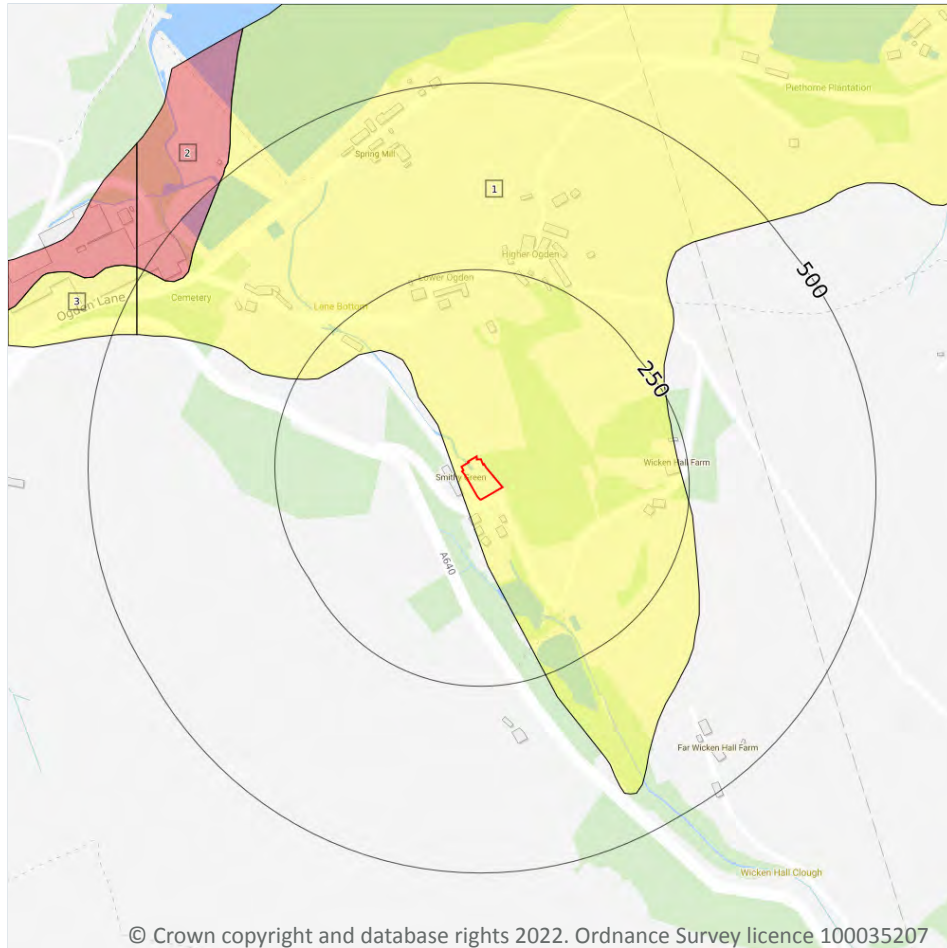


5 Hydrogeology - Superficial aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive
 - Unknown

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5.1 Superficial aquifer

Records within 500m

3

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 46**

ID	Location	Designation	Description
1	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
2	449m NW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers



ID	Location	Designation	Description
3	469m W	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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



Bedrock aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

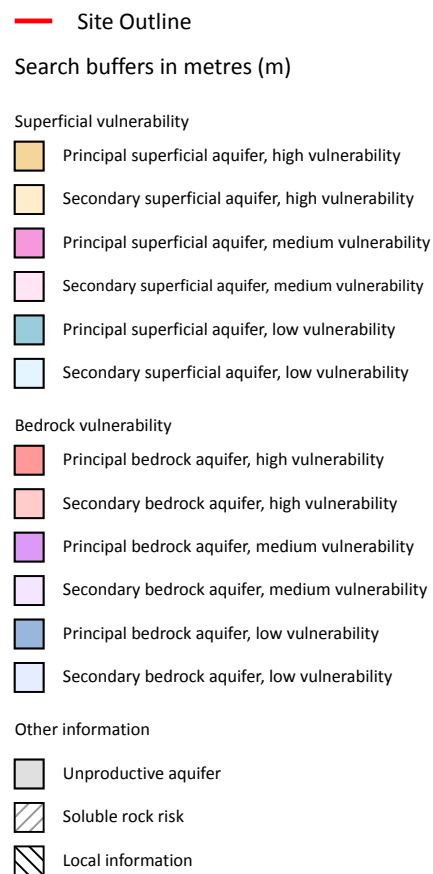
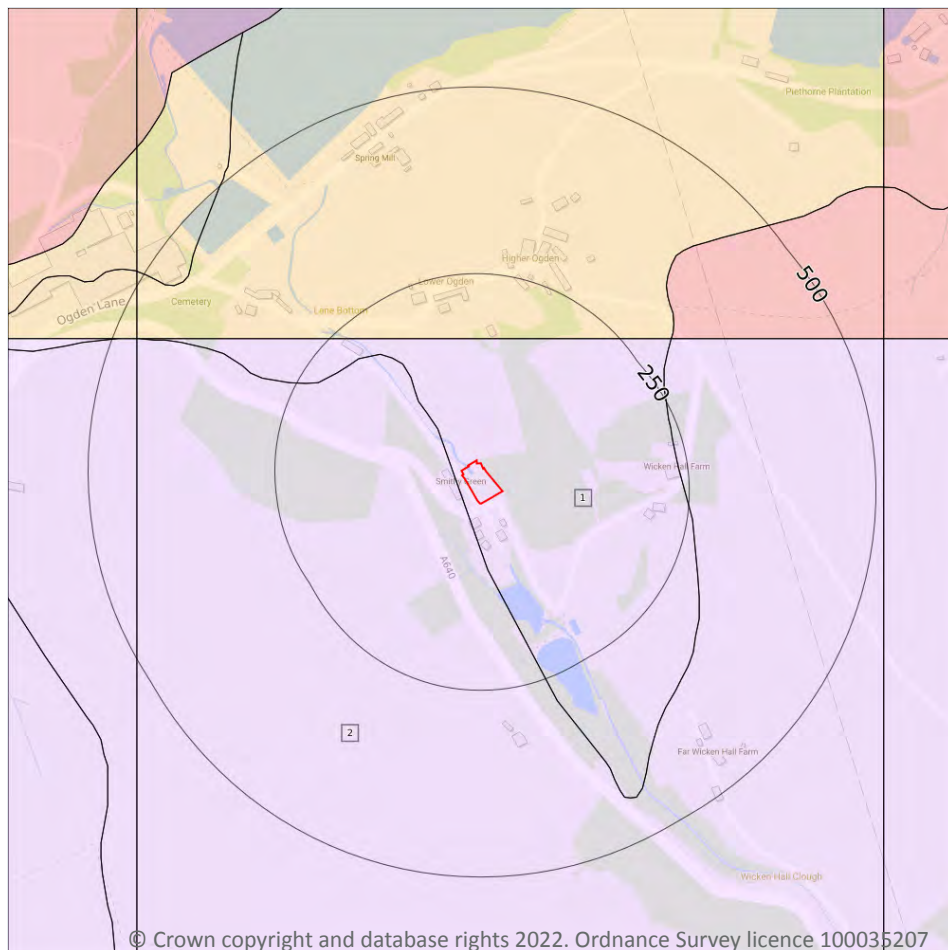
Features are displayed on the Bedrock aquifer map on **page 48**

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	435m W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

2

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

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

Features are displayed on the Groundwater vulnerability map on **page 50**

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

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0
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This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

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

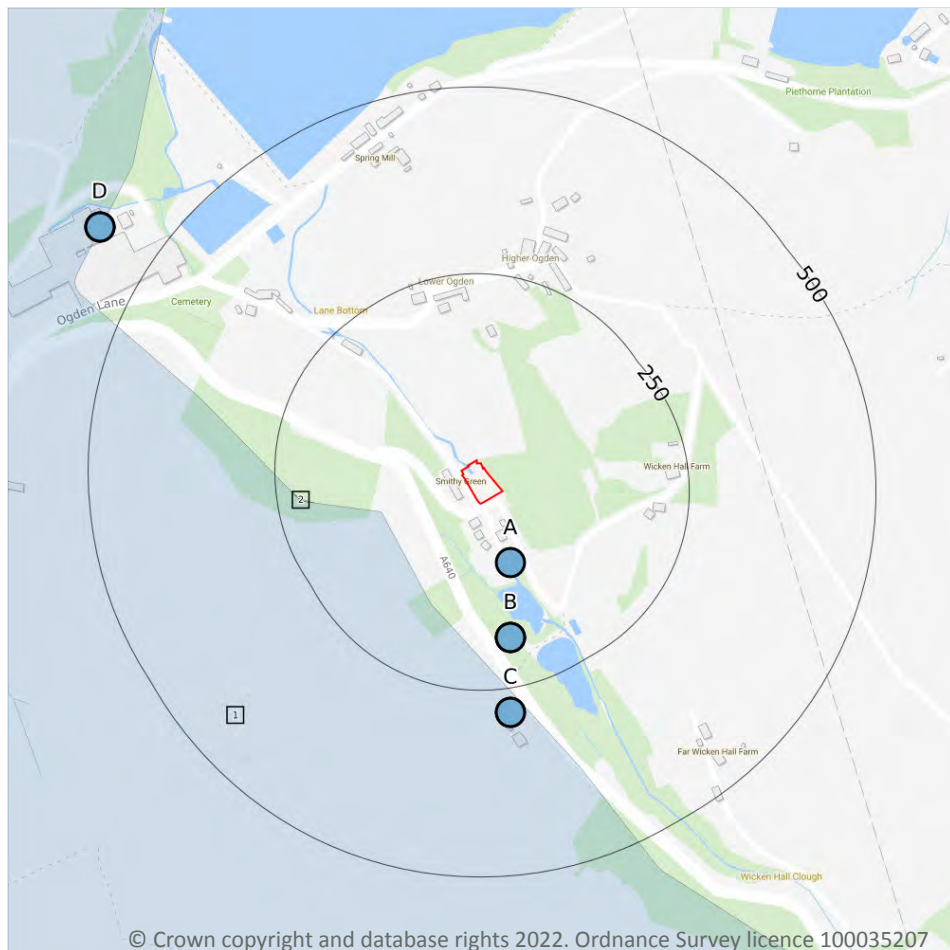
5.5 Groundwater vulnerability- local information

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

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

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

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
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 52**

ID	Location	Details	
-	1125m SE	Status: Historical Licence No: 2569012047 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING AT WHITE SLACK FARM, NEWHEY, ROCHDALE" Data Type: Point Name: POLLITT Easting: 396500 Northing: 411300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/02/1966 Version End Date: -
-	1125m SE	Status: Historical Licence No: 2569012047 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING AT WHITE SLACK FARM, NEWHEY, ROCHDALE Data Type: Point Name: POLLITT Easting: 396500 Northing: 411300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/02/1966 Version End Date: -
-	1205m SW	Status: Historical Licence No: 2569002258 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: "BOREHOLE AT TOP-'O'-'TH'-HILL FARM, HAUGH, MILNROW" Data Type: Point Name: J BUTLER (WHOLESALE MEATS) LTD Easting: 394400 Northing: 411200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 19/07/1994 Expiry Date: - Issue No: 101 Version Start Date: 19/07/1994 Version End Date: -
-	1205m SW	Status: Historical Licence No: 2569002258 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: BOREHOLE AT TOP-'O'-'TH'-HILL FARM, HAUGH, MILNROW Data Type: Point Name: J BUTLER (WHOLESALE MEATS) LTD Easting: 394400 Northing: 411200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 19/07/1994 Expiry Date: - Issue No: 101 Version Start Date: 19/07/1994 Version End Date: -

ID	Location	Details	
-	1396m SE	Status: Historical Licence No: 2569012103 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING FED COLLECTING TANK AT CHERRY CLOUGH FARM, DENS" Data Type: Point Name: HALL Easting: 396700 Northing: 411100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/02/1966 Version End Date: -
-	1396m SE	Status: Historical Licence No: 2569012103 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING FED COLLECTING TANK AT CHERRY CLOUGH FARM, DENS Data Type: Point Name: HALL Easting: 396700 Northing: 411100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/02/1966 Version End Date: -
-	1439m SE	Status: Historical Licence No: 2569012071 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "SPRING FED WELL AT THE LA PERGOLA HOTEL, DENSHAW, NR OLDHAM" Data Type: Point Name: LDL LEISURE LTD Easting: 396800 Northing: 411200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/05/1997 Version End Date: -
-	1439m SE	Status: Historical Licence No: 2569012071 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: SPRING FED WELL AT THE LA PERGOLA HOTEL, DENSHAW, NR OLDHAM Data Type: Point Name: LDL LEISURE LTD Easting: 396800 Northing: 411200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/05/1997 Version End Date: -



ID	Location	Details	
-	1511m W	Status: Historical Licence No: 2569002209 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "COLLECTING CHAMBER AT LAND ADJOINING LARK HILL FARM, NEWHEY" Data Type: Point Name: WOOD Easting: 394000 Northing: 412300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 03/11/1970 Expiry Date: - Issue No: 100 Version Start Date: 03/11/1970 Version End Date: -
-	1511m W	Status: Historical Licence No: 2569002209 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: COLLECTING CHAMBER AT LAND ADJOINING LARK HILL FARM, NEWHEY Data Type: Point Name: WOOD Easting: 394000 Northing: 412300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 03/11/1970 Expiry Date: - Issue No: 100 Version Start Date: 03/11/1970 Version End Date: -
-	1826m NW	Status: Historical Licence No: 2569002253 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: "BOREHOLE AT TUNSHILL, MILNROW, ROCHDALE" Data Type: Point Name: TUNSHILL GOLF CLUB Easting: 394180 Northing: 413150	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 18/06/1992 Expiry Date: - Issue No: 100 Version Start Date: 18/06/1992 Version End Date: -
-	1826m NW	Status: Historical Licence No: 2569002253 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT TUNSHILL, MILNROW, ROCHDALE Data Type: Point Name: TUNSHILL GOLF CLUB Easting: 394180 Northing: 413150	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 18/06/1992 Expiry Date: - Issue No: 100 Version Start Date: 18/06/1992 Version End Date: -

ID	Location	Details	
-	1826m NW	Status: Active Licence No: 2569002253 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT TUNSHILL MILNROW ROCHDALE Data Type: Point Name: TUNSHILL GOLF CLUB Easting: 394180 Northing: 413150	Annual Volume (m ³): 4,546 Max Daily Volume (m ³): 54.55 Original Application No: 7126 Original Start Date: 18/06/1992 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -
-	1880m N	Status: Historical Licence No: 2569002214 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING AT PREMISES, MILNROW" Data Type: Point Name: ADRIAN ARNOLD AND DAVID DRAKE TA Easting: 395200 Northing: 413700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 27/06/1973 Expiry Date: - Issue No: 100 Version Start Date: 27/06/1973 Version End Date: -
-	1880m N	Status: Historical Licence No: 2569002214 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING AT PREMISES, MILNROW Data Type: Point Name: ADRIAN ARNOLD AND DAVID DRAKE TA Easting: 395200 Northing: 413700	Annual Volume (m ³): 6637 Max Daily Volume (m ³): 18 Original Application No: - Original Start Date: 27/06/1973 Expiry Date: - Issue No: 100 Version Start Date: 27/06/1973 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m

16

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 52**



ID	Location	Details	
A	88m SE	Status: Historical Licence No: 2569002213 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Surface, Non-Tidal - North West Region Point: SPRING FED RESERVOIR AT MILNROW Data Type: Point Name: RADCLIFFE Easting: 395500 Northing: 411700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 13/06/1973 Expiry Date: - Issue No: 100 Version Start Date: 10/11/1992 Version End Date: -
B	183m S	Status: Historical Licence No: 2569002229 Details: Fish Farm/Cress Pond Throughflow Direct Source: "Surface, Non-Tidal - North West Region" Point: "BOTTOM LODGE AT WICKENHALL, OGDEN, NEWHEY" Data Type: Point Name: HUGHES Easting: 395500 Northing: 411600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 07/03/1984 Expiry Date: - Issue No: 100 Version Start Date: 07/03/1984 Version End Date: -
B	183m S	Status: Historical Licence No: 2569002229 Details: Fish Farm/Cress Pond Throughflow Direct Source: Surface, Non-Tidal - North West Region Point: BOTTOM LODGE AT WICKENHALL, OGDEN, NEWHEY Data Type: Point Name: HUGHES Easting: 395500 Northing: 411600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 07/03/1984 Expiry Date: - Issue No: 100 Version Start Date: 07/03/1984 Version End Date: -
B	183m S	Status: Active Licence No: 2569002229 Details: Fish Farm/Cress Pond Throughflow Direct Source: Surface, Non-Tidal - North West Region Point: BOTTOM LODGE AT WICKENHALL OGDEN NEWHEY Data Type: Point Name: HUGHES Easting: 395500 Northing: 411600	Annual Volume (m ³): 81,828 Max Daily Volume (m ³): 454.60 Original Application No: 2663 Original Start Date: 07/03/1984 Expiry Date: - Issue No: 100 Version Start Date: 07/03/1984 Version End Date: -



ID	Location	Details	
C	281m S	Status: Historical Licence No: 2569002228 Details: Fish Farm/Cress Pond Throughflow Direct Source: "Surface, Non-Tidal - North West Region" Point: "WICKENHALL CLOUGH AT OGDEN, NEWHEY, ROCHDALE" Data Type: Point Name: HUGHES Easting: 395500 Northing: 411500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 07/03/1984 Expiry Date: - Issue No: 100 Version Start Date: 07/03/1984 Version End Date: -
C	281m S	Status: Active Licence No: 2569002228 Details: Fish Farm/Cress Pond Throughflow Direct Source: Surface, Non-Tidal - North West Region Point: WICKENHALL CLOUGH AT OGDEN, NEWHEY, ROCHDALE Data Type: Point Name: HUGHES Easting: 395500 Northing: 411500	Annual Volume (m ³): 248,893.50 Max Daily Volume (m ³): 681.90 Original Application No: 2663 Original Start Date: 07/03/1984 Expiry Date: - Issue No: 100 Version Start Date: 07/03/1984 Version End Date: -
D	584m NW	Status: Active Licence No: 2569002154 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: COMPENSATION REL FROM OGDEN RES ABST FROM WELL PIT NEWHEY Data Type: Point Name: P W Greenhalgh Finishing Limited Easting: 394950 Northing: 412150	Annual Volume (m ³): 472,874 Max Daily Volume (m ³): 1,819 Original Application No: NPS/WR/036977 Original Start Date: 20/01/1966 Expiry Date: - Issue No: 101 Version Start Date: 17/02/2022 Version End Date: -
D	584m NW	Status: Active Licence No: 2569002154 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: COMPENSATION REL FROM OGDEN RES ABST FROM WELL PIT NEWHEY Data Type: Point Name: P W Greenhalgh Finishing Limited Easting: 394950 Northing: 412150	Annual Volume (m ³): 472,874 Max Daily Volume (m ³): 1,819 Original Application No: NPS/WR/036977 Original Start Date: 20/01/1966 Expiry Date: - Issue No: 101 Version Start Date: 17/02/2022 Version End Date: -

ID	Location	Details	
D	584m NW	Status: Active Licence No: 2569002154 Details: Process Water Direct Source: Surface, Non-Tidal - North West Region Point: COMPENSATION REL FROM OGDEN RES ABST FROM WELL PIT NEWHEY Data Type: Point Name: P W Greenhalgh Finishing Limited Easting: 394950 Northing: 412150	Annual Volume (m ³): 472,874 Max Daily Volume (m ³): 1,819 Original Application No: NPS/WR/036977 Original Start Date: 20/01/1966 Expiry Date: - Issue No: 101 Version Start Date: 17/02/2022 Version End Date: -
-	1072m NE	Status: Active Licence No: 2569002205 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIRS (8) (ROODEN/HANGING LEES/PIETHORN/KITCLIFFE/OGDEN Data Type: Point Name: United Utilities Water Ltd Easting: 396300 Northing: 412500	Annual Volume (m ³): 9,978,470 Max Daily Volume (m ³): 27,276 Original Application No: 1567 Original Start Date: 14/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 31/03/1994 Version End Date: -
-	1443m NE	Status: Historical Licence No: 2569002205 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIRS (8) (ROODEN/HANGING LEES/PIETHORN/KITCLIFFE/109 Data Type: Point Name: NORTH WEST WATER LTD Easting: 396800 Northing: 412400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 14/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 31/03/1994 Version End Date: -
-	1443m NE	Status: Historical Licence No: 2569002205 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIRS (8) (ROODEN/HANGING LEES/PIETHORN/KITCLIFFE/\$109 Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 396800 Northing: 412400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 14/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 31/03/1994 Version End Date: -

ID	Location	Details	
-	1443m NE	Status: Active Licence No: 2569002205 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIRS (8) (ROODEN/HANGING LEES/PIETHORN/KITCLIFFE/ Data Type: Point Name: United Utilities Water Ltd Easting: 396800 Northing: 412400	Annual Volume (m ³): 9,978,470 Max Daily Volume (m ³): 27,276 Original Application No: 1567 Original Start Date: 14/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 31/03/1994 Version End Date: -
-	1926m N	Status: Historical Licence No: NW/069/0002/008 Details: Lake & Pond Throughflow Direct Source: Surface, Non-Tidal - North West Region Point: LONGDEN END BROOK ADJ TO RAKEWOOD ROAD, LITTLEBOROUGH Data Type: Point Name: J CLEGG & BROS RAKEWOOD LTD Easting: 394803 Northing: 413650	Annual Volume (m ³): 120,000 Max Daily Volume (m ³): 619 Original Application No: - Original Start Date: 01/04/2014 Expiry Date: 31/03/2021 Issue No: 1 Version Start Date: 01/04/2014 Version End Date: -
-	1926m N	Status: Historical Licence No: NW/069/0002/008/L Details: Lake & Pond Throughflow Direct Source: Surface, Non-Tidal - North West Region Point: LONGDEN END BROOK ADJ TO RAKEWOOD ROAD, LITTLEBOROUGH Data Type: Point Name: J CLEGG & BROS RAKEWOOD LTD Easting: 394803 Northing: 413650	Annual Volume (m ³): 120,000 Max Daily Volume (m ³): 619 Original Application No: - Original Start Date: 01/04/2021 Expiry Date: - Issue No: 1 Version Start Date: 01/04/2021 Version End Date: -
-	1926m N	Status: Active Licence No: NW/069/0002/008/R01 Details: Lake & Pond Throughflow Direct Source: Surface, Non-Tidal - North West Region Point: LONGDEN END BROOK ADJ TO RAKEWOOD ROAD, LITTLEBOROUGH Data Type: Point Name: J.Clegg & Bros (Rakewood) Limited Easting: 394803 Northing: 413650	Annual Volume (m ³): 120,000 Max Daily Volume (m ³): 619 Original Application No: NPS/WR/033153 Original Start Date: 14/07/2021 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 14/07/2021 Version End Date: -

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



5.8 Potable abstractions

Records within 2000m

7

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 52**

ID	Location	Details	
A	88m SE	Status: Historical Licence No: 2569002213 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Surface, Non-Tidal - North West Region Point: SPRING FED RESERVOIR AT MILNROW Data Type: Point Name: RADCLIFFE Easting: 395500 Northing: 411700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 13/06/1973 Expiry Date: - Issue No: 100 Version Start Date: 10/11/1992 Version End Date: -
-	1072m NE	Status: Active Licence No: 2569002205 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIRS (8) (ROODEN/HANGING LEES/PIETHORN/KITCLIFFE/OGDEN Data Type: Point Name: United Utilities Water Ltd Easting: 396300 Northing: 412500	Annual Volume (m ³): 9,978,470 Max Daily Volume (m ³): 27,276 Original Application No: 1567 Original Start Date: 14/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 31/03/1994 Version End Date: -
-	1439m SE	Status: Historical Licence No: 2569012071 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "SPRING FED WELL AT THE LA PERGOLA HOTEL, DENSHAW, NR OLDHAM" Data Type: Point Name: LDL LEISURE LTD Easting: 396800 Northing: 411200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/05/1997 Version End Date: -



ID	Location	Details	
-	1439m SE	Status: Historical Licence No: 2569012071 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: SPRING FED WELL AT THE LA PERGOLA HOTEL, DENSHAW, NR OLDHAM Data Type: Point Name: LDL LEISURE LTD Easting: 396800 Northing: 411200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/05/1997 Version End Date: -
-	1443m NE	Status: Historical Licence No: 2569002205 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIRS (8) (ROODEN/HANGING LEES/PIETHORN/KITCLIFFE/109 Data Type: Point Name: NORTH WEST WATER LTD Easting: 396800 Northing: 412400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 14/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 31/03/1994 Version End Date: -
-	1443m NE	Status: Historical Licence No: 2569002205 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIRS (8) (ROODEN/HANGING LEES/PIETHORN/KITCLIFFE/\$109 Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 396800 Northing: 412400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 14/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 31/03/1994 Version End Date: -
-	1443m NE	Status: Active Licence No: 2569002205 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIRS (8) (ROODEN/HANGING LEES/PIETHORN/KITCLIFFE/ Data Type: Point Name: United Utilities Water Ltd Easting: 396800 Northing: 412400	Annual Volume (m ³): 9,978,470 Max Daily Volume (m ³): 27,276 Original Application No: 1567 Original Start Date: 14/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 31/03/1994 Version End Date: -

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



5.9 Source Protection Zones

Records within 500m**2**

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination. Features are displayed on the Abstractions and Source Protection Zones map on **page 52**

ID	Location	Type	Description
1	118m SW	2	Outer catchment
2	202m W	3	Total catchment

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

15

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 64**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	61m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	88m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	88m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	89m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	119m SE	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	123m S	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	136m S	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	176m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
1	207m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	207m SE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
C	213m SE	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
D	245m NW	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	6
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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 64**

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 64**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	On site	River	Beal	GB112069064690	Roch Irk Medlock	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 64**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	533m NW	River	Beal	<u>GB112069064690</u>	Moderate	Fail	Moderate	2019

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 64**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	On site	Northern Manchester Carboniferous Aquifers	<u>GB41202G101800</u>	Poor	Poor	Good	2019

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

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m

0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; 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). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 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

0

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.

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

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

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, Greater than 1.0m

Highest risk within 50m

1 in 30 year, Greater than 1.0m

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

Features are displayed on the Surface water flooding map on **page 71**

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.

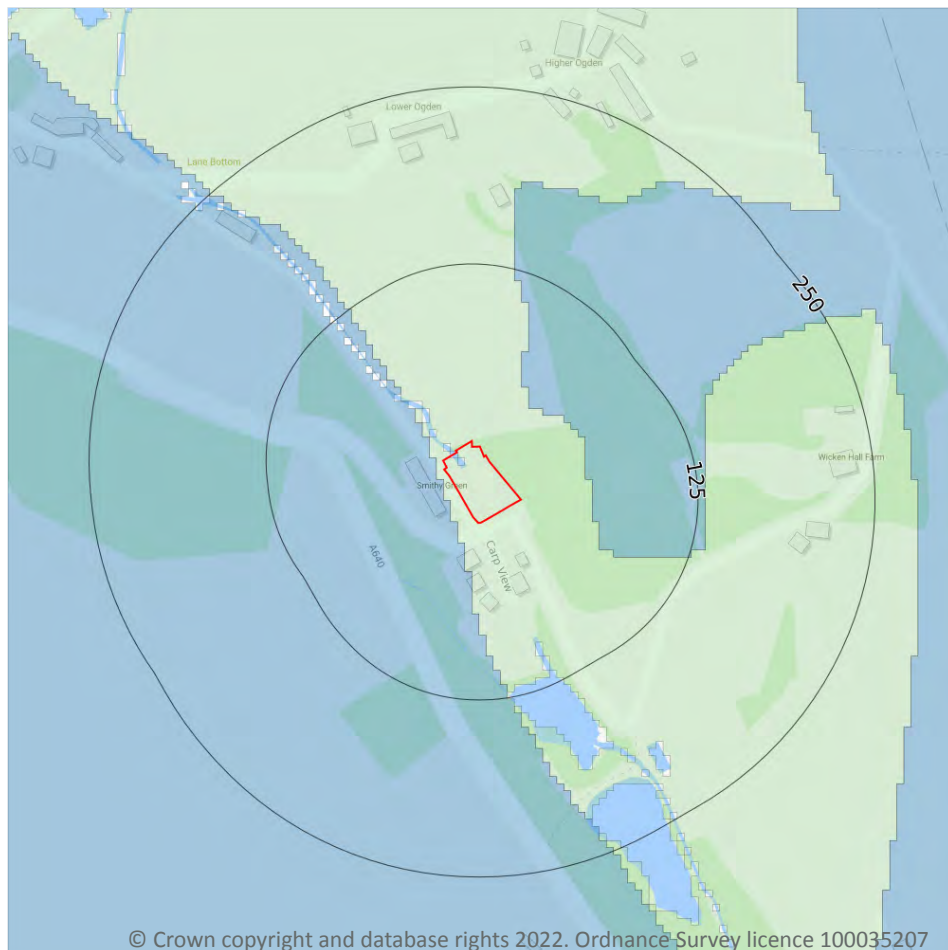
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Greater than 1.0m
1 in 30 year	Greater than 1.0m

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

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9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

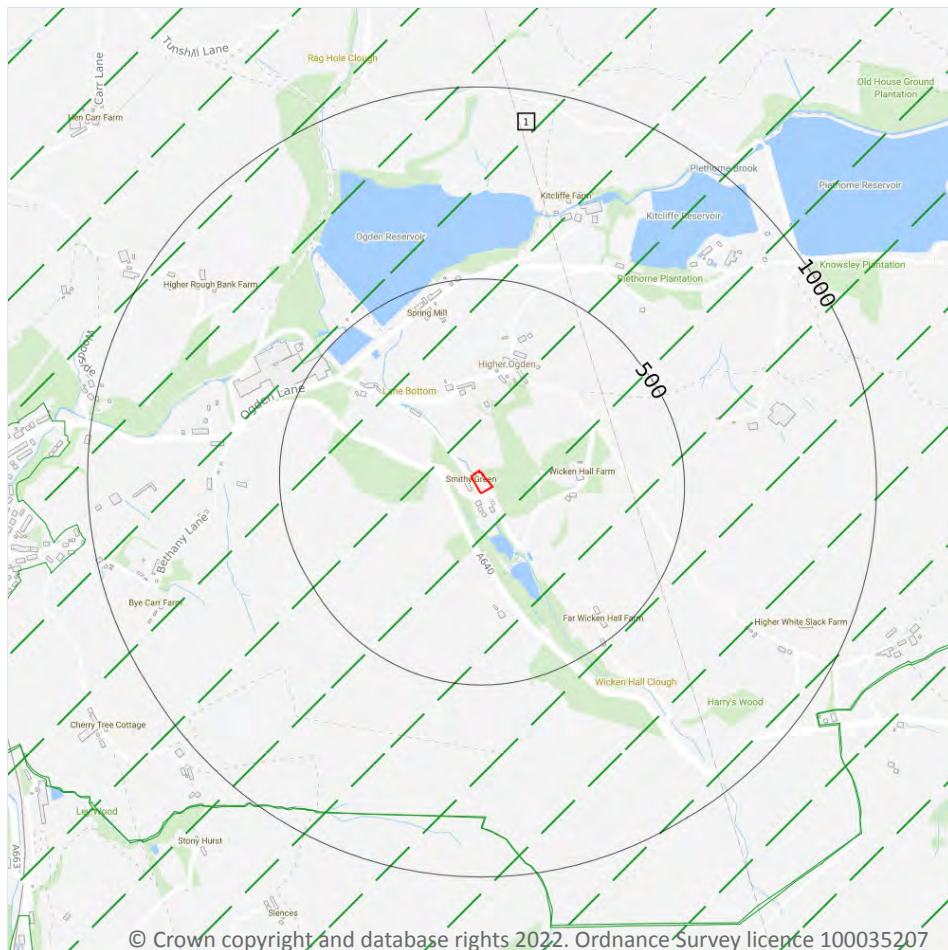
Low

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 73**

This data is sourced from Ambient Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- 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**0**

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.

