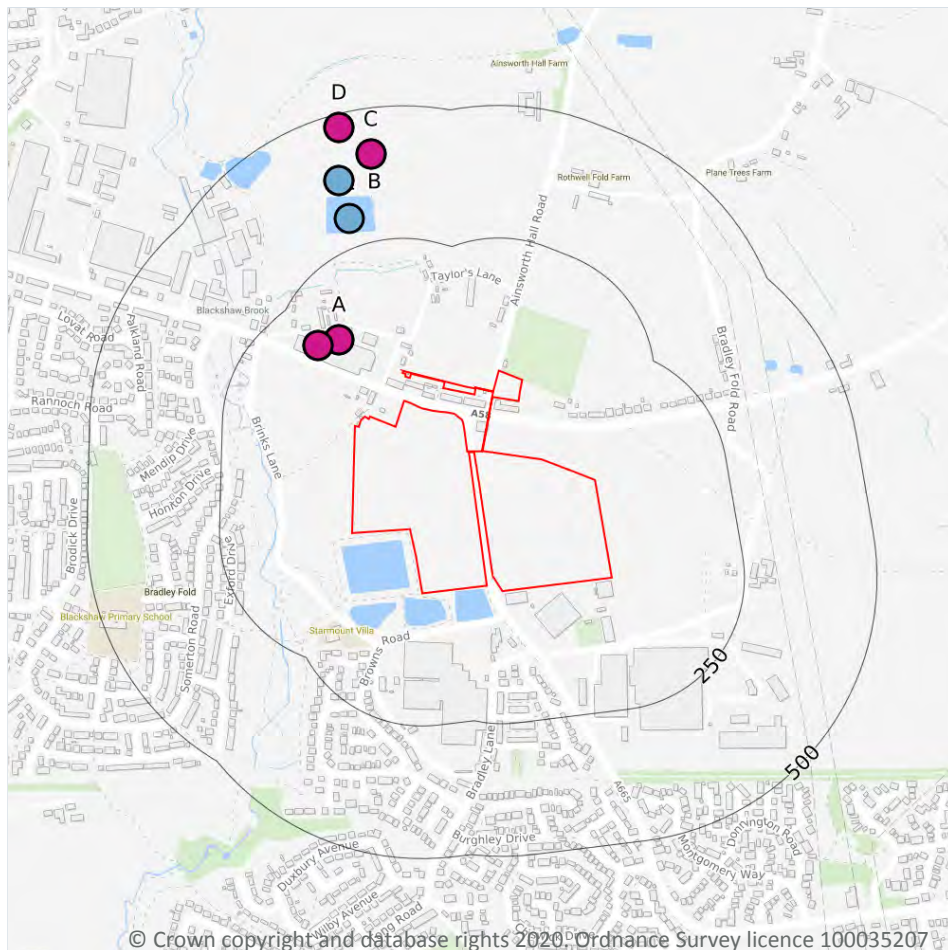


Abstractions and Source Protection Zones



- Site Outline
- Search buffers in metres (m)
- Source Protection Zone 1
Inner catchment
- Source Protection Zone 2
Outer catchment
- Source Protection Zone 3
Total catchment
- Source Protection Zone 4
Zone of Special Interest
- Source Protection Zone 1c
Inner catchment - confined aquifer
- Source Protection Zone 2c
Outer catchment - confined aquifer
- Source Protection Zone 3c
Total catchment - confined aquifer
- Drinking water abstraction licences
Point features
- Drinking water abstraction licences
Polygon features
- Drinking water abstraction licences
Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m

15

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	134m NW	Status: Historical Licence No: 2569003012 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, AINSWORTH MILLBREIGHTMET, BOLTON" Data Type: Point Name: AINSWORTH FINISHING COMPANY LTD. Easting: 375500 Northing: 409200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 23/02/2001 Version End Date: -
A	134m NW	Status: Historical Licence No: 2569003012 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, AINSWORTH MILLBREIGHTMET, BOLTON Data Type: Point Name: AINSWORTH FINISHING COMPANY LTD. Easting: 375500 Northing: 409200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 23/02/2001 Version End Date: -
A	161m NW	Status: Historical Licence No: 2569003012 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, AINSWORTH MILLBREIGHTMET, BOLTON Data Type: Point Name: PNC PROPERTIES LLP Easting: 375460 Northing: 409190	Annual Volume (m ³): 44840 Max Daily Volume (m ³): 700 Original Application No: - Original Start Date: 02/02/1966 Expiry Date: 05/08/2010 Issue No: 104 Version Start Date: 15/10/2007 Version End Date: -
A	161m NW	Status: Historical Licence No: 2569003012/R1 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, AINSWORTH MILLBREIGHTMET, BOLTON Data Type: Point Name: PCN PROPERTIES LLP Easting: 375460 Northing: 409190	Annual Volume (m ³): 8183 Max Daily Volume (m ³): 27.28 Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 104 Version Start Date: 06/08/2010 Version End Date: -

ID	Location	Details	
C	412m N	Status: Historical Licence No: 2569003042 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, AINSWORTH MILL BREIGHTMET, BOLTON Data Type: Point Name: PNC PROPERTIES LLP Easting: 375560 Northing: 409550	Annual Volume (m ³): 24820 Max Daily Volume (m ³): 436.41 Original Application No: - Original Start Date: 14/02/1966 Expiry Date: 05/08/2010 Issue No: 104 Version Start Date: 15/10/2007 Version End Date: -
C	412m N	Status: Historical Licence No: 2569003042/R1 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, AINSWORTH MILL BREIGHTMET, BOLTON Data Type: Point Name: PCN PROPERTIES LLP Easting: 375560 Northing: 409550	Annual Volume (m ³): 159290 Max Daily Volume (m ³): 436.41 Original Application No: - Original Start Date: 14/02/1966 Expiry Date: - Issue No: 104 Version Start Date: 06/08/2010 Version End Date: -
D	474m N	Status: Historical Licence No: 2569003042 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, AINSWORTH MILLBREIGHTMET, BOLTON" Data Type: Point Name: AINSWORTH FINISHING COMPANY LTD. Easting: 375500 Northing: 409600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 14/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 23/02/2001 Version End Date: -
D	474m N	Status: Historical Licence No: 2569003042 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, AINSWORTH MILLBREIGHTMET, BOLTON Data Type: Point Name: AINSWORTH FINISHING COMPANY LTD Easting: 375500 Northing: 409600	Annual Volume (m ³): 44840 Max Daily Volume (m ³): 486 Original Application No: - Original Start Date: 14/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 23/02/2001 Version End Date: -

ID	Location	Details	
-	1242m S	Status: Historical Licence No: 2569004051 Details: Dust suppression Direct Source: Ground Water - North West Region Point: "BOREHOLE AT STOPES RD, LITTLE LEVER, BOLTON" Data Type: Point Name: TARMAC TOPBLOCK LTD Easting: 376330 Northing: 407550	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 29/04/1996 Expiry Date: - Issue No: 100 Version Start Date: 06/04/1998 Version End Date: -
-	1242m S	Status: Historical Licence No: 2569004051 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT STOPES RD, LITTLE LEVER, BOLTON" Data Type: Point Name: TARMAC TOPBLOCK LTD Easting: 376330 Northing: 407550	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 29/04/1996 Expiry Date: - Issue No: 100 Version Start Date: 06/04/1998 Version End Date: -
-	1242m S	Status: Historical Licence No: 2569004051 Details: Dust Suppression Direct Source: Ground Water - North West Region Point: BOREHOLE AT STOPES RD, LITTLE LEVER, BOLTON Data Type: Point Name: Tarmac Building Products Limited Easting: 376330 Northing: 407550	Annual Volume (m ³): 30000 Max Daily Volume (m ³): 168 Original Application No: - Original Start Date: 29/04/1996 Expiry Date: - Issue No: 104 Version Start Date: 01/11/2016 Version End Date: -
-	1242m S	Status: Historical Licence No: 2569004051 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT STOPES RD, LITTLE LEVER, BOLTON Data Type: Point Name: Tarmac Building Products Limited Easting: 376330 Northing: 407550	Annual Volume (m ³): 30000 Max Daily Volume (m ³): 168 Original Application No: - Original Start Date: 29/04/1996 Expiry Date: - Issue No: 104 Version Start Date: 01/11/2016 Version End Date: -

ID	Location	Details	
-	1637m N	Status: Historical Licence No: 2569003089 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: "BOREHOLE AT ARTHUR LANE NURSERIES, AINSWORTH" Data Type: Point Name: LORD Easting: 375790 Northing: 410780	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 12/10/1992 Expiry Date: - Issue No: 100 Version Start Date: 01/05/1995 Version End Date: -
-	1637m N	Status: Historical Licence No: 2569003089 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT ARTHUR LANE NURSERIES, AINSWORTH Data Type: Point Name: LORD Easting: 375790 Northing: 410780	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 12/10/1992 Expiry Date: - Issue No: 100 Version Start Date: 01/05/1995 Version End Date: -
-	1637m N	Status: Active Licence No: 2569003089 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT ARTHUR LANE NURSERIES AINSWORTH Data Type: Point Name: LORD Easting: 375790 Northing: 410780	Annual Volume (m ³): 9,092 Max Daily Volume (m ³): 110 Original Application No: - Original Start Date: 12/10/1992 Expiry Date: - Issue No: 100 Version Start Date: 01/05/1995 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	
1	305m N	Status: Historical Licence No: 2569003043 Details: Process Water Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIR FED BY SURFACE DRAINAGE AT PREMISES AINSWORTH MILL Data Type: Point Name: AINSWORTH FINISHING COMPANY LTD Easting: 375520 Northing: 409430	Annual Volume (m ³): 200000 Max Daily Volume (m ³): 1600 Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 104 Version Start Date: 05/08/2005 Version End Date: -
B	378m N	Status: Historical Licence No: 2569003043 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "RESERVOIR FED BY SURFACE DRAINAGE ATPREMISES, AINSWORTH MILL" Data Type: Point Name: AINSWORTH FINISHING COMPANY LTD. Easting: 375500 Northing: 409500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 23/02/2001 Version End Date: -
B	378m N	Status: Historical Licence No: 2569003043 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIR FED BY SURFACE DRAINAGE ATPREMISES, AINSWORTH MILL Data Type: Point Name: AINSWORTH FINISHING COMPANY LTD Easting: 375500 Northing: 409500	Annual Volume (m ³): 365000 Max Daily Volume (m ³): 1980 Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 103 Version Start Date: 23/02/2001 Version End Date: -
-	1264m N	Status: Historical Licence No: 2569003051 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: CHERRY TREE & PIMHOLE R/VOIRS FED BY SURFACE DRAINAGE114 Data Type: Point Name: REXHAM CFP LTD. Easting: 375500 Northing: 410400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/06/1999 Version End Date: -



ID	Location	Details	
-	1264m N	Status: Historical Licence No: 2569003051 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: CHERRY TREE & PIMHOLE R/VOIRS FED BY SURFACE DRAINAGE \$114 Data Type: Point Name: FIBERMARK RED BRIDGE INTERNATIONAL LTD Easting: 375500 Northing: 410400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 18/04/2001 Version End Date: -
-	1264m N	Status: Active Licence No: 2569003051 Details: Process Water Direct Source: Surface, Non-Tidal - North West Region Point: CHERRY TREE & PIMHOLE R/VOIRS FED BY SURFACE DRAINAGE Data Type: Point Name: FIBERMARK RED BRIDGE INTERNATIONAL LTD Easting: 375500 Northing: 410400	Annual Volume (m ³): 13,500 Max Daily Volume (m ³): 54 Original Application No: - Original Start Date: 04/03/1966 Expiry Date: - Issue No: 102 Version Start Date: 25/06/2012 Version End Date: -
-	1323m S	Status: Historical Licence No: 2569003027 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "RESERVOIR FED BY SURFACE DRAINAGE ATPREMISES, LITTLE LEVER, " Data Type: Point Name: LORIVAL PLASTICS LTD Easting: 375700 Northing: 407400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 28/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 18/02/1991 Version End Date: -
-	1323m S	Status: Historical Licence No: 2569003027 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIR FED BY SURFACE DRAINAGE ATPREMISES, LITTLE LEVER Data Type: Point Name: LORIVAL PLASTICS LTD Easting: 375700 Northing: 407400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 28/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 18/02/1991 Version End Date: -

ID	Location	Details	
-	1435m N	Status: Historical Licence No: 2569003098 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: PIMHOLE RESERVOIR AT REDBRIDGE, BOLTON Data Type: Point Name: BREIGHTMET GOLF CLUB LIMITED Easting: 375400 Northing: 410560	Annual Volume (m ³): 3660 Max Daily Volume (m ³): 59 Original Application No: - Original Start Date: 08/12/2003 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 01/04/2008 Version End Date: -
-	1475m N	Status: Historical Licence No: 2569003051 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: CHERRY TREE AND PIMHOLE RESERVOIRS FED BY SURFACE DRAINAGE Data Type: Point Name: FIBERMARK RED BRIDGE INTERNATIONAL LTD Easting: 375400 Northing: 410600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 18/04/2001 Version End Date: -
-	1475m N	Status: Active Licence No: 2569003051 Details: Process Water Direct Source: Surface, Non-Tidal - North West Region Point: CHERRY TREE AND PIMHOLE RESERVOIRS FED BY SURFACE DRAINAGE Data Type: Point Name: FIBERMARK RED BRIDGE INTERNATIONAL LTD Easting: 375400 Northing: 410600	Annual Volume (m ³): 13,500 Max Daily Volume (m ³): 54 Original Application No: - Original Start Date: 04/03/1966 Expiry Date: - Issue No: 102 Version Start Date: 25/06/2012 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	0
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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.

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)

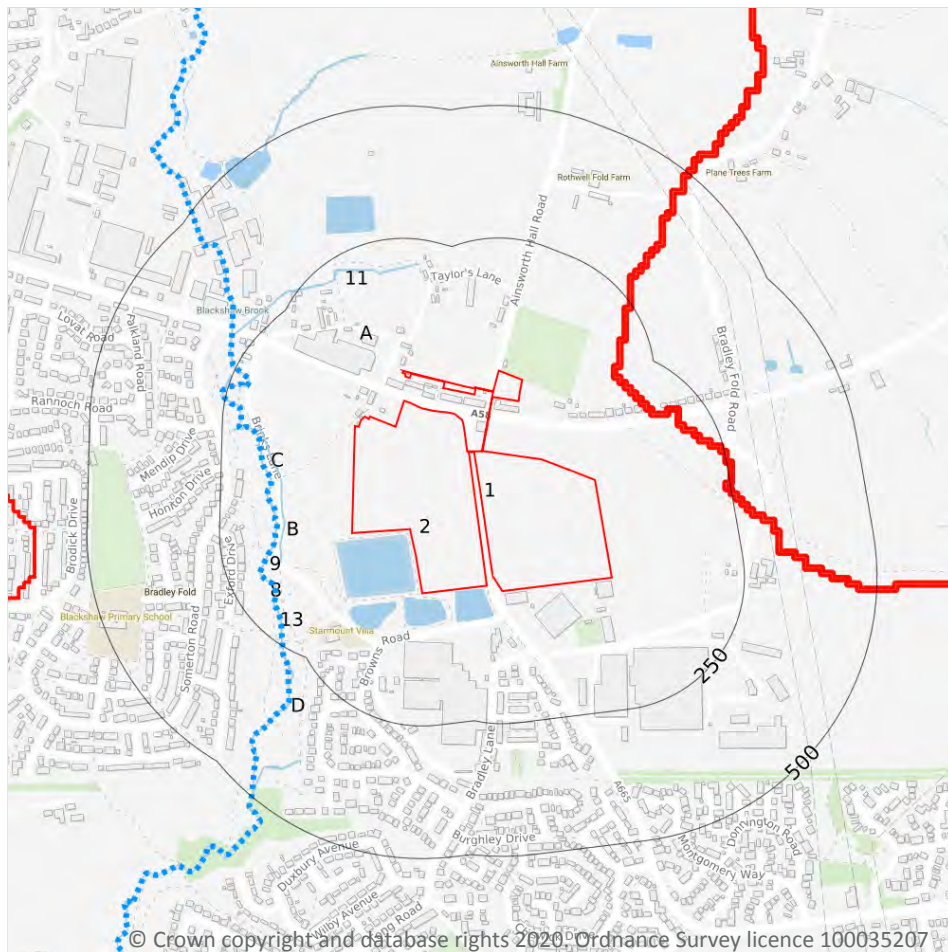
Records within 500m**0**

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



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ... WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

16

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 67**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	119m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
A	122m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	124m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	127m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	137m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	141m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Blackshaw Brook
8	163m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Blackshaw Brook
9	163m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	179m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Blackshaw Brook
C	179m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
11	189m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
13	200m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Blackshaw Brook
D	204m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Blackshaw Brook
C	214m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Blackshaw Brook



ID	Location	Type of water feature	Ground level	Permanence	Name
C	216m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Blackshaw Brook
C	217m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

11

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 67**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

1

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 67**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
2	On site	River WB catchment	Croal (including Blackshaw Brook)	GB112069064550	Croal Irwell	Irwell

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



6.4 WFD Surface water bodies

Records identified

1

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 67**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
7	141m W	River	Croal (including Blackshaw Brook)	GB112069064550	Moderate	Good	Moderate	2016

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

6.5 WFD Groundwater bodies

Records on site

1

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.

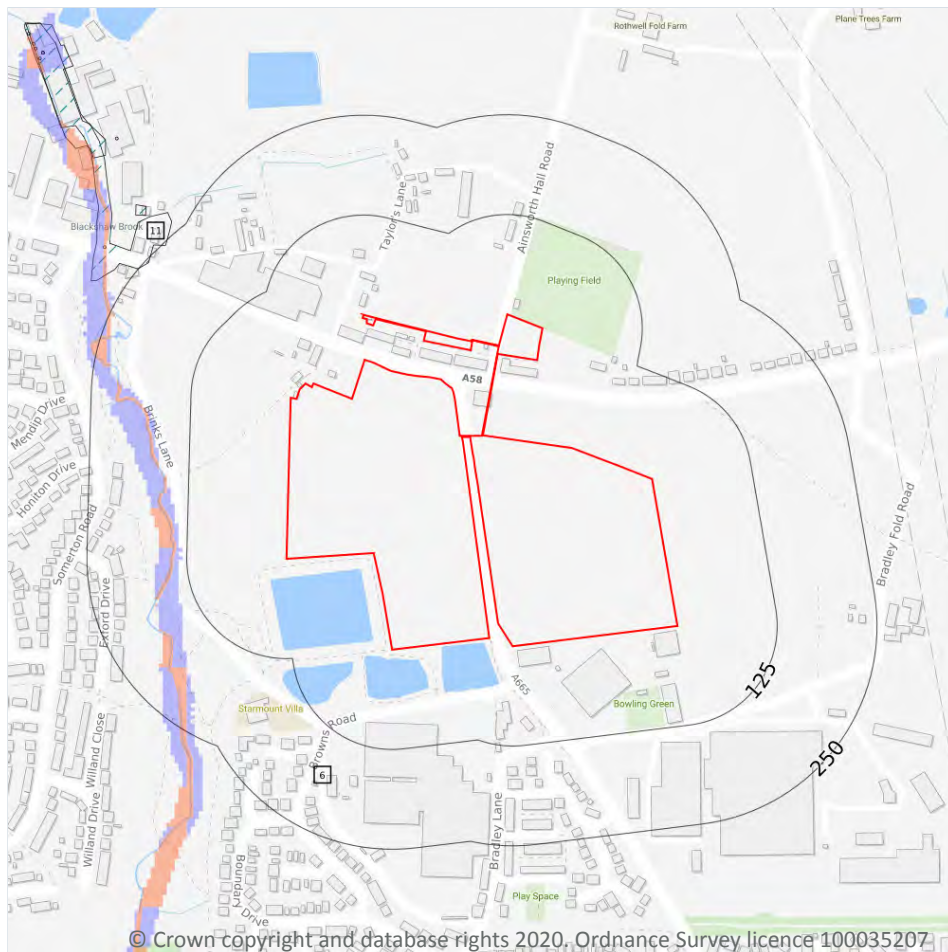
Features are displayed on the Hydrology map on **page 67**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
1	On site	Northern Manchester Carboniferous Aquifers	GB41202G101800	Poor	Poor	Good	2015

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



7 River and coastal flooding



- Site Outline
- Search buffers in metres (m)
- Environment Agency river and coastal flooding:
 - High
 - Medium
 - Low
 - Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

7.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m

0

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).

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

7.2 Historical Flood Events

Records within 250m

2

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 71**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
6	178m SW	Bksb	1998-03-06 1998-03-07	Unknown	Channel capacity exceeded (no raised defences)	No data
11	246m NW	Brightmet	2015-12-26 2015-12-26	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	0
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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.

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

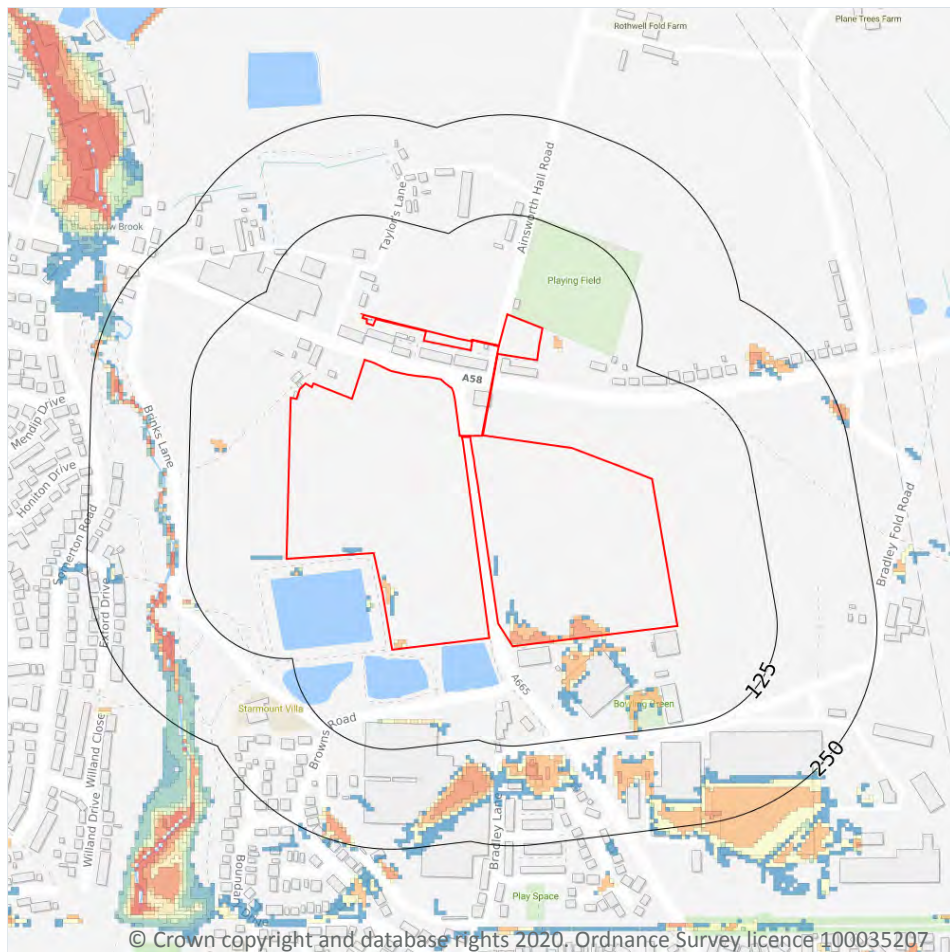
7.7 Flood Zone 3

Records within 50m	0
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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.

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

8 Surface water flooding



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

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, 0.3m - 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 75**

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.

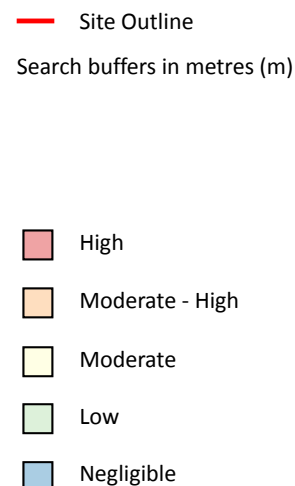
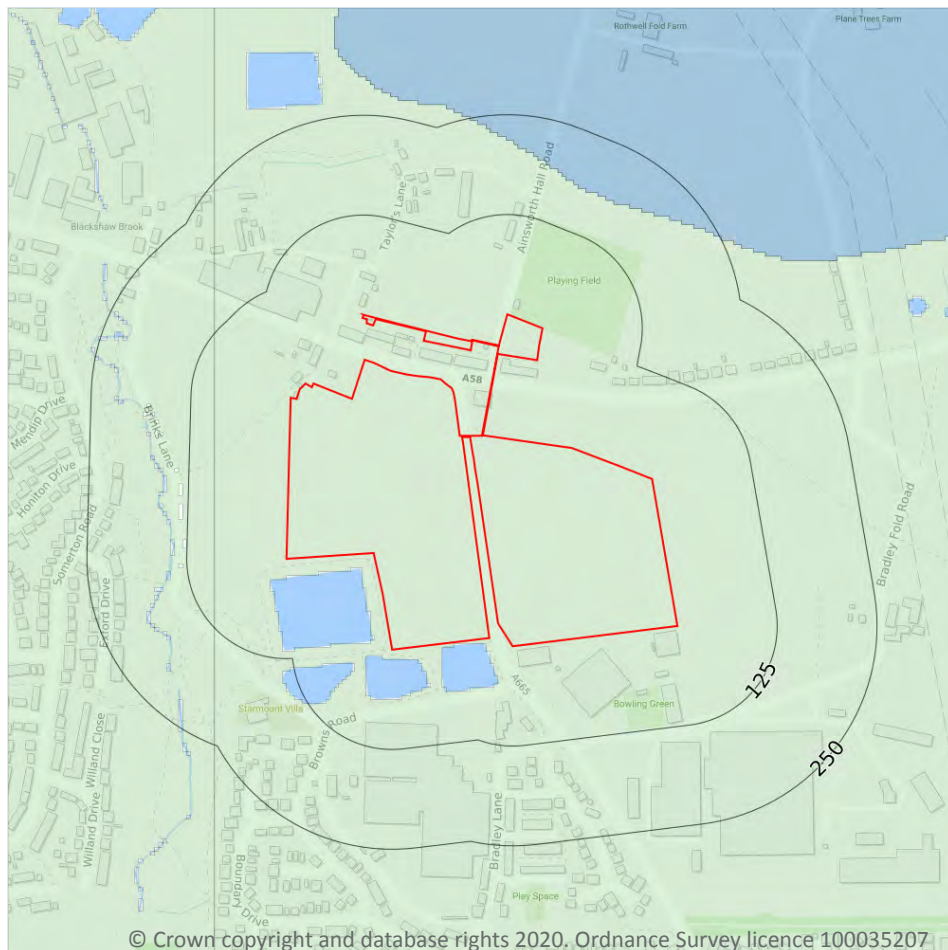
The table below shows the maximum flood depths for a range of return periods for the site.

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 Ambiantal Risk Analytics.



9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

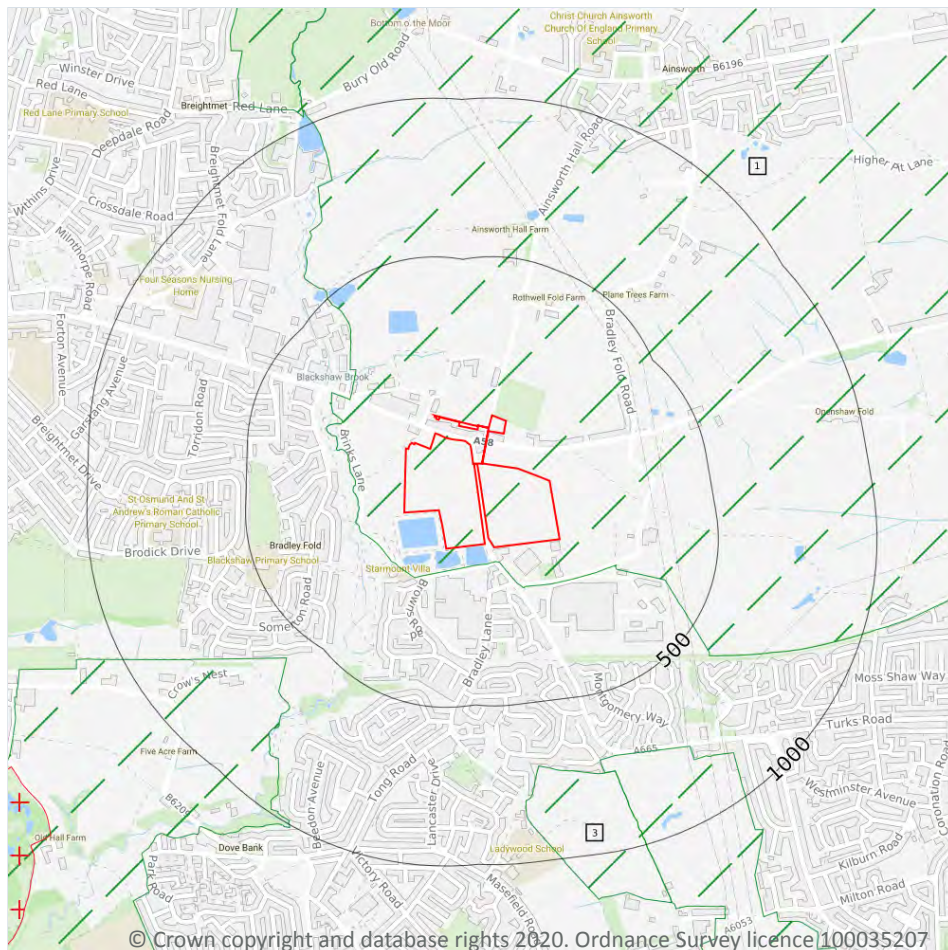
Low

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 77**

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- + Local Nature Reserves (LNR)
- / Green Belt

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

7

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 78**

ID	Location	Name	Data source
6	1468m SW	Moses Gate	Natural England
-	1604m W	Leverhulme	Natural England
-	1662m W	Seven Acres	Natural England
-	1760m S	Moses Gate	Natural England
-	1789m SW	Moses Gate	Natural England
-	1850m S	Moses Gate	Natural England
-	1993m SW	Moses Gate	Natural England

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

10.7 Designated Ancient Woodland

Records within 2000m

0

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.

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 78**

ID	Location	Name	Local Authority name
1	On site	Liverpool and Manchester	Bury
2	589m SW	Liverpool and Manchester	Bolton
3	701m S	Liverpool and Manchester	Bolton
4	703m S	Liverpool and Manchester	Bury
5	1028m NW	Liverpool and Manchester	Bolton

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

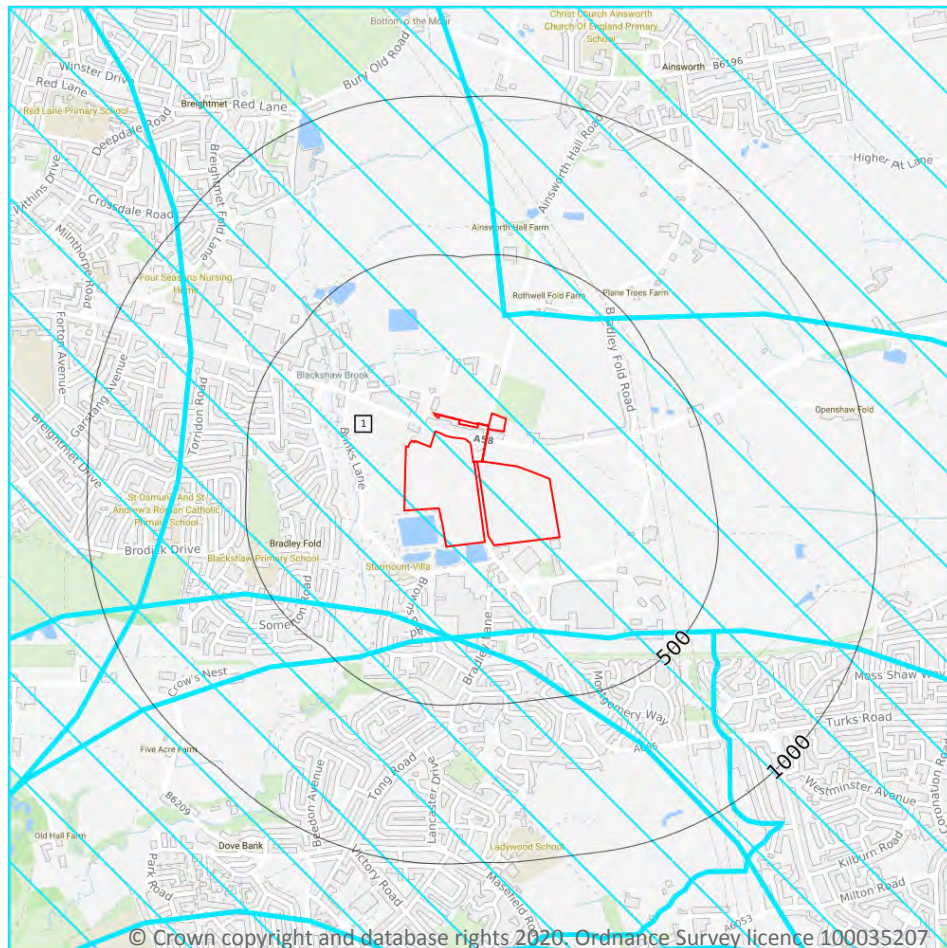
Records within 2000m**0**

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



- Site Outline
- Search buffers in metres (m)
- SSSI Impact Risk Zones
- SSSI Units
- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

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 83**

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons > 750m² & manure stores > 3500t.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m

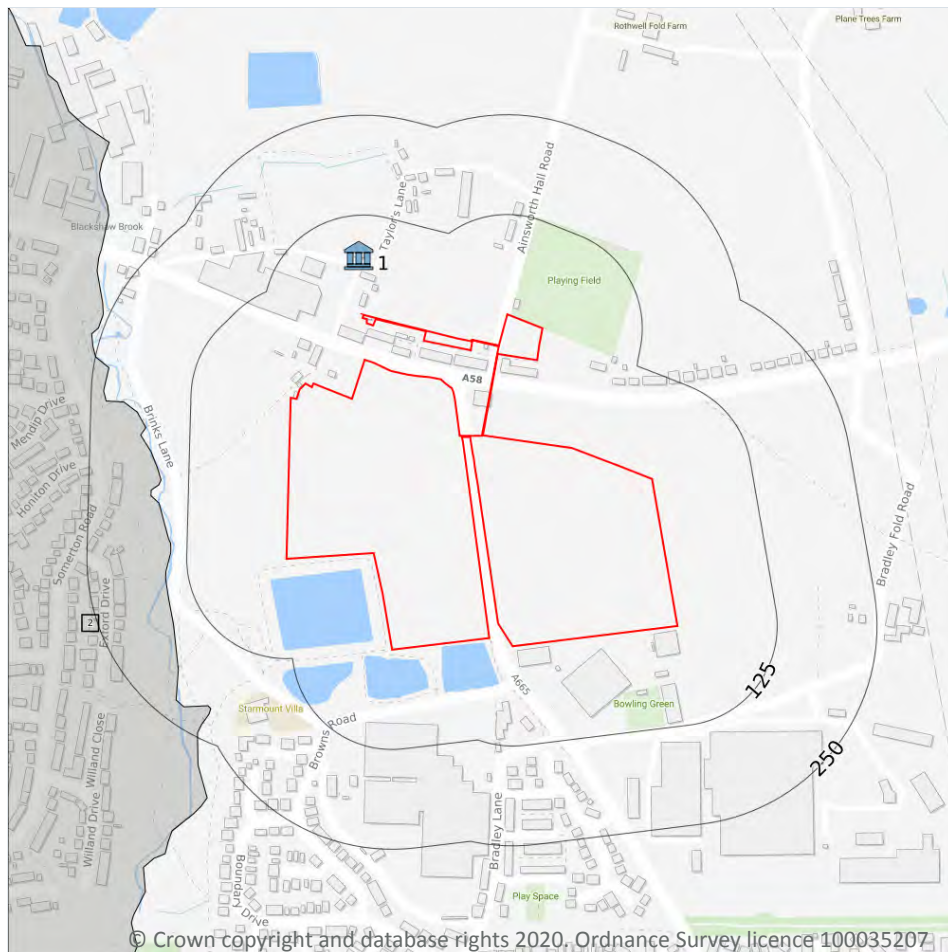
0

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



- Site Outline
- Search buffers in metres (m)
- Listed buildings
- Conservation areas
- Conservation areas - no data
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites

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

1

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 85**

ID	Location	Name	Grade	Reference Number	Listed date
1	75m N	Smith Fold Farmhouse, Bury, BL2	II	1067222	29/01/1985

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

11.5 Conservation Areas

Records within 250m

1

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.

Features are displayed on the Visual and cultural designations map on **page 85**

ID	Location	Name	District	Date of designation
2	145m W	The Local Authority for this area have not supplied conservation area data.		-

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

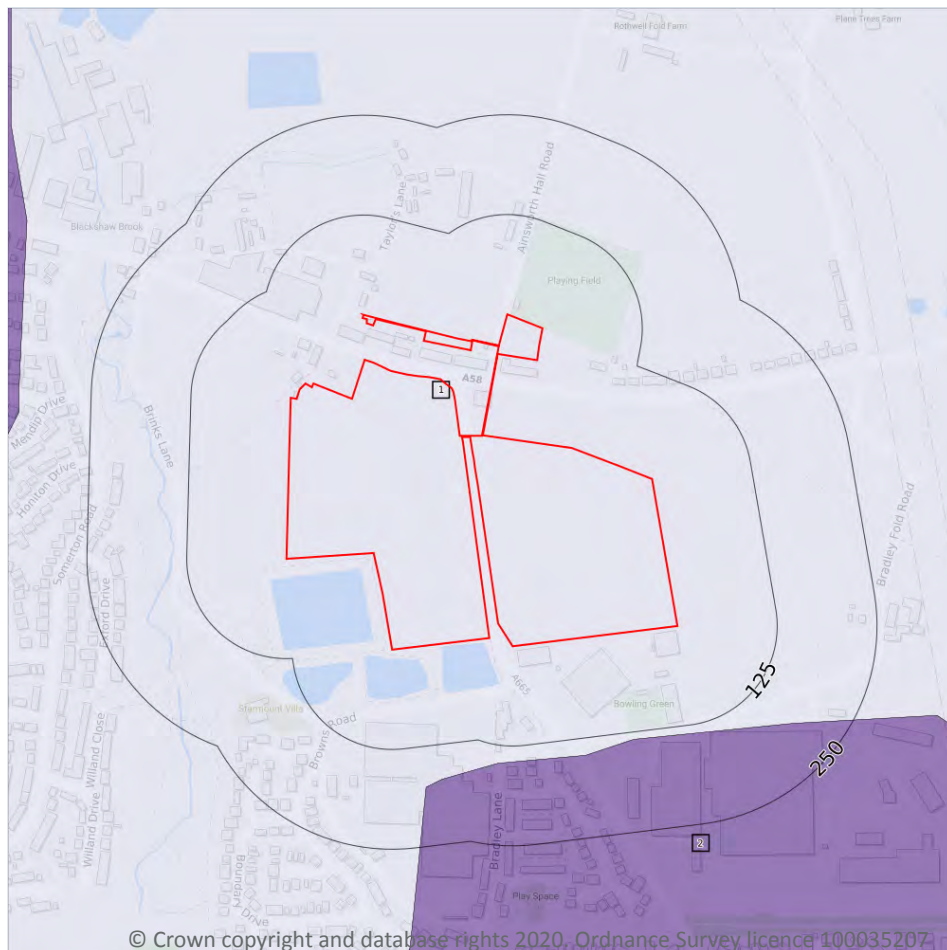
Records within 250m

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



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m

2

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 88**

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.

ID	Location	Classification	Description
2	134m S	Urban	-

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

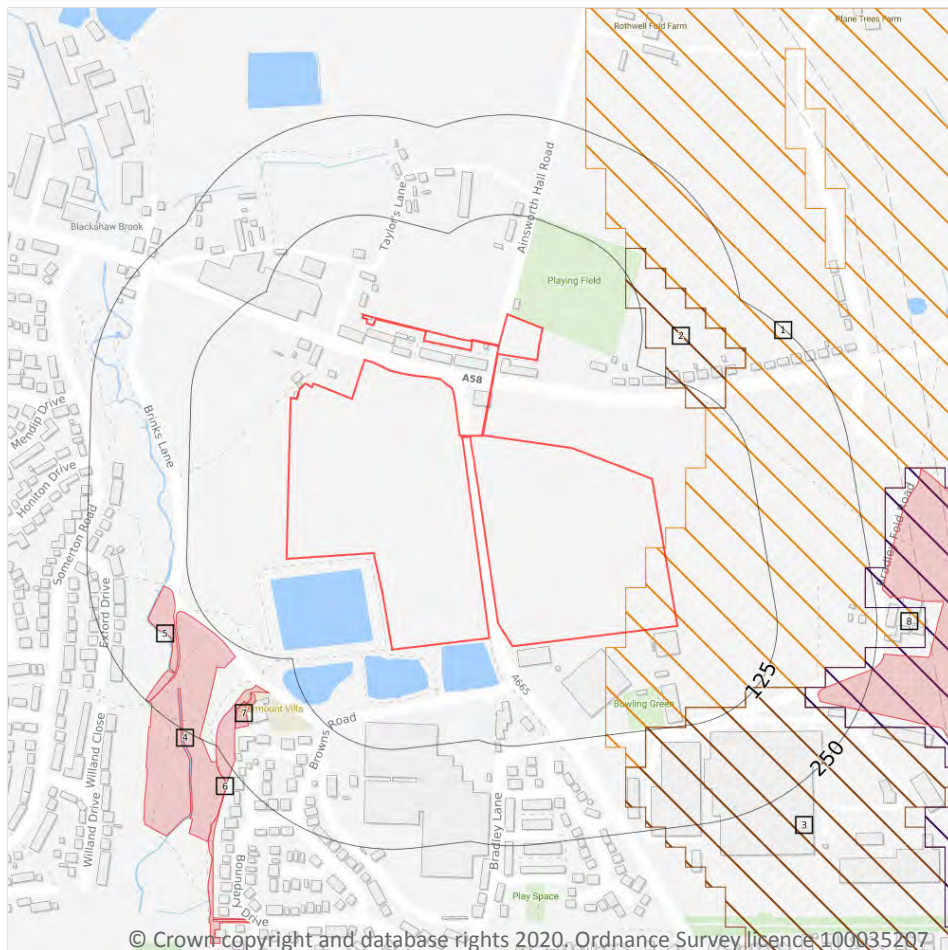
Records within 250m

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



- Site Outline
- Search buffers in metres (m)
- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders
- Habitat Networks
- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m

5

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 90**

ID	Location	Main Habitat	Other habitats
4	130m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
5	149m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
6	163m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
7	174m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)



ID	Location	Main Habitat	Other habitats
9	196m SE	Lowland fens	Main habitat: LFENS (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	4
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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.

Features are displayed on the Habitat designations map on **page 90**

ID	Location	Type	Habitat
1	On site	Network Enhancement Zone 1	Not specified
2	98m NE	Network Enhancement Zone 2	Not specified
3	103m S	Network Enhancement Zone 2	Not specified
8	178m SE	Primary Habitat	Lowland fens

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0
----------------------------	----------

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.

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.

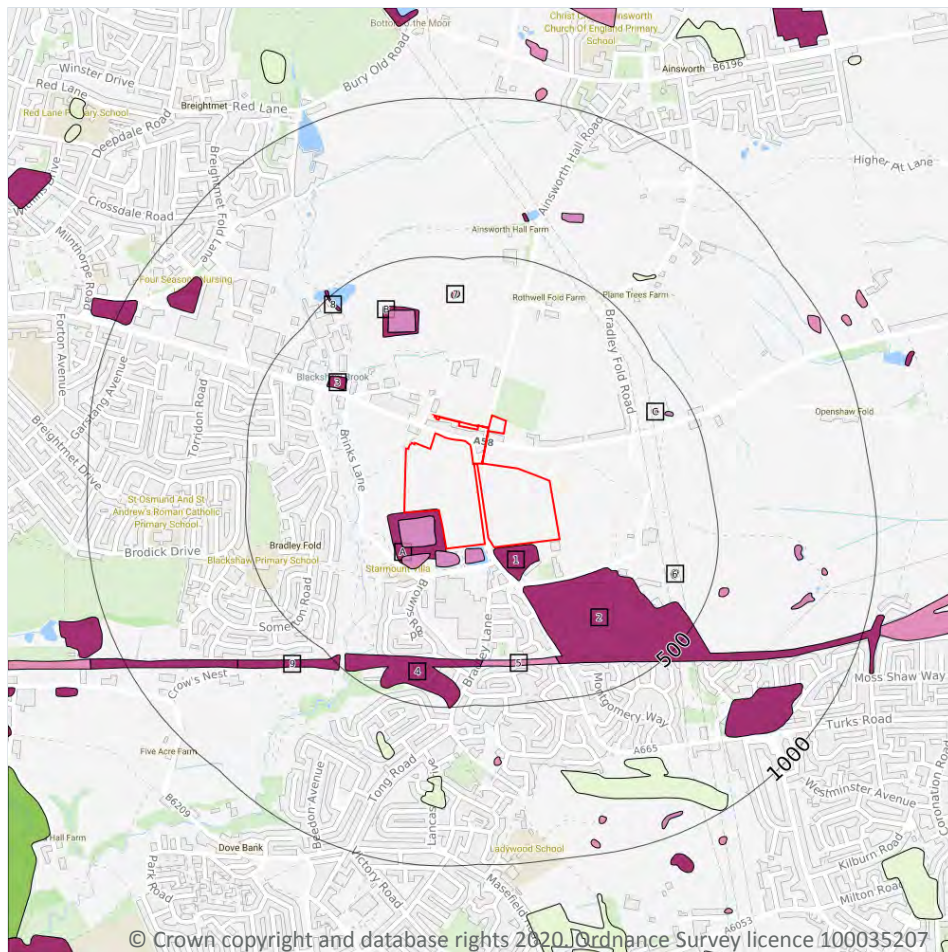
Features are displayed on the Geology 1:10,000 scale - Availability map on **page 93**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	SD70NE

This data is sourced from the British Geological Survey.



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



- Site Outline**
- Search buffers in metres (m)
- Reclaimed ground
 - Made ground
 - Worked ground
 - Infilled ground
 - Disturbed ground
 - Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m

18

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 94**

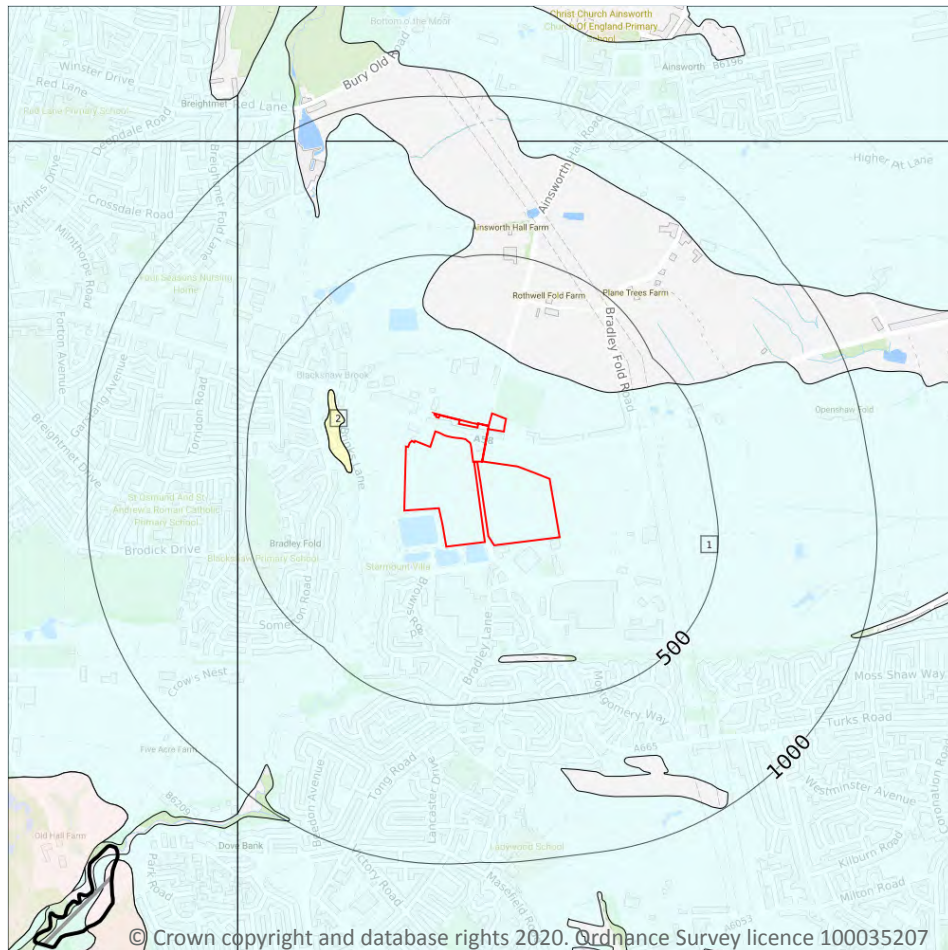
ID	Location	LEX Code	Description	Rock description
A	On site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
1	3m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	9m S	WGR-VOID	Worked Ground (Undivided)	Void
A	10m S	WGR-VOID	Worked Ground (Undivided)	Void

ID	Location	LEX Code	Description	Rock description
A	16m S	WGR-VOID	Worked Ground (Undivided)	Void
A	54m W	WGR-VOID	Worked Ground (Undivided)	Void
2	131m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
B	265m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	270m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
B	272m N	WGR-VOID	Worked Ground (Undivided)	Void
4	348m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
5	356m S	WGR-VOID	Worked Ground (Undivided)	Void
6	368m E	WGR-VOID	Worked Ground (Undivided)	Void
7	375m N	WGR-VOID	Worked Ground (Undivided)	Void
C	391m NE	WGR-VOID	Worked Ground (Undivided)	Void
C	420m NE	WGR-VOID	Worked Ground (Undivided)	Void
8	445m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
9	475m SW	MGR-ARTDP	Made Ground (Undivided)	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

2

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 96**

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
2	168m W	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

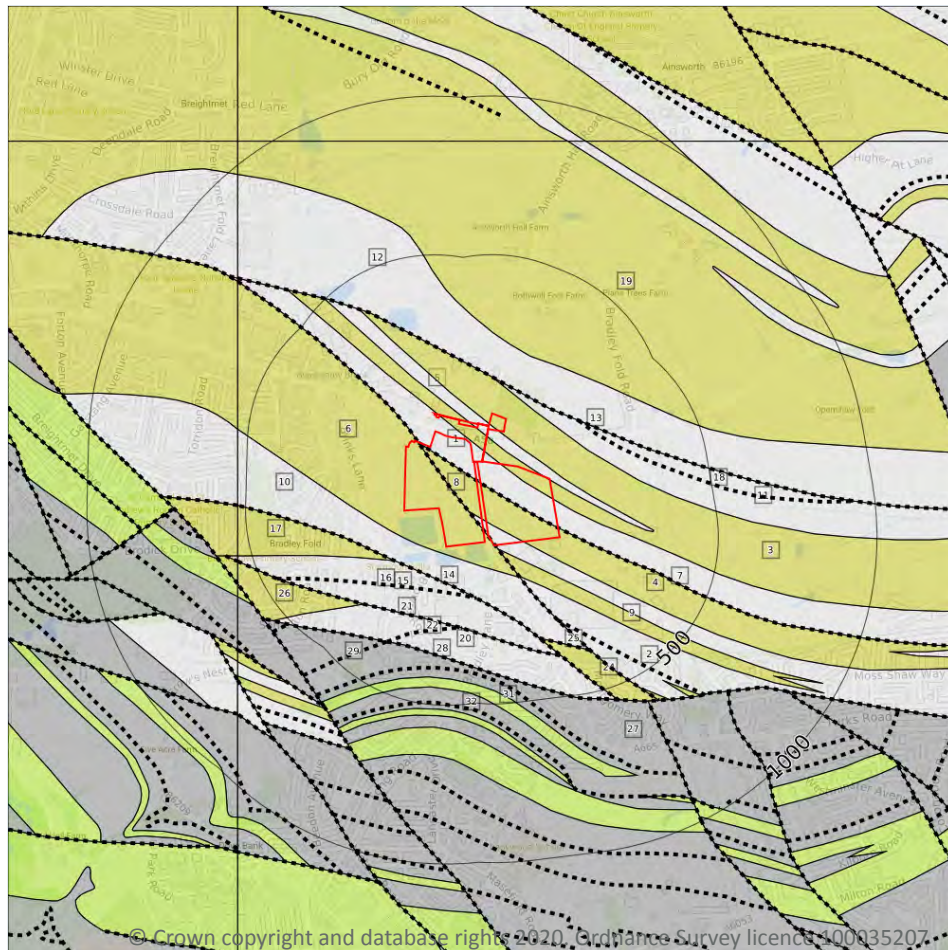
0

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.

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

18

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 98**

ID	Location	LEX Code	Description	Rock age
1	On site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
2	On site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
3	On site	CAR-SDST	Cannel Rock (south Lancashire) - Sandstone	Langsettian Sub-age

ID	Location	LEX Code	Description	Rock age
4	On site	TRBR-SDST	Trencherbone Rock - Sandstone	Langsettian Sub-age
5	On site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
6	On site	CAR-SDST	Cannel Rock (south Lancashire) - Sandstone	Langsettian Sub-age
9	13m S	TRBR-SDST	Trencherbone Rock - Sandstone	Langsettian Sub-age
10	24m S	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
11	76m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
12	95m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
15	106m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
17	157m SW	TRBR-SDST	Trencherbone Rock - Sandstone	Langsettian Sub-age
19	212m N	CAR-SDST	Cannel Rock (south Lancashire) - Sandstone	Langsettian Sub-age
20	236m S	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
24	307m S	TRBR-SDST	Trencherbone Rock - Sandstone	Langsettian Sub-age
26	317m SW	TRBR-SDST	Trencherbone Rock - Sandstone	Langsettian Sub-age
27	335m S	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
31	414m S	PMCM-SDST	Pennine Middle Coal Measures Formation - Sandstone	Bolsovia Sub-age - Duckmantian Sub-age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

14

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 98**

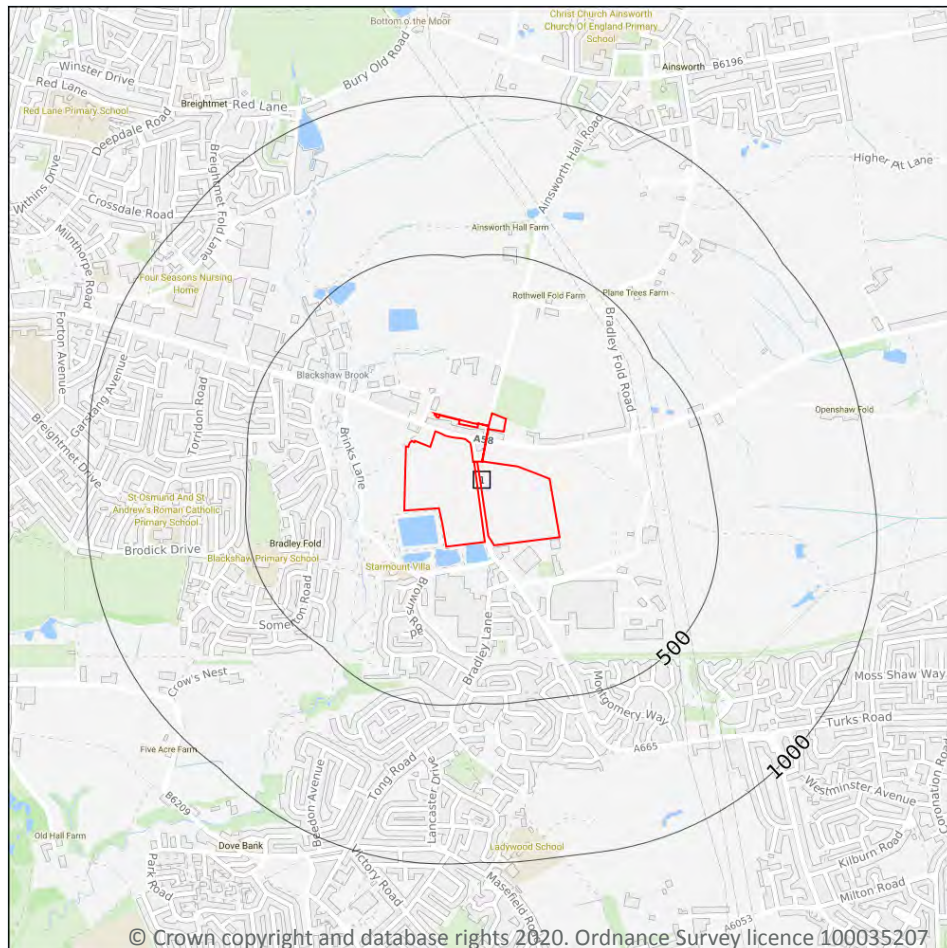


ID	Location	Category	Description
7	On site	ROCK	Coal seam, inferred coincident with bedrock geology boundary
8	On site	FAULT	Normal fault, inferred; crossmarks on downthrow side
13	95m NE	FAULT	Normal fault, inferred; crossmarks on downthrow side
14	106m SW	FAULT	Normal fault, inferred; crossmarks on downthrow side
16	143m S	ROCK	Coal seam, inferred
18	202m NE	ROCK	Coal seam, inferred
21	236m S	FAULT	Normal fault, inferred; crossmarks on downthrow side
22	258m S	ROCK	Coal seam, inferred
23	258m S	ROCK	Coal seam, inferred
25	307m S	ROCK	Coal seam, inferred coincident with bedrock geology boundary
28	335m S	FAULT	Normal fault, inferred; crossmarks on downthrow side
29	353m SW	ROCK	Coal seam, inferred
30	383m S	ROCK	Coal seam, inferred
32	492m S	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline
Search buffers in metres (m)

☐ 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.

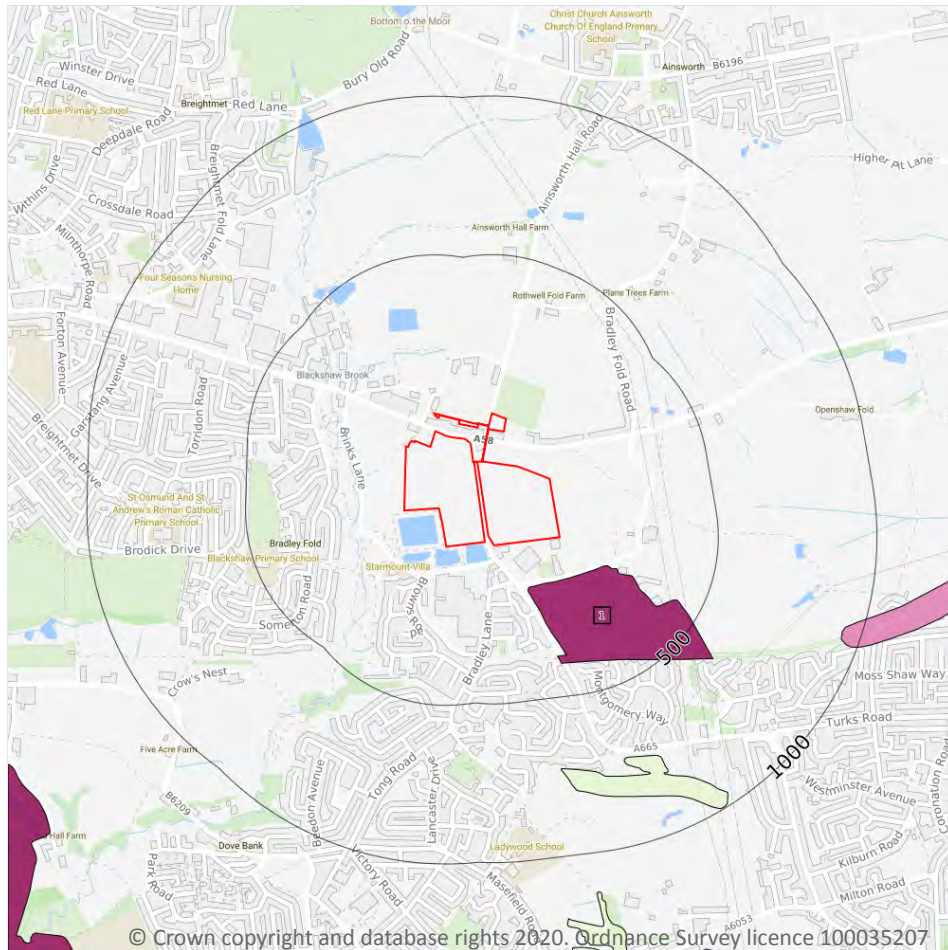
Features are displayed on the Geology 1:50,000 scale - Availability map on **page 101**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	EW085_manchester_v4

This data is sourced from the British Geological Survey.



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



— Site Outline
Search buffers in metres (m)

- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

15.2 Artificial and made ground (50k)

Records within 500m

1

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 102**

ID	Location	LEX Code	Description	Rock description
1	132m S	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.



15.3 Artificial ground permeability (50k)

Records within 50m

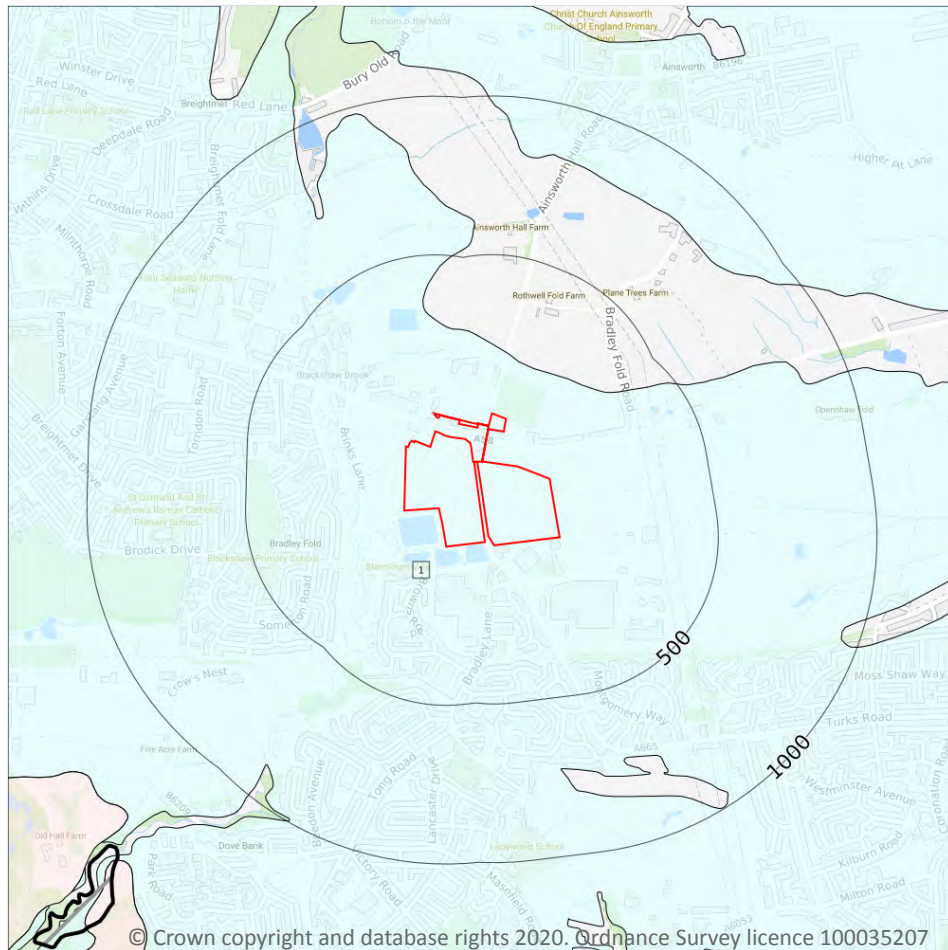
0

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

1

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 104**

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON

This data is sourced from the British Geological Survey.



15.5 Superficial permeability (50k)

Records within 50m**1**

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	Mixed	High	Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m**0**

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.

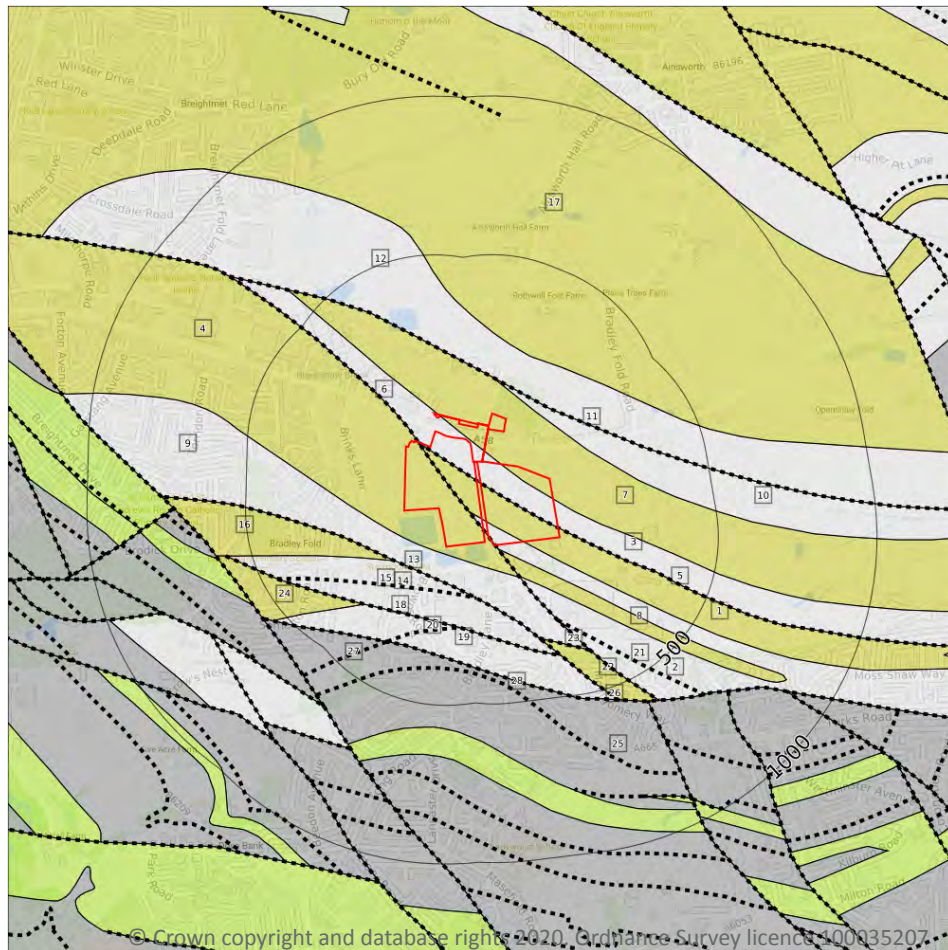
15.7 Landslip permeability (50k)

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 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

16

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 106**

ID	Location	LEX Code	Description	Rock age
1	On site	TRBR-SDST	TRENCHBONE ROCK - SANDSTONE	WESTPHALIAN
2	On site	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
3	On site	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN



ID	Location	LEX Code	Description	Rock age
4	On site	CAR-SDST	CANNEL ROCK (SOUTH LANCASHIRE) - SANDSTONE	WESTPHALIAN
7	On site	CAR-SDST	CANNEL ROCK (SOUTH LANCASHIRE) - SANDSTONE	WESTPHALIAN
8	13m S	TRBR-SDST	TRENCHBONE ROCK - SANDSTONE	WESTPHALIAN
9	24m S	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
10	76m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
12	95m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
14	106m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
16	157m SW	TRBR-SDST	TRENCHBONE ROCK - SANDSTONE	WESTPHALIAN
17	211m N	CAR-SDST	CANNEL ROCK (SOUTH LANCASHIRE) - SANDSTONE	WESTPHALIAN
19	236m S	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
22	308m S	TRBR-SDST	TRENCHBONE ROCK - SANDSTONE	WESTPHALIAN
24	317m SW	TRBR-SDST	TRENCHBONE ROCK - SANDSTONE	WESTPHALIAN
25	335m S	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m

6

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	High	Moderate
On site	Fracture	High	Low
On site	Fracture	High	Low
On site	Fracture	High	Moderate
On site	Fracture	High	Moderate



Location	Flow type	Maximum permeability	Minimum permeability
13m SE	Fracture	High	Moderate

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	12
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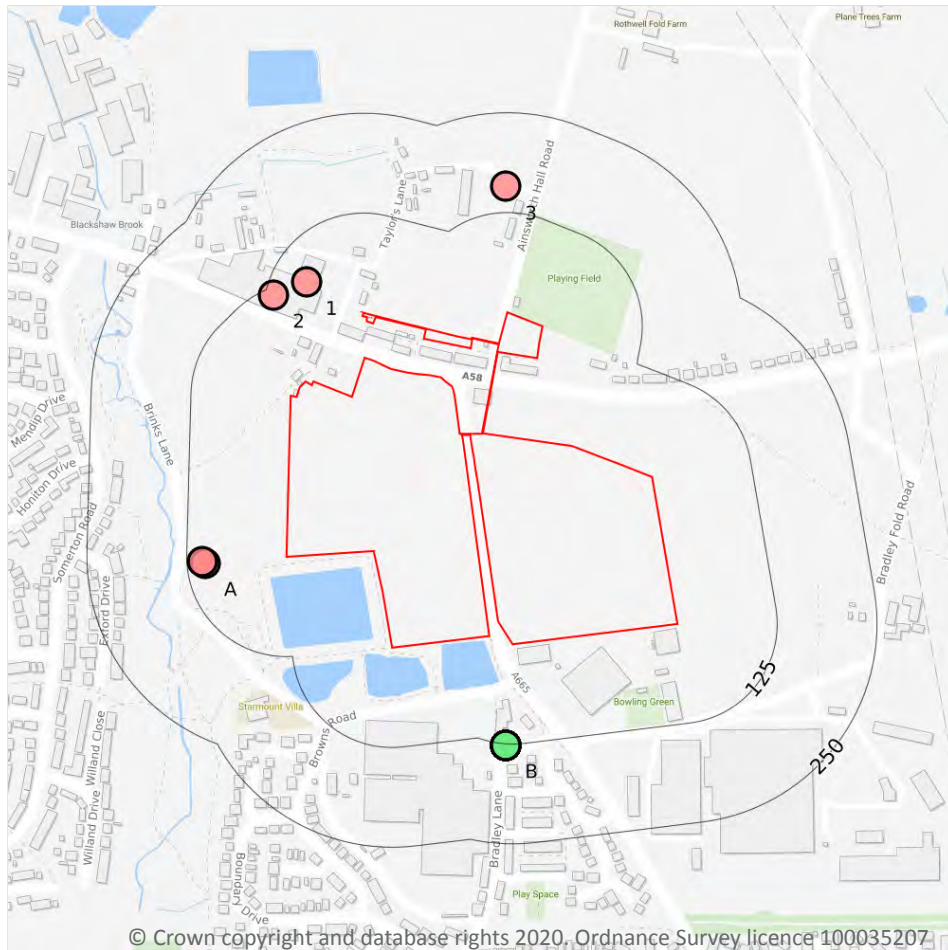
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 106**

ID	Location	Category	Description
5	On site	ROCK	Coal seam, inferred
6	On site	FAULT	Fault, inferred
11	95m NE	FAULT	Fault, inferred
13	106m SW	FAULT	Fault, inferred
15	143m S	ROCK	Coal seam, inferred
18	236m S	FAULT	Fault, inferred
20	257m S	ROCK	Coal seam, inferred
21	258m S	ROCK	Coal seam, inferred
23	308m S	ROCK	Coal seam, inferred
26	335m S	FAULT	Fault, inferred
27	353m SW	ROCK	Coal seam, inferred
28	383m S	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.

16 Boreholes



— Site Outline
Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m

27

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 109**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	81m NW	375550 409180	AINSWORTH MILLS	75.9	N	18773
A	102m W	375423 408828	STARMOUNT PRINT WORKS BRADLEY FOLD	390.75	N	18399
A	105m W	375420 408830	STARMOUNT PRINT WORKS	390.75	N	18776

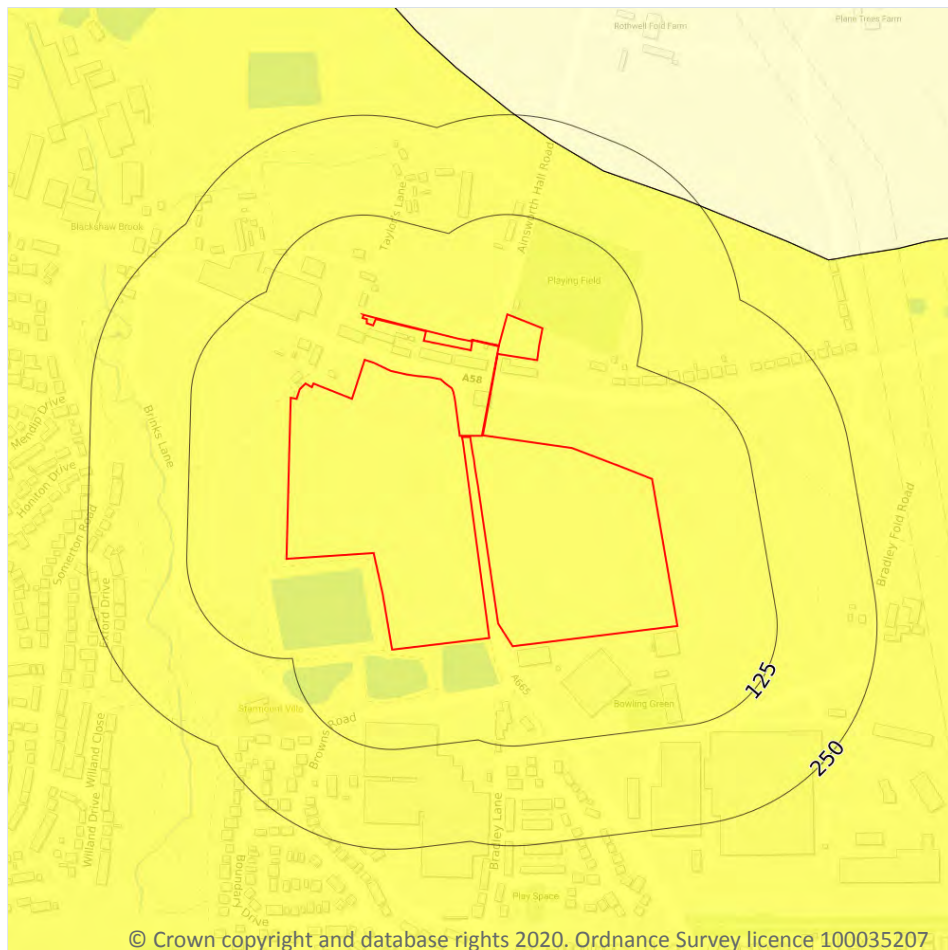


ID	Location	Grid reference	Name	Length	Confidential	Web link
2	114m W	375509 409164	HODGKINSON & PEARSON LTD AINSWORTH MILLS	71.32	N	18383
B	127m S	375800 408600	PROP GARDENSTORE. 1	30.0	N	18508
B	127m S	375800 408600	PROP GARDENSTORE. TP.1	2.0	N	18494
B	127m S	375800 408600	PROP GARDENSTORE. A	11.0	N	18505
B	127m S	375800 408600	PROP GARDENSTORE. 2	30.0	N	18509
B	127m S	375800 408600	PROP GARDENSTORE. 4	30.0	N	18511
B	127m S	375800 408600	PROP GARDENSTORE. TP.4	2.0	N	18497
B	127m S	375800 408600	PROP GARDENSTORE. B	12.0	N	18506
B	127m S	375800 408600	PROP GARDENSTORE. TP.6	3.0	N	18499
B	127m S	375800 408600	PROP GARDENSTORE. 3	30.0	N	18510
B	127m S	375800 408600	PROP GARDENSTORE. TP.8	4.0	N	18501
B	127m S	375800 408600	PROP GARDENSTORE. 75	18.0	N	18515
B	127m S	375800 408600	PROP GARDENSTORE. TP.3	2.0	N	18496
B	127m S	375800 408600	PROP GARDENSTORE. TP.7	2.0	N	18500
B	127m S	375800 408600	PROP GARDENSTORE. 2II	36.0	N	18514
B	127m S	375800 408600	PROP GARDENSTORE. 2I	15.0	N	18513
B	127m S	375800 408600	PROP GARDENSTORE. C	6.0	N	18507
B	127m S	375800 408600	PROP GARDENSTORE. TP.5	3.0	N	18498
B	127m S	375800 408600	PROP GARDENSTORE. TP.9	2.0	N	18502
B	127m S	375800 408600	PROP GARDENSTORE. TP.2	2.0	N	18495
B	127m S	375800 408600	PROP GARDENSTORE. TP.10	2.0	N	18503
B	127m S	375800 408600	PROP GARDENSTORE. TP.11	3.0	N	18504
B	127m S	375800 408600	PROP GARDENSTORE. 5	30.0	N	18512
3	158m N	375800 409300	POLLITTS CLOSE ROTHWELLS FARM	54.86	N	18387

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.1 Shrink swell clays

Records within 50m

1

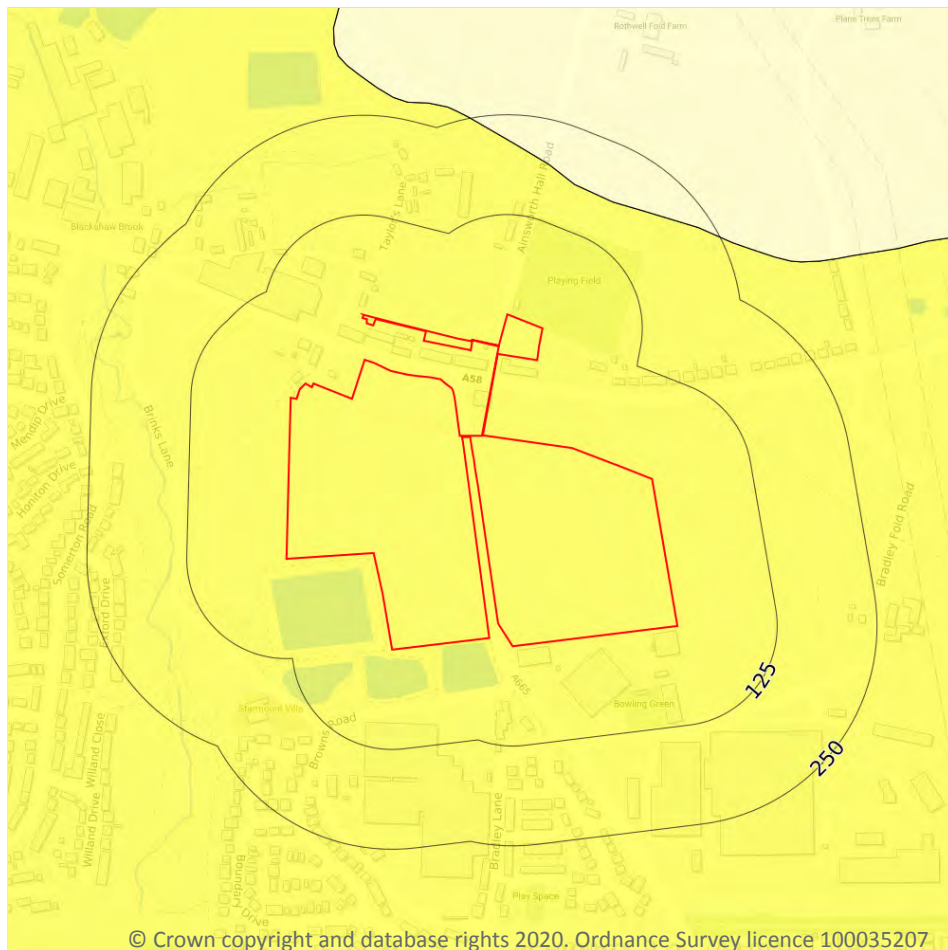
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 111**

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.2 Running sands

Records within 50m

1

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 112**

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.

This data is sourced from the British Geological Survey.

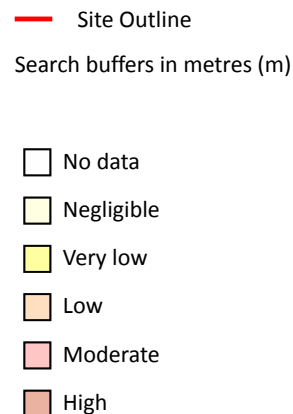
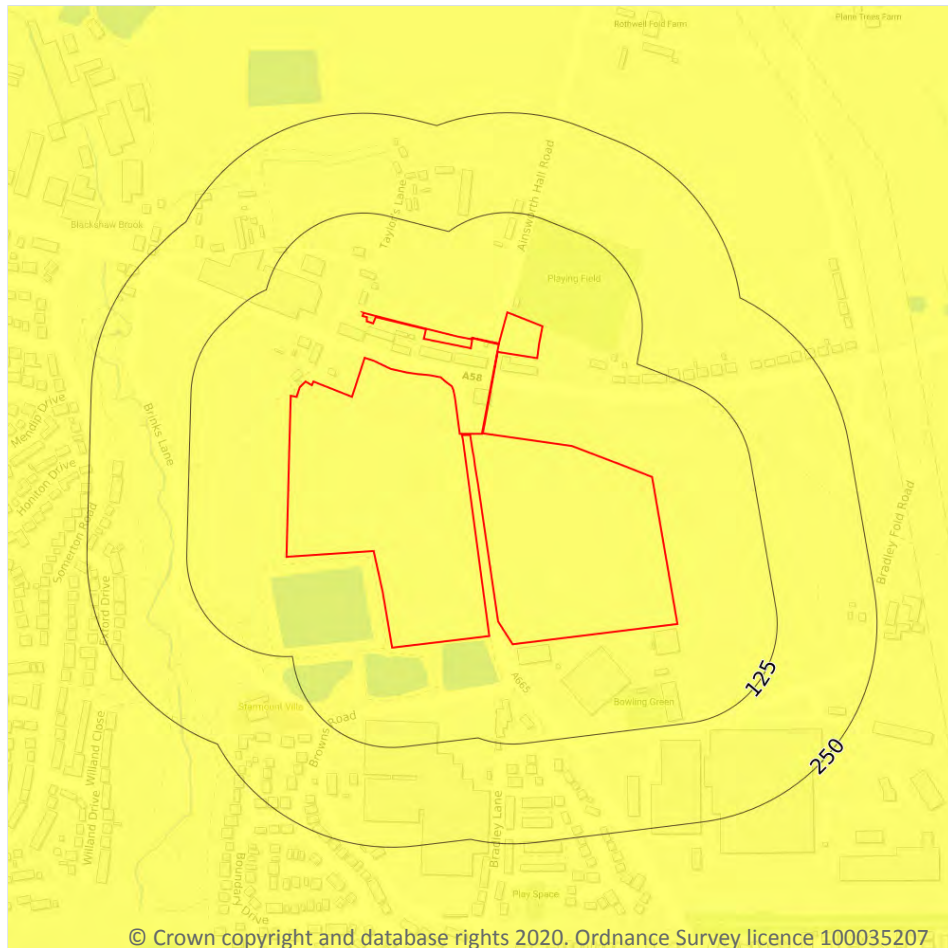


An aerial map of a residential area. A large, irregular area is outlined in black. Within this black-outlined area, a smaller, irregular area is outlined in red. To the right of the black-outlined area, there is a yellow-shaded area. The map shows various streets, including Blinks Lane, Taylor's Lane, Ainsworth Hall Road, A58, A65, Browns Road, and Bradley Fold Road. Other features include a playing field, a bowling green, and several farms (Rothwell Fold Farm, Pless Thin Farm). The map is overlaid with a grid of latitude and longitude coordinates. At the bottom, there is a copyright notice: "© Crown copyright and database rights 2020. Ordnance Survey licence 100035207".

☐ No data
☐ Negligible
☐ Very low
☐ Low
☐ Moderate
☐ High

113

Natural ground subsidence - Collapsible deposits



17.4 Collapsible deposits

Records within 50m

1

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.

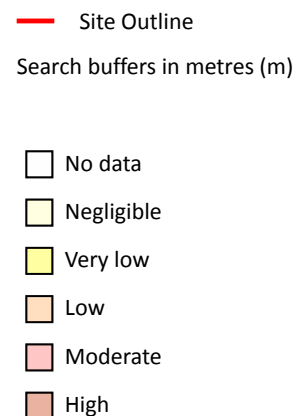
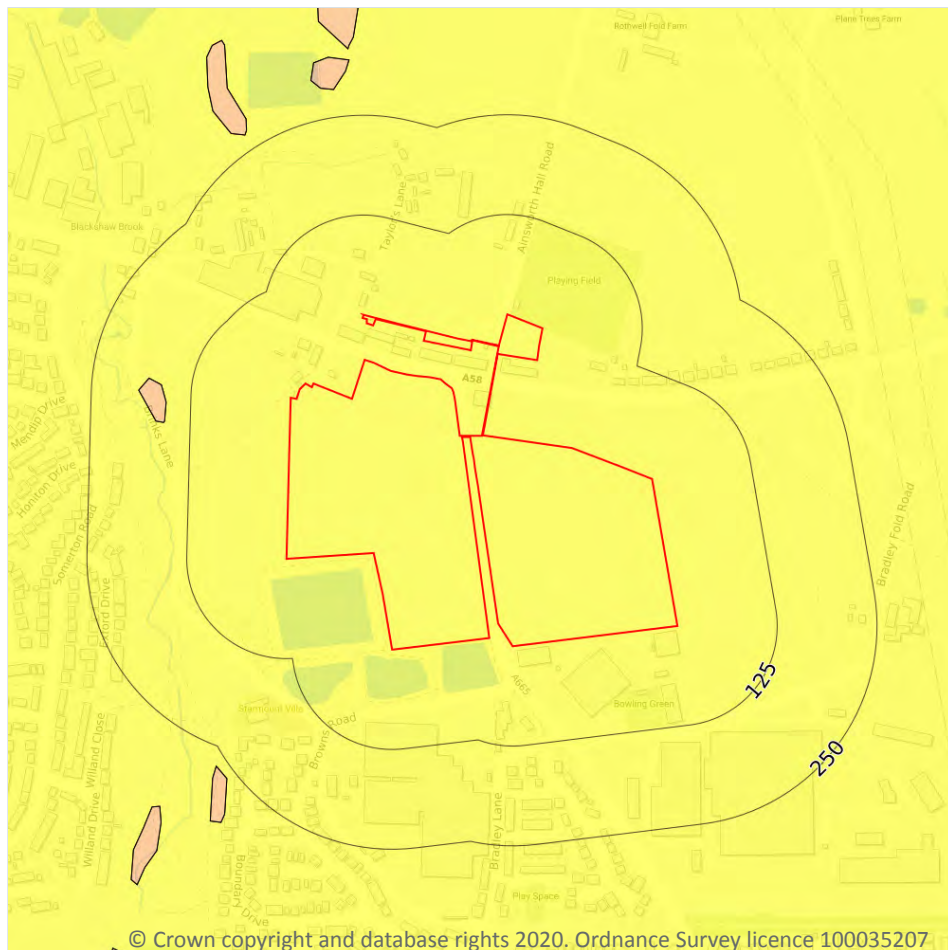
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 114**

Location	Hazard rating	Details
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

1

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.

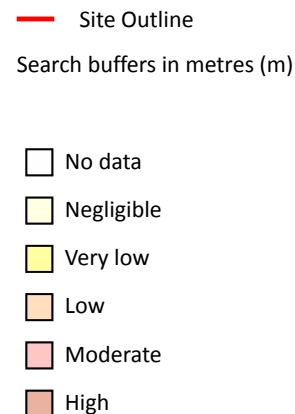
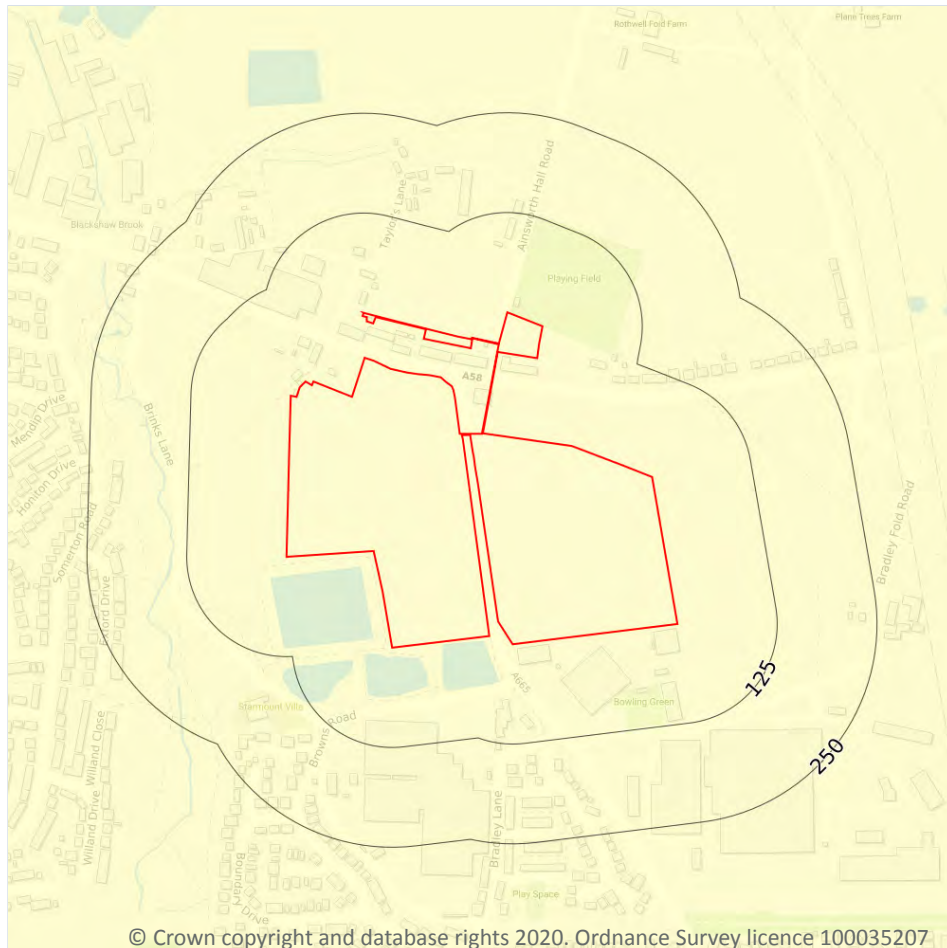
Features are displayed on the Natural ground subsidence - Landslides map on **page 115**

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.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



17.6 Ground dissolution of soluble rocks

Records within 50m

1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

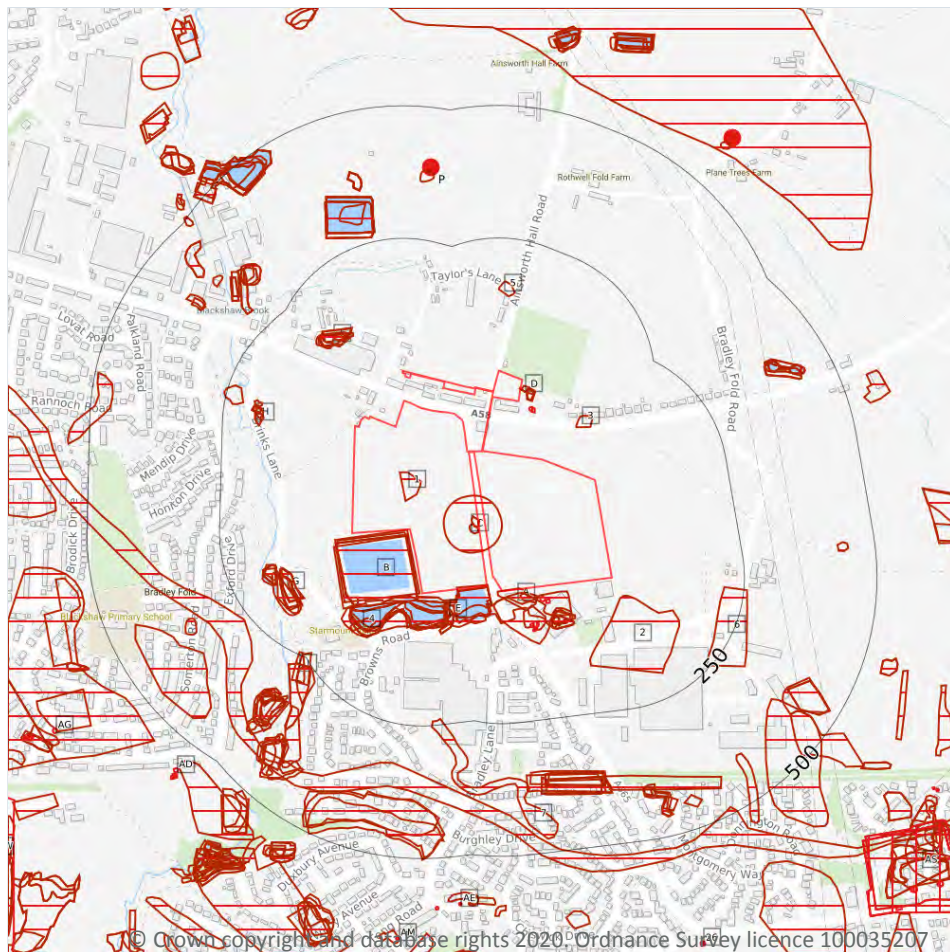
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 116**

Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.

This data is sourced from the British Geological Survey.



18 Mining, ground workings and natural cavities



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Peter Brett Associates (PBA).

18.2 BritPits

Records within 500m

1

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

Features are displayed on the Mining, ground workings and natural cavities map on **page 118**

ID	Location	Details	Description
P	386m N	Name: Rothwells Address: Ainsworth, BURY, Lancashire Commodity: Sandstone Status: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Type: Ceased Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

67

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining, ground workings and natural cavities map on **page 118**

ID	Location	Land Use	Year of mapping	Mapping scale
1	On site	Refuse Heap	1955	1:10560
A	On site	Unspecified Heap	1965	1:10560
B	On site	Ponds	1965	1:10560
C	On site	Unspecified Heap	1927	1:10560
C	On site	Unspecified Ground Workings	1955	1:10560
C	On site	Pumping Pit	1890	1:10560
B	1m S	Reservoir	1955	1:10560
D	2m E	Unspecified Pit	1890	1:10560
B	3m S	Reservoirs	1991	1:10000
B	3m S	Reservoirs	1977	1:10000
B	3m S	Reservoirs	1988	1:10000



ID	Location	Land Use	Year of mapping	Mapping scale
A	7m S	Unspecified Ground Workings	1977	1:10000
A	8m S	Ponds	1851	1:10560
B	11m W	Reservoir	1938	1:10560
D	11m E	Filter Beds	1938	1:10560
A	13m S	Refuse Heap	1908	1:10560
D	14m E	Settling Beds	1927	1:10560
B	15m SW	Ponds	1955	1:10560
E	23m S	Unspecified Ground Workings	1955	1:10560
B	25m S	Reservoirs	1890	1:10560
B	28m SW	Ponds	1938	1:10560
B	28m SW	Ponds	1927	1:10560
B	28m SW	Ponds	1908	1:10560
A	34m S	Refuse Heap	1890	1:10560
E	36m S	Unspecified Heap	1938	1:10560
E	36m S	Unspecified Heap	1927	1:10560
2	41m SE	Unspecified Pit	1890	1:10560
A	44m S	Pond	1965	1:10560
A	49m S	Pond	1955	1:10560
A	50m S	Pond	1988	1:10000
A	51m S	Pond	1977	1:10000
A	59m S	Pond	1938	1:10560
A	59m S	Pond	1927	1:10560
A	59m S	Pond	1908	1:10560
3	80m N	Pond	1851	1:10560
4	105m SW	Pond	1851	1:10560
F	116m NW	Reservoir	1938	1:10560
F	116m NW	Reservoir	1908	1:10560
F	120m NW	Reservoir	1927	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
F	122m NW	Reservoir	1955	1:10560
F	123m NW	Pond	1965	1:10560
F	125m NW	Pond	1851	1:10560
F	128m NW	Pond	1890	1:10560
G	138m SW	Reservoir	1955	1:10560
G	139m SW	Ponds	1965	1:10560
5	142m N	Pond	1851	1:10560
G	146m SW	Reservoir	1938	1:10560
G	146m SW	Reservoir	1927	1:10560
G	147m SW	Reservoir	1890	1:10560
G	148m SW	Pond	1908	1:10560
G	157m SW	Refuse Heap	1955	1:10560
G	157m SW	Unspecified Heap	1991	1:10000
G	157m SW	Unspecified Heap	1977	1:10000
G	157m SW	Unspecified Heap	1988	1:10000
G	159m SW	Pond	1851	1:10560
G	160m SW	Refuse Heap	1927	1:10560
H	173m W	Settling Beds	1938	1:10560
H	173m W	Settling Beds	1927	1:10560
H	175m W	Settling Beds	1955	1:10560
H	179m W	Filter Beds	1938	1:10560
H	179m W	Filter Beds	1927	1:10560
H	180m W	Filter Beds	1955	1:10560
6	209m E	Cuttings	1890	1:10560
H	215m W	Refuse Heap	1965	1:10560
I	238m SW	Reservoir	1908	1:10560
7	239m S	Unspecified Ground Workings	1890	1:10560
I	244m S	Reservoir	1890	1:10560

This is data is sourced from Ordnance Survey/Groundsure.



18.4 Underground workings

Records within 1000m

39

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

Features are displayed on the Mining, ground workings and natural cavities map on **page 118**

ID	Location	Land Use	Year of mapping	Mapping scale
A	20m S	Unspecified Old Shafts	1890	1:10560
D	24m SE	Unspecified Old Shaft	1890	1:10560
A	26m S	Unspecified Old Shafts	1908	1:10560
D	28m SE	Unspecified Old Shaft	1908	1:10560
A	65m S	Unspecified Disused Shaft	1977	1:10000
A	67m S	Unspecified Old Shafts	1890	1:10560
A	74m S	Unspecified Old Shafts	1908	1:10560
A	78m S	Unspecified Old Shaft	1927	1:10560
AD	552m SW	Unspecified Old Shaft	1950	1:10560
AD	562m SW	Unspecified Old Shaft	1908	1:10560
AD	563m SW	Unspecified Old Shaft	1938	1:10560
AD	567m SW	Unspecified Old Shaft	1927	1:10560
AE	588m S	Old Air Shafts	1908	1:10560
AE	592m S	Old Air Shafts	1908	1:10560
AM	649m S	Unspecified Old Shaft	1908	1:10560
AG	668m SW	Unspecified Old Shaft	1908	1:10560
AS	683m SE	Collieries	1950	1:10560
AS	686m SE	Collieries	1938	1:10560
AS	686m SE	Collieries	1927	1:10560
-	699m S	Colliery	1891	1:10560
-	699m S	Disused Collieries	1908	1:10560
26	707m S	Unspecified Disused Shaft	1977	1:10000
AG	713m SW	Unspecified Old Shaft	1938	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
AG	716m SW	Unspecified Old Shaft	1927	1:10560
AG	720m SW	Air Shaft	1938	1:10560
AG	720m SW	Air Shaft	1908	1:10560
AG	723m SW	Air Shaft	1927	1:10560
AS	724m SE	Unspecified Old Shaft	1890	1:10560
AS	731m SE	Unspecified Old Shaft	1908	1:10560
AW	812m SW	Colliery	1890	1:10560
AS	813m SE	Unspecified Shaft	1950	1:10560
AS	813m SE	Unspecified Disused Shafts	1965	1:10560
AS	814m SE	Unspecified Disused Shafts	1977	1:10000
AS	821m SE	Unspecified Shaft	1938	1:10560
AS	841m SE	Unspecified Disused Shafts	1977	1:10000
AS	841m SE	Unspecified Disused Shafts	1965	1:10560
AS	859m SE	Unspecified Shaft	1938	1:10560
AS	861m SE	Unspecified Shaft	1927	1:10560
-	950m SW	Colliery	1890	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

0

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites



and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m

0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Peter Brett Associates (PBA).

18.8 JPB mining areas

Records on site

1

Areas which could be affected by former coal mining. This data includes some mine plans unavailable to the Coal Authority.

Location	Details
On site	In addition to being located inside an area where The Coal Authority have information on coal mining activities, Johnson Poole & Bloomer (JPB) have information such as mining plans and maps held within their archive of mining activities that have occurred within 1km of this property which may supplement this information. Further details and a quote for services can be obtained by emailing this report to enquiries.gs@jpb.co.uk .

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site

1

Areas which could be affected by past, current or future coal mining.

Location	Details
On site	The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.

This data is sourced from the Coal Authority.



18.10 Brine areas

Records on site	0
-----------------	---

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.11 Gypsum areas

Records on site	0
-----------------	---

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0
-----------------	---

Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.

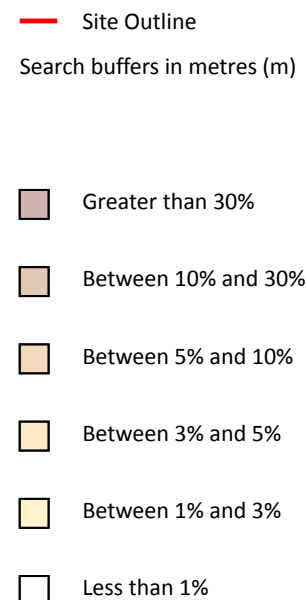
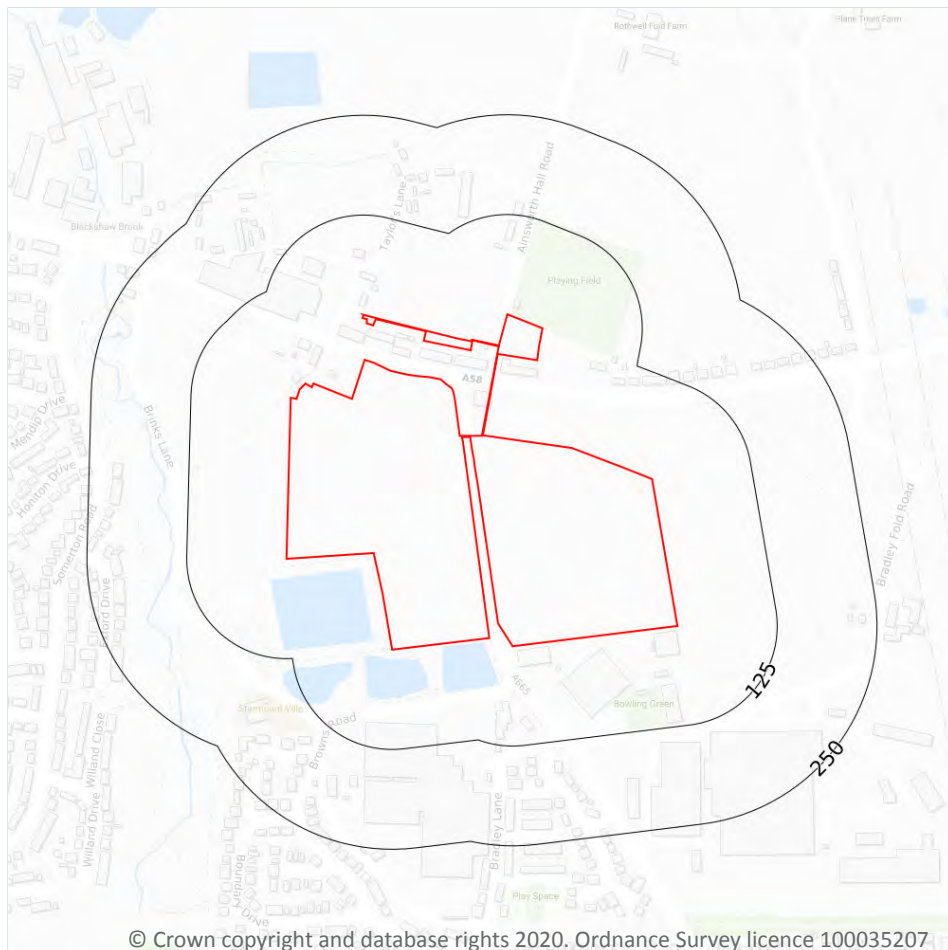
18.13 Clay mining

Records on site	0
-----------------	---

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Radon



19.1 Radon

Records on site

1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 126**

Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None**

This data is sourced from the British Geological Survey and Public Health England.



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

23

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg



Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
1m E	15 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
1m E	15 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
4m SE	15 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
4m SE	15 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
8m NE	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
19m NE	15 - 25 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
25m W	15 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
29m W	15 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
29m NW	15 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.



20.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects



- Site Outline
- Search buffers in metres (m)
- C1 Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 1 Worksites
- C2 Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

21.1 Underground railways (London)

Records within 250m

0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m

0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.



This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m

12

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

Features are displayed on the Railway infrastructure and projects map on **page 130**

Location	Land Use	Year of mapping	Mapping scale
139m S	Railway Sidings	1965	10560
153m S	Railway Sidings	1908	10560
154m S	Railway Sidings	1977	10000
156m S	Railway Sidings	1910	2500
163m S	Railway Sidings	1955	10560
164m S	Railway Sidings	1955	2500
164m S	Railway Sidings	1955	1250
164m S	Railway Sidings	1967	2500
186m S	Railway Sidings	1938	10560
186m S	Railway Sidings	1927	10560
189m S	Railway Sidings	1930	2500
190m S	Railway Sidings	1937	2500

This data is sourced from Ordnance Survey/Groundsure.



21.5 Royal Mail tunnels

Records within 250m**0**

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m**0**

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m**0**

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m**0**

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m**0**

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.



21.10 HS2

Records within 500m

0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 Ltd.



Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference>.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: <https://www.groundsure.com/terms-and-conditions-jan-2020/>.





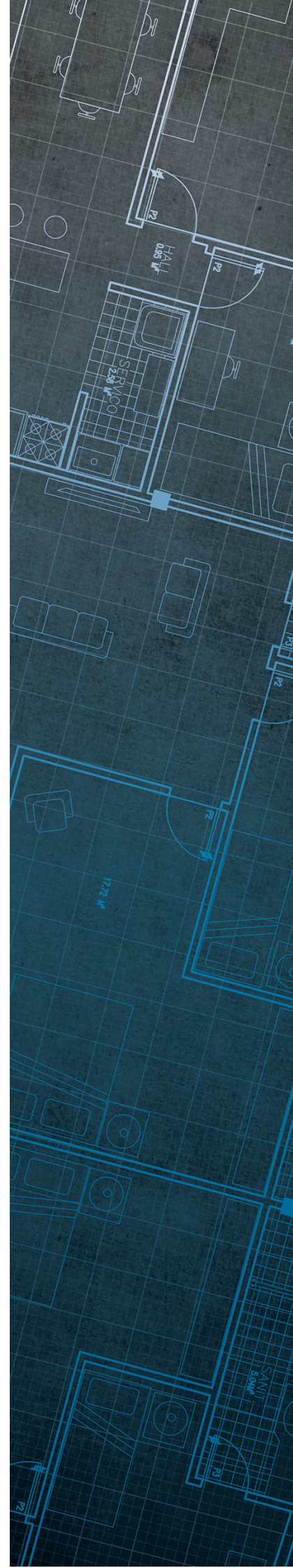
The Coal
Authority

Consultants Coal Mining Report

Potential Relocation Of Wyresdale
Fc, Bury New Road, Radcliffe, BL2
6qu
Greater Manchester

Date of enquiry:	12 October 2020
Date enquiry received:	12 October 2020
Issue date:	12 October 2020

Our reference:	51002314761001
Your reference:	GS-7150957



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

GROUNDSURE LIMITED

Enquiry address

Potential Relocation Of Wyresdale Fc, Bury New Road, Radcliffe, BL2 6qu
Greater Manchester

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

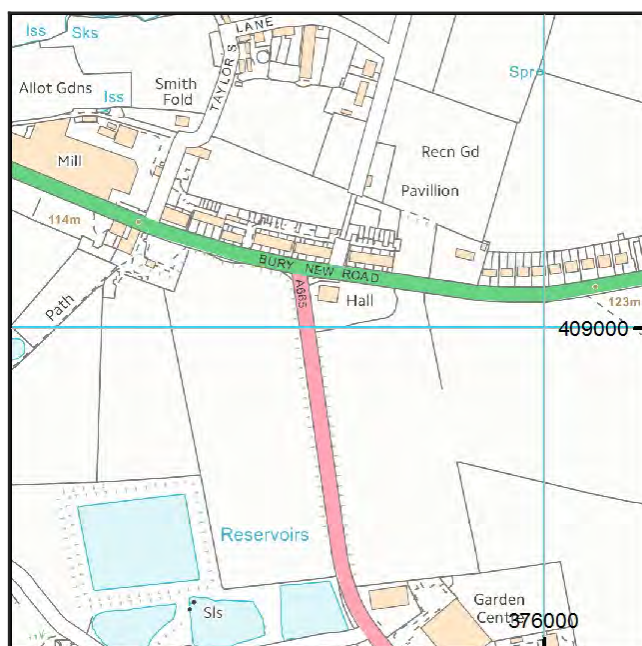
www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	CANNEL	Coal	3Y5I	16	Beneath Property	14.0	South	150	1900
unnamed	TRENCHERB ONE	Coal	3Y96	23	Beneath Property	14.0	South	160	1908
unnamed	CANNEL	Coal	3Y5L	32	Beneath Property	14.0	South	150	1870
unnamed	CANNEL	Coal	3Y5K	33	Beneath Property	14.0	South	150	1900

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

Distance to spine roadway (m)	Direction to spine roadway
2.8	South

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	375408-006	375761 408850		Coal	
Shaft	375408-007	375896 408720	This shaft was located in May 1989 by a prospective developer but there is no record of any treatment being afforded to the shaft.	Coal	
Shaft	375408-008	375873 408666	This shaft was located in May 1989 by a prospective developer but there is no record of any treatment being afforded to the shaft.	Coal	
Shaft	375409-001	375847 409128		Coal	
Shaft	375409-002	375871 409073	A visual inspection of the site in July 2002 revealed a shaft of about 3m in diameter filled with unknown material. A reinforced concrete cap was constructed in November 2002 by JMC Mining Services Ltd acting on behalf of the Coal Authority. The cap measures 5 metres square by 600mm thick and is sited 1.5 metres below ground level	Coal	

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

NW362	5419	NW1157
16820	PO0	

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
CANNEL	Coal	Yes	121.1	East	128
TRENCHBONE	Coal	Yes	Within	N/A	94
TRENCHBONE	Coal	Yes	Within	N/A	102
TRENCHBONE	Coal	Yes	Within	N/A	296
TRENCHBONE	Coal	Yes	Within	N/A	300

Geological faults, fissures and breaklines

Please refer to the 'Summary of findings' map (on separate sheet) for details of any geological faults, fissures or breaklines either within or intersecting the enquiry boundary.

Faults under or close to the property recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

Distance to site remediation (m)	Direction
37.1	South

See Section 4 for further information.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

Remediated sites

The site is within an area of previous interest. It is close to where the Coal Authority has investigated and where necessary remediated mine entries and/or shallow coal mine workings following specific reported hazards.

The site requires further investigation and may influence your risk assessment. We recommend that you order the Coal Authority **Surface Hazards Incident Report**, which will include more information about the hazard.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

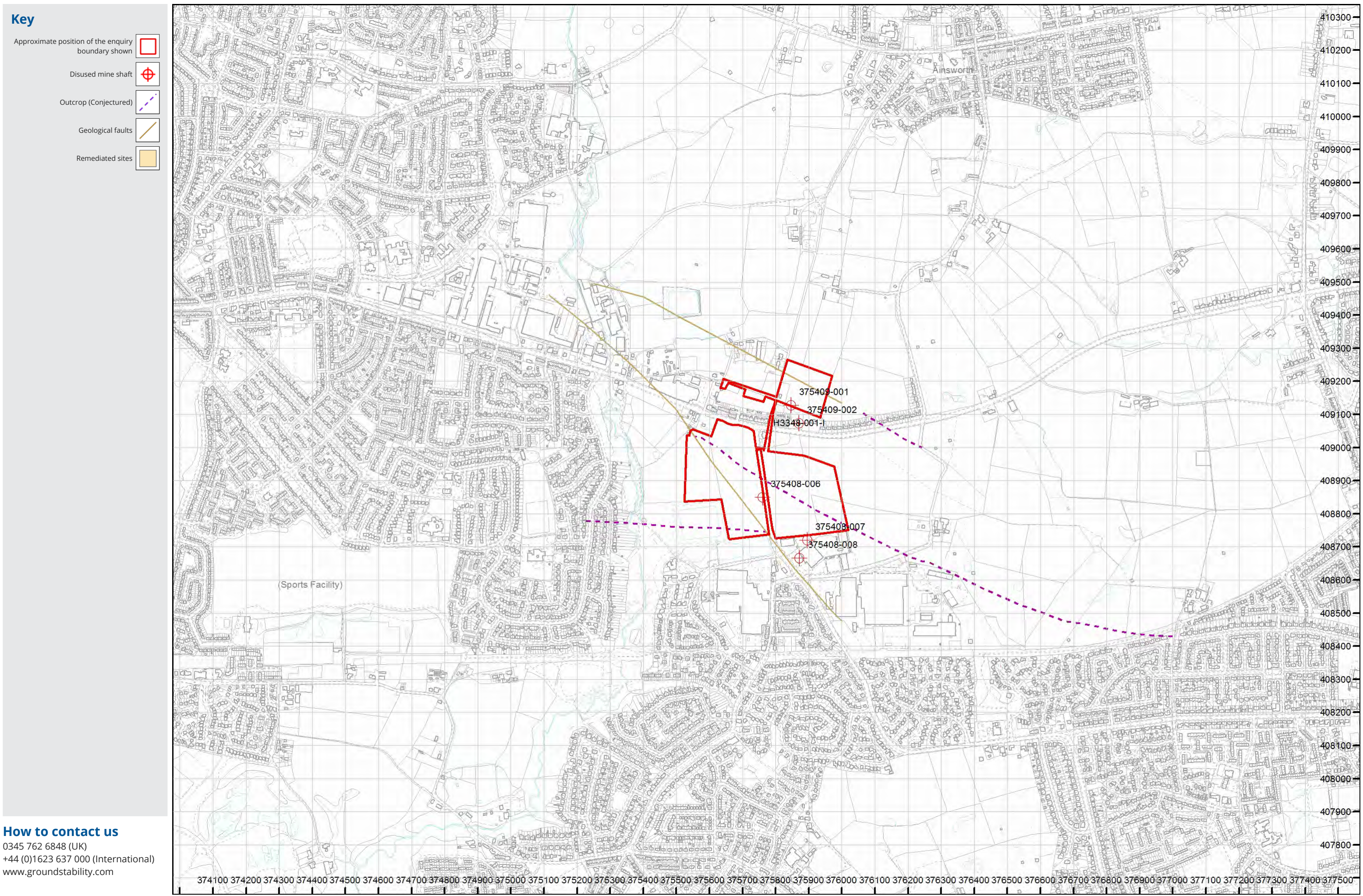
Withdrawal of support notices

Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land

Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

The map highlights any specific surface or subsurface features within or near to the boundary of the site.



APPENDIX D

(i) Conceptual Model

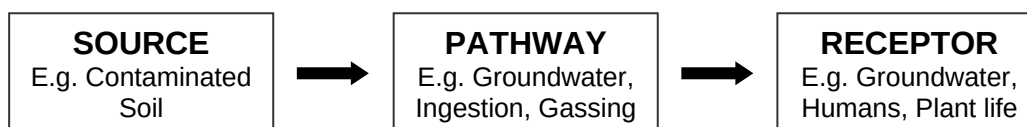
The report aims to identify land which could potentially be affected by contamination, such that it could affect the value or re-use of the land, or such that mitigation would be required for certain proposed end uses of the land.

The assessment also aims to identify land which would be regarded as 'contaminated land' under the terms of the Environmental Protection Act 1990, Part IIa. This act includes a stricter test for contaminated land than that outlined above. Land is considered to be contaminated if either: the land is causing significant harm to people, ecosystems or infrastructure; or there is a significant possibility that such harm could be caused; or pollution of controlled waters is being, or is likely to be, caused.

The following situations are defined as being where harm is to be regarded as significant: chronic or quite toxic effect, serious injury or death to humans; irreversible or other adverse harm to the ecological system; substantial damage to or failure of buildings; death of, or disease or other physical damage affecting, livestock or crops; pollution of controlled waters.

The risk assessment uses a 'Source-Pathway-Receptor' methodology for assessing whether a source of contamination could potentially lead to harmful consequences. This means that there needs to be a pollutant linkage from source to receptor for harm to be caused, this linkage consisting of: a source of pollution; a pathway for the pollutant to move along; a receptor that is affected by the pollutant.

As an example, the pollutant source could be an identified leak of oil or an area of dumped waste.



The pathways could include transport of the contaminant by groundwater, surface water, windblown dust, or vapours, and for human receptors will include the means by which contaminants enter the body, for example skin contact, ingestion and inhalation.

Receptors include people, other living organisms, the built environment and groundwater and surface waters (these latter two also being contaminant pathways).

The source-pathway-receptor methodology relationship allows an assessment of the environmental risk to be determined, based on the nature of the source, the degree of exposure of the receptor to the source and the sensitivity of the receptor.

This section of the report is based on the information set out in the previous sections of the report and should not be read independently of such sections.

Initial Conceptual Model

From the available information the preliminary conceptual model is visualised as follows:

Target (Receptor)	POTENTIAL SOURCE-PATHWAY LINKAGE
Site Users / Residents	Inhalation of soil gas, odours or dust.
	Ingestion of, and skin contact with, contaminated soil.
	Ingestion of contaminants in vegetables etc. or in soils adhering to vegetables, etc.
Construction/ Maintenance Workers.	Inhalation of soil gas, odours or dust.
	Ingestion of, and skin contact with, contaminated soil
Plants	Adverse effects on growth caused by presence of contaminants in soil
Buildings and Structures	Flow of ground gas into buildings. Asphyxiation, toxicity, explosion and fire hazards
	Sulphate attack of foundations
	Hydrocarbons penetrating plastic water supply pipes
Groundwater	Migration of soluble contaminants into groundwater on or off site. Migration of oils into groundwater on or off site.
Surface water	Migration of soluble contaminants and/or direct run-off of contaminants. Migration of oils into groundwater on or off site.

Initial Environmental Risk Assessment - General

It is accepted that an environmental risk assessment can be based on a source-pathway-target model. An examination is carried out as to whether a target will be at risk from a contamination source, that a source exists, and whether there are any pathways (routes of exposure) which might actually link the source to the target.

Environmental risk assessments rely heavily on numerical trigger concentrations or guidelines because exposure of targets to contamination is difficult to quantify directly. Quantification of risk is therefore mainly undertaken for general scenarios in order to derive trigger levels. These are derived for various contaminants for particular targets and routes of exposure. An example of a sensitive target would be users of a domestic back garden, where routes of exposure might be skin contact, dust inhalation, direct ingestion and indirect ingestion via cultivation and consumption of fruit and vegetables. In March 2002, the first parts of the new CLEA risk assessment guidance were released by DEFRA/Environment Agency.

The risk assessment approach is an extension of the 'fit for use' concept whereby land is cleaned up to a standard fit for the proposed use, that is, so all remaining risks are acceptable. However, as well as being 'fit for use', the environmental risk assessment approach also addresses the soil and water environment so that these are also safeguarded where necessary. For example if a site was contaminated with heavy metals and the development comprised the proposed construction of hard standings and buildings only, the fit-for-use approach might require no remediation for the site. However, consideration of the wider environment needs to address whether groundwater is being contaminated, and if so whether remediation is required for this reason.

The following classification presented by CIRIA has been used in the assessment of risk:

Estimation of risk from consideration of magnitude, consequences and probabilities				
Probability	Consequences			
	Severe	Moderate	Mild	Minor
High	Very high	High	Moderate	Moderate / Low
Medium	High	Moderate	Moderate / Low	Low
Low	Moderate	Moderate / Low	Low	Very Low
Unlikely	Moderate / Low	Low	Very Low	Very Low

Reference: Contaminated Land Risk Management; A Guide to Good Practice, CIRIA C552:2001

APPENDIX E

(i) Notes on Limitations

The desk study report includes examination and provision of historical maps and an environmental database search covering geology, hydrogeology, historical, land use, water abstractions, groundwater source protection zones, landfill sites, radon, trade directory entries, petrol filling stations and nature reserves for the site and surrounding area. A Coal Authority Report has not been obtained as part of the investigation.

This report does not consider ecological impacts (e.g. bats) or botanical risks (e.g. Japanese knotweed). It is recommended that these are considered as part of the assessment of development constraints for the site.

The assessment and judgements given in this report are directed by both the finite data on which they are based and the proposed works to which they are addressed. The data essentially comprised a study of available documented information from various sources together with discussions with relevant authorities and other interested parties. There may also be circumstances at the site that are not documented. The information reviewed is not exhaustive and has been accepted in good faith as providing representative and true data pertaining to site conditions. If additional information becomes available which might impact our environmental conclusions, we request the opportunity to review the information, reassess the potential concerns and modify our opinion if warranted.

It should be noted that any risks identified in this report are perceived risks based on the available information. Actual risks can only be assessed following a physical investigation of the site.

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