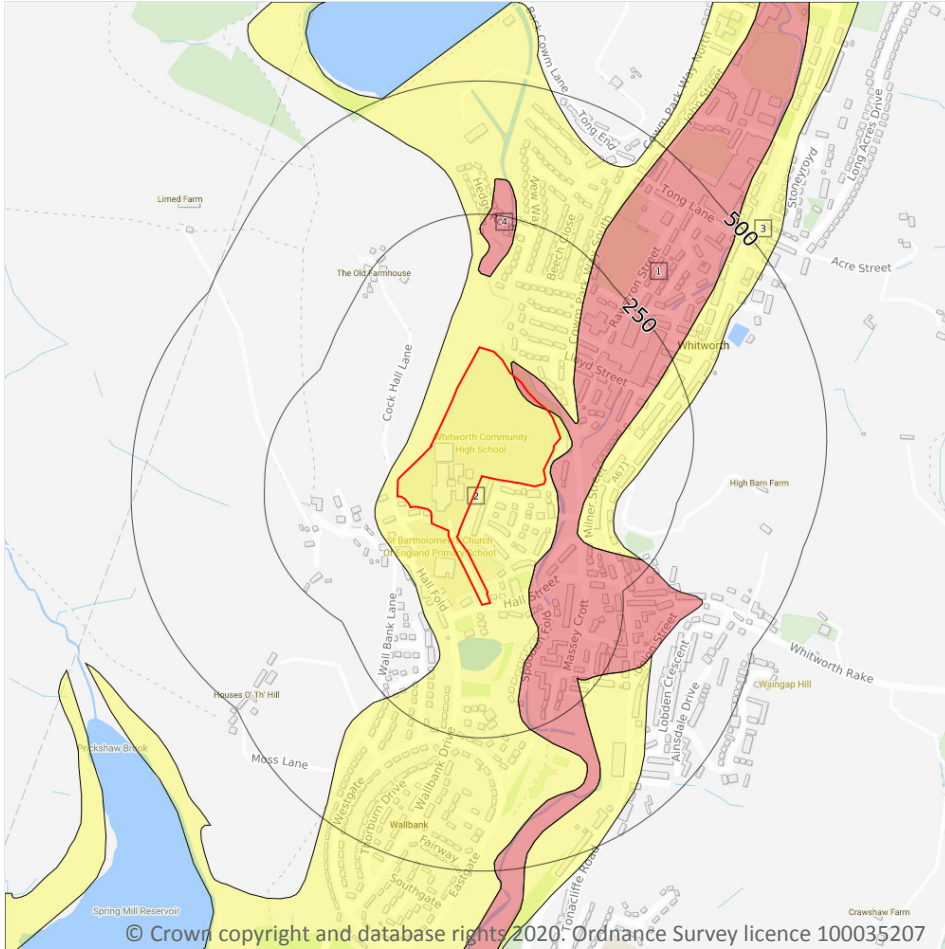


## 5 Hydrogeology - Superficial aquifer



### 5.1 Superficial aquifer

Records within 500m

4

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 52**

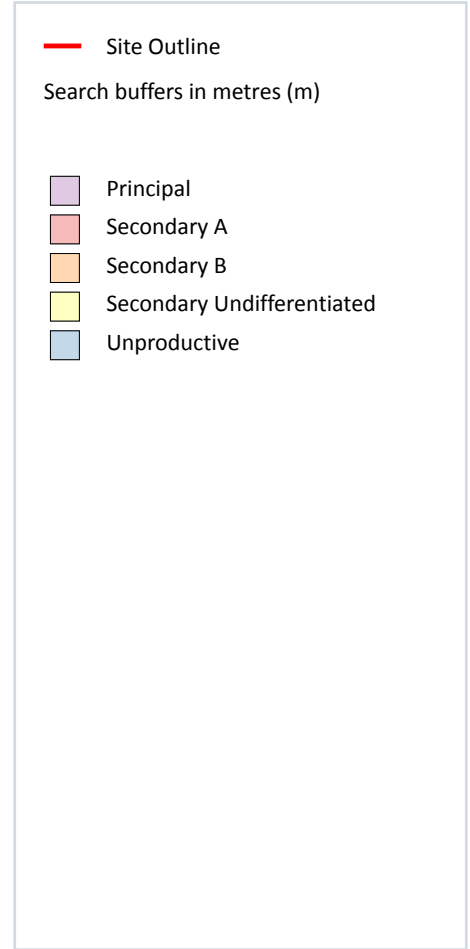
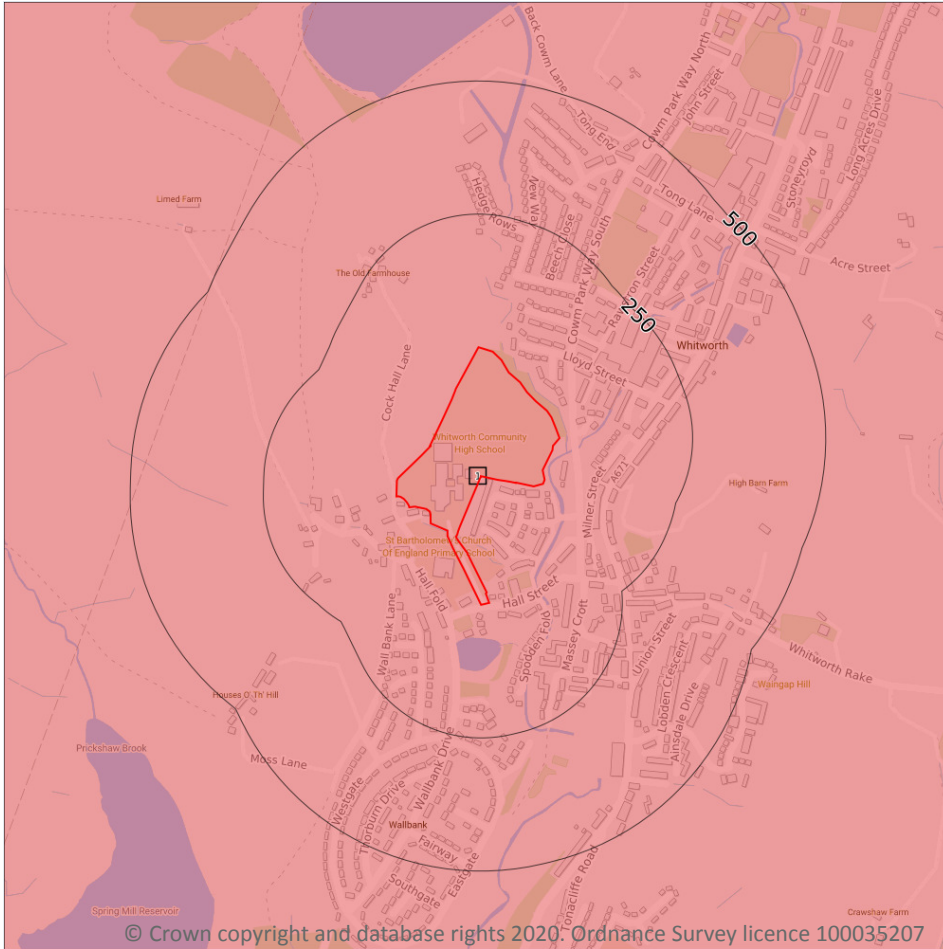
ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

ID	Location	Designation	Description
3	83m SE	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
4	134m N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

*This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.*



## Bedrock aquifer



### 5.2 Bedrock aquifer

Records within 500m

1

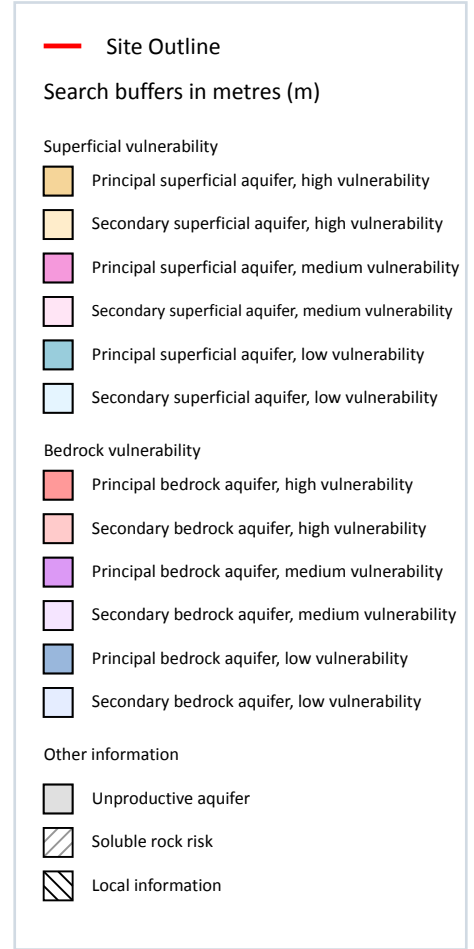
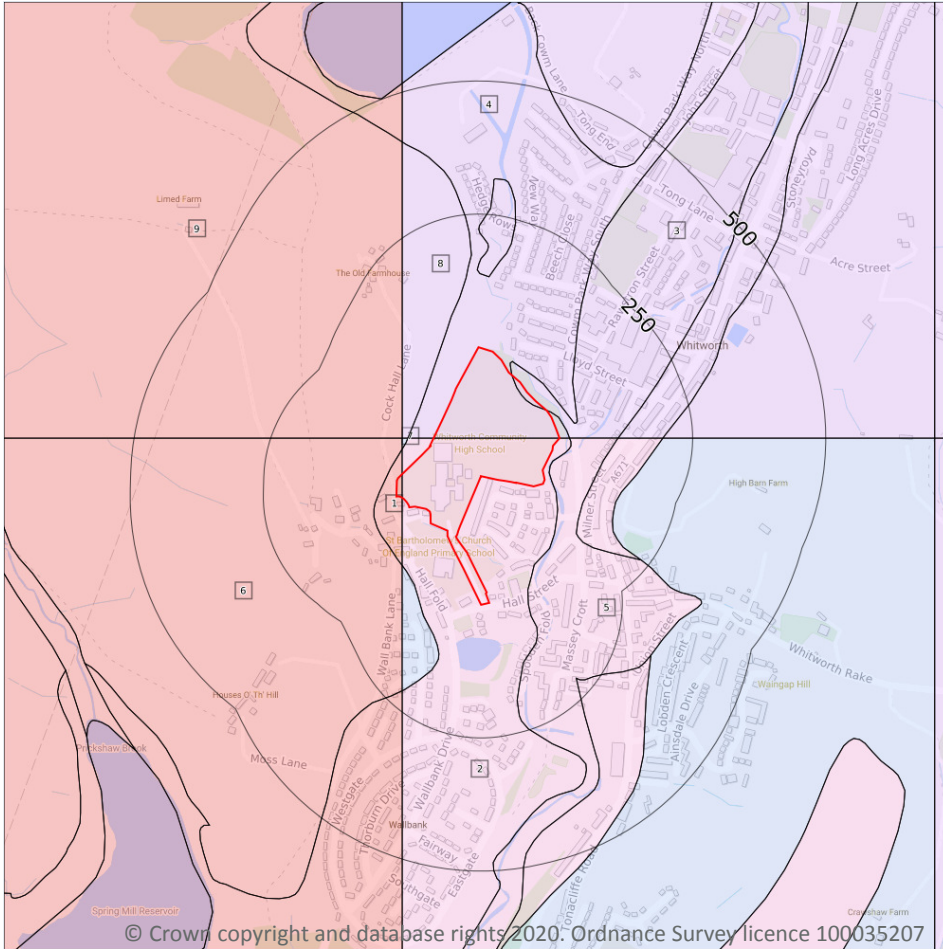
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 54**

ID	Location	Designation	Description
1	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

*This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.*

## Groundwater vulnerability



### 5.3 Groundwater vulnerability

Records within 50m

9

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 55**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	<b>Summary Classification:</b> Secondary bedrock aquifer - High Vulnerability <b>Combined classification:</b> Productive Bedrock Aquifer, Productive Superficial Aquifer	<b>Leaching class: High</b> <b>Infiltration value:</b> 40-70% <b>Dilution value:</b> >550mm/year	<b>Vulnerability: Medium</b> <b>Aquifer type: Secondary</b> <b>Thickness: 3-10m</b> <b>Patchiness value: &lt;90%</b> <b>Recharge potential: No Data</b>	<b>Vulnerability: High</b> <b>Aquifer type: Secondary</b> <b>Flow mechanism: Well connected fractures</b>
2	On site	<b>Summary Classification:</b> Secondary superficial aquifer - Medium Vulnerability <b>Combined classification:</b> Productive Bedrock Aquifer, Productive Superficial Aquifer	<b>Leaching class: Low</b> <b>Infiltration value:</b> >70% <b>Dilution value:</b> >550mm/year	<b>Vulnerability: Medium</b> <b>Aquifer type: Secondary</b> <b>Thickness: &lt;3m</b> <b>Patchiness value: &gt;90%</b> <b>Recharge potential: High</b>	<b>Vulnerability: Low</b> <b>Aquifer type: Secondary</b> <b>Flow mechanism: Well connected fractures</b>
3	On site	<b>Summary Classification:</b> Secondary bedrock aquifer - Medium Vulnerability <b>Combined classification:</b> Productive Bedrock Aquifer, Productive Superficial Aquifer	<b>Leaching class: Low</b> <b>Infiltration value:</b> 40-70% <b>Dilution value:</b> >550mm/year	<b>Vulnerability: Low</b> <b>Aquifer type: Secondary</b> <b>Thickness: &lt;3m</b> <b>Patchiness value: &lt;90%</b> <b>Recharge potential: High</b>	<b>Vulnerability: Medium</b> <b>Aquifer type: Secondary</b> <b>Flow mechanism: Well connected fractures</b>
4	On site	<b>Summary Classification:</b> Secondary bedrock aquifer - Medium Vulnerability <b>Combined classification:</b> Productive Bedrock Aquifer, Productive Superficial Aquifer	<b>Leaching class: Low</b> <b>Infiltration value:</b> 40-70% <b>Dilution value:</b> >550mm/year	<b>Vulnerability: Low</b> <b>Aquifer type: Secondary</b> <b>Thickness: &lt;3m</b> <b>Patchiness value: &lt;90%</b> <b>Recharge potential: High</b>	<b>Vulnerability: Medium</b> <b>Aquifer type: Secondary</b> <b>Flow mechanism: Well connected fractures</b>
5	9m SE	<b>Summary Classification:</b> Secondary superficial aquifer - Medium Vulnerability <b>Combined classification:</b> Productive Bedrock Aquifer, Productive Superficial Aquifer	<b>Leaching class: Low</b> <b>Infiltration value:</b> >70% <b>Dilution value:</b> >550mm/year	<b>Vulnerability: Medium</b> <b>Aquifer type: Secondary</b> <b>Thickness: &lt;3m</b> <b>Patchiness value: &gt;90%</b> <b>Recharge potential: High</b>	<b>Vulnerability: Low</b> <b>Aquifer type: Secondary</b> <b>Flow mechanism: Well connected fractures</b>
6	20m NW	<b>Summary Classification:</b> Secondary bedrock aquifer - High Vulnerability <b>Combined classification:</b> Productive Bedrock Aquifer, No Superficial Aquifer	<b>Leaching class: High</b> <b>Infiltration value:</b> 40-70% <b>Dilution value:</b> >550mm/year	<b>Vulnerability: -</b> <b>Aquifer type: -</b> <b>Thickness: 3-10m</b> <b>Patchiness value: &lt;90%</b> <b>Recharge potential: No Data</b>	<b>Vulnerability: High</b> <b>Aquifer type: Secondary</b> <b>Flow mechanism: Well connected fractures</b>



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
7	33m NW	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: >70% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
8	41m NW	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: 40- 70% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: High	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
9	48m NW	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: 40- 70% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures

*This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.*

## 5.4 Groundwater vulnerability- soluble rock risk

### Records on site

0

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

*This data is sourced from the British Geological Survey and the Environment Agency.*

## 5.5 Groundwater vulnerability- local information

### Records on site

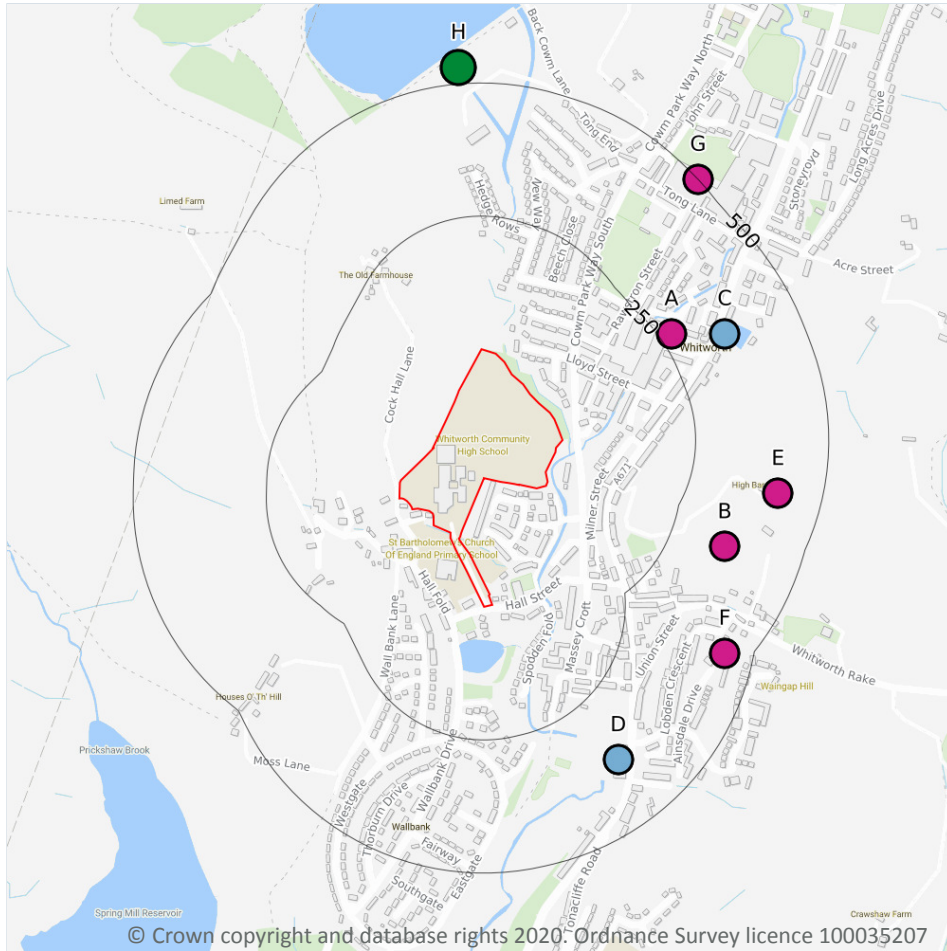
0

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk).

*This data is sourced from the British Geological Survey and the Environment Agency.*



## Abstractions and Source Protection Zones



### 5.6 Groundwater abstractions

Records within 2000m

16

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 58**

ID	Location	Details	
A	272m NE	Status: Historical Licence No: 2569002067 Details: Process water Direct Source: Ground Water - North West Region Point: "WELL AT BRIDGE MILLS, WHITWORTH NEAR ROCHDALE" Data Type: Point Name: MATTHEW STUTTARD & BROS LTD Easting: 388500 Northing: 418200	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 04/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 04/02/1966 Version End Date: -
A	272m NE	Status: Historical Licence No: 2569002067 Details: Process water Direct Source: Ground Water - North West Region Point: WELL AT BRIDGE MILLS, WHITWORTH NEAR ROCHDALE Data Type: Point Name: MATTHEW STUTTARD & BROS LTD Easting: 388500 Northing: 418200	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 04/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 04/02/1966 Version End Date: -
B	354m E	Status: Historical Licence No: 2569002119 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING FED CATCHPIT AT HORSE CROFT FARM, WHITWORTH, ROCHDAL" Data Type: Point Name: JACKSON Easting: 388600 Northing: 417800	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 31/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 31/01/1966 Version End Date: -
B	354m E	Status: Historical Licence No: 2569002119 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING FED CATCHPIT AT HORSE CROFT FARM, WHITWORTH, ROCHDAL Data Type: Point Name: JACKSON Easting: 388600 Northing: 417800	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 31/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 31/01/1966 Version End Date: -





ID	Location	Details	
E	416m E	Status: Historical Licence No: 2569002115 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING FED WELL AT HIGH BARN FARM, WHITWORTH, ROCHDALE" Data Type: Point Name: JACKSON Easting: 388700 Northing: 417900	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 03/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 03/03/1966 Version End Date: -
E	416m E	Status: Historical Licence No: 2569002115 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING FED WELL AT HIGH BARN FARM, WHITWORTH, ROCHDALE Data Type: Point Name: JACKSON Easting: 388700 Northing: 417900	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 03/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 03/03/1966 Version End Date: -
F	445m E	Status: Historical Licence No: 2569002084 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING FED CATCHPIT AT WAINGAP FARM, WHITWORTH, ROCHDALE" Data Type: Point Name: ROYMIC CONSTRUCTION CO LTD Easting: 388600 Northing: 417600	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 03/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 03/02/1966 Version End Date: -
F	445m E	Status: Historical Licence No: 2569002084 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING FED CATCHPIT AT WAINGAP FARM, WHITWORTH, ROCHDALE Data Type: Point Name: ROYMIC CONSTRUCTION CO LTD Easting: 388600 Northing: 417600	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 03/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 03/02/1966 Version End Date: -



ID	Location	Details	
G	500m NE	Status: Historical Licence No: 2569002265 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "A BOREHOLE AT TONG LANE, WHITWORTH, ROCHDALE" Data Type: Point Name: ANGLO FELT INDUSTRIES LTD Easting: 388550 Northing: 418490	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 28/01/1998 Expiry Date: - Issue No: 100 Version Start Date: 28/01/1998 Version End Date: -
G	500m NE	Status: Historical Licence No: 2569002265 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: A BOREHOLE AT TONG LANE, WHITWORTH, ROCHDALE Data Type: Point Name: ANGLO FELT INDUSTRIES LTD Easting: 388550 Northing: 418490	Annual Volume (m <sup>3</sup> ): 4546 Max Daily Volume (m <sup>3</sup> ): 18.9 Original Application No: - Original Start Date: 28/01/1998 Expiry Date: - Issue No: 100 Version Start Date: 28/01/1998 Version End Date: -
-	1268m NE	Status: Historical Licence No: 2569002118 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING FED CATCHPIT AT NEW BARN, WHITWORTH" Data Type: Point Name: JACKSON Easting: 388900 Northing: 419200	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 15/02/1966 Version End Date: -
-	1268m NE	Status: Historical Licence No: 2569002118 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING FED CATCHPIT AT NEW BARN, WHITWORTH Data Type: Point Name: JACKSON Easting: 388900 Northing: 419200	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 15/02/1966 Version End Date: -



ID	Location	Details	
-	1594m SE	Status: Historical Licence No: 2569002155 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "WELL AT MOORSIDE FARM, WARDLE, ROCHDALE, LANCASHIRE" Data Type: Point Name: ROWLEY Easting: 389600 Northing: 417000	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/01/1966 Version End Date: -
-	1594m SE	Status: Historical Licence No: 2569002155 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: WELL AT MOORSIDE FARM, WARDLE, ROCHDALE, LANCASHIRE Data Type: Point Name: ROWLEY Easting: 389600 Northing: 417000	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/01/1966 Version End Date: -
-	1690m SW	Status: Historical Licence No: 2569002254 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: "BOREHOLE AT KNACKS FARM,LANEHEAD, ROCHDALE" Data Type: Point Name: HUGHES Easting: 387290 Northing: 416230	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 06/11/1992 Expiry Date: - Issue No: 100 Version Start Date: 06/11/1992 Version End Date: -
-	1690m SW	Status: Historical Licence No: 2569002254 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: BOREHOLE AT KNACKS FARM,LANEHEAD, ROCHDALE Data Type: Point Name: HUGHES Easting: 387290 Northing: 416230	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 06/11/1992 Expiry Date: - Issue No: 100 Version Start Date: 06/11/1992 Version End Date: -

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 5.7 Surface water abstractions

### Records within 2000m

11

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 58**

ID	Location	Details	
C	358m NE	Status: Historical Licence No: 2569002068 Details: Boiler Feed Direct Source: "Surface, Non-Tidal - North West Region" Point: "RESERVOIR AT BRIDGE MILLS, WHITWORTHROCHDALE" Data Type: Point Name: MATTHEW STUTTARD & BROS LTD Easting: 388600 Northing: 418200	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 04/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 04/02/1966 Version End Date: -
C	358m NE	Status: Historical Licence No: 2569002068 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIR AT BRIDGE MILLS, WHITWORTHROCHDALE Data Type: Point Name: MATTHEW STUTTARD & BROS LTD Easting: 388600 Northing: 418200	Annual Volume (m <sup>3</sup> ): 3636.8 Max Daily Volume (m <sup>3</sup> ): 36.368 Original Application No: - Original Start Date: 04/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 04/02/1966 Version End Date: -
D	374m SE	Status: Historical Licence No: 2569002066 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: R SPODDEN AT WHITWORTH, LANCS Data Type: Point Name: GUARDIAN CONTRACTS LTD Easting: 388400 Northing: 417400	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 03/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 19/10/2000 Version End Date: -



ID	Location	Details	
D	374m SE	Status: Historical Licence No: 2569002066 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "R SPODDEN AT WHITWORTH, LANCS" Data Type: Point Name: GUARDIAN CONTRACTS LTD Easting: 388400 Northing: 417400	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 03/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 19/10/2000 Version End Date: -
H	531m N	Status: Historical Licence No: 2569002127 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: SPRING MILL RESERVOIR AND COWM RESERVOIR AT WHITWO101 Data Type: Point Name: NORTH WEST WATER LTD Easting: 388100 Northing: 418700	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 24/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1969 Version End Date: -
H	531m N	Status: Historical Licence No: 2569002127 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: SPRING MILL RESERVOIR AND COWM RESERVOIR AT WHITWO\$101 Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 388100 Northing: 418700	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 24/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1969 Version End Date: -
H	531m N	Status: Active Licence No: 2569002127 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: SPRING MILL RESERVOIR AND COWM RESERVOIR AT WHITWORTH Data Type: Point Name: United Utilities Water Ltd Easting: 388100 Northing: 418700	Annual Volume (m <sup>3</sup> ): 4,318,700 Max Daily Volume (m <sup>3</sup> ): 4,318,700 Original Application No: - Original Start Date: 24/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1969 Version End Date: -



ID	Location	Details	
-	878m SW	Status: Historical Licence No: 2569002127 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: SPRING MILL RESERVOIR AND COWM RESERVOIR AT WHITWORTH Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 387600 Northing: 417000	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 24/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1969 Version End Date: -
-	878m SW	Status: Active Licence No: 2569002127 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: SPRING MILL RESERVOIR AND COWM RESERVOIR AT WHITWORTH Data Type: Point Name: United Utilities Water Ltd Easting: 387600 Northing: 417000	Annual Volume (m <sup>3</sup> ): 4,318,700 Max Daily Volume (m <sup>3</sup> ): 4,318,700 Original Application No: - Original Start Date: 24/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1969 Version End Date: -
-	1872m E	Status: Historical Licence No: 2569002259 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household" Direct Source: "Surface, Non-Tidal - North West Region" Point: "SPRING FED TANK ON ADJACENT LAND KNOWN AS STID FOLD FARM," Data Type: Point Name: DAVID CHRISTOPHER HARRY & JANET ROSE HARRY Easting: 390100 Northing: 417500	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 03/11/1994 Expiry Date: - Issue No: 101 Version Start Date: 01/07/1999 Version End Date: -
-	1872m E	Status: Historical Licence No: 2569002259 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Surface, Non-Tidal - North West Region Point: SPRING FED TANK ON ADJACENT LAND KNOWN AS STID FOLD FARM Data Type: Point Name: DAVID CHRISTOPHER HARRY & JANET ROSE HARRY Easting: 390100 Northing: 417500	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 03/11/1994 Expiry Date: - Issue No: 101 Version Start Date: 01/07/1999 Version End Date: -

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 5.8 Potable abstractions

Records within 2000m

7

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 58**

ID	Location	Details	
H	531m N	Status: Historical Licence No: 2569002127 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: SPRING MILL RESERVOIR AND COWM RESERVOIR AT WHITWO101 Data Type: Point Name: NORTH WEST WATER LTD Easting: 388100 Northing: 418700	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 24/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1969 Version End Date: -
H	531m N	Status: Historical Licence No: 2569002127 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: SPRING MILL RESERVOIR AND COWM RESERVOIR AT WHITWO\$101 Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 388100 Northing: 418700	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 24/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1969 Version End Date: -
H	531m N	Status: Active Licence No: 2569002127 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: SPRING MILL RESERVOIR AND COWM RESERVOIR AT WHITWORTH Data Type: Point Name: United Utilities Water Ltd Easting: 388100 Northing: 418700	Annual Volume (m <sup>3</sup> ): 4,318,700 Max Daily Volume (m <sup>3</sup> ): 4,318,700 Original Application No: - Original Start Date: 24/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1969 Version End Date: -



ID	Location	Details	
-	878m SW	Status: Historical Licence No: 2569002127 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: SPRING MILL RESERVOIR AND COWM RESERVOIR AT WHITWORTH Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 387600 Northing: 417000	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 24/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1969 Version End Date: -
-	878m SW	Status: Active Licence No: 2569002127 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: SPRING MILL RESERVOIR AND COWM RESERVOIR AT WHITWORTH Data Type: Point Name: United Utilities Water Ltd Easting: 387600 Northing: 417000	Annual Volume (m <sup>3</sup> ): 4,318,700 Max Daily Volume (m <sup>3</sup> ): 4,318,700 Original Application No: - Original Start Date: 24/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1969 Version End Date: -
-	1872m E	Status: Historical Licence No: 2569002259 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household" Direct Source: "Surface, Non-Tidal - North West Region" Point: "SPRING FED TANK ON ADJACENT LAND KNOWN AS STID FOLD FARM," Data Type: Point Name: DAVID CHRISTOPHER HARRY & JANET ROSE HARRY Easting: 390100 Northing: 417500	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 03/11/1994 Expiry Date: - Issue No: 101 Version Start Date: 01/07/1999 Version End Date: -
-	1872m E	Status: Historical Licence No: 2569002259 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Surface, Non-Tidal - North West Region Point: SPRING FED TANK ON ADJACENT LAND KNOWN AS STID FOLD FARM Data Type: Point Name: DAVID CHRISTOPHER HARRY & JANET ROSE HARRY Easting: 390100 Northing: 417500	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 03/11/1994 Expiry Date: - Issue No: 101 Version Start Date: 01/07/1999 Version End Date: -

*This data is sourced from the Environment Agency and Natural Resources Wales.*





## 5.9 Source Protection Zones

Records within 500m

0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 5.10 Source Protection Zones (confined aquifer)

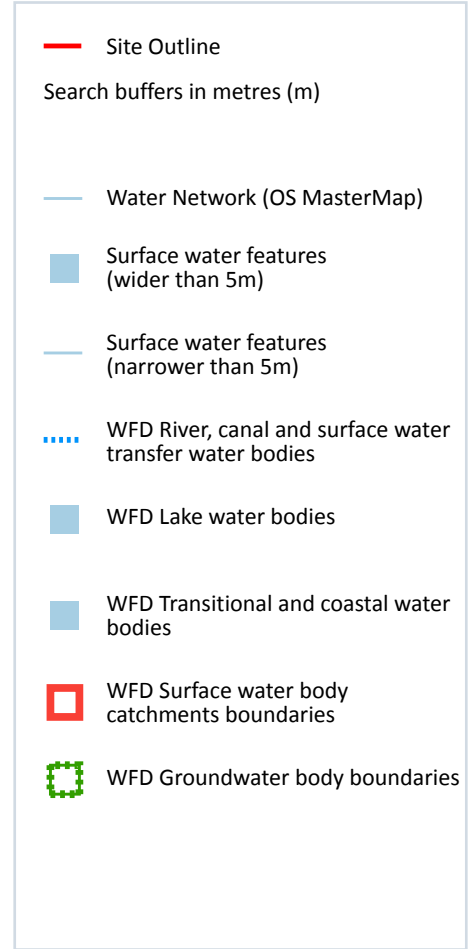
Records within 500m

0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 6 Hydrology



### 6.1 Water Network (OS MasterMap)

Records within 250m

32

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on **page 69**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Miller's Gutter

ID	Location	Type of water feature	Ground level	Permanence	Name
A	1m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Miller's Gutter
A	1m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Miller's Gutter
3	8m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Spodden
4	10m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Tong End Brook
A	12m NE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Miller's Gutter
C	13m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Tong End Brook
5	13m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Miller's Gutter
D	14m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Tong End Brook
D	14m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Tong End Brook
D	14m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Tong End Brook
E	15m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Spodden
D	15m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Tong End Brook
A	21m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Miller's Gutter



ID	Location	Type of water feature	Ground level	Permanence	Name
D	23m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Tong End Brook
6	49m NE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Miller's Gutter
F	74m S	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	82m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	89m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Miller's Gutter
H	94m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Spodden
I	100m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Tong End Brook
9	102m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Miller's Gutter
J	131m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Tong End Brook
10	140m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Spodden
K	166m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Miller's Gutter
11	181m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Miller's Gutter
J	185m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Tong End Brook



ID	Location	Type of water feature	Ground level	Permanence	Name
L	205m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Spodden
J	207m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Tong End Brook
J	234m N	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Tong End Brook
L	237m NE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	River Spodden
12	244m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Tong End Brook

*This data is sourced from the Ordnance Survey.*

## 6.2 Surface water features

<b>Records within 250m</b>	<b>17</b>
----------------------------	-----------

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on **page 69**

*This data is sourced from the Ordnance Survey.*

## 6.3 WFD Surface water body catchments

<b>Records on site</b>	<b>1</b>
------------------------	----------

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 69**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
B	On site	River WB catchment	Spodden	GB112069064730	Roch Irk Medlock	Irwell

This data is sourced from the Environment Agency and Natural Resources Wales.

## 6.4 WFD Surface water bodies

<b>Records identified</b>	<b>1</b>
---------------------------	----------

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on **page 69**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
2	8m SE	River	Spodden	<a href="#">GB112069064730</a>	Moderate	Good	Moderate	2016

This data is sourced from the Environment Agency and Natural Resources Wales.

## 6.5 WFD Groundwater bodies

<b>Records on site</b>	<b>1</b>
------------------------	----------

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

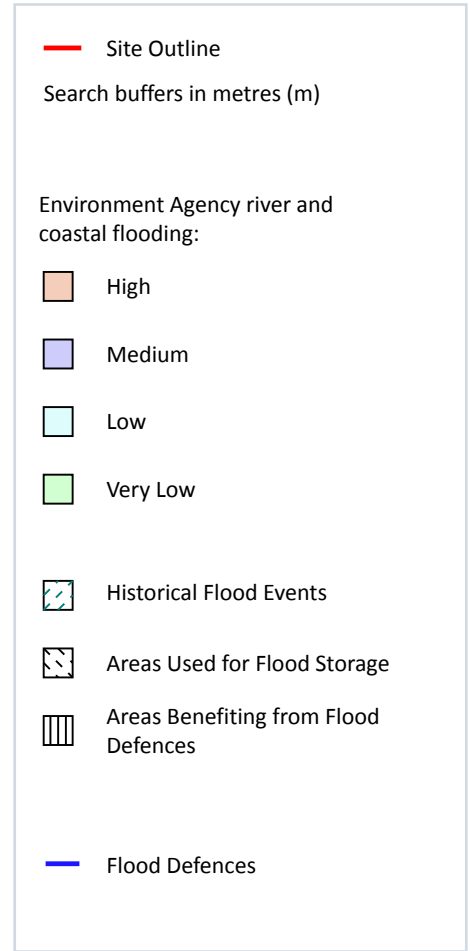
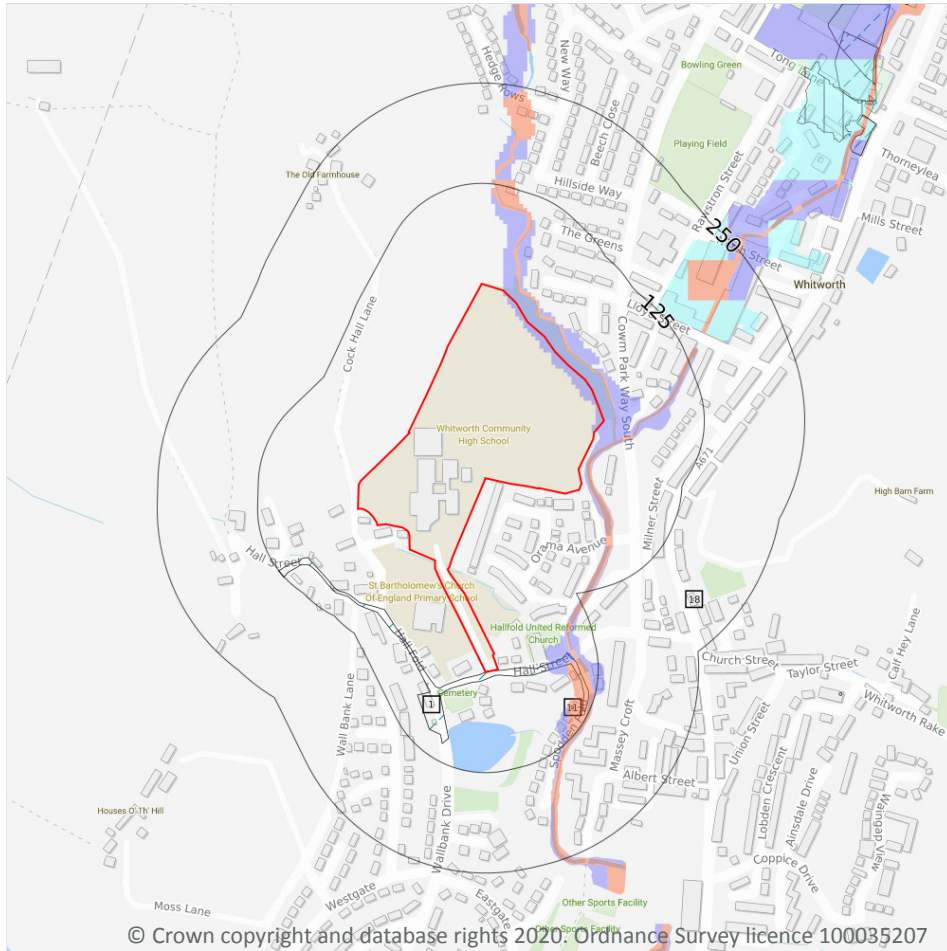
Features are displayed on the Hydrology map on **page 69**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
B	On site	Northern Manchester Carboniferous Aquifers	<a href="#">GB41202G101800</a>	Poor	Poor	Good	2015

This data is sourced from the Environment Agency and Natural Resources Wales.



## 7 River and coastal flooding



### 7.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m

15

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance).

Features are displayed on the River and coastal flooding map on **page 74**

Distance	RoFRaS flood risk
<b>On site</b>	<b>Medium</b>
0 - 50m	High

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 7.2 Historical Flood Events

**Records within 250m**

**3**

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

Features are displayed on the River and coastal flooding map on **page 74**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
1	On site	Ea013_Whitworth	2019-07-28 2019-07-31	Unknown	Unknown	Fluvial Tidal
11	102m SE	Ea01327_21 January 2008_River Spodden_Healey, Lanc	2008-01-21 2008-01-22	Main river	Unknown	Fluvial
18	196m SE	Ea01327_04february2004_Riverspodden_294 marketst	2004-02-04 2004-02-05	Unknown	Unknown	No data

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 7.3 Flood Defences

**Records within 250m**

**0**

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 7.4 Areas Benefiting from Flood Defences

**Records within 250m**

**0**

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

*This data is sourced from the Environment Agency and Natural Resources Wales.*





## 7.5 Flood Storage Areas

Records within 250m

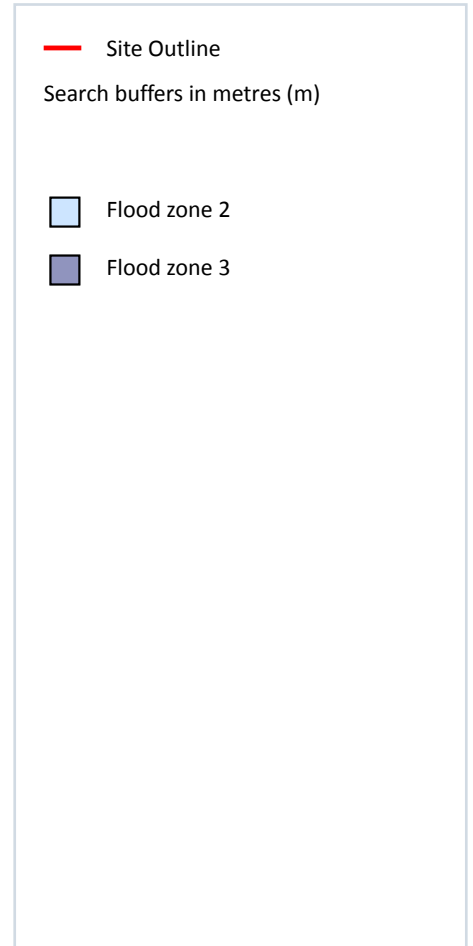
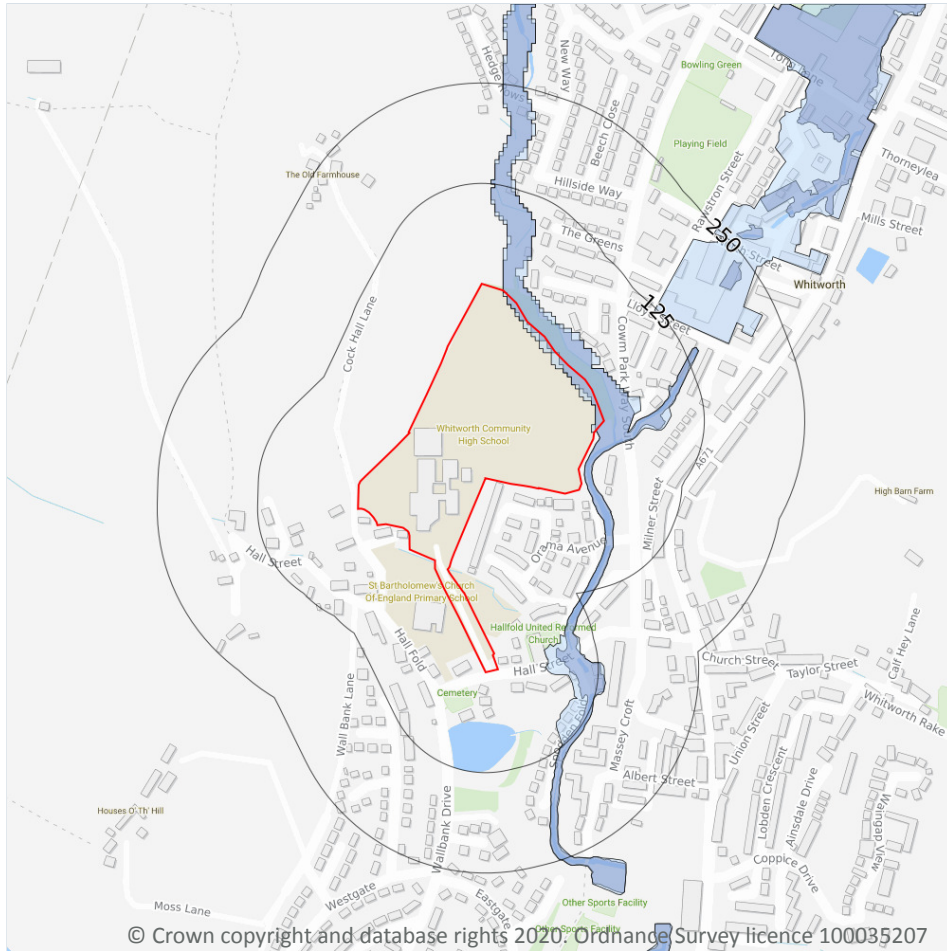
0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## River and coastal flooding - Flood Zones



### 7.6 Flood Zone 2

#### Records within 50m

1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

Features are displayed on the River and coastal flooding map on **page 74**

Location	Type
On site	Zone 2 - (Fluvial /Tidal Models)

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 7.7 Flood Zone 3

Records within 50m

1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

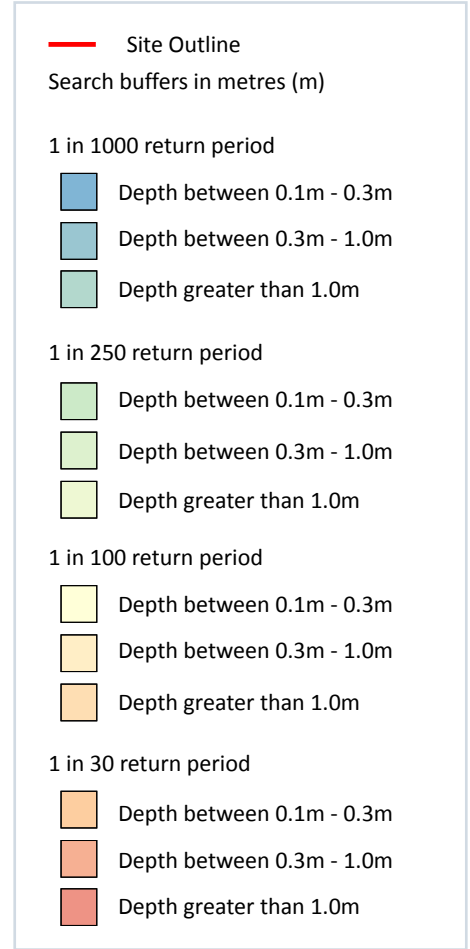
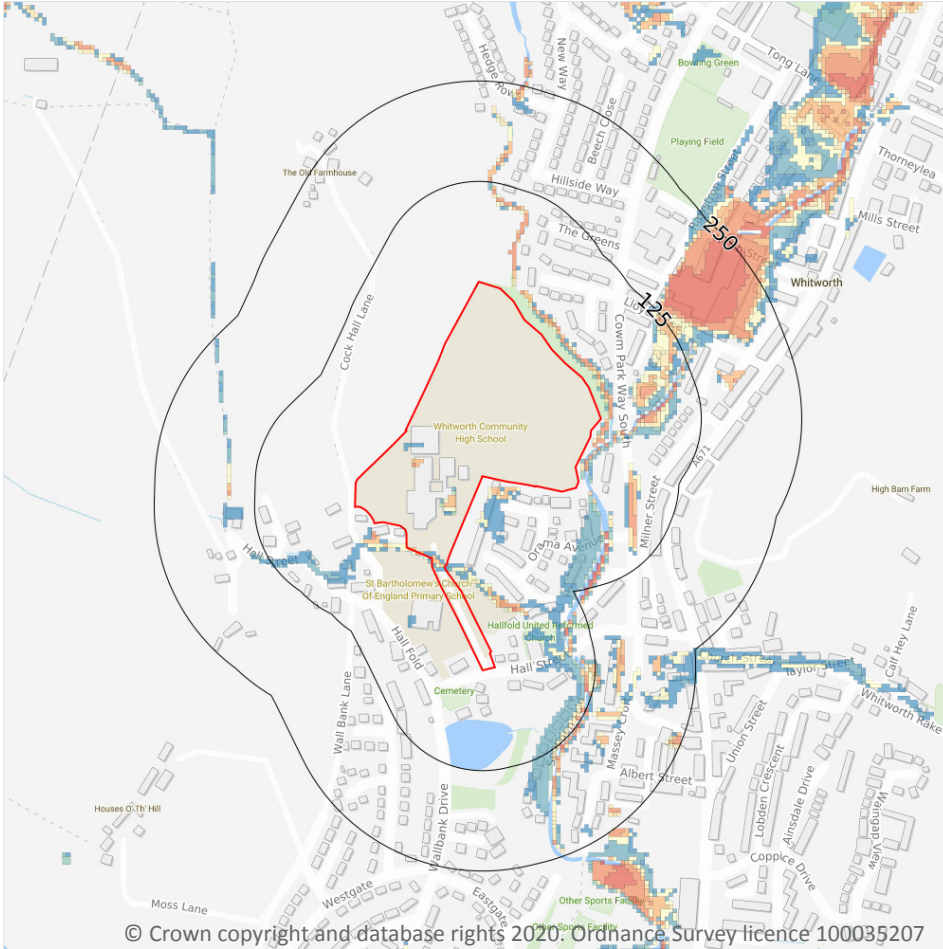
Features are displayed on the River and coastal flooding map on **page 74**

Location	Type
On site	Zone 3 - (Fluvial Models)

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 8 Surface water flooding



### 8.1 Surface water flooding

Highest risk on site

1 in 30 year, 0.3m - 1.0m

Highest risk within 50m

1 in 30 year, Greater than 1.0m

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 79**

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

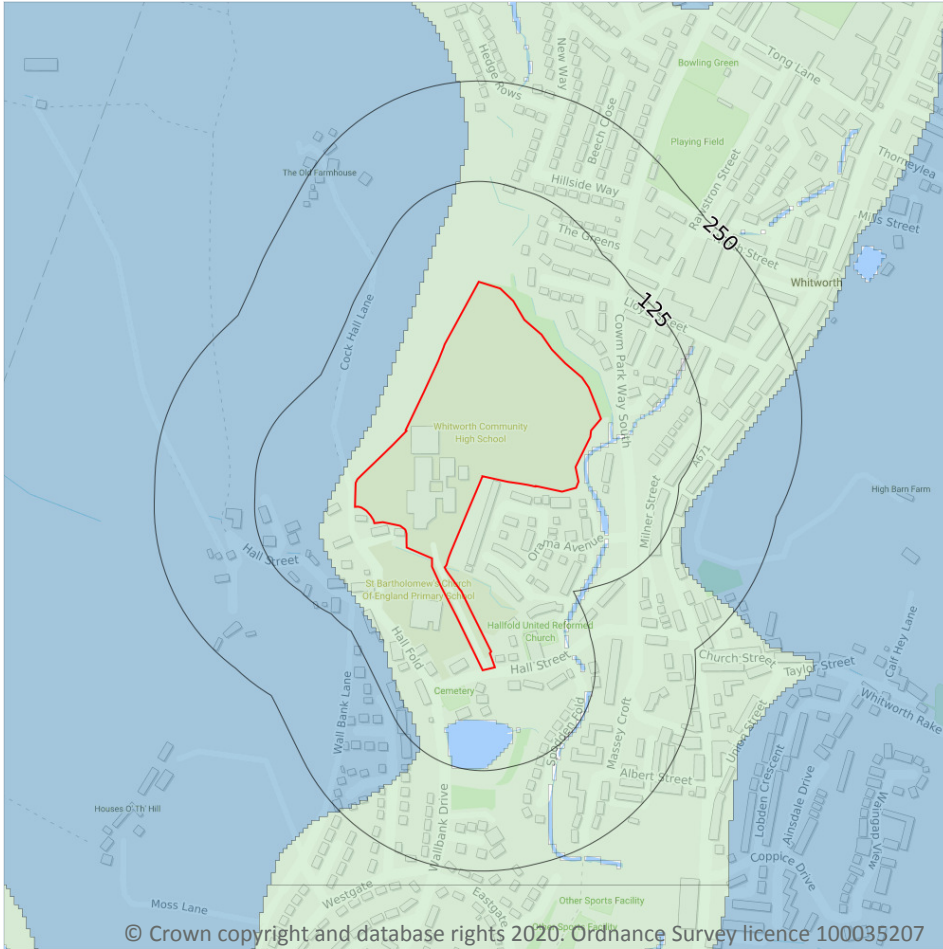
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

*This data is sourced from Ambiental Risk Analytics.*



## 9 Groundwater flooding



### 9.1 Groundwater flooding

**Highest risk on site**

**Low**

**Highest risk within 50m**

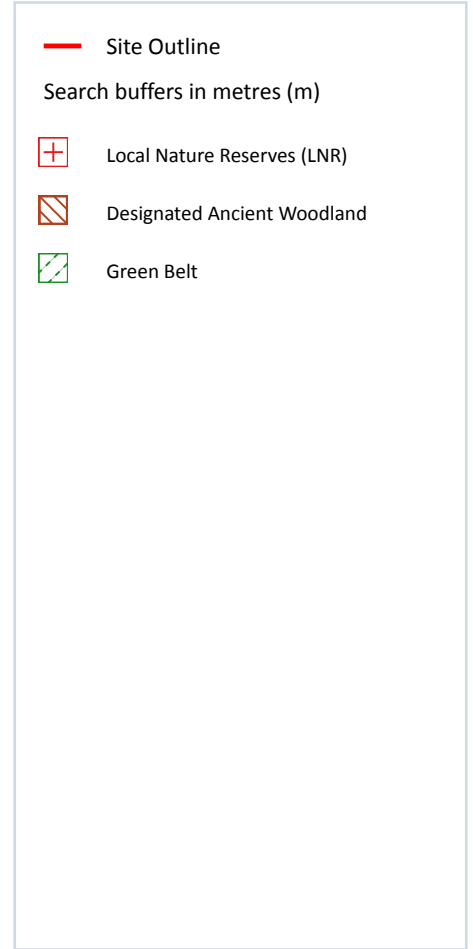
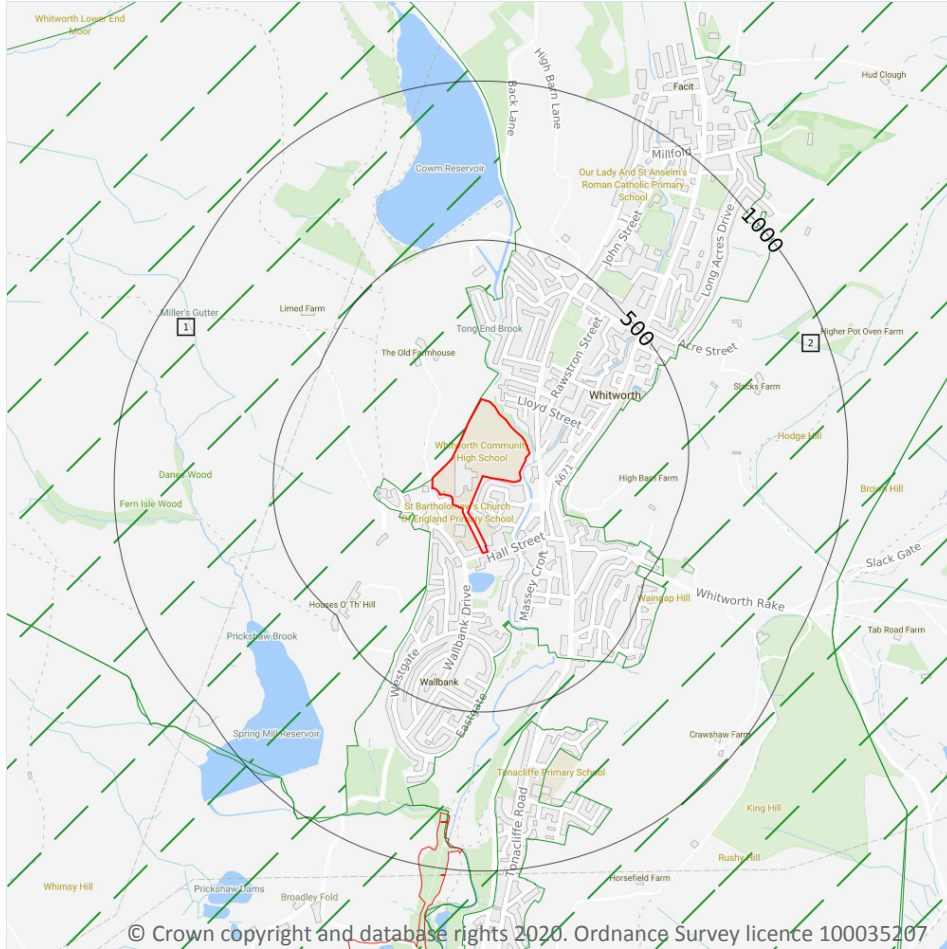
**Low**

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 81**

*This data is sourced from Ambiental Risk Analytics.*

## 10 Environmental designations



### 10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.3 Special Areas of Conservation (SAC)

Records within 2000m

0

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.4 Special Protection Areas (SPA)

Records within 2000m

0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.5 National Nature Reserves (NNR)

Records within 2000m

0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*





## 10.6 Local Nature Reserves (LNR)

Records within 2000m

1

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

Features are displayed on the Environmental designations map on **page 82**

ID	Location	Name	Data source
4	827m S	Healey Dell	Natural England

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.7 Designated Ancient Woodland

Records within 2000m

2

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

Features are displayed on the Environmental designations map on **page 82**

ID	Location	Name	Woodland Type
-	1625m S	Unknown	Ancient & Semi-Natural Woodland
-	1870m S	Unknown	Ancient & Semi-Natural Woodland

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.8 Biosphere Reserves

Records within 2000m

0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*



## 10.9 Forest Parks

Records within 2000m

0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

*This data is sourced from the Forestry Commission.*

## 10.10 Marine Conservation Zones

Records within 2000m

0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.11 Green Belt

Records within 2000m

5

Areas designated to prevent urban sprawl by keeping land permanently open.

Features are displayed on the Environmental designations map on **page 82**

ID	Location	Name	Local Authority name
1	On site	Liverpool and Manchester	Rossendale
2	141m E	Liverpool and Manchester	Rossendale
3	814m S	Liverpool and Manchester	Rochdale
5	1047m E	Liverpool and Manchester	Rochdale
-	1820m S	Liverpool and Manchester	Rochdale

*This data is sourced from the Ministry of Housing, Communities and Local Government.*

## 10.12 Proposed Ramsar sites

Records within 2000m

0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

*This data is sourced from Natural England.*



### 10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

*This data is sourced from Natural England and Natural Resources Wales.*

### 10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

*This data is sourced from Natural England.*

### 10.15 Nitrate Sensitive Areas

Records within 2000m

0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

*This data is sourced from Natural England.*

### 10.16 Nitrate Vulnerable Zones

Records within 2000m

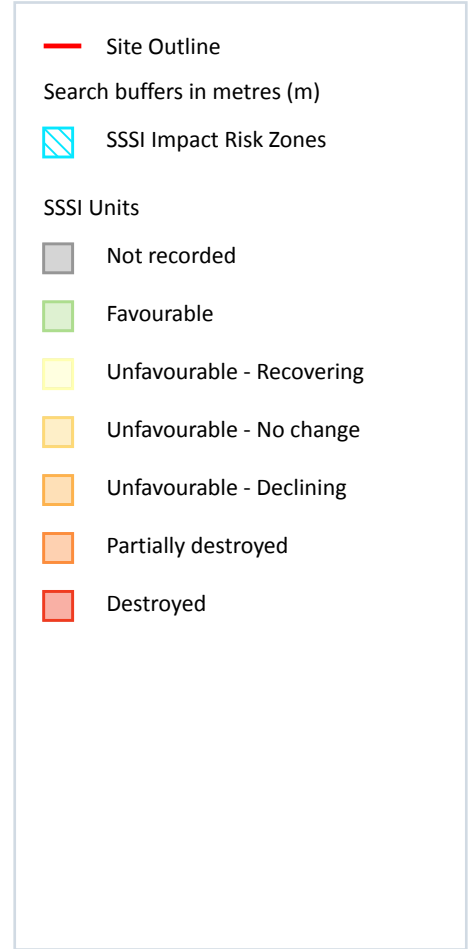
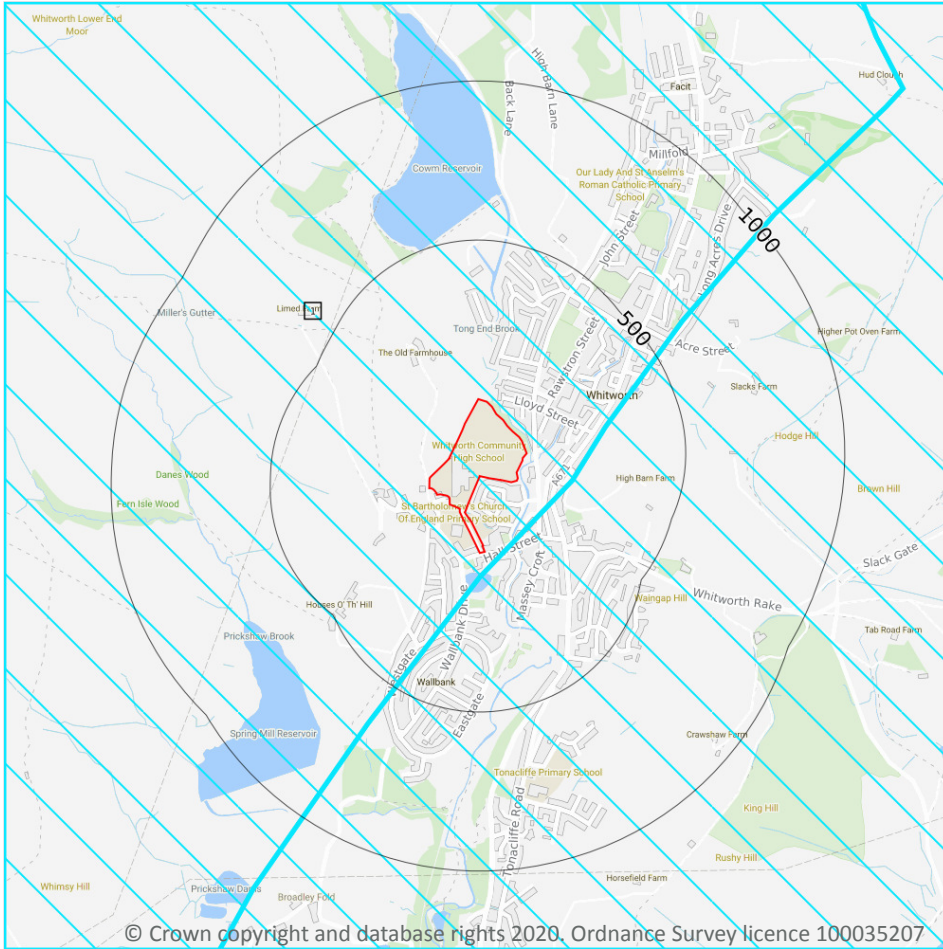
0

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

*This data is sourced from Natural England and Natural Resources Wales.*



## SSSI Impact Zones and Units



### 10.17 SSSI Impact Risk Zones

#### Records on site

1

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on **page 87**

ID	Location	Type of developments requiring consultation
1	On site	<p><b>Infrastructure - Airports, helipads and other aviation proposals.</b></p> <p><b>Air pollution - Livestock &amp; poultry units with floorspace &gt; 500m<sup>2</sup>, slurry lagoons &gt; 4000m<sup>2</sup>.</b></p> <p><b>Combustion - General combustion processes &gt;50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.</b></p>

*This data is sourced from Natural England.*

## 10.18 SSSI Units

**Records within 2000m**

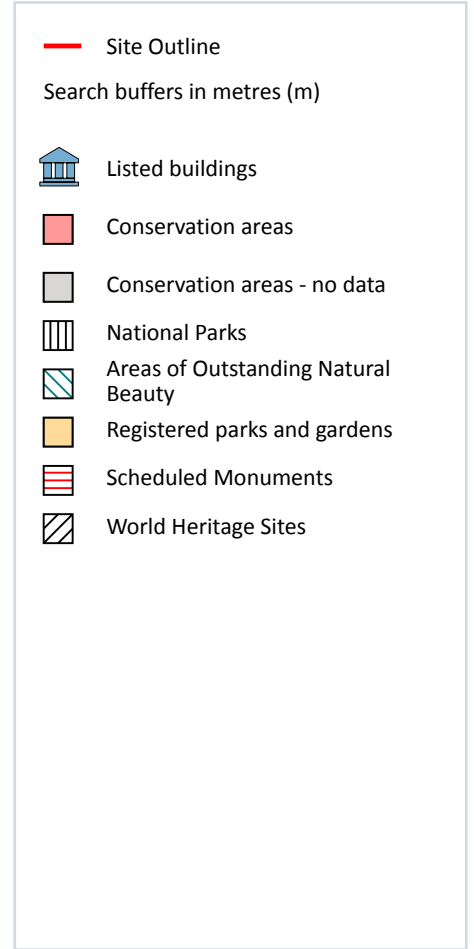
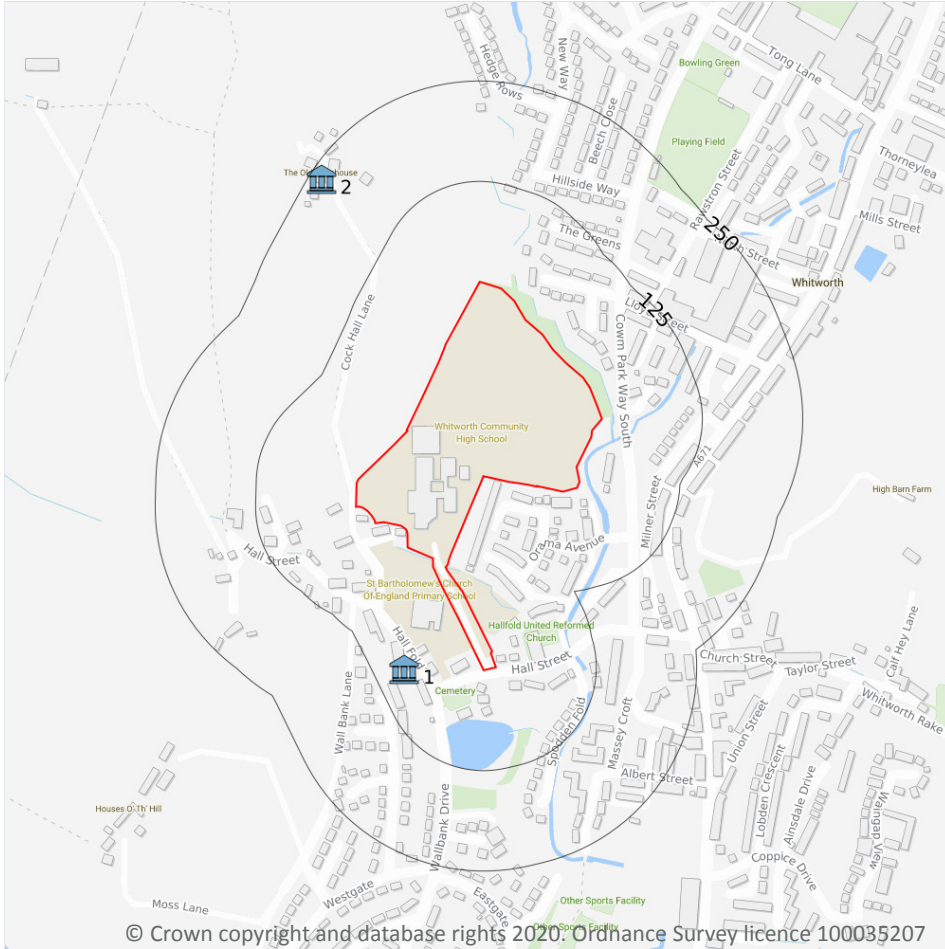
**0**

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

*This data is sourced from Natural England and Natural Resources Wales.*



## 11 Visual and cultural designations



### 11.1 World Heritage Sites

Records within 250m

0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

*This data is sourced from Historic England, Cadw and Historic Environment Scotland.*

## 11.2 Area of Outstanding Natural Beauty

Records within 250m

0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 11.3 National Parks

Records within 250m

0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

*This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.*

## 11.4 Listed Buildings

Records within 250m

2

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

Features are displayed on the Visual and cultural designations map on **page 89**

ID	Location	Name	Grade	Reference Number	Listed date
1	89m SW	19, Hall Fold, Whitworth, Rossendale, Lancashire, OL12	II	1164433	30/11/1984
2	235m NW	Old Farmhouse C20 Metres North Of Cock Hall Farmhouse, Whitworth, Rossendale, Lancashire, OL12	II	1317747	30/11/1984

*This data is sourced from English Heritage, Cadw and Historic Environment Scotland.*

## 11.5 Conservation Areas

Records within 250m

0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

*This data is sourced from English Heritage, Cadw and Historic Environment Scotland.*

## 11.6 Scheduled Ancient Monuments

Records within 250m

0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

*This data is sourced from English Heritage, Cadw and Historic Environment Scotland.*

## 11.7 Registered Parks and Gardens

Records within 250m

0

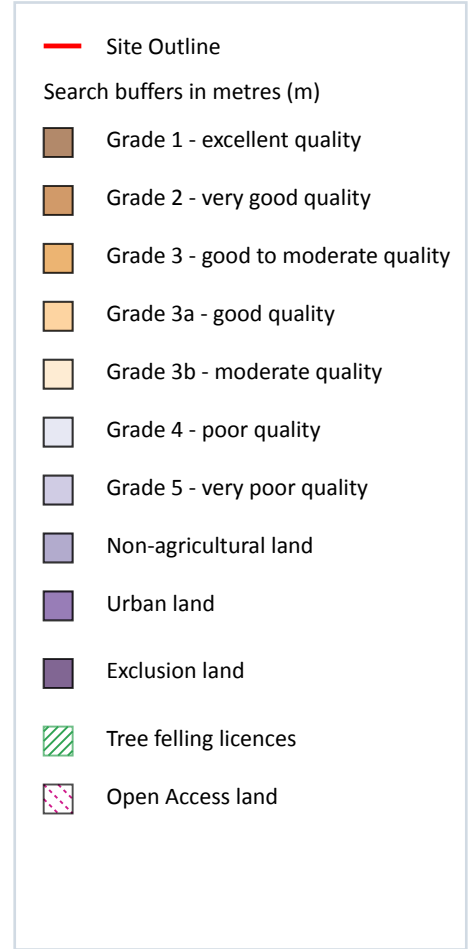
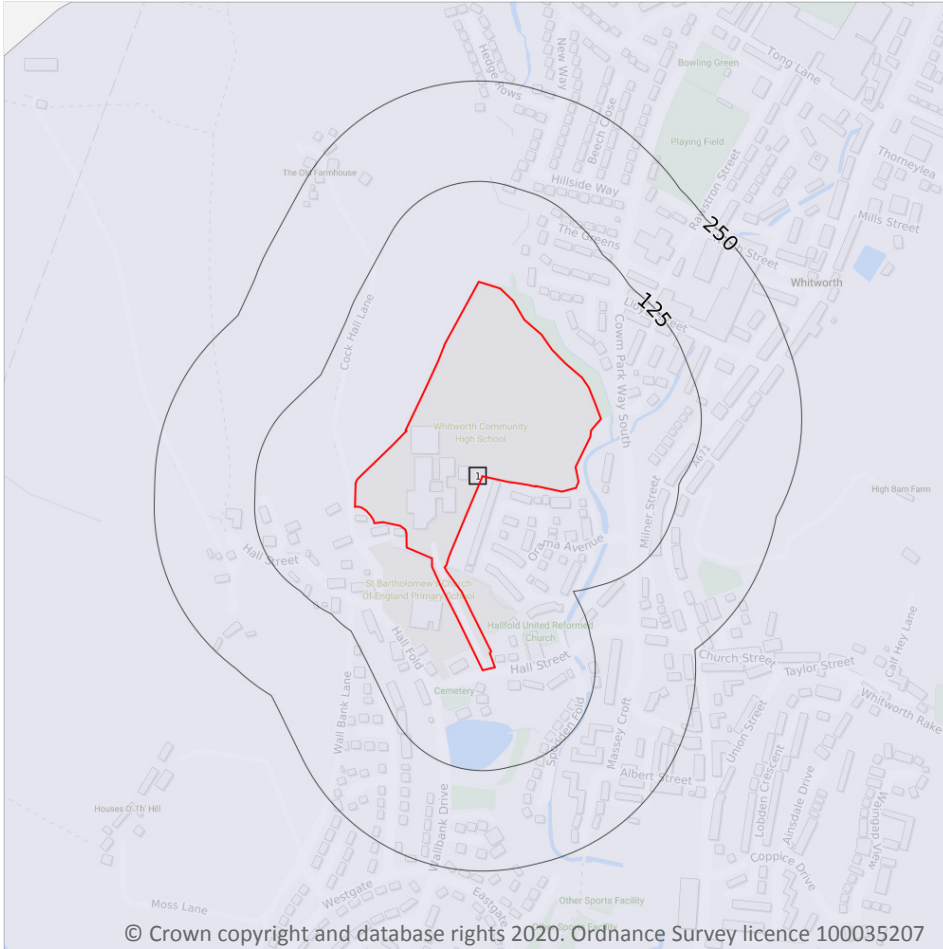
Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

*This data is sourced from English Heritage, Cadw and Historic Environment Scotland.*





## 12 Agricultural designations



### 12.1 Agricultural Land Classification

Records within 250m

1

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 92**

ID	Location	Classification	Description
1	On site	Grade 4	Poor quality agricultural land. Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

*This data is sourced from Natural England.*

## 12.2 Open Access Land

**Records within 250m**

**0**

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

*This data is sourced from Natural England and Natural Resources Wales.*

## 12.3 Tree Felling Licences

**Records within 250m**

**0**

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

*This data is sourced from the Forestry Commission.*

## 12.4 Environmental Stewardship Schemes

**Records within 250m**

**0**

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment.

*This data is sourced from Natural England.*

## 12.5 Countryside Stewardship Schemes

**Records within 250m**

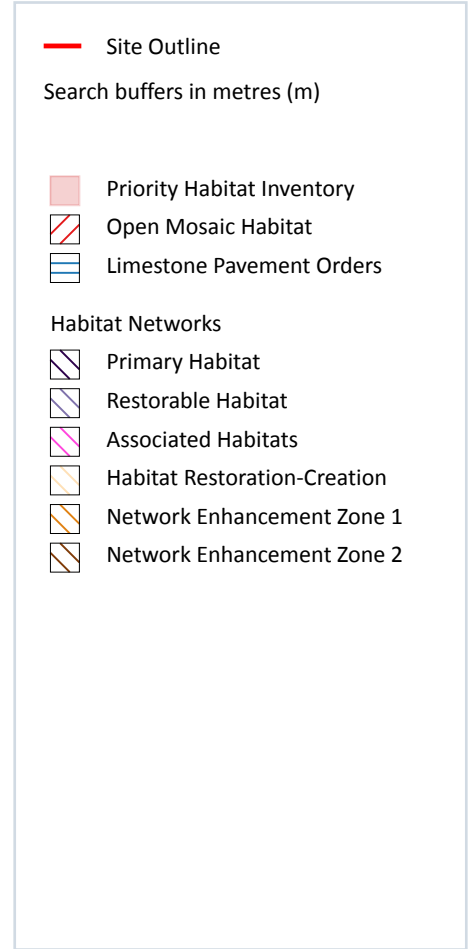
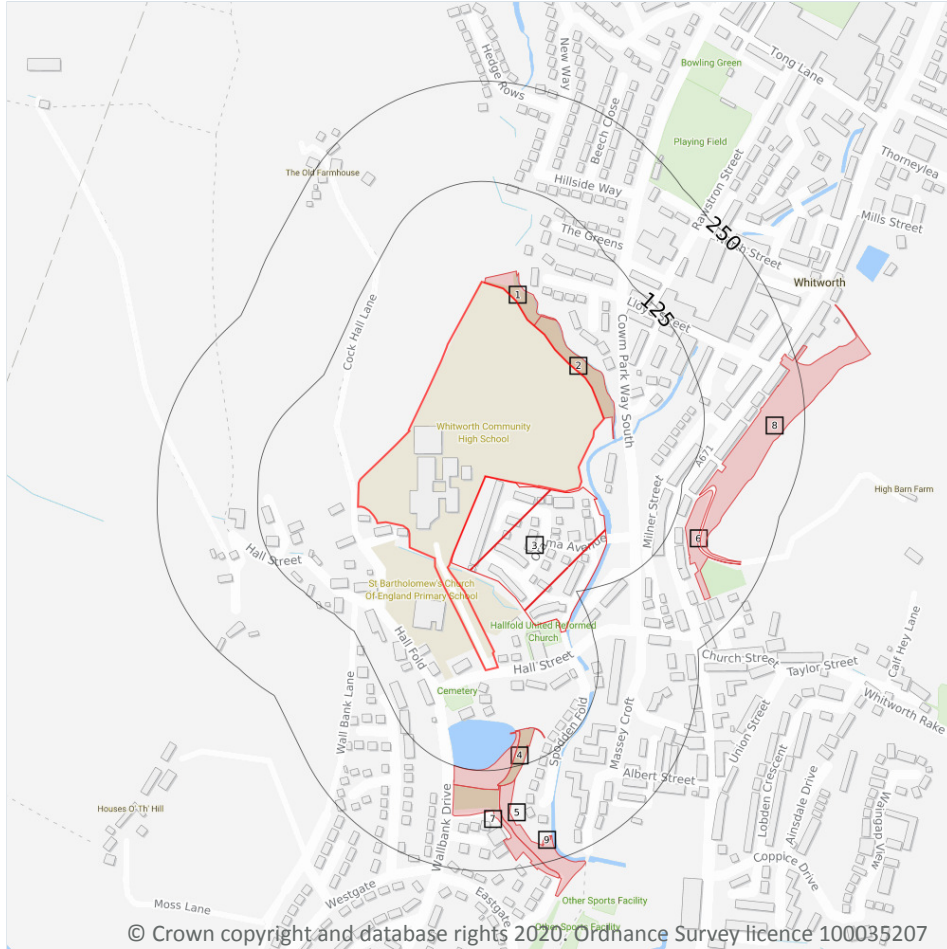
**0**

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

*This data is sourced from Natural England.*



## 13 Habitat designations



### 13.1 Priority Habitat Inventory

Records within 250m

8

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

Features are displayed on the Habitat designations map on **page 94**

ID	Location	Main Habitat	Other habitats
1	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	82m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
5	83m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

ID	Location	Main Habitat	Other habitats
6	141m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
7	145m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
8	148m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
9	220m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

## 13.2 Habitat Networks

Records within 250m

0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

## 13.3 Open Mosaic Habitat

Records within 250m

1

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

Features are displayed on the Habitat designations map on **page 94**

ID	Location	Site reference	Identification confidence	Primary source	Secondary source	Tertiary source
3	On site	NLUD Ref: 235500429	Low	National Land Use Database - Previously Developed Land	UK Perspectives Aerial Photography	-

This data is sourced from Natural England.

## 13.4 Limestone Pavement Orders

Records within 250m

0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave

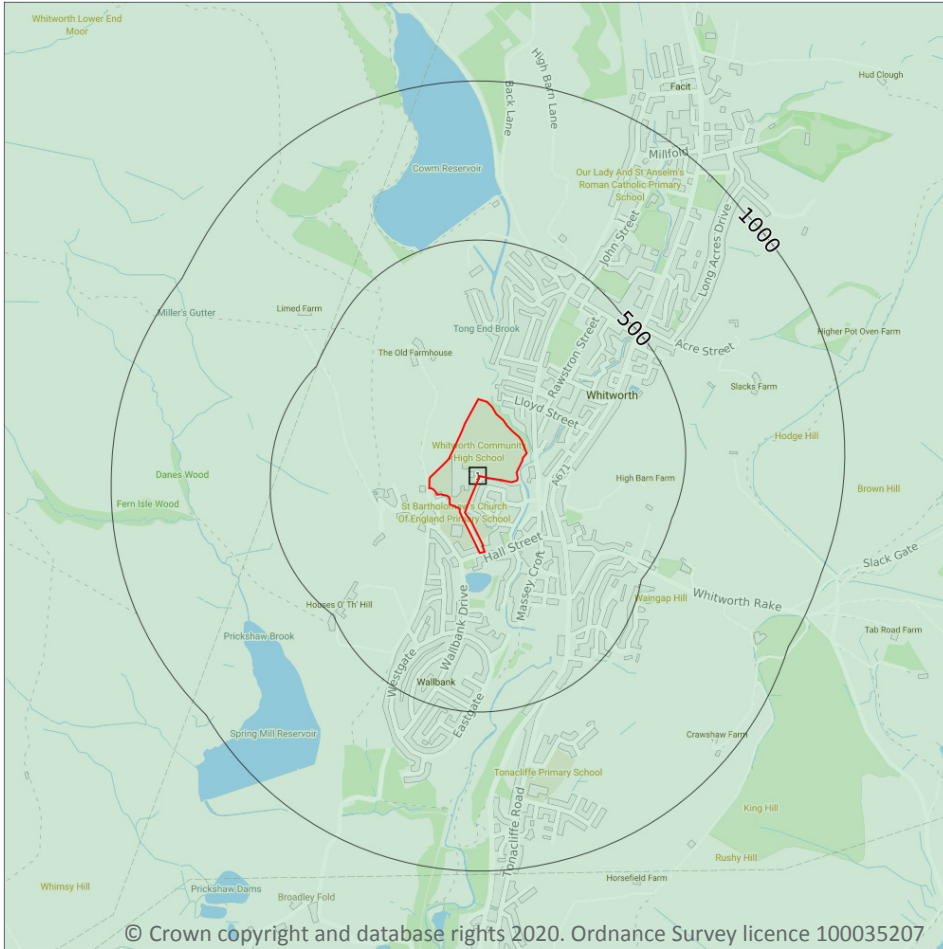


them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

*This data is sourced from Natural England.*



## 14 Geology 1:10,000 scale - Availability



**Site Outline**

Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

### 14.1 10k Availability

**Records within 500m**

**1**

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

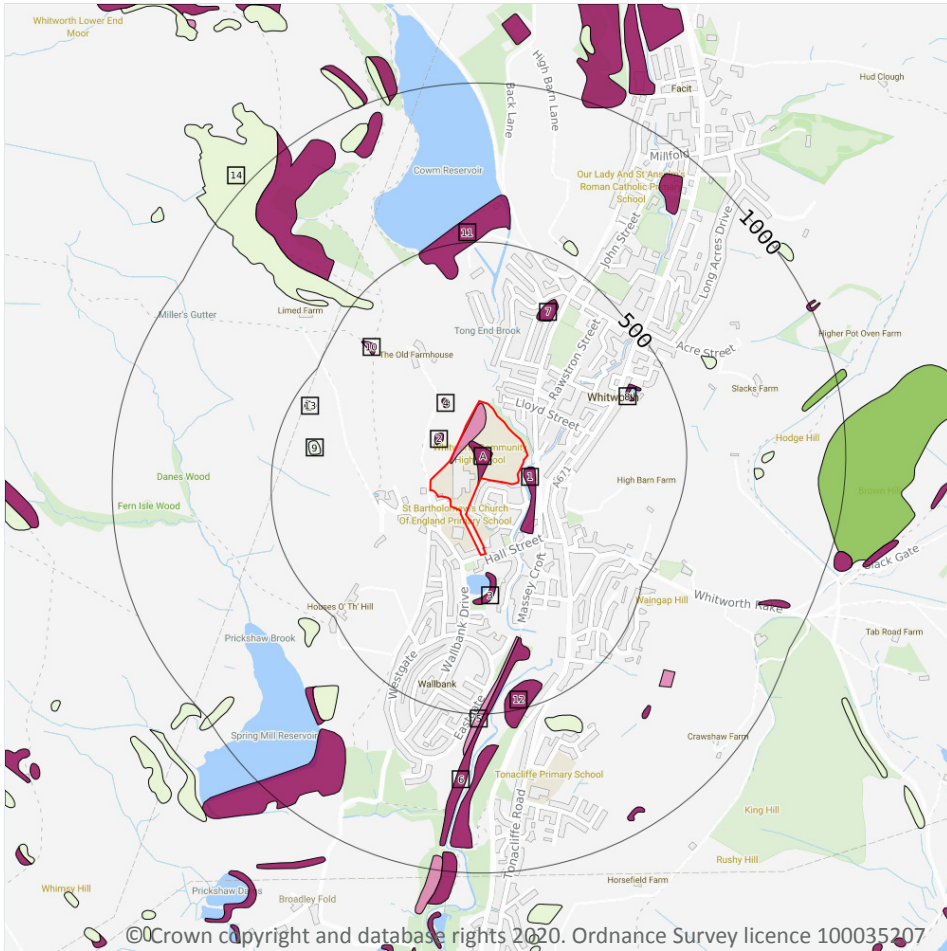
Features are displayed on the Geology 1:10,000 scale - Availability map on **page 97**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	SD81NE

*This data is sourced from the British Geological Survey.*



## Geology 1:10,000 scale - Artificial and made ground



### 14.2 Artificial and made ground (10k)

**Records within 500m** **16**

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 98**

ID	Location	LEX Code	Description	Rock description
A	On site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	On site	WGR-VOID	Worked Ground (Undivided)	Void
1	13m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	47m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

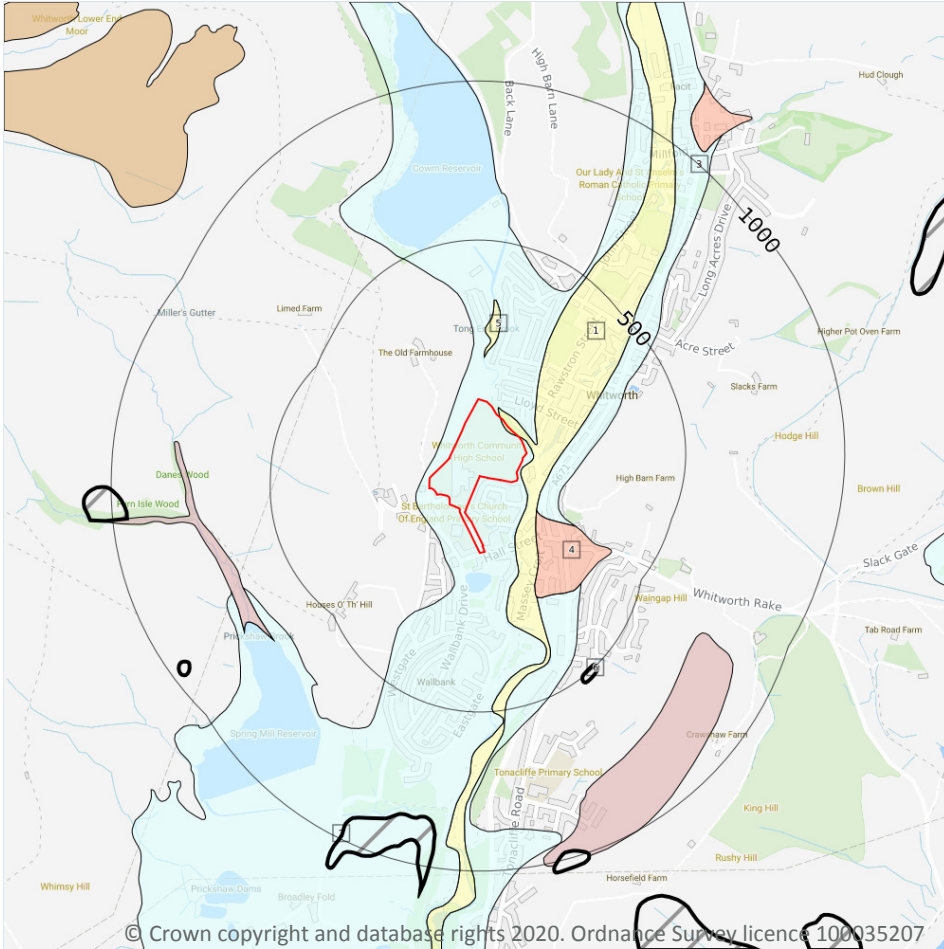
ID	Location	LEX Code	Description	Rock description
3	58m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	76m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
5	278m S	WGR-VOID	Worked Ground (Undivided)	Void
6	283m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
7	308m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
8	350m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
9	358m W	WMGR-ARTDP	Infilled Ground	Artificial Deposit
10	362m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
11	393m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
12	418m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
13	428m NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
14	447m NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit

*This data is sourced from the British Geological Survey.*





## Geology 1:10,000 scale - Superficial



**— Site Outline**  
Search buffers in metres (m)

**▨ Landslip (10k)**  
Superficial geology (10k)  
Please see table for more details.

### 14.3 Superficial geology (10k)

Records within 500m

5

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 100**

ID	Location	LEX Code	Description	Rock description
1	On site	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
2	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
3	83m SE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton



ID	Location	LEX Code	Description	Rock description
4	112m SE	ALF-XSV	Alluvial Fan Deposits - Sand And Gravel	Sand And Gravel
5	134m N	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel

*This data is sourced from the British Geological Survey.*

## 14.4 Landslip (10k)

**Records within 500m**

**1**

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

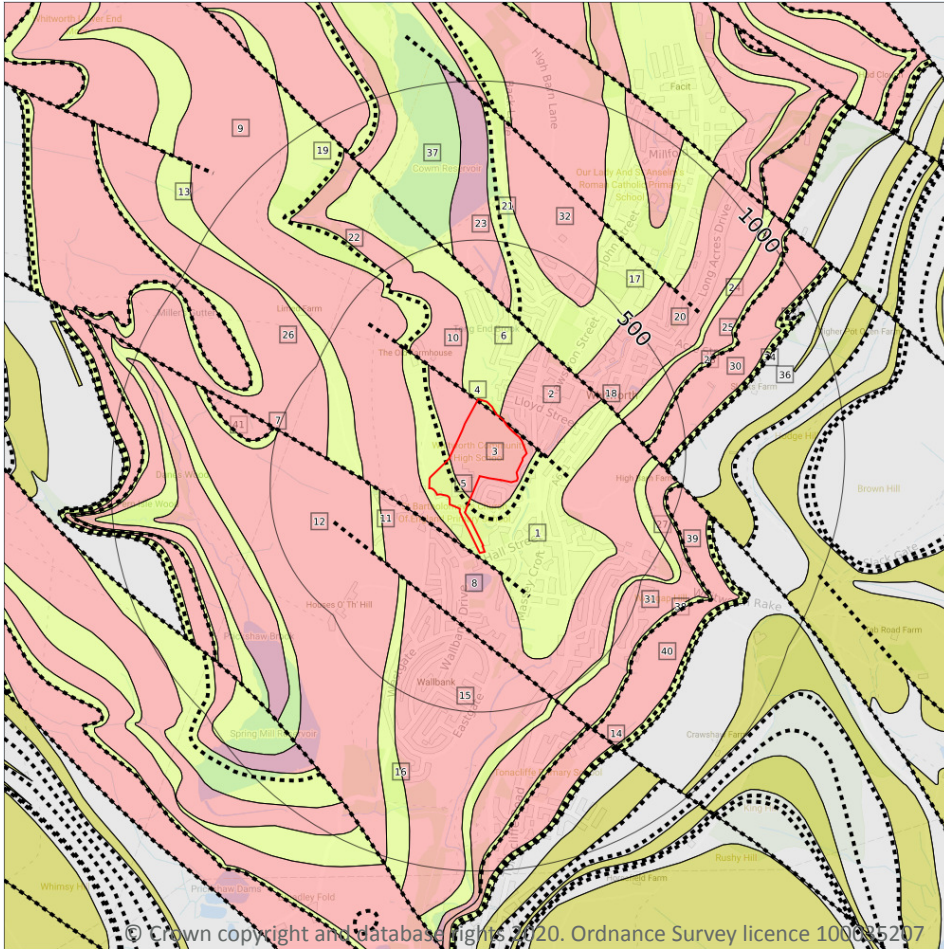
Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 100**

ID	Location	LEX Code	Description	Rock description
6	493m SE	SLIP-UNKNOWN	Landslide Deposits	Unknown/unclassified Entry

*This data is sourced from the British Geological Survey.*



## Geology 1:10,000 scale - Bedrock



- Site Outline
- Search buffers in metres (m)
- Bedrock faults and other linear features (10k)
- Bedrock geology (10k)  
Please see table for more details.

### 14.5 Bedrock geology (10k)

Records within 500m

30

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 102**

ID	Location	LEX Code	Description	Rock age
1	On site	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age
2	On site	LH-SDST	Lower Haslingden Flags - Sandstone	Yeadonian Sub-age
3	On site	LH-SDST	Lower Haslingden Flags - Sandstone	Yeadonian Sub-age

ID	Location	LEX Code	Description	Rock age
<b>6</b>	<b>On site</b>	<b>MG-MDSI</b>	<b>Millstone Grit Group [see Also Migr] - Mudstone And Siltstone</b>	<b>Namurian Age</b>
8	13m SW	UH-SDST	Upper Haslingden Flags - Sandstone	Yeadonian Sub-age
9	18m SW	UH-SDST	Upper Haslingden Flags - Sandstone	Yeadonian Sub-age
10	57m NW	LH-SDST	Lower Haslingden Flags - Sandstone	Yeadonian Sub-age
11	156m W	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age
12	185m W	RR-SDST	Rough Rock - Sandstone	Yeadonian Sub-age
13	208m W	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age
15	212m SW	UH-SDST	Upper Haslingden Flags - Sandstone	Yeadonian Sub-age
16	245m SW	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age
17	251m NE	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age
19	261m NW	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age
20	263m NE	UH-SDST	Upper Haslingden Flags - Sandstone	Yeadonian Sub-age
23	293m N	LH-SDST	Lower Haslingden Flags - Sandstone	Yeadonian Sub-age
24	309m E	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age
25	317m E	RR-SDST	Rough Rock - Sandstone	Yeadonian Sub-age
26	329m W	RR-SDST	Rough Rock - Sandstone	Yeadonian Sub-age
27	355m E	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age
28	365m E	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age
30	376m E	RR-SDST	Rough Rock - Sandstone	Yeadonian Sub-age
31	388m E	RR-SDST	Rough Rock - Sandstone	Yeadonian Sub-age
32	417m NE	UH-SDST	Upper Haslingden Flags - Sandstone	Yeadonian Sub-age
33	429m E	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age



ID	Location	LEX Code	Description	Rock age
36	444m E	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
37	453m N	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age
38	453m E	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age
40	460m E	RR-SDST	Rough Rock - Sandstone	Yeadonian Sub-age
41	500m W	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age

*This data is sourced from the British Geological Survey.*

## 14.6 Bedrock faults and other linear features (10k)

Records within 500m

11

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

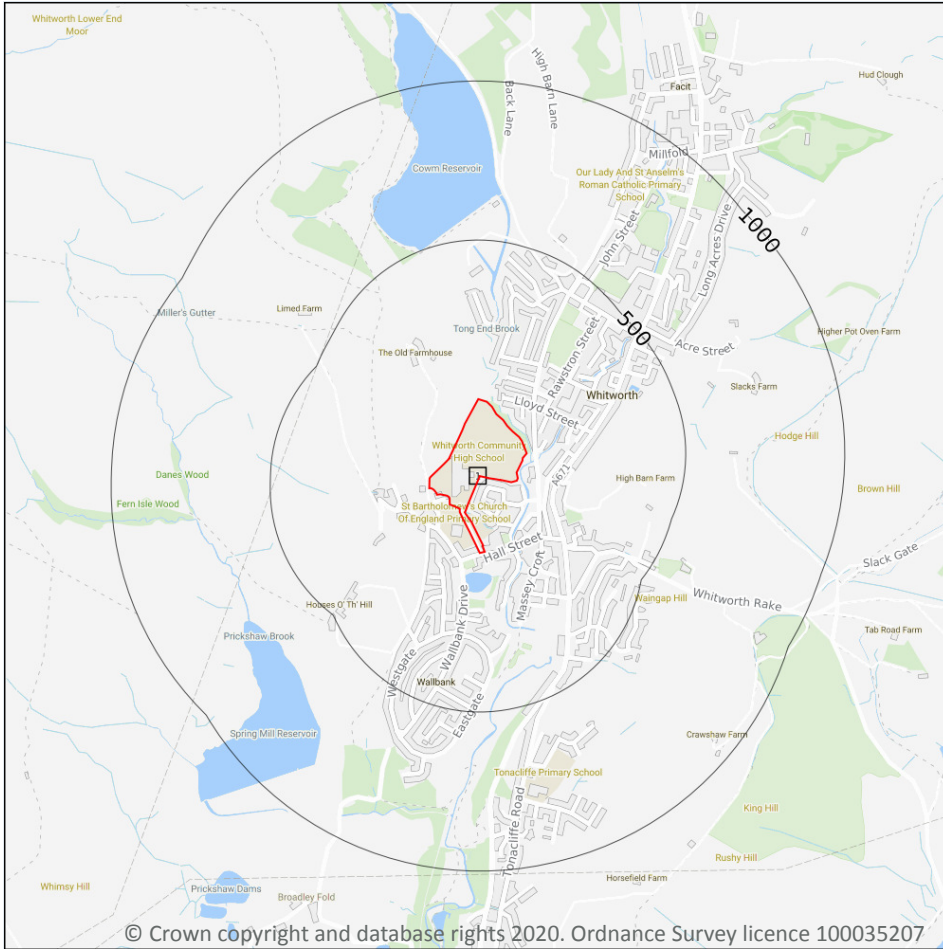
Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 102**

ID	Location	Category	Description
4	On site	FAULT	Normal fault, inferred
5	On site	FOSSIL_HORIZON	Fossil horizon, marine band
7	13m SW	FAULT	Normal fault, inferred
14	212m SW	FAULT	Normal fault, inferred
18	251m NE	FAULT	Normal fault, inferred
21	275m N	FOSSIL_HORIZON	Fossil horizon, marine band
22	278m NW	FOSSIL_HORIZON	Fossil horizon, marine band
29	376m E	ROCK	Coal seam, inferred coincident with bedrock geology boundary
34	435m E	ROCK	Coal seam, inferred
35	444m E	FOSSIL_HORIZON	Fossil horizon, marine band coincident with bedrock geology boundary
39	460m E	ROCK	Coal seam, observed coincident with bedrock geology boundary

*This data is sourced from the British Geological Survey.*



## 15 Geology 1:50,000 scale - Availability



**— Site Outline**

Search buffers in metres (m)

**○ 500**

**○ 1000**

**□ Geological map tile**

### 15.1 50k Availability

Records within 500m

1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

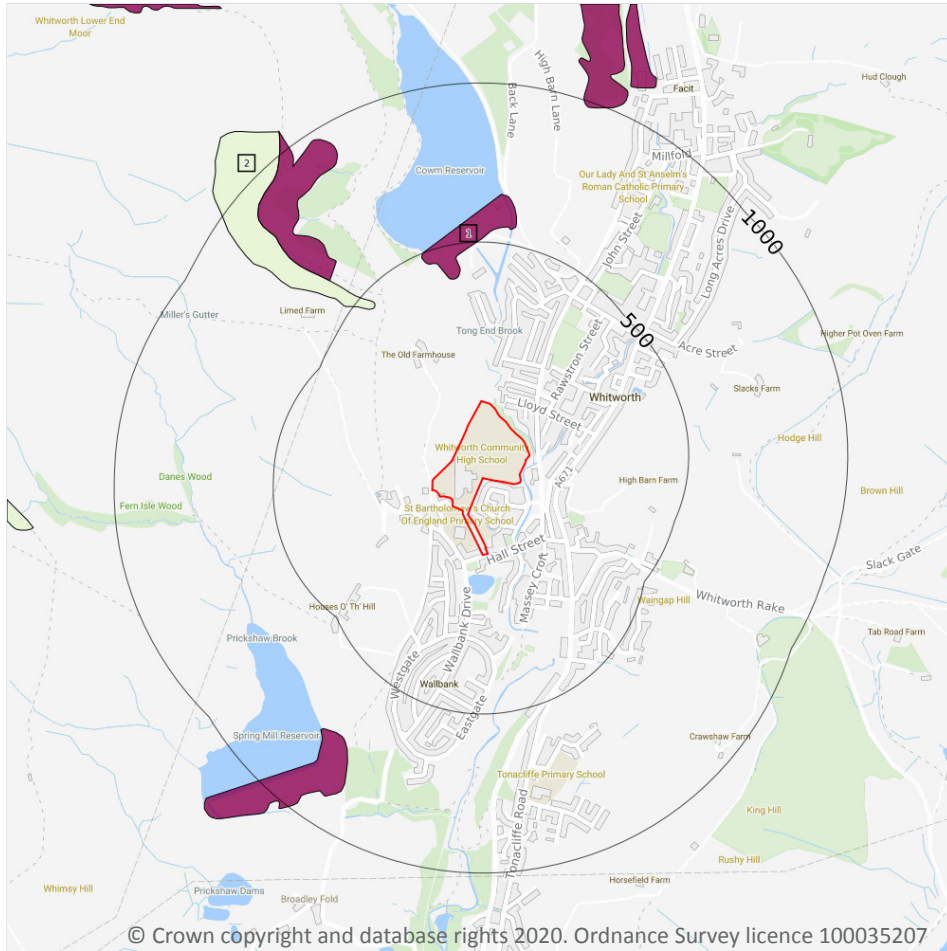
Features are displayed on the Geology 1:50,000 scale - Availability map on **page 105**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	Full	EW076_rochdale_v4

*This data is sourced from the British Geological Survey.*



## Geology 1:50,000 scale - Artificial and made ground



### 15.2 Artificial and made ground (50k)

Records within 500m

2

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 106**

ID	Location	LEX Code	Description	Rock description
1	393m N	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	447m NW	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT

*This data is sourced from the British Geological Survey.*



### 15.3 Artificial ground permeability (50k)

Records within 50m

0

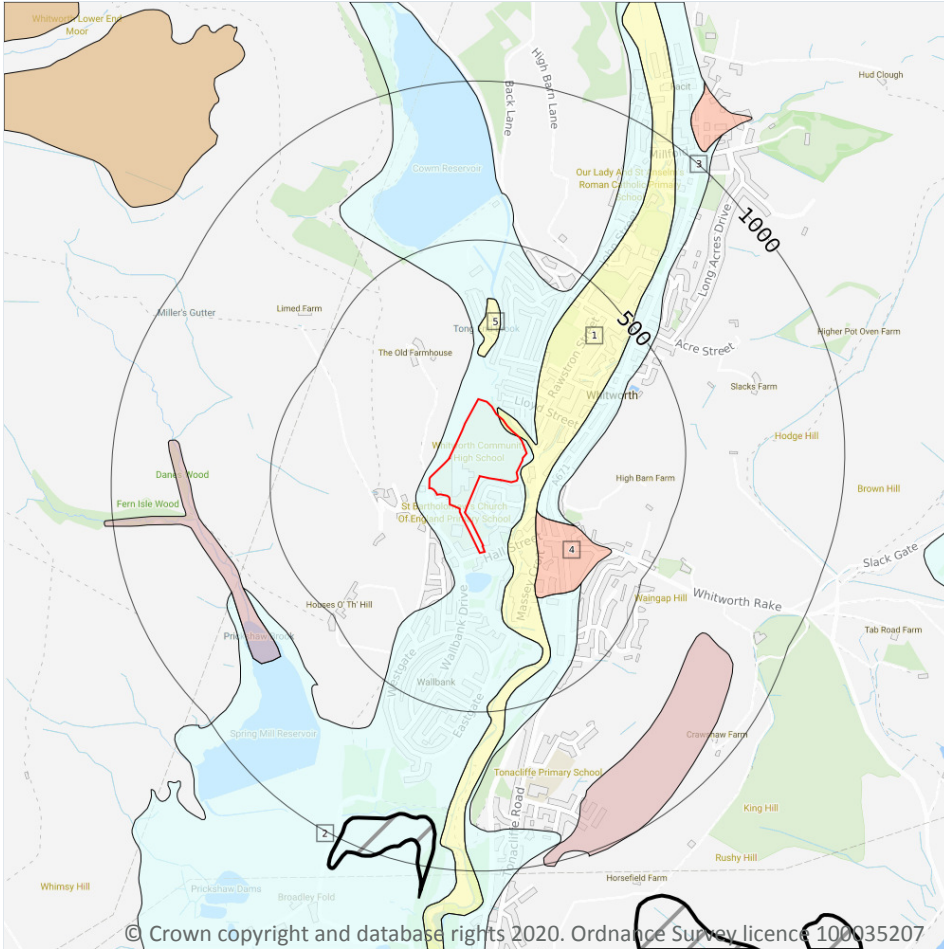
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

*This data is sourced from the British Geological Survey.*





## Geology 1:50,000 scale - Superficial



**—** Site Outline

Search buffers in metres (m)

**▣** Landslip (50k)

Superficial geology (50k)  
Please see table for more details.

### 15.4 Superficial geology (50k)

Records within 500m

5

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 108**

ID	Location	LEX Code	Description	Rock description
1	On site	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
2	On site	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON
3	83m SE	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON



ID	Location	LEX Code	Description	Rock description
4	112m SE	ALF-XSV	ALLUVIAL FAN DEPOSITS	SAND AND GRAVEL
5	134m N	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

*This data is sourced from the British Geological Survey.*

## 15.5 Superficial permeability (50k)

<b>Records within 50m</b>	<b>2</b>
---------------------------	----------

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	High	Very Low
On site	Mixed	High	Low

*This data is sourced from the British Geological Survey.*

## 15.6 Landslip (50k)

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

*This data is sourced from the British Geological Survey.*

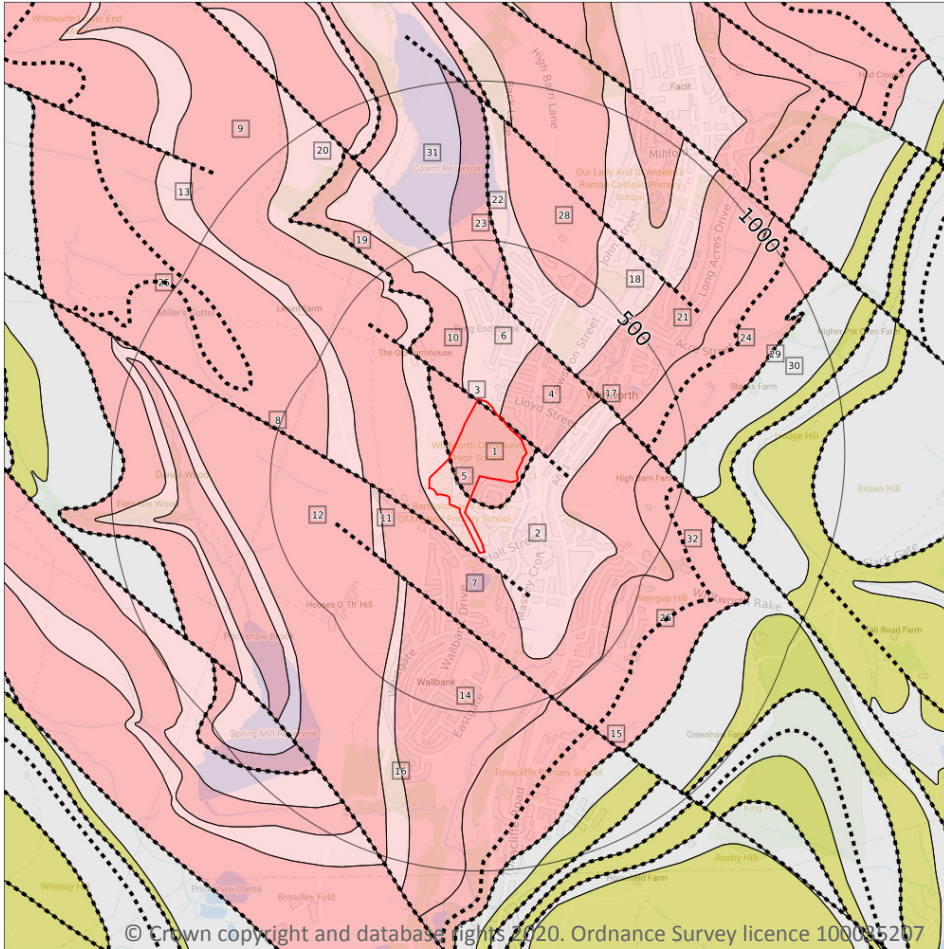
## 15.7 Landslip permeability (50k)

<b>Records within 50m</b>	<b>0</b>
---------------------------	----------

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

*This data is sourced from the British Geological Survey.*

## Geology 1:50,000 scale - Bedrock



- Site Outline
- Search buffers in metres (m)
- - - - Bedrock faults and other linear features (50k)
- Bedrock geology (50k)  
Please see table for more details.

### 15.8 Bedrock geology (50k)

Records within 500m

22

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 110**

ID	Location	LEX Code	Description	Rock age
1	On site	LH-SDST	LOWER HASLINGDEN FLAGS - SANDSTONE	NAMURIAN
2	On site	ROSSE-MDSI	ROSSENDALE FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN
4	On site	LH-SDST	LOWER HASLINGDEN FLAGS - SANDSTONE	NAMURIAN

ID	Location	LEX Code	Description	Rock age
6	On site	ROSSE-MDSI	ROSSENDALE FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN
7	13m SW	UH-SDST	UPPER HASLINGDEN FLAGS - SANDSTONE	NAMURIAN
9	18m SW	UH-SDST	UPPER HASLINGDEN FLAGS - SANDSTONE	NAMURIAN
10	57m NW	LH-SDST	LOWER HASLINGDEN FLAGS - SANDSTONE	NAMURIAN
11	156m W	ROSSE-MDSI	ROSSENDALE FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN
12	184m W	RR-SDST	ROUGH ROCK - SANDSTONE	NAMURIAN
13	208m W	ROSSE-MDSI	ROSSENDALE FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN
14	212m SW	UH-SDST	UPPER HASLINGDEN FLAGS - SANDSTONE	NAMURIAN
16	245m SW	ROSSE-MDSI	ROSSENDALE FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN
18	251m NE	ROSSE-MDSI	ROSSENDALE FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN
20	262m NW	ROSSE-MDSI	ROSSENDALE FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN
21	262m NE	UH-SDST	UPPER HASLINGDEN FLAGS - SANDSTONE	NAMURIAN
23	293m N	LH-SDST	LOWER HASLINGDEN FLAGS - SANDSTONE	NAMURIAN
24	316m E	RR-SDST	ROUGH ROCK - SANDSTONE	NAMURIAN
25	329m W	RR-SDST	ROUGH ROCK - SANDSTONE	NAMURIAN
26	354m E	RR-SDST	ROUGH ROCK - SANDSTONE	NAMURIAN
28	416m NE	UH-SDST	UPPER HASLINGDEN FLAGS - SANDSTONE	NAMURIAN
30	444m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
31	452m N	ROSSE-MDSI	ROSSENDALE FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN

*This data is sourced from the British Geological Survey.*

## 15.9 Bedrock permeability (50k)

**Records within 50m**

**4**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Low	Low



Location	Flow type	Maximum permeability	Minimum permeability
<b>On site</b>	<b>Fracture</b>	<b>High</b>	<b>Moderate</b>
<b>On site</b>	<b>Fracture</b>	<b>Low</b>	<b>Low</b>
13m NW	Fracture	High	Moderate

*This data is sourced from the British Geological Survey.*

## 15.10 Bedrock faults and other linear features (50k)

<b>Records within 500m</b>	<b>10</b>
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Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

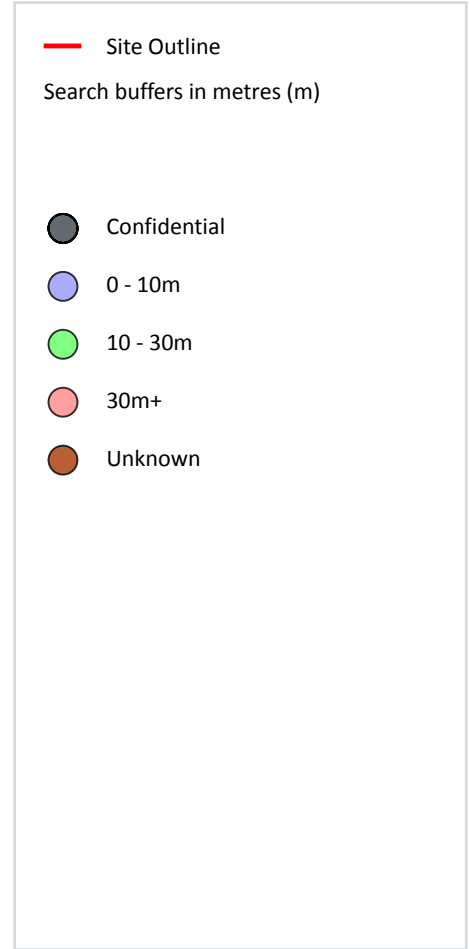
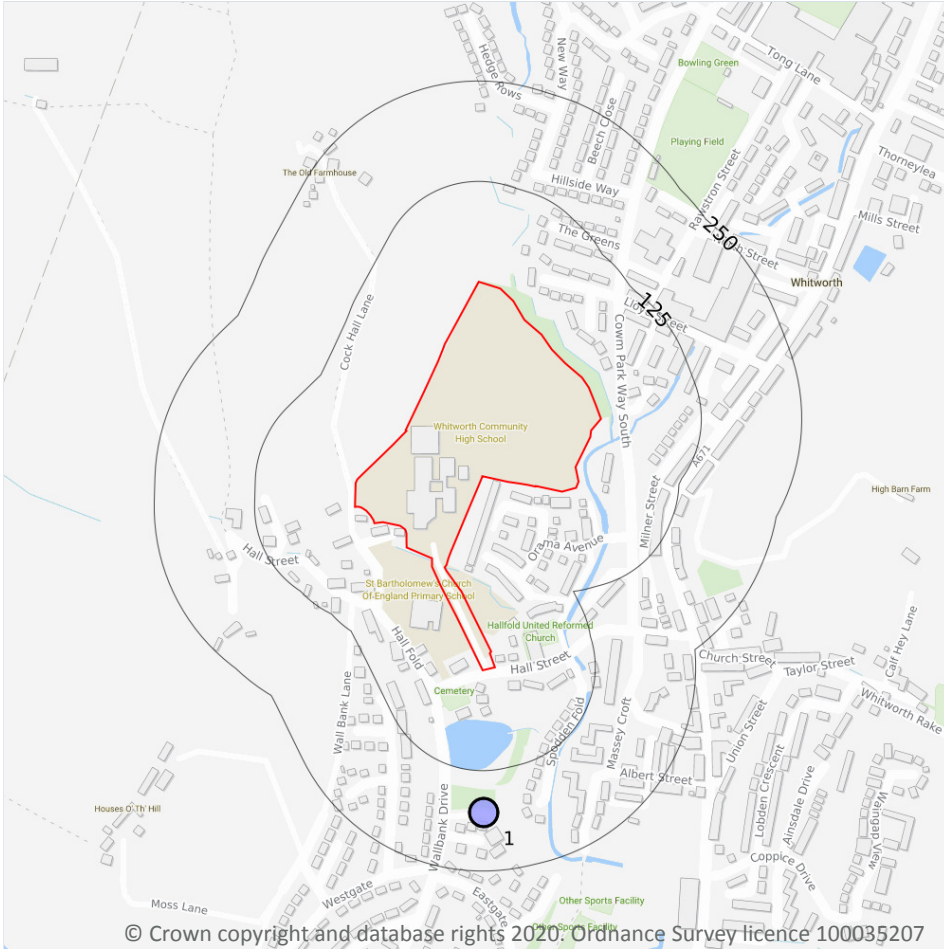
Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 110**

ID	Location	Category	Description
<b>3</b>	<b>On site</b>	<b>FAULT</b>	<b>Fault, inferred</b>
<b>5</b>	<b>On site</b>	<b>FOSSIL_HORIZON</b>	<b>Marine band</b>
8	13m SW	FAULT	Fault, inferred
15	212m SW	FAULT	Fault, inferred
17	251m NE	FAULT	Fault, inferred
19	262m NW	FOSSIL_HORIZON	Marine band
22	293m N	FOSSIL_HORIZON	Marine band
27	376m E	ROCK	Coal seam, inferred
29	444m E	FOSSIL_HORIZON	Marine band
32	460m E	ROCK	Coal seam, observed

*This data is sourced from the British Geological Survey.*



## 16 Boreholes



### 16.1 BGS Boreholes

#### Records within 250m

1

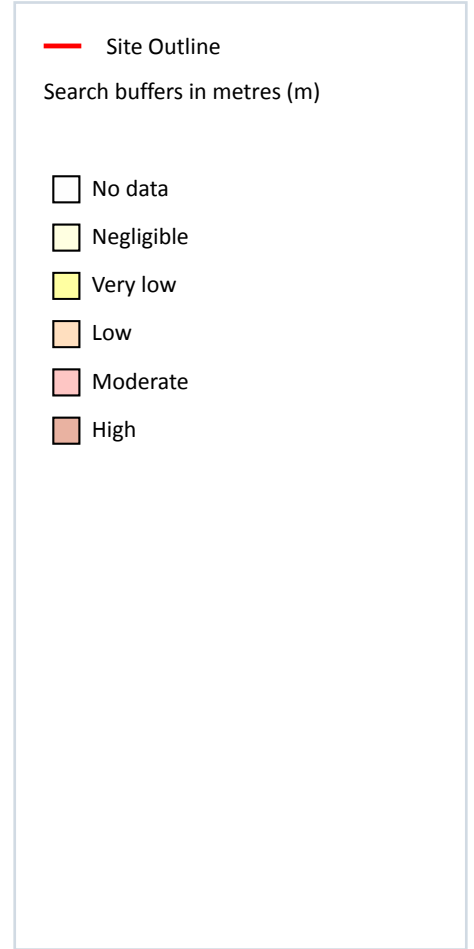
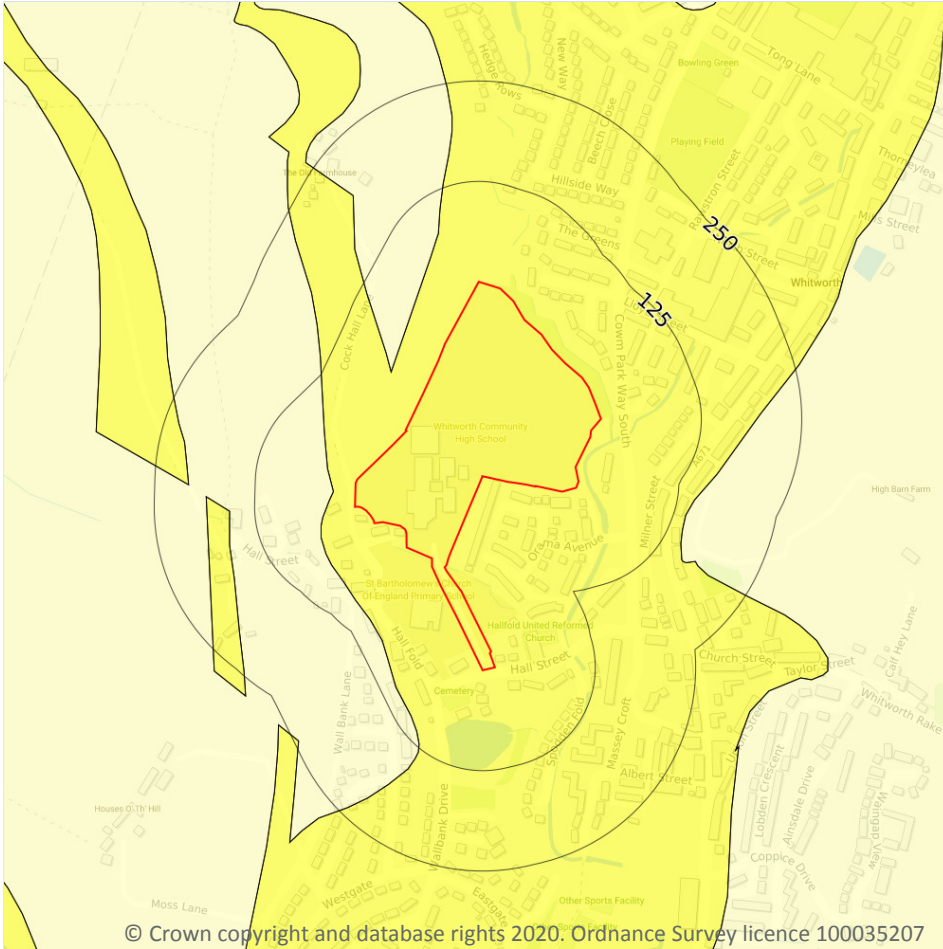
The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on **page 113**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	177m S	388150 417510	JOSHUA HAYLE & SON	-2.0	N	<a href="#">29680</a>

*This data is sourced from the British Geological Survey.*

## 17 Natural ground subsidence - Shrink swell clays



### 17.1 Shrink swell clays

Records within 50m

2

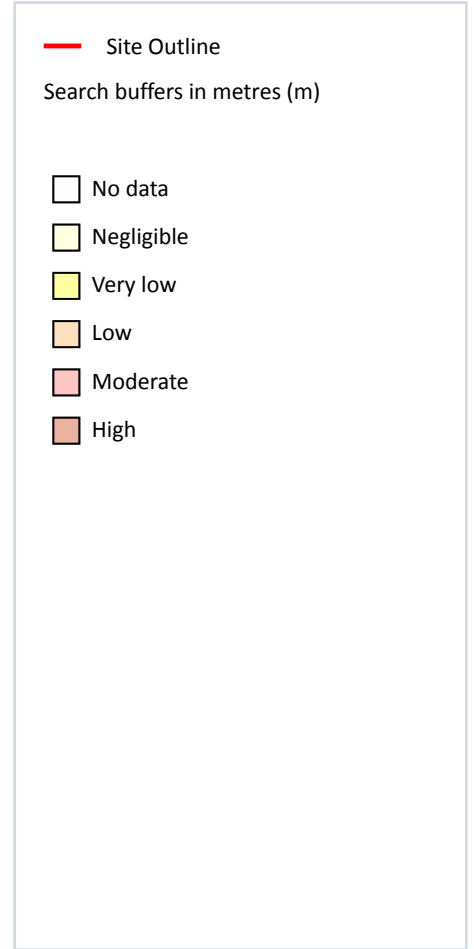
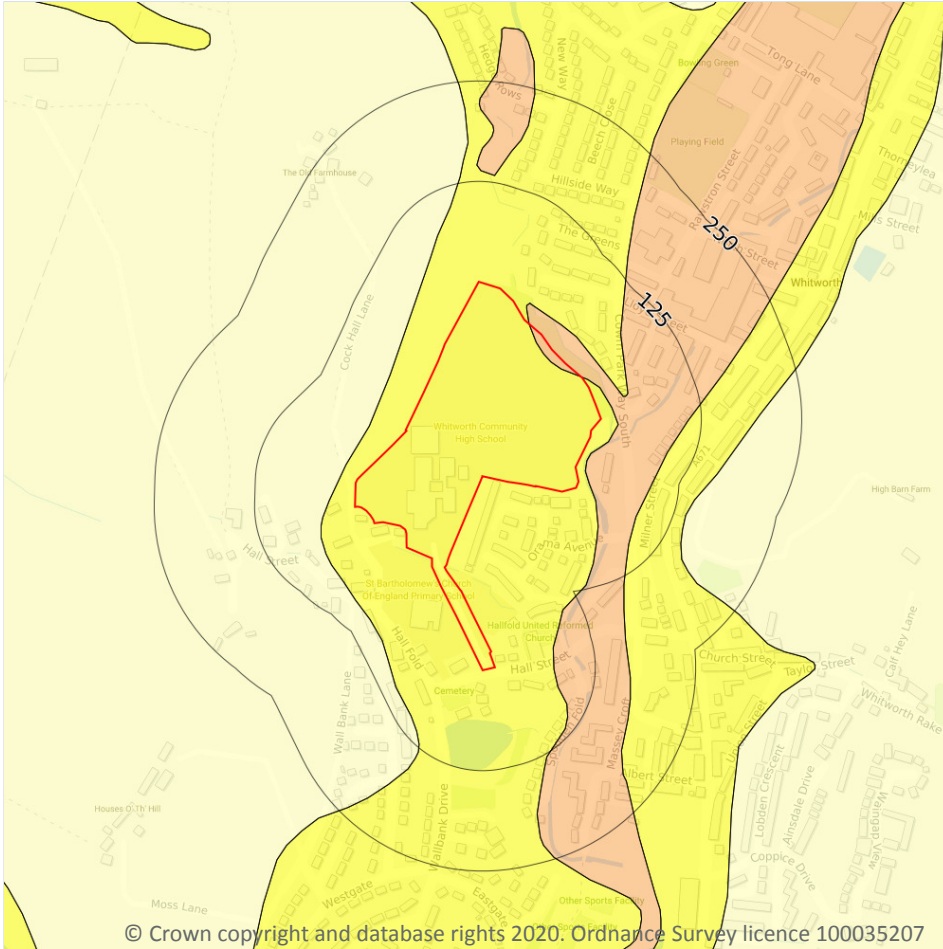
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 114**

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.
27m W	Negligible	Ground conditions predominantly non-plastic.

*This data is sourced from the British Geological Survey.*

## Natural ground subsidence - Running sands



### 17.2 Running sands

Records within 50m

3

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 115**

Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

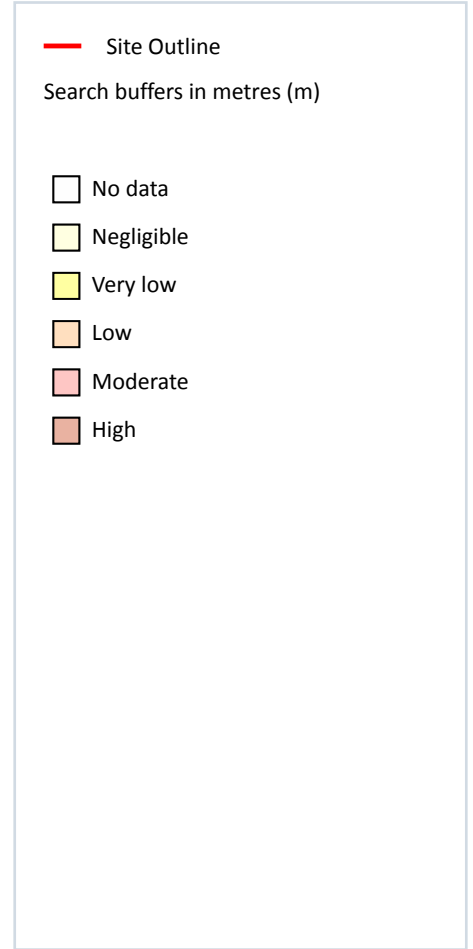
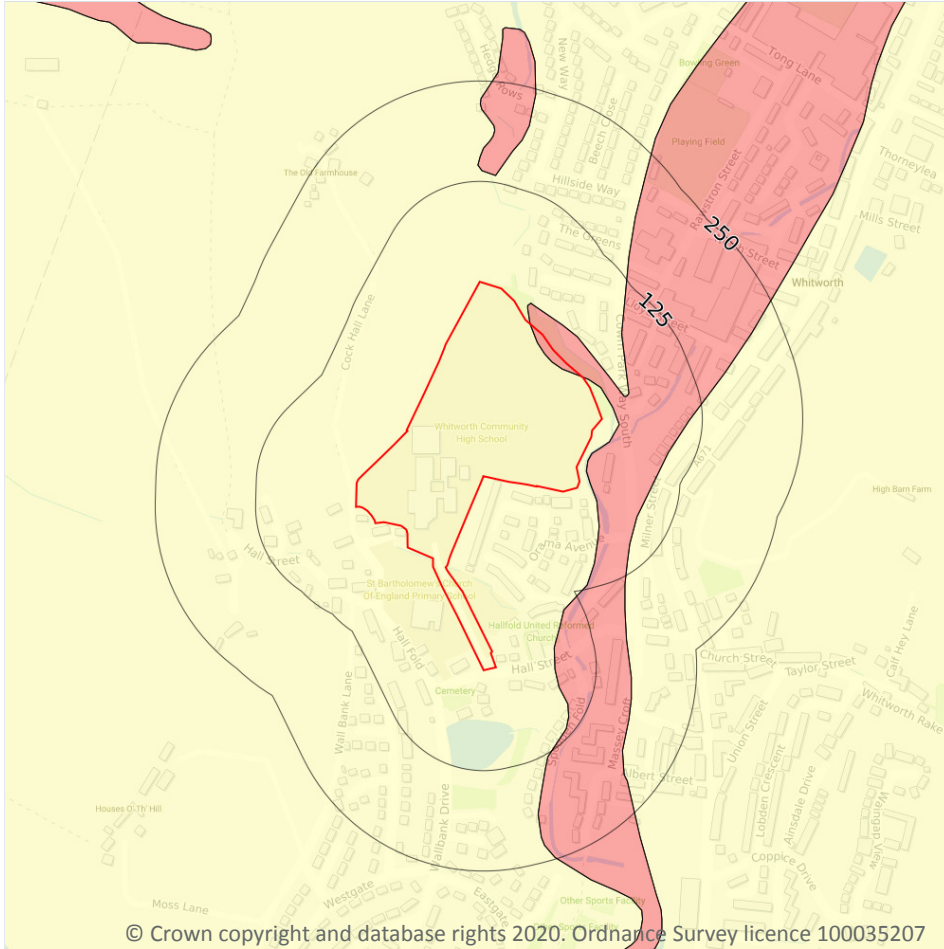


Location	Hazard rating	Details
On site	Low	<b>Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.</b>
21m NW	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

*This data is sourced from the British Geological Survey.*



## Natural ground subsidence - Compressible deposits



### 17.3 Compressible deposits

Records within 50m

2

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

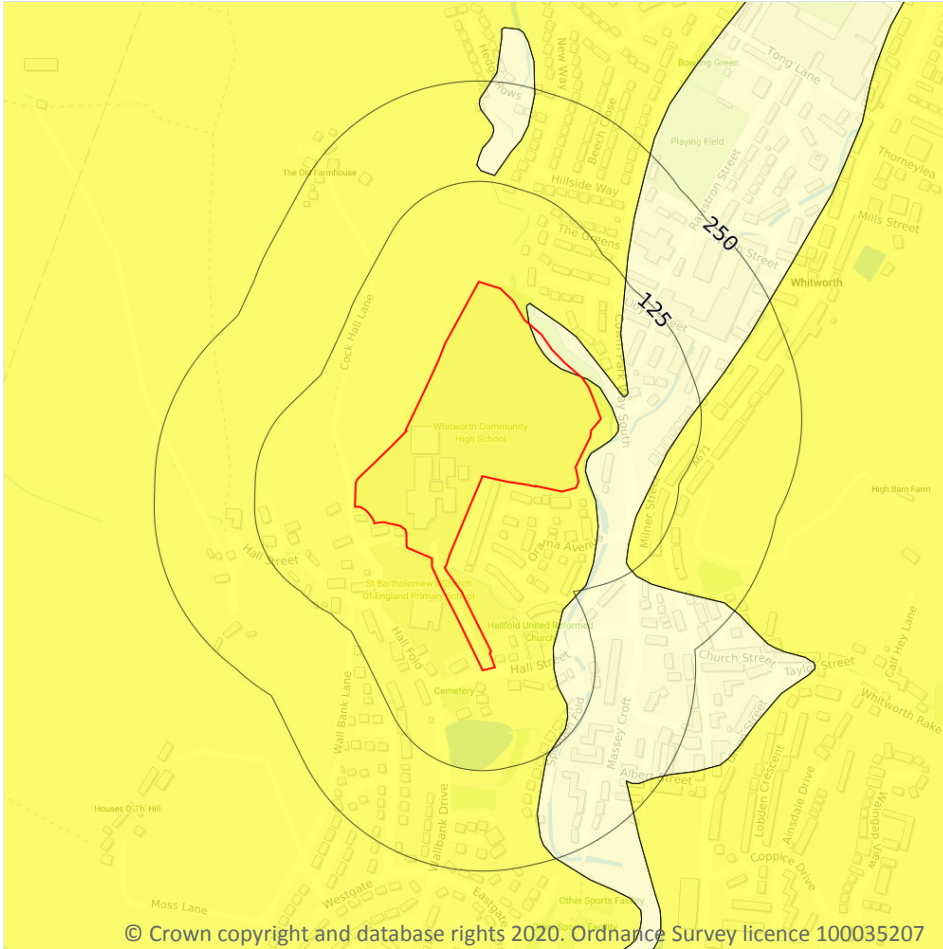
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 117**

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
On site	Moderate	Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.

*This data is sourced from the British Geological Survey.*



## Natural ground subsidence - Collapsible deposits



### 17.4 Collapsible deposits

Records within 50m

2

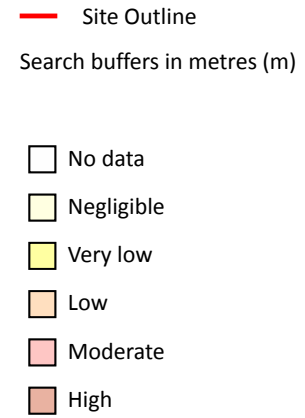
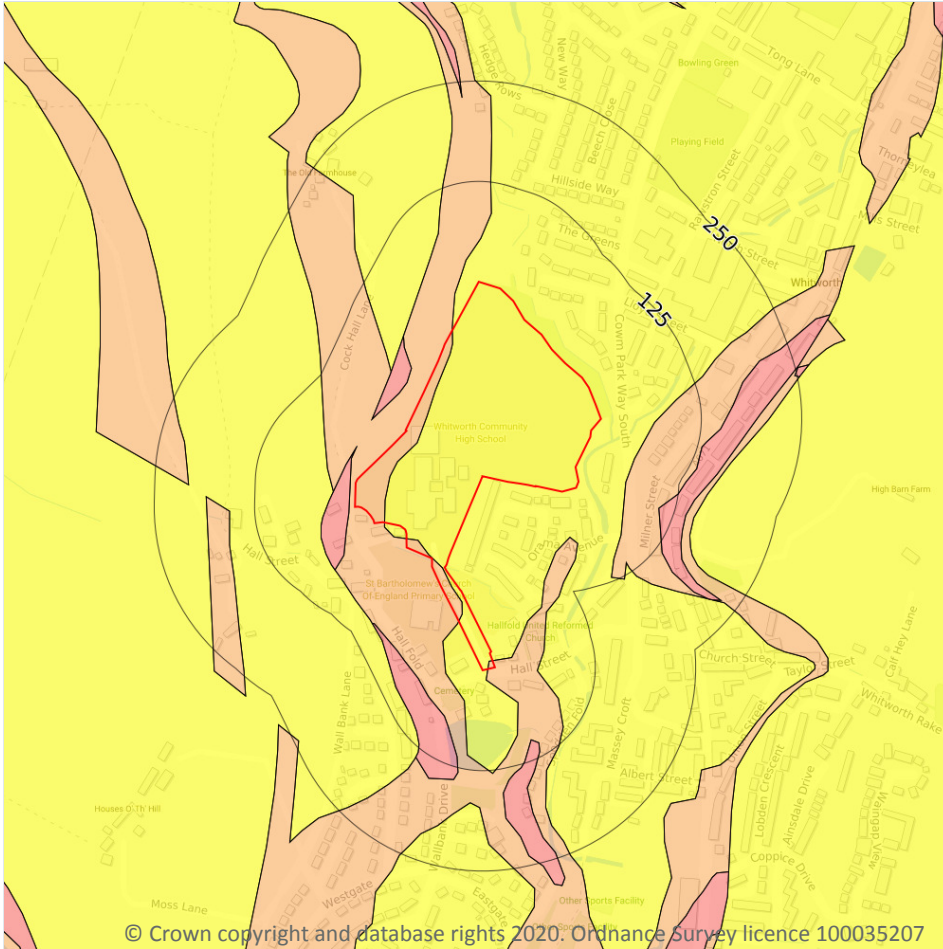
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 119**

Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

*This data is sourced from the British Geological Survey.*

## Natural ground subsidence - Landslides



### 17.5 Landslides

Records within 50m

4

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 120**

Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

Location	Hazard rating	Details
On site	Low	<b>Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.</b>
7m W	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.
24m NW	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.

*This data is sourced from the British Geological Survey.*