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

3

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

Features are displayed on the Environmental designations map on **page 74**

ID	Location	Name	Local Authority name
1	On site	Merseyside and Greater Manchester	Rochdale
2	845m S	Merseyside and Greater Manchester	Oldham
-	1653m SW	Merseyside and Greater Manchester	Rochdale

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

10.12 Proposed Ramsar sites

Records within 2000m

0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

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

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



10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

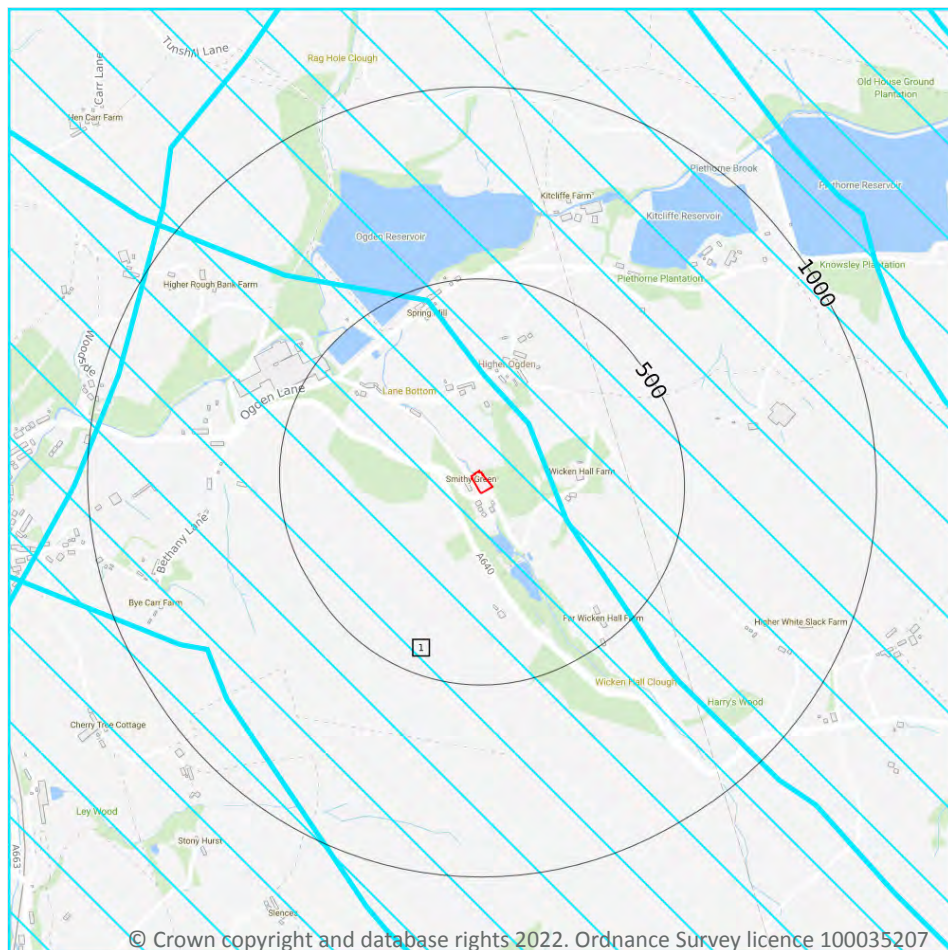
Records within 2000m

0

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

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

SSSI Impact Zones and Units



- 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 79**

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Airports, helipads and other aviation proposals. Wind and Solar - Wind turbines. 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 - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t). Combustion - General combustion processes >50mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. incl: inert landfill, non-hazardous landfill, hazardous landfill. Discharges - Any discharge of water or liquid waste of more than 20m³/day to ground (ie to seep away) or to surface water, such as a beck or stream.

This data is sourced from Natural England.

10.18 SSSI Units

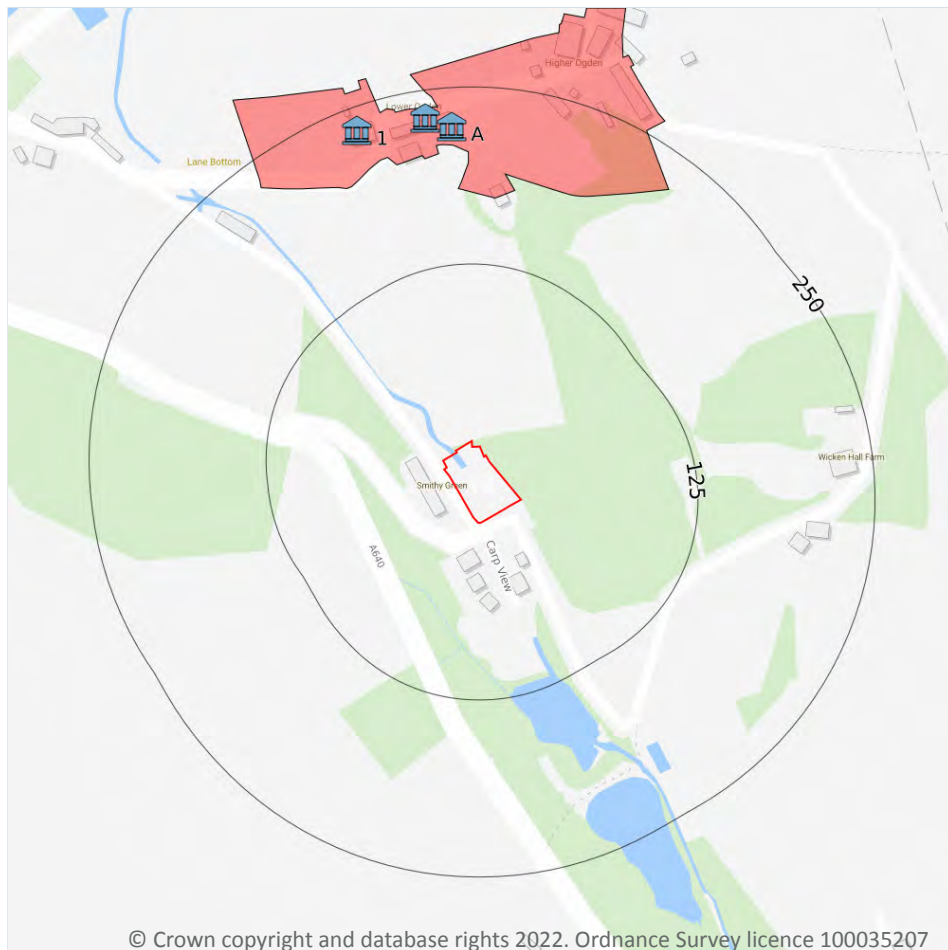
Records within 2000m	0
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Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management 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

3

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 81**

ID	Location	Name	Grade	Reference Number	Listed date
A	223m N	The Castle, Milnrow and Newhey, Rochdale, OL16	II	1068497	24/01/1967
A	231m N	The Barn Tea Shop and The Barn, Milnrow and Newhey, Rochdale, OL16	II	1162558	23/04/1986
1	234m N	Holly Cottage and No. 5, Milnrow and Newhey, Rochdale, OL16	II	1356226	24/01/1967

This data is sourced from Historic England, 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 81**

ID	Location	Name	District	Date of designation
A	172m N	Ogden	Rochdale	01/09/1974

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

11.7 Registered Parks and Gardens

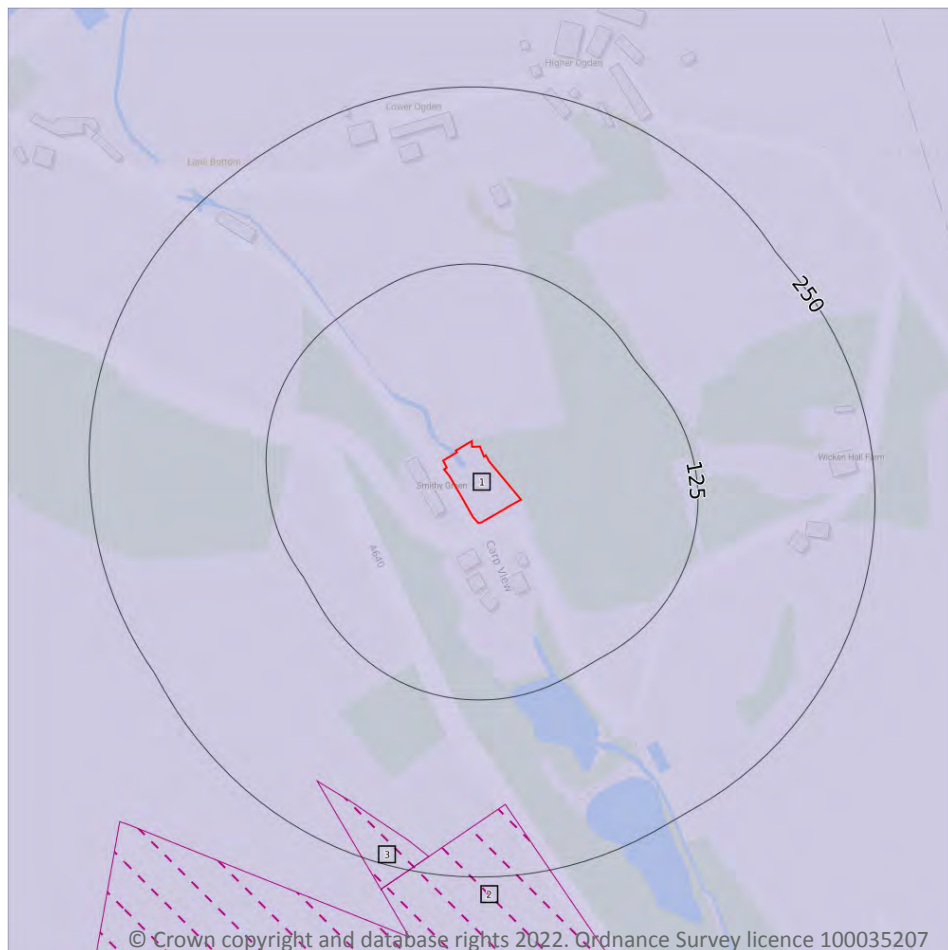
Records within 250m

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 Historic England, 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

1

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

Features are displayed on the Agricultural designations map on **page 84**

ID	Location	Classification	Description
1	On site	Grade 5	Very poor quality agricultural land. Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

This data is sourced from Natural England.



12.2 Open Access Land

Records within 250m

2

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.

Features are displayed on the Agricultural designations map on **page 84**

ID	Location	Name	Classification	Other relevant legislation
2	200m S	Helpet or Helpit or Elpit Edge and Crompton Moor	Section 15 Land	S.193 - Urban Borough District
3	215m SW	-	Section 4 Conclusive Open Country	-

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. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

0

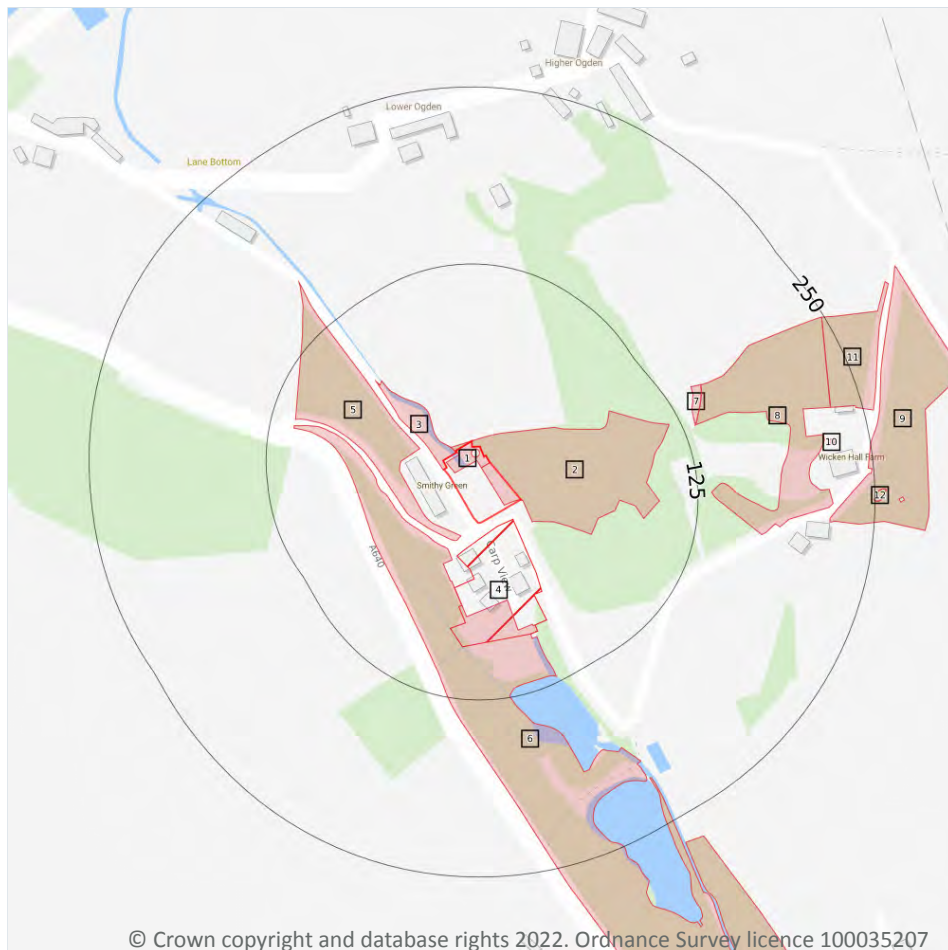
Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.



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

11

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 87**

ID	Location	Main Habitat	Other habitats
1	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
5	15m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)



ID	Location	Main Habitat	Other habitats
6	28m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
7	134m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
8	134m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
9	219m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
10	221m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
11	228m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
12	249m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0
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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.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	1
----------------------------	----------

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

Features are displayed on the Habitat designations map on **page 87**

ID	Location	Site reference	Identification confidence	Primary source	Secondary source	Tertiary source
4	8m SE	NLUD Ref: 422500258	Low	National Land Use Database - Previously Developed Land	UK Perspectives Aerial Photography	-

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m

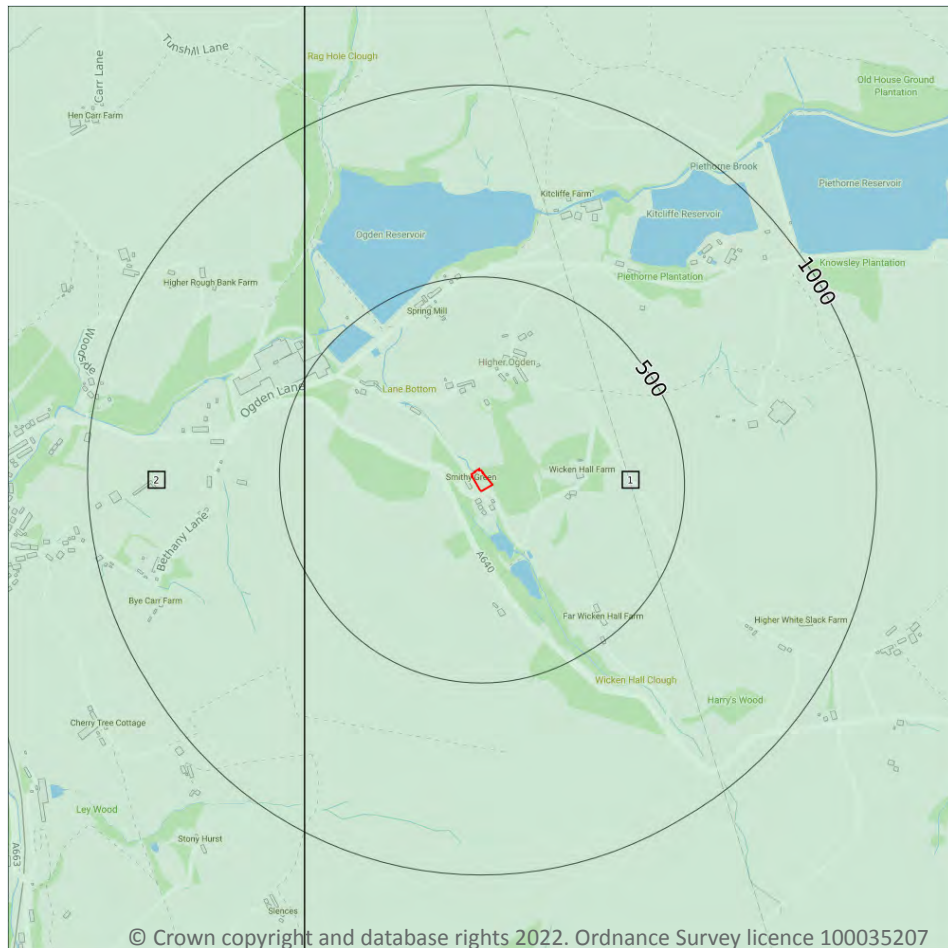
0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

2

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 90**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	SD91SE
2	435m W	Full	Full	Full	Full	SD91SW

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

14

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 91**

ID	Location	LEX Code	Description	Rock description
1	47m NE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
2	73m SE	WGR-VOID	Worked Ground (Undivided)	Void
3	101m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	193m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

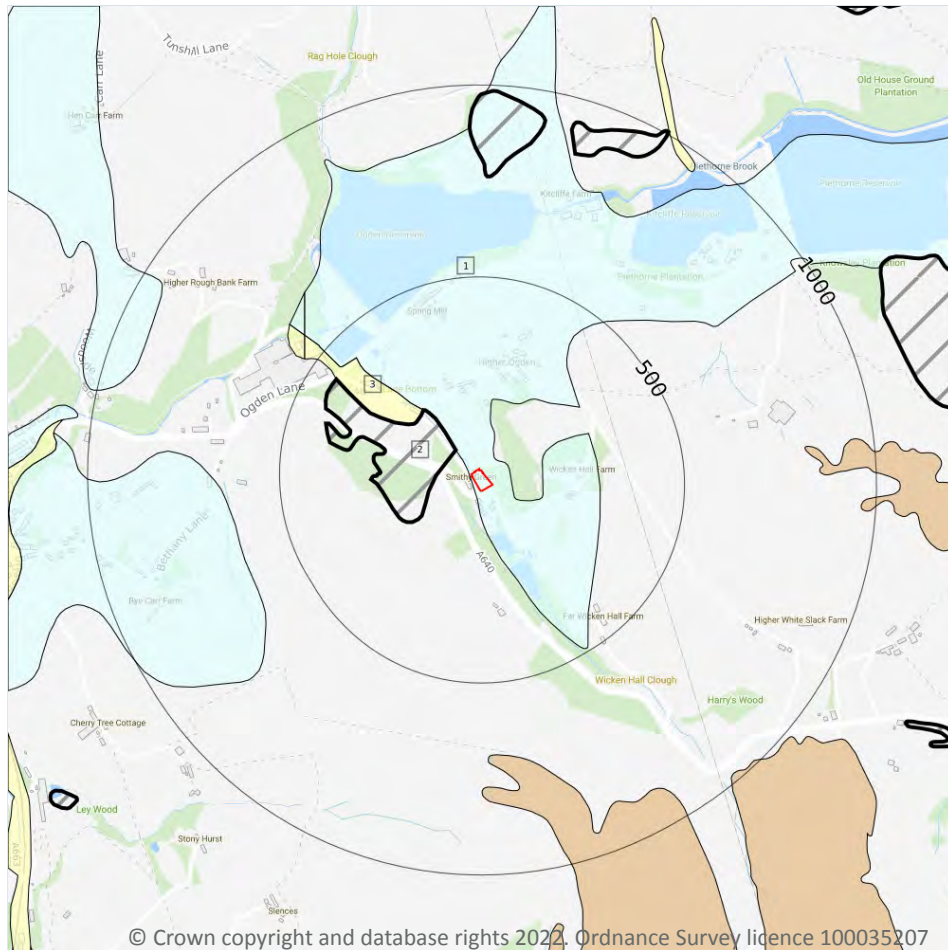


ID	Location	LEX Code	Description	Rock description
4	233m W	WMGR-ARTDP	Infilled Ground	Artificial Deposit
A	240m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
B	334m W	WGR-VOID	Worked Ground (Undivided)	Void
5	334m NE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
6	335m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
7	423m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
B	442m W	WGR-VOID	Worked Ground (Undivided)	Void
C	474m SW	WGR-VOID	Worked Ground (Undivided)	Void
C	490m SW	WGR-VOID	Worked Ground (Undivided)	Void
8	494m SW	WGR-VOID	Worked Ground (Undivided)	Void

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 93**

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
3	197m NW	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel

This data is sourced from the British Geological Survey.



14.4 Landslip (10k)

Records within 500m

1

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

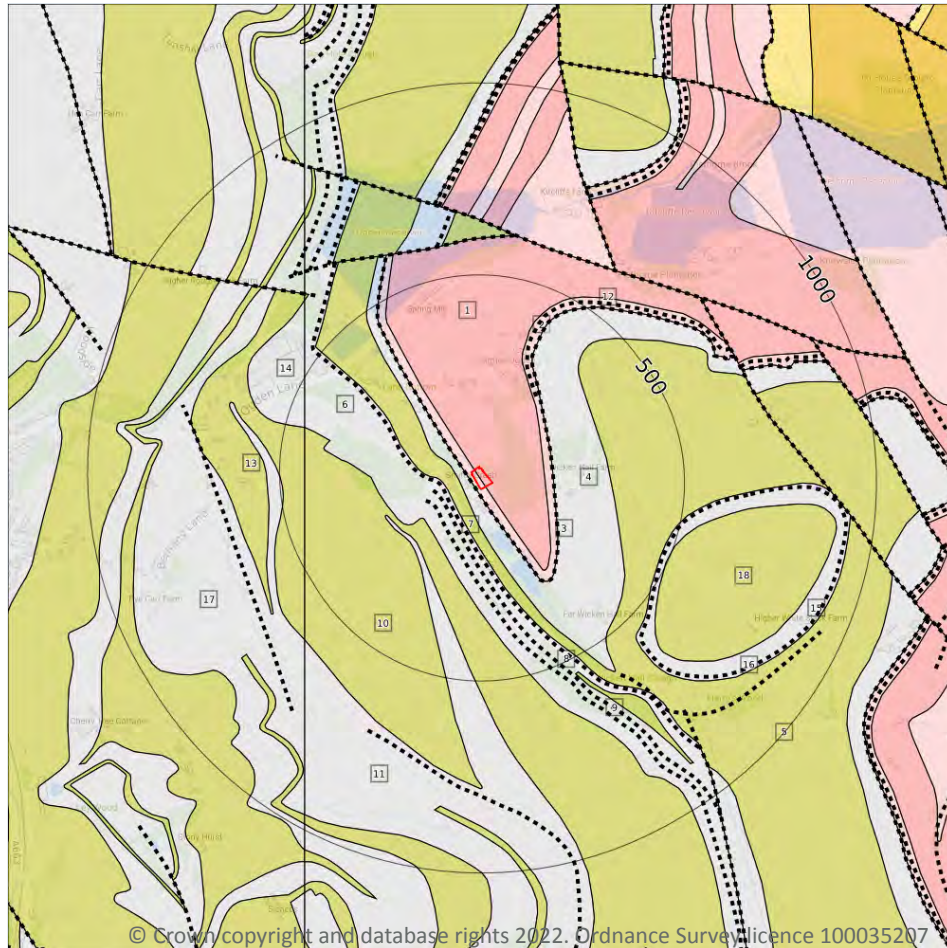
Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 93**

ID	Location	LEX Code	Description	Rock description
2	71m NW	SLIP-UNKNOWN	Landslide Deposits	Unknown/unclassified Entry

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m

12

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 95**

ID	Location	LEX Code	Description	Rock age
1	On site	RR-SDST	Rough Rock - Sandstone	Yeadonian Sub-age
2	On site	ROSSE-MDSI	Rossendale Formation - Mudstone And Siltstone	Yeadonian Sub-age
4	10m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age



ID	Location	LEX Code	Description	Rock age
5	36m SW	WH-SDST	Woodhead Hill Rock - Sandstone	Langsettian Sub-age
6	74m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
10	166m SW	HER-SDST	Helpet Edge Rock - Sandstone	Langsettian Sub-age
11	218m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
13	435m W	HER-SDST	Helpet Edge Rock - Sandstone	Langsettian Sub-age
14	450m W	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
15	478m SE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
17	494m W	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
18	497m SE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

6

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.

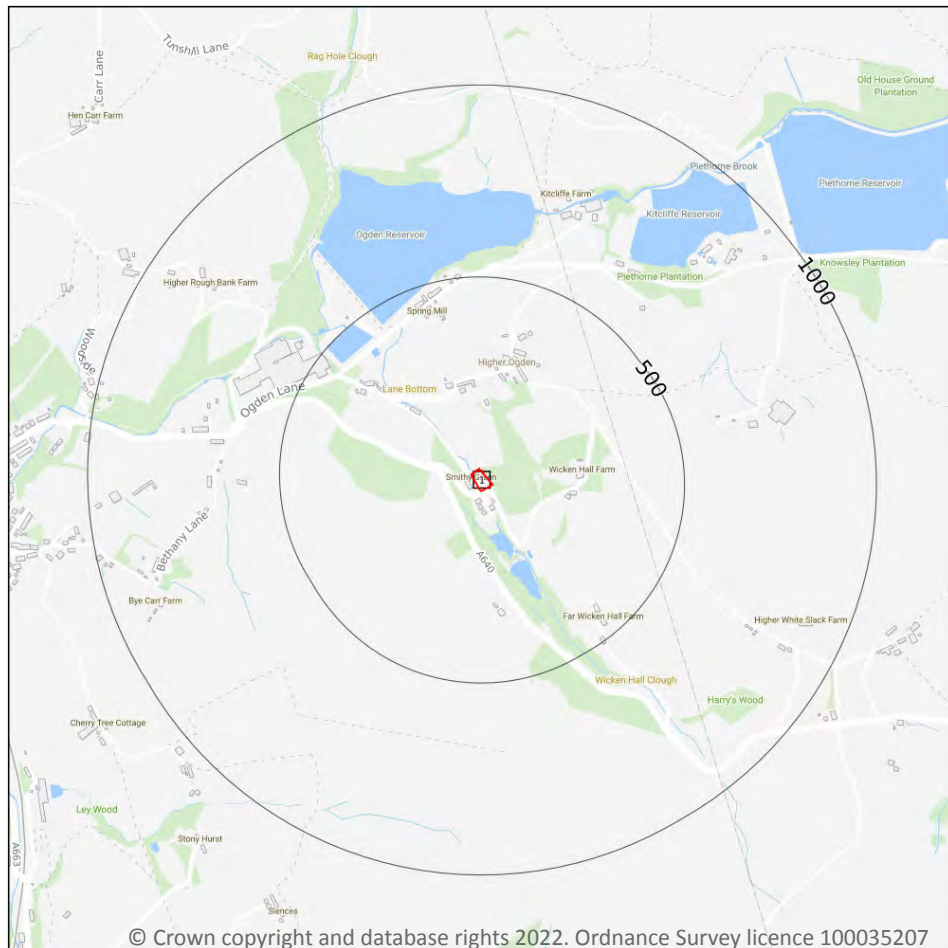
Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 95**

ID	Location	Category	Description
3	10m SW	FOSSIL_HORIZON	Fossil horizon, marine band coincident with bedrock geology boundary
7	83m SW	ROCK	Coal seam, inferred
8	100m SW	ROCK	Coal seam, inferred
9	124m SW	ROCK	Coal seam, inferred
12	234m NE	ROCK	Coal seam, inferred
16	483m SE	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 97**

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

15.2 Artificial and made ground (50k)

Records within 500m

0

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.

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

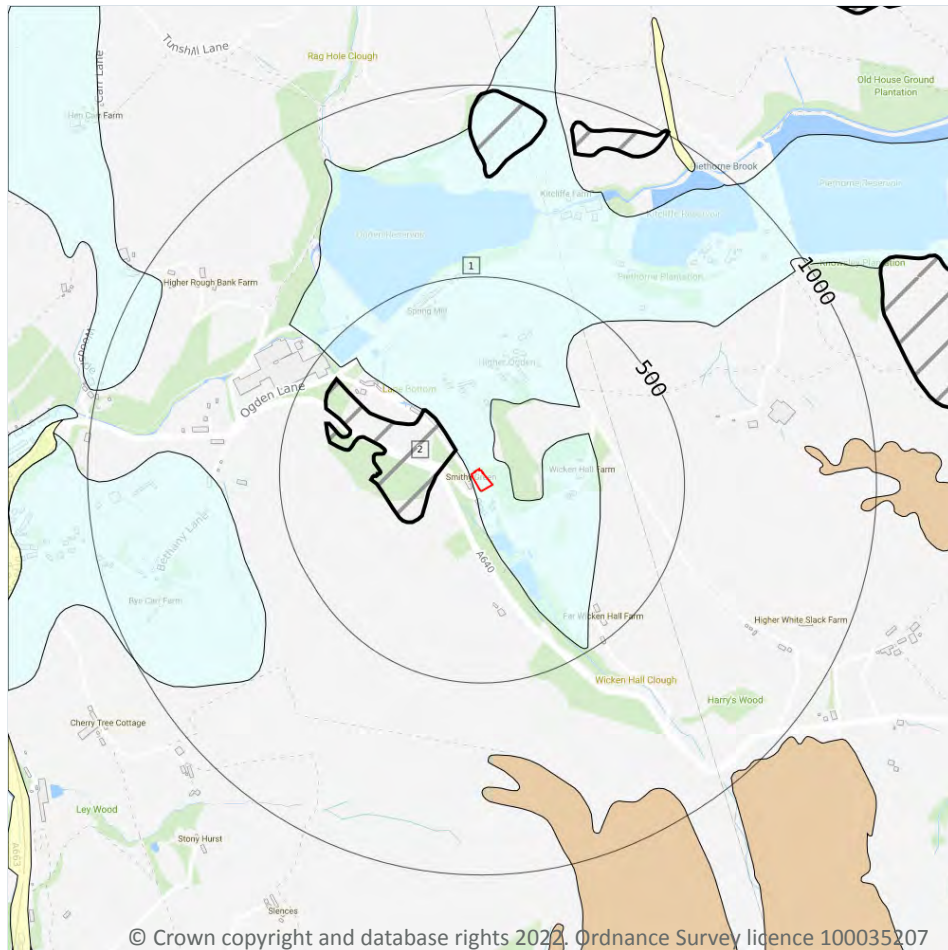
0

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 99**

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

1

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.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 99**

ID	Location	LEX Code	Description	Rock description
2	71m NW	SLIP-UNKNOWN	LANDSLIDE DEPOSITS	UNKNOWN/UNCLASSIFIED ENTRY

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m

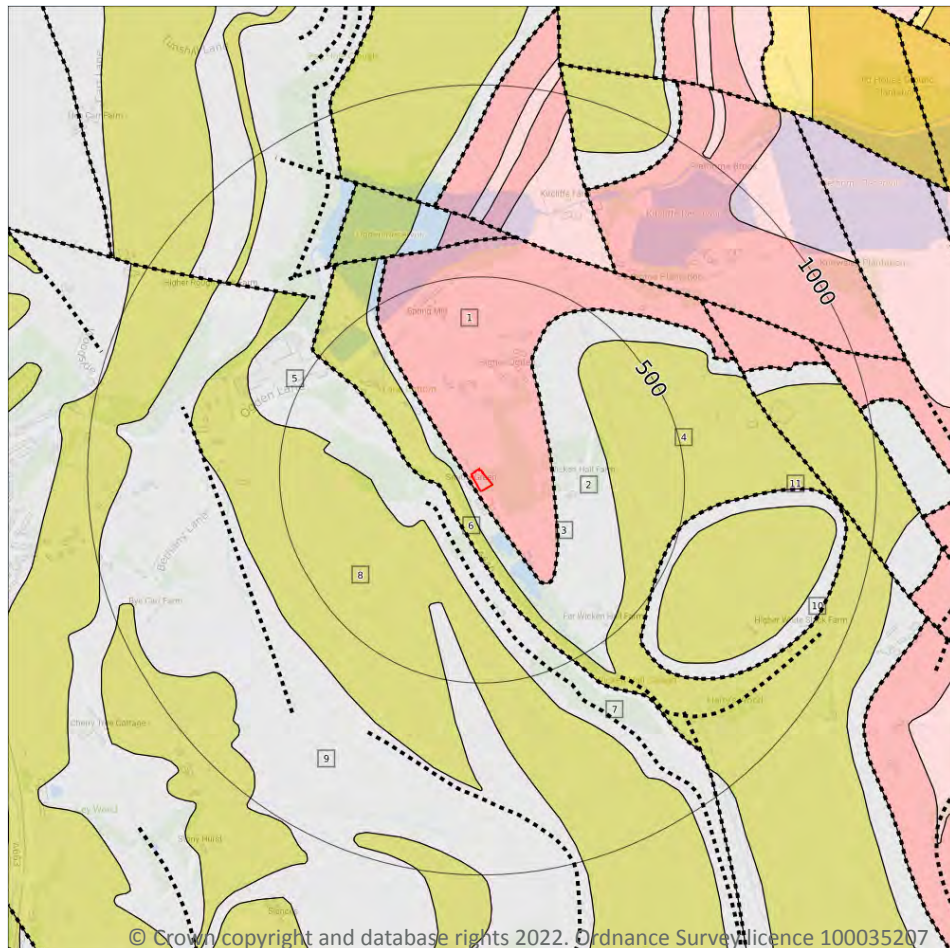
0

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

7

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 101**

ID	Location	LEX Code	Description	Rock age
1	On site	RR-SDST	ROUGH ROCK - SANDSTONE	NAMURIAN
2	10m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
4	36m SW	WH-SDST	WOODHEAD HILL ROCK - SANDSTONE	WESTPHALIAN

ID	Location	LEX Code	Description	Rock age
5	83m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
8	166m SW	HER-SDST	HELPET EDGE ROCK - SANDSTONE	WESTPHALIAN
9	310m S	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
10	483m SE	PLCM-MDSS	PENNINE LOWER 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	3
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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
10m E	Fracture	Moderate	Low
36m 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	4
----------------------------	----------

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 101**

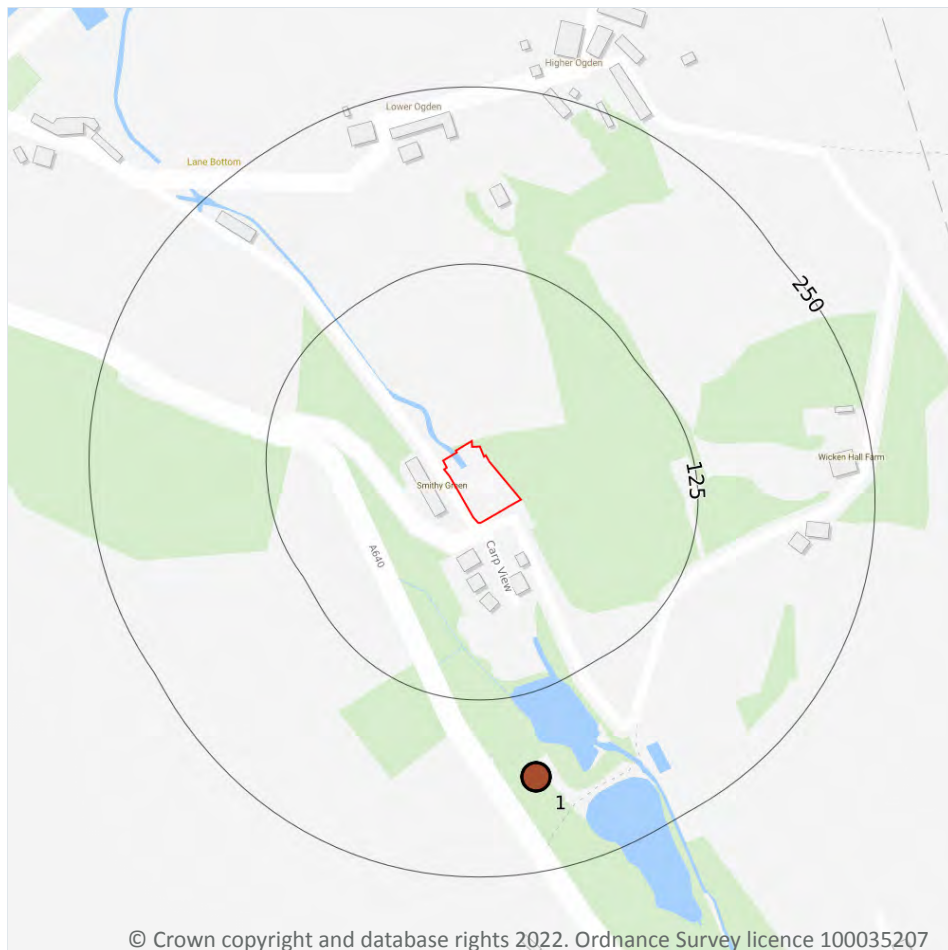
ID	Location	Category	Description
3	10m SW	FOSSIL_HORIZON	Marine band
6	83m SW	ROCK	Coal seam, inferred
7	124m SW	ROCK	Coal seam, inferred
11	483m SE	ROCK	Coal seam, inferred



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

1

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

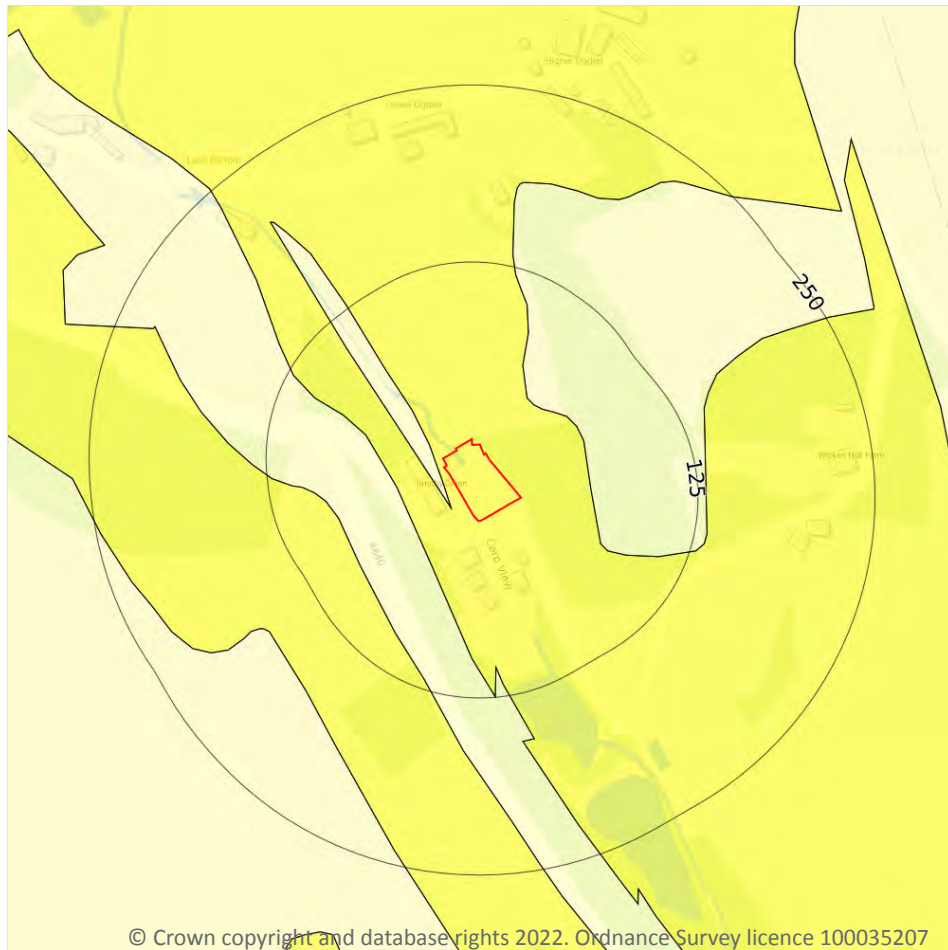
Features are displayed on the Boreholes map on **page 104**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	183m S	395500 411600	WICKEN HALL COLLIERY	-1.0	N	34967

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

3

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).

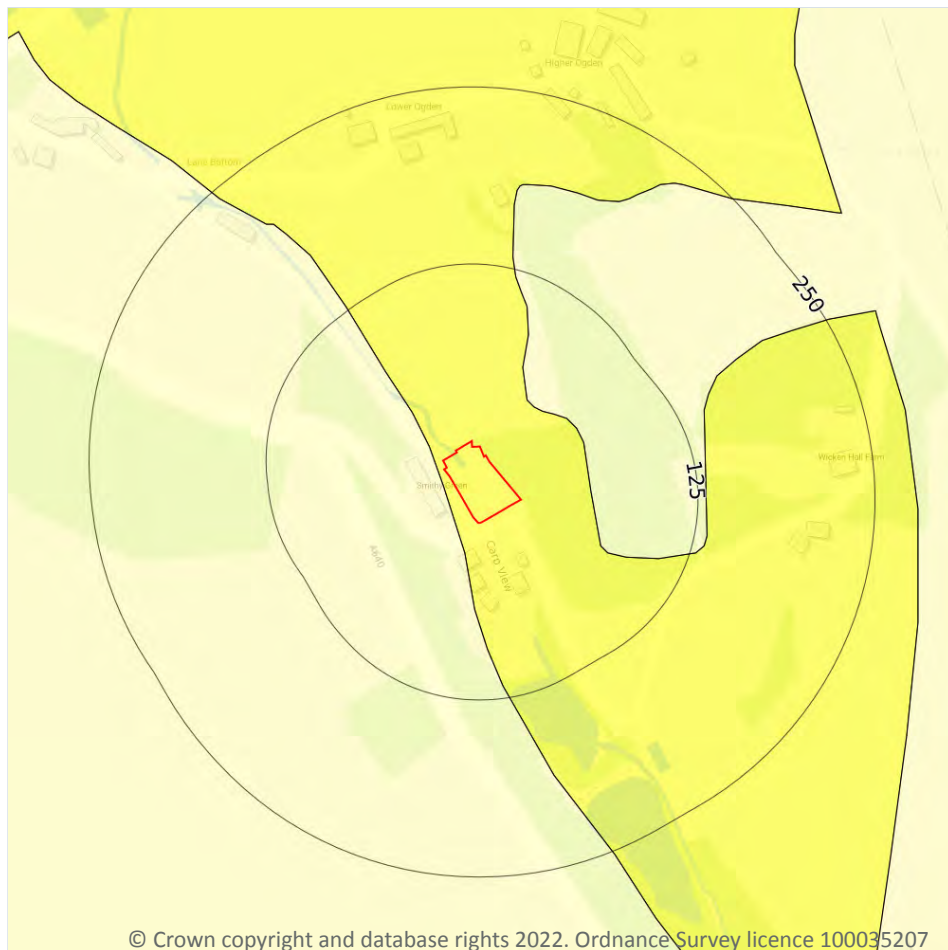
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 105**

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.
4m W	Negligible	Ground conditions predominantly non-plastic.
36m SW	Negligible	Ground conditions predominantly non-plastic.

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

2

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 107**

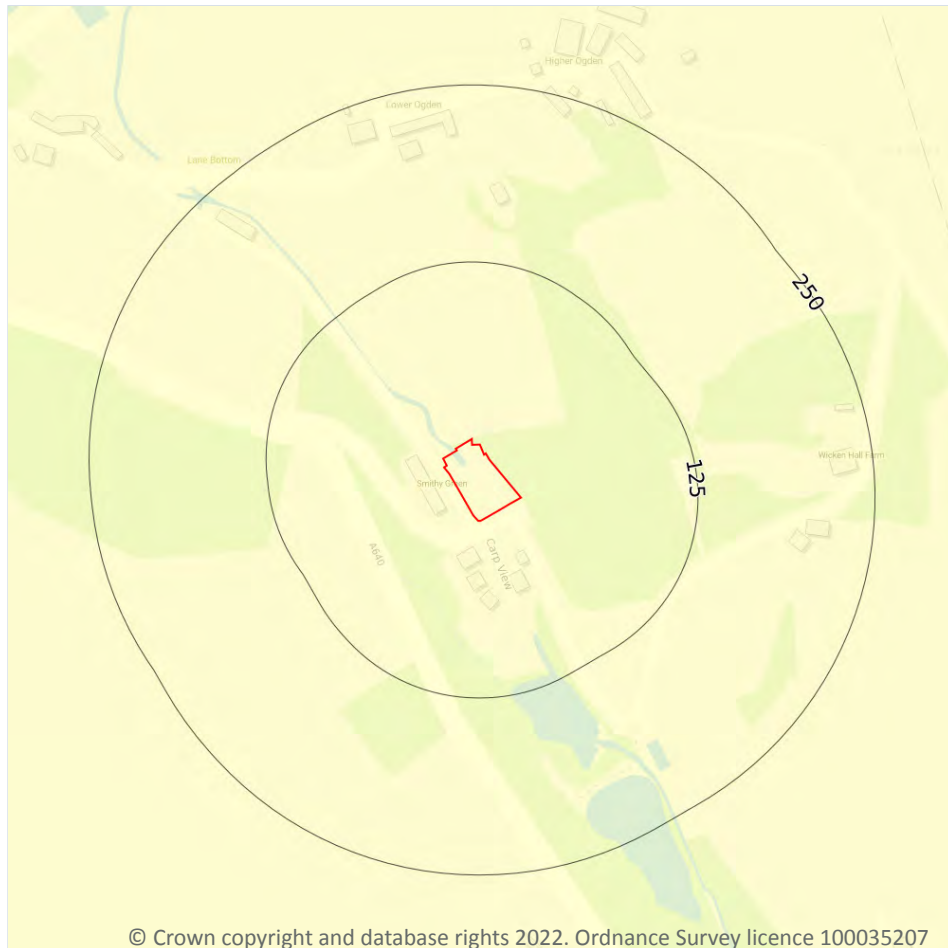
Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

Location	Hazard rating	Details
4m W	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



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

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17.3 Compressible deposits

Records within 50m

1

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

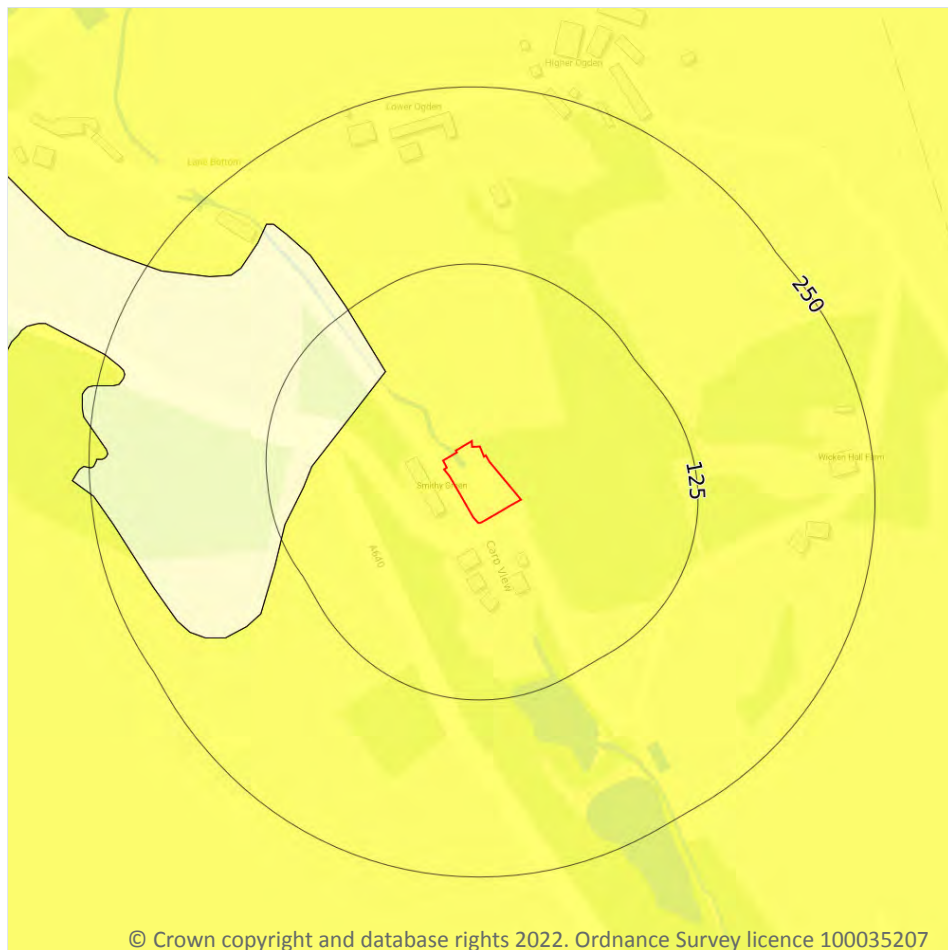
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 109**

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



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

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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.

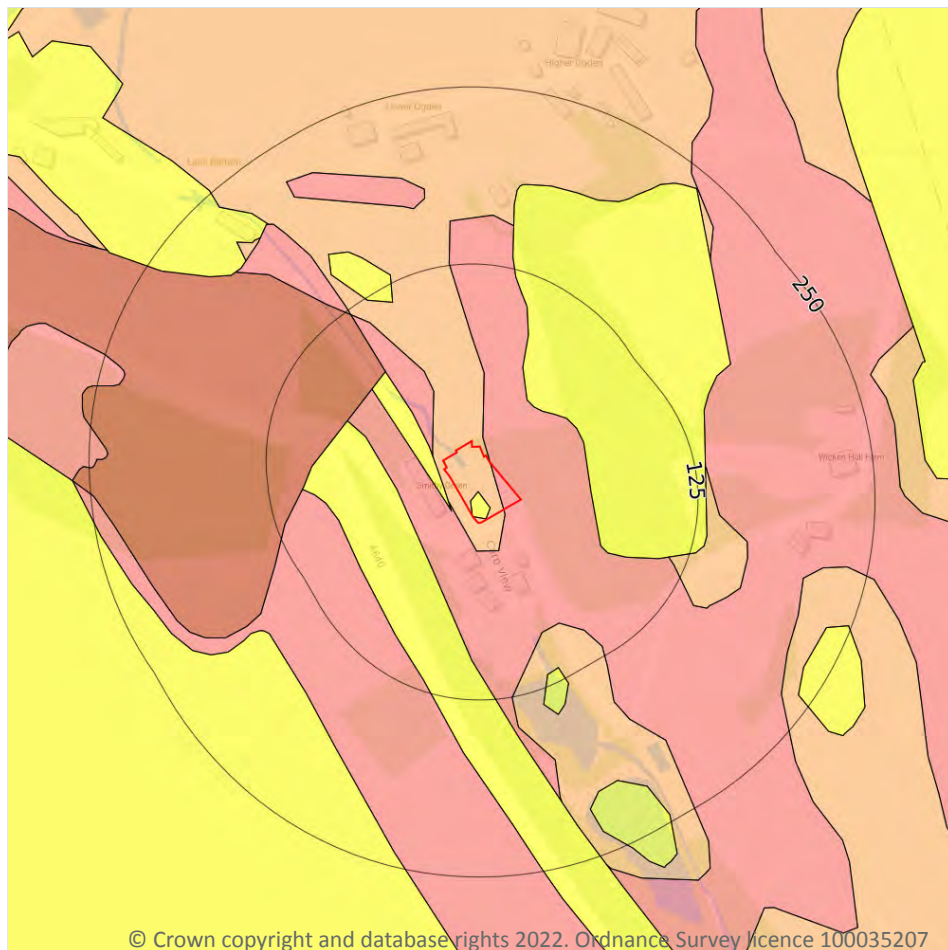
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 110**

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



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

17.5 Landslides

Records within 50m

7

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 111**

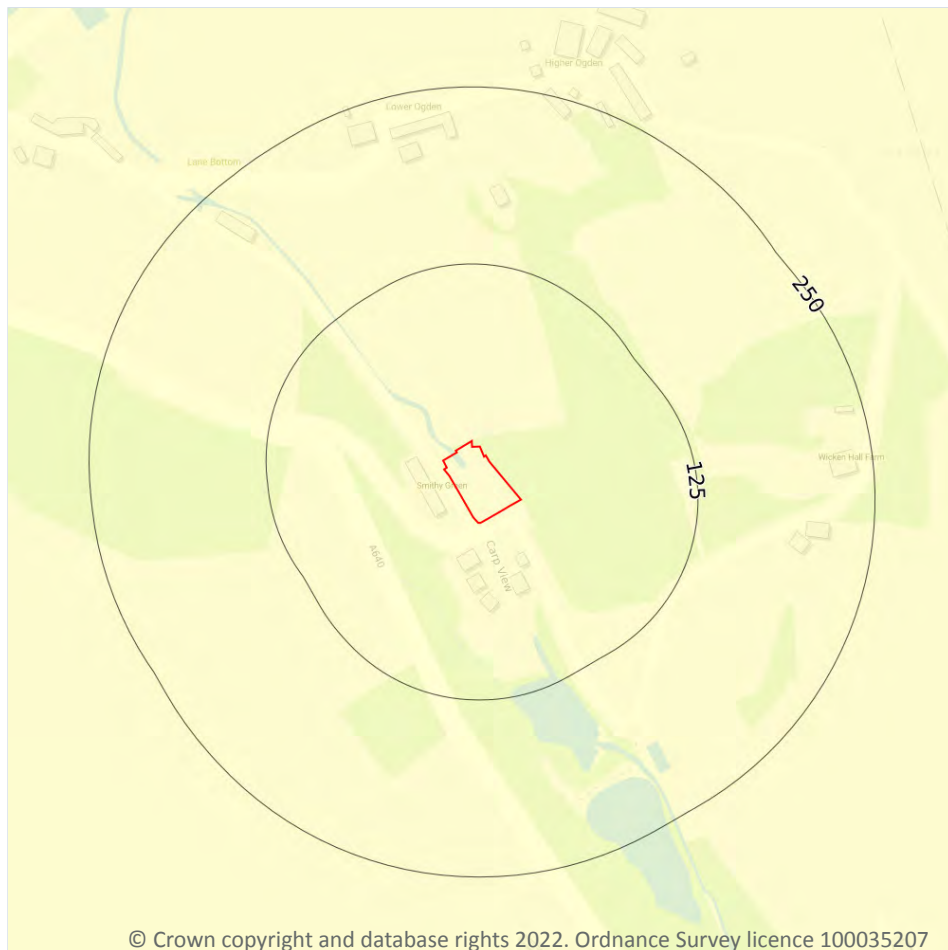
Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

Location	Hazard rating	Details
On site	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
On site	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.
4m W	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.
8m NW	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.
36m SW	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.
47m NE	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



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

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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.

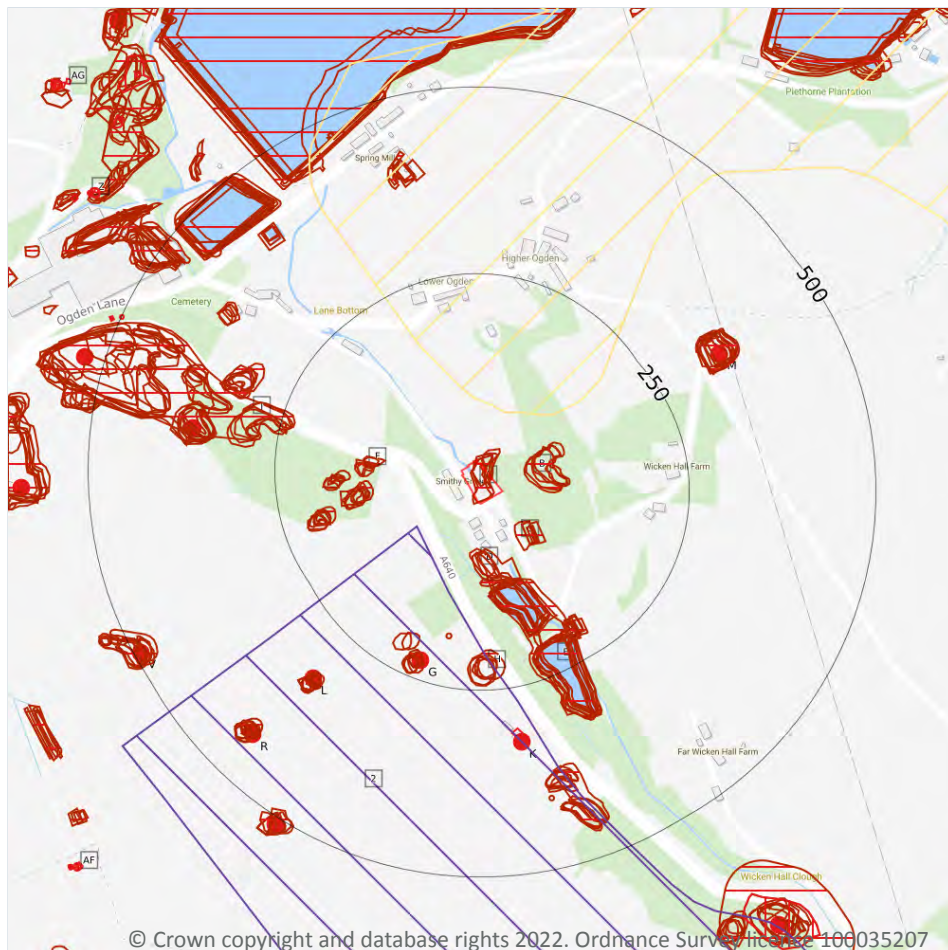
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 113**

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 Stantec UK Ltd.

18.2 BritPits

Records within 500m

7

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 115**

ID	Location	Details	Description
G	223m S	Name: Haugh Hey Quarry Address: Newhey, MILNROW, Lancashire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site 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
K	323m S	Name: Haugh Hey Fireclay Mine Address: Newhey, Shaw, OLDHAM, Lancashire Commodity: Fireclay Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) 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
L	323m SW	Name: Haugh Hey Quarry Address: Newhey, MILNROW, Lancashire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site 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
M	343m NE	Name: Higher Ogden Address: Higher Ogden, MILNROW, Lancashire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site 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
I	364m W	Name: Huddersfield Road Address: MILNROW, Lancashire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site 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



ID	Location	Details	Description
R	434m SW	Name: Haugh Hey Address: Newhey, MILNROW, Lancashire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site 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
V	491m SW	Name: Barnards Address: Newhey, MILNROW, Lancashire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site 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	84
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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 115**

ID	Location	Land Use	Year of mapping	Mapping scale
A	On site	Refuse Heap	1910	1:10560
A	On site	Refuse Heap	1928	1:10560
A	On site	Refuse Heap	1907	1:10560
A	On site	Refuse Heap	1845	1:10560
A	On site	Refuse Heap	1949	1:10560
B	37m NE	Refuse Heap	1928	1:10560
B	41m NE	Refuse Heap	1928	1:10560
C	47m SE	Reservoir	1928	1:10560
B	48m NE	Refuse Heap	1949	1:10560
B	50m NE	Refuse Heap	1949	1:10560
C	52m SE	Reservoir	1907	1:10560
C	52m SE	Reservoirs	1892	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
B	54m NE	Refuse Heap	1845	1:10560
C	57m SE	Reservoirs	1892	1:10560
C	59m SE	Reservoir	1910	1:10560
D	60m S	Reservoirs	1892	1:10560
E	61m S	Reservoirs	1892	1:10560
D	63m S	Reservoirs	1910	1:10560
E	64m S	Ponds	1851	1:10560
D	66m S	Reservoirs	1907	1:10560
D	98m S	Unspecified Ground Workings	1949	1:10560
D	102m S	Unspecified Ground Workings	1928	1:10560
F	104m W	Refuse Heap	1949	1:10560
D	107m S	Water Body	1979	1:10000
D	109m S	Pond	1949	1:10560
E	111m S	Reservoirs	1845	1:10560
F	112m W	Refuse Heap	1949	1:10560
D	112m S	Reservoirs	1892	1:10560
D	113m S	Pond	1949	1:10560
F	114m W	Refuse Heap	1928	1:10560
D	114m S	Reservoirs	1928	1:10560
D	117m S	Reservoirs	1907	1:10560
F	117m W	Refuse Heap	1907	1:10560
D	117m S	Pond	1928	1:10560
F	117m W	Refuse Heap	1928	1:10560
F	121m W	Refuse Heap	1845	1:10560
F	126m W	Refuse Heap	1949	1:10560
F	127m W	Refuse Heap	1949	1:10560
F	129m W	Refuse Heap	1907	1:10560
F	131m W	Refuse Heaps	1910	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
F	133m W	Refuse Heap	1928	1:10560
F	135m W	Refuse Heap	1928	1:10560
F	149m W	Refuse Heap	1845	1:10560
F	156m W	Refuse Heap	1949	1:10560
F	158m W	Refuse Heap	1949	1:10560
F	159m W	Refuse Heap	1907	1:10560
F	163m W	Refuse Heap	1928	1:10560
F	164m W	Refuse Heap	1928	1:10560
F	177m W	Refuse Heap	1845	1:10560
G	179m S	Coal Level	1851	1:10560
F	185m W	Refuse Heap	1949	1:10560
F	185m W	Refuse Heap	1949	1:10560
F	187m W	Refuse Heap	1910	1:10560
E	190m SE	Reservoirs	1949	1:10560
F	191m W	Refuse Heap	1928	1:10560
E	191m SE	Reservoirs	1892	1:10560
F	192m W	Refuse Heap	1928	1:10560
E	193m SE	Reservoirs	1928	1:10560
E	193m SE	Pond	1949	1:10560
F	194m W	Refuse Heap	1907	1:10560
G	194m SW	Unspecified Pit	1892	1:10560
E	195m SE	Reservoirs	1928	1:10560
H	196m S	Refuse Heap	1845	1:10560
E	197m SE	Reservoirs	1910	1:10560
E	197m SE	Reservoirs	1907	1:10560
G	198m SW	Unspecified Quarry	1892	1:10560
H	203m S	Refuse Heap	1928	1:10560
H	204m S	Refuse Heap	1949	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
E	205m SE	Water Body	1979	1:10000
E	205m SE	Reservoirs	1928	1:10560
H	206m S	Refuse Heap	1928	1:10560
H	208m S	Refuse Heap	1910	1:10560
H	208m S	Refuse Heap	1949	1:10560
G	213m SW	Unspecified Pit	1949	1:10560
G	216m S	Unspecified Pit	1949	1:10560
G	222m SW	Unspecified Old Quarry	1910	1:10560
G	222m SW	Unspecified Quarry	1928	1:10560
G	223m SW	Unspecified Old Quarries	1907	1:10560
G	223m SW	Unspecified Pit	1928	1:10560
I	232m W	Unspecified Old Quarries	1845	1:10560
J	234m W	Refuse Heap	1949	1:10560
J	236m W	Refuse Heap	1949	1:10560
J	240m W	Refuse Heap	1928	1:10560
J	242m W	Refuse Heap	1928	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m

38

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 115**

ID	Location	Land Use	Year of mapping	Mapping scale
K	305m S	Unspecified Mine	1979	1:10000
I	497m NW	Old Air Shaft	1910	1:10560
I	508m NW	Old Air Shaft	1907	1:10560
I	508m NW	Old Air Shaft	1928	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
Z	610m NW	Unspecified Disused Shaft	1976	1:10000
Z	610m NW	Unspecified Disused Shaft	1967	1:10560
Z	613m NW	Unspecified Old Shaft	1954	1:10560
Z	617m NW	Unspecified Old Shaft	1907	1:10560
Z	617m NW	Unspecified Old Shaft	1910	1:10560
Z	618m NW	Unspecified Old Shaft	1928	1:10560
Z	630m NW	Unspecified Old Shaft	1890	1:10560
AA	634m SE	Colliery	1892	1:10560
Z	649m NW	Unspecified Old Level	1907	1:10560
Z	652m NW	Unspecified Old Level	1910	1:10560
Z	670m NW	Unspecified Old Level	1907	1:10560
Z	681m NW	Unspecified Old Level	1910	1:10560
AF	720m SW	Unspecified Old Shaft	1892	1:10560
AF	720m SW	Unspecified Old Shaft	1954	1:10560
AF	721m SW	Unspecified Disused Shaft	1976	1:10000
AF	721m SW	Unspecified Disused Shaft	1967	1:10560
AF	726m SW	Unspecified Old Shaft	1910	1:10560
AF	730m SW	Unspecified Old Shaft	1928	1:10560
AF	731m SW	Unspecified Old Shaft	1907	1:10560
AF	731m SW	Unspecified Old Shaft	1892	1:10560
AG	737m NW	Unspecified Old Shaft	1890	1:10560
AG	739m NW	Unspecified Old Shaft	1954	1:10560
AG	742m NW	Unspecified Disused Shaft	1976	1:10000
AG	742m NW	Unspecified Disused Shaft	1967	1:10560
AG	743m NW	Unspecified Old Shaft	1928	1:10560
AG	743m NW	Unspecified Old Shaft	1910	1:10560
-	748m NW	Colliery	1928	1:10560
AG	750m NW	Unspecified Old Shaft	1907	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
AG	750m NW	Unspecified Old Shaft	1892	1:10560
-	817m W	Disused Colliery	1954	1:10560
-	832m W	Colliery	1910	1:10560
-	832m NW	Unspecified Old Shaft	1890	1:10560
-	836m W	Colliery	1907	1:10560
-	891m W	Disused Colliery	1928	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

1

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.

Features are displayed on the Mining, ground workings and natural cavities map on **page 115**

ID	Location	Site Name	Mineral	Type	Planning Status	Planning Status Date
2	87m SW	Haugh Hey	Fireclay	Working is wholly underground	Valid	22/5/52

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

1

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).

Features are displayed on the Mining, ground workings and natural cavities map on **page 115**

ID	Location	Name	Commodity	Class	Likelihood
1	74m NE	Not available	Vein Mineral	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered



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 Stantec UK Ltd.

18.8 JPB mining areas

Records on site

1

Areas which could be affected by former coal and other 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. Please note, the plans held by JPB may also relate to non-mining records. Further details and a quote for services (if appropriate) 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
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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
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Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0
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Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

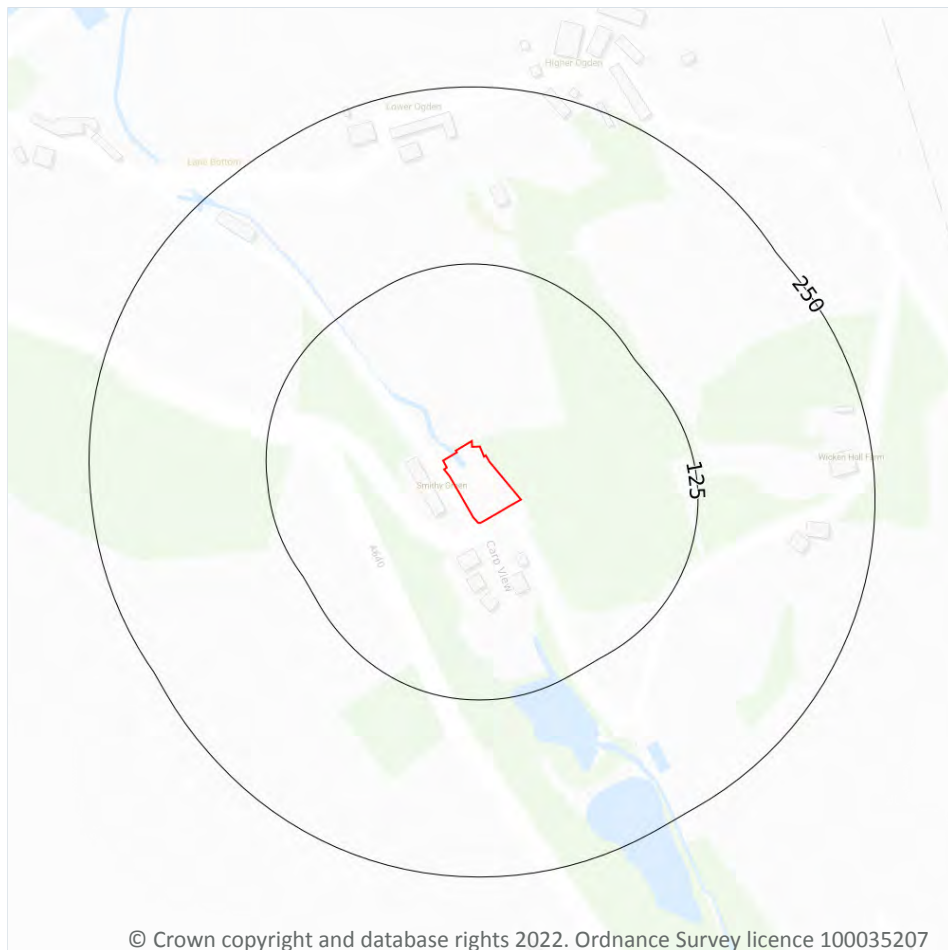
18.13 Clay mining

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



— Site Outline
Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

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 125**

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

7

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	200 - 300 mg/kg	120 - 240 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	30 - 45 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
10m NW	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
10m NE	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
17m SE	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
19m NW	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
46m W	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

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

21.1 Underground railways (London)

Records within 250m	0
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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
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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	0
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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.

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0
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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/>.



APPENDIX 6

BGS BOREHOLE LOGS, BGS MINERAL RESOURCES MAP FOR GREATER MANCHESTER AND GREATER MANCHESTER JOINT MINERALS PLAN MINERAL SAFEGUARDING MAP

SD 91 SE 12 & 13 6" map.
Lancashire 89 NE-W.

Ogden Colliery.

[Home Office Plan 2860].

Workings in the Bullion Coal. Also known as the Foot Coal. Above the Mountain Mine.

Worked by Messrs Taylor & Walmsley 1890-1892.

Dip of coal 1 in 6 due west.

Thickness of coal 10 inches. Overlain by black shale.

Area of coal worked out in 1890-1892 about 100 square yards. No faults occur.

Main adit levels shown on 6" field slips.

1. Adit to M.M. coal. Just south of last "L" in "Ogden Mill".

2. Adit to Bullion coal. 40 yards due south of above.

3. Entrance of tunnel running SE into Littlefoot Coal.

115 yards SE of above at point $\uparrow$ B.M. 746.8 on map.

South Wicken Hall Colliery.

[Home Office Plan No 3317]

Three coals worked here by Mr. E. Schunck in 1893, 1894 and 1895.

Coal workings close by "H" in "Helpet Edge" on map.

No faults.

General dip of beds 1 in 5 - SSW. No faults.

Thicknesses of several coals:—

Mountain Mine or Garmister Coal	1'6"
Half Yard or Lower Foot Coal	1'1"
Yard Mine Coal	3'0"

Wicken Hall Colliery.

SD 91 SE / 15A

[Home Office Plan 2296].

Along the eastern slope of Helpet Edge the coal known by the several names "Little Mine", "Lower Foot", or "Half Yard" has been worked in 1889 along the crop. The coal is 11 inches thick and lies 48 feet below the Mountain Mine Coal.

955 116.

These workings lie 350 yards south of the Chimney of Wicken Hall Print Works, mainly near the crop.

Helpet Edge Colliery, Butterworth.

[Home Office Plan No. 2542].

Workings by Mr. James Beach in the Little Foot or Half Yard Coal, along the southern edge of field slope 89 NE. W.

The general succession given on the plan is:-

5. Half Yard Mine Coal	12" (0.30m)
4. Black shale	-
3. Grey lugs	-
2. Black shale	-
1. Yard Mine Coal	26" (0.66m)

Wicken Hall Colliery.

SD 91 SE / 15B

Workings in Little Mine coal [above the Mountain Mine Coal] by Mr. Edward Schminck of Wicken Hall, in 1896. Two dayeyes into coal opposite woods "old Quarry" near Lane Bottom. 6" map 89 NE. W. 35 yards apart. Coal worked for 200 yards into the hill from the more southern one. Dip of workings 1 in 6 due west.

No faults.

Section:-

61
229
149
8

3. Very soft shale	12'0"
2. Little Mine Coal	11"
1. Fireclay	18'0"

GREATER MANCHESTER

(comprising the Cities of Manchester and Salford and the Metropolitan Boroughs of Bolton, Bury, Oldham, Rochdale, Stockport, Tameside, Trafford and Wigan)

Mineral Resource Information in Support of National, Regional and Local Planning

Mineral Resources

Scale 1:100 000

Compiled by D.J. Minchin, D.G. Cameron, D.J. Evans, G.K. Lott, S.F. Hobbs and D.E. Highley.
Project Leader: D.E. Highley.
Digital cartography by N.A. Spencer, British Geological Survey.
Published 2006.

This map comprises part of a summary of the Mineral Resources of the North-West England Region.
For more information see www.mineralsUK.com

BIBLIOGRAPHIC REFERENCE

Minchin D. J. and 5 others. 2006. Mineral Resource Information for National, Regional and Local Planning: Greater Manchester (comprising the Cities of Manchester and Salford and Metropolitan Boroughs of Bolton, Bury, Oldham, Rochdale, Stockport, Tameside, Trafford and Wigan). British Geological Survey Commissioned Report CR06/0162N.

Production of this map was commissioned and funded by the Office of the Deputy Prime Minister (Contract MP0677).

SAND & GRAVEL

Superficial deposits

Sub-alluvial: Inferred resources

River Terrace deposits

Glaciofluvial deposits

PEAT

SANDSTONE

Carboniferous: Millstone Grit and Pennine Coal Measures

Carboniferous: Pennine Coal Measures

Brick clay and fireclay coincident with coal bearing strata - Shallow Coal

Area of shallow coal

Opencast coal: worked area

MINERAL PLANNING PERMISSION (as at 01.01.06)

Source: Mineral Planning Authorities

Surface planning permission (valid and expired)

Underground planning permission other than coal (valid and expired)

MINERAL WORKINGS

Harwood Active site

Inactive (including yet to be worked), worked-out and/or restored site

Mineral commodity

Cl Clay & Shale

CR Crushed Rock

Fr Fireclay

Gas Natural Gas

Min Mineral, unspecified

Active rail aggregate depot

ENVIRONMENTAL DESIGNATIONS (as at 06/07/05)

National nature conservation designations (SSSIs and NNRs)

International nature conservation designations (SCAPs, SACs and Ramsar sites)

National Park: Peak District (part)

Scheduled Monument

ADMINISTRATIVE AREAS

Mineral Planning Authority (National Parks are also MPAs)

Aims and Intentions

The purpose of the maps in this series is to show the broad distribution of those mineral resources which may be of current or potential economic interest and to relate these to selected nationally-recognised planning designations. The maps are intended to assist in the consideration and preparation of development plan policies in respect of mineral extraction and the protection of important mineral resources against destruction. For further information the relevant body should be contacted.

The maps have been produced by the collation and interpretation of mineral resource data principally held by the British Geological Survey. Information on the extent of mineral planning permissions has been obtained from the relevant Mineral Planning Authority (MPA). Some of these permissions may have lapsed or expired. The status of individual areas can be ascertained from the appropriate MPA. Location information on national planning designations has been obtained from the appropriate statutory body (Countrywide Agency, English Nature and English Heritage). For further information the relevant body should be contacted.

The mineral resource data presented are based on the best available information, but are not comprehensive and their quality is variable. The inferred boundaries are, therefore, approximate. Mineral resources defined on the map delineate areas within which potentially workable minerals may occur. These areas are not of uniform potential and also take no account of planning constraints that may limit their working. The economic potential of specific sites can only be proved by a detailed evaluation programme. Such an investigation is an essential prerequisite to submitting a planning application for mineral working. Extensive areas are shown having no mineral resource potential, but some isolated mineral resources may occur in these areas. The presence of these operations generally reflect very local or specific situations.

The maps are intended for general consideration of mineral issues and not as a source of detailed information on specific sites. The maps should not be used to determine individual planning applications or in taking other decisions on the acquisition or use of a particular piece of land, although they may give useful background information which sets a specific proposal within context.

BRICK CLAY (including FIRECLAY)

Brick clay is the term used to describe 'clay and shale' used in the manufacture of structural clay products, such as facing and engineering bricks, paving, clay tiles and vitrified clay bricks. These clays may also be used in cement manufacture, as a source of constructional fill and for lining and sealing landfill sites. Brick manufacture is the largest tonnage use in England. Clay bricks are versatile construction materials and one of the most visible components of the built environment. They make an important contribution to local architectural styles.

Brick clays are essentially mudstones of different geological ages and compositions. Their mineralogy, chemistry and physical properties are critical to determining their suitability for the manufacture of structural clay products. These properties affect the forming behaviour of the clay (the process of shaping the ware) and also its behaviour during drying and firing. They will also determine the technical properties of the final product, such as strength, water absorption (porosity) and frost resistance, and thus its durability and performance in service and, importantly, its architectural appearance, such as colour and texture. Most facing bricks, engineering bricks and vitrified clay-based building products are manufactured in large automated factories. These represent a high capital investment and are therefore increasingly dependent on raw material with predictable and consistent firing characteristics in order to achieve high yields of saleable products. Blending different clay types to achieve improved durability and to provide a range of final colours and textures is an increasingly common feature of the brick industry. Continuity of supply of consistent raw materials is of paramount importance.

In Manchester, brick clay has been produced for local consumption from small brick pits for over two hundred years. Historically, a variety of clays were extracted for 'brownstone' brick making, including local clay, Triassic Meria Mudstone and mudstones from the Pennine Lower and Middle Coal Measures. Freely, the fire-grained sandstones that commonly underlie coal seams, were mined alongside coal in opencast and deep mines for use in pipe making. With the demise of the 'common' brick and consolidation of the brick industry, most of these clay quarries closed. Today, one active clay quarry remains at Harwood, northwest of Bolton, working the Pennine Lower Coal Measures. This quarry produces high quality brick clay for use in facing, engineering and paving bricks but has no associated brownstone. The clay is delivered to a brickworks at Denton, in Tameside, which has no associated quarry and sources clay from a variety of locations, mainly from a site in Glossop, approximately 13 km away in Derbyshire.

Pennine Coal Measures mudstones, which occur interbedded with siltstones, sandstone, coal seams and sandstones, are the principal brick clay resource in North West England. Resources occur across the north and west of the county but are currently only worked in Bolton. The clay mineralogy of Coal Measures mudstones is dominated by kaolinite and illite which tend to provide optimum firing characteristics. Carbon and sulphur contents are also critical to firing performance. Evacuable amounts of either may lead to firing problems and sulphur may also give unacceptable emission levels, although leaching of clays may reduce these problems. In general, carbon and sulphur contents should be less than 1.5 per cent and 0.2 per cent respectively. Both freestays and mudstones occur in association with opencast coal, with which they may be worked. However, this is only rarely the case because of the variable quality of the clay, particularly of the freestays, and due to operational and planning difficulties. Freestays have relatively low iron content compared to other brick clays and they are primarily valued for the manufacture of buff coloured bricks and pavers. There is no current freely extraction in the area.

PEAT

Peat is an unconsolidated deposit of compressed plant remains in a water-saturated environment such as a bog or fen. Bogs occur in areas where inputs of water (either exclusively from precipitation) have a low nutrient content and where the rainfall is sufficient to maintain the ground surface in a waterlogged condition. The vegetation is characterised by acid-tolerant plant communities in which the moss genus *Sphagnum* is dominant. The two main types of bog are (i) raised bogs, which consist of flat underlying topography and (ii) blanket bogs, which occur mainly in upland areas where conditions are suitable and cool and wet. Many raised raised bogs have been designated as sites of international and national conservation value. Peat is dug in England mainly from raised blanket bogs, almost entirely (98 per cent) for horticultural use, either as growing media or as a soil improver. Areas of upland blanket peat are not worked and therefore not shown.

Peat is being extracted from three sites on Chat Moss in the west and north west of the Wigan/Salford boundary. The peat deposits cover an area of 2847 ha, may be over 30 in thick on a flat underlying topography. Planning permission for peat extraction covers 302 ha, both in the Wigan and Salford districts. Smaller worked peat deposits such as Carrington Moss and Ashton Moss cover approximately two square kilometres each, but are not worked.

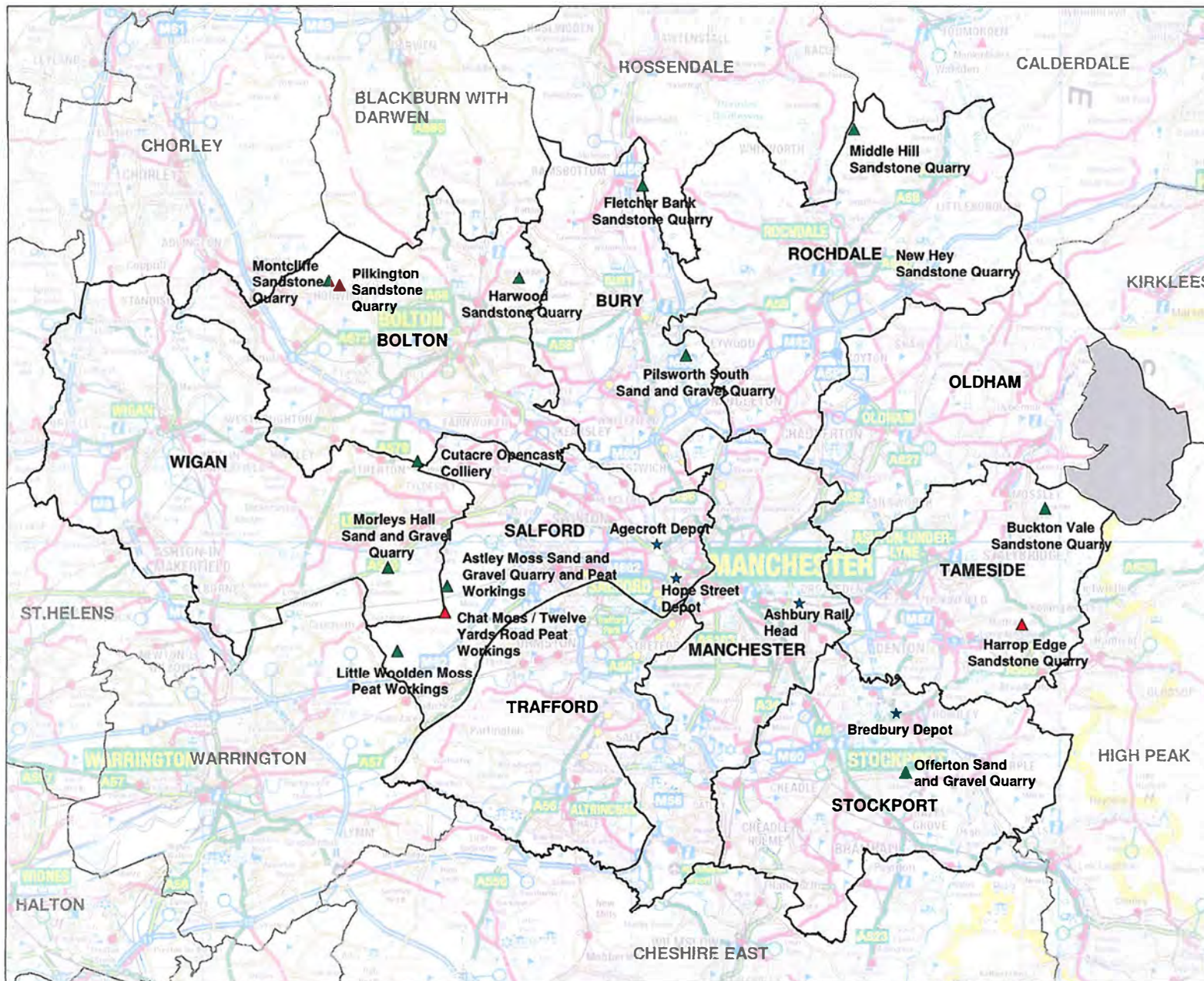
Many of the peat deposits have been worked extensively in the past and today a large percentage of these areas have been 'reclaimed' to agricultural land. Due to the unavailability of up to date borehole drilling and other information of the reclamation, the entire resource as mapped is shown on the face of the map.

COAL

The area lies predominantly within the South Lancashire Coalfield. The coal-bearing strata of the Pennine Lower and Middle Coal Measures (Upper Carboniferous) generally dip to the southwest and west. The South Lancashire Coalfield crops out across an area of approximately 970 km², stretching from Rochdale in the east to St Helens in the west. A spur runs southwards from Rochdale to just south of Stockport. In the east and north, older Permian strata are present at outcrop and to the west and south, Permian-Triassic strata unconformably overlie the Coal Measures. To the south, the coalfield deepens significantly to greater than 3000 m below Ordinance Datum beneath Permian-Triassic strata and passes into the Cheshire Basin. A substantial portion of the coalfield is covered by urban development.

Coal seams are numerous with in excess of 36 named coal seams, which vary laterally in both thickness and composition, chiefly by variation in the number of the partings present within the seam. Coals are mainly present within the Pennine Lower and Middle Coal Measures, with a few outliers in the lower part of the Pennine Upper Coal Measures. The main coal-bearing interval typically varies from about 590 m in the west to 880 m in the east. The lower part of the Pennine Lower Coal Measures, below the *Alder* seam, typically contains coals that are thin and of variable quality. The rest of the Pennine Lower and Middle Coal Measures form the most important coal-bearing interval, with a number of coals in excess of 2 m in thickness. Coals from the Pennine Upper Coal Measures are generally thin, the exception being the Worsley Four Foot, which can be up to 1.6 m in thickness. Coal veins range from high to medium coals.

There are no operating deep mines in the area, the last, *Palslade*, was closed in 1993. Any future commercial interest in coal extraction is likely to be confined to coal that can be recovered by surface mining. Historic opencast mining has occurred in the Worsley Coalfield, which has been mined for seven centuries, and across the north of the area. Opencast mining in the coal field was limited by the deeper dip of the strata in this area. Recent, small-scale opencast production has been confined to the Wigan Coalfield, but there has been no production since 2000. Although there is potential for further opencast mining this is reduced by a number of factors. Firstly the basal part of the Pennine Lower Coal Measures does not contain many thick seams. Hence areas on the northern and eastern flank of the coalfield are probably not economically viable. Secondly there are thick drift deposits up to 50 m in place across the coalfield and, thirdly, much of the area is devoted by urban development. Areas of shallow coal resources and former opencast worked areas are shown on the map.

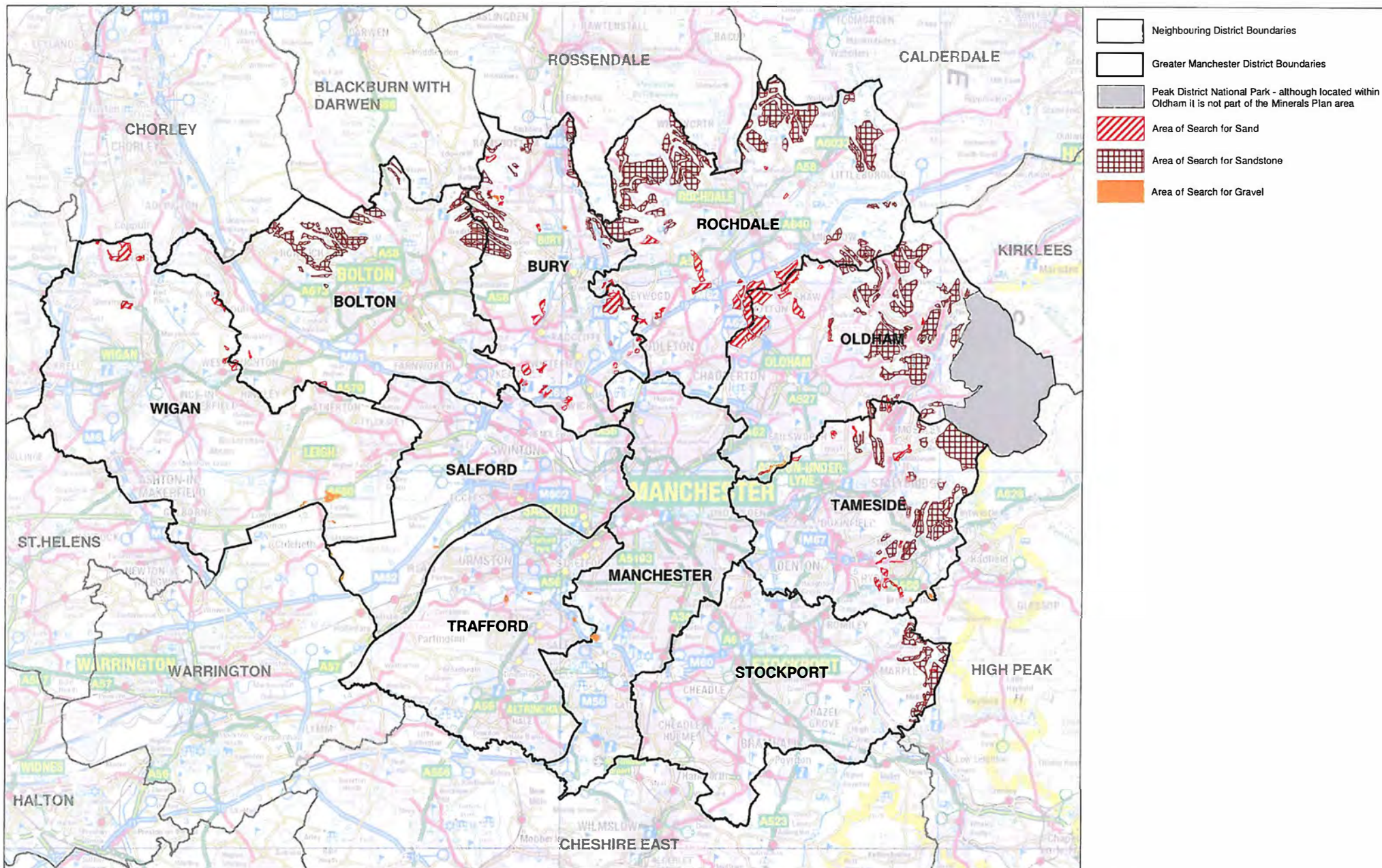


- Greater Manchester Districts
- Neighbouring District Boundaries
- Peak District National Park - although located within Oldham it is not part of the Minerals Plan area
- ▲ Inactive Mineral Extraction Sites
- ▲ Active Mineral Extraction Sites
- ★ Rail Depots

Inactive sites are those which have not been worked at any point within the previous year. In this case January - December 2010.

The following quarries have been identified by the English Heritage BGS Strategic Stone Study (SSS) as being important for maintaining and repairing historic buildings:

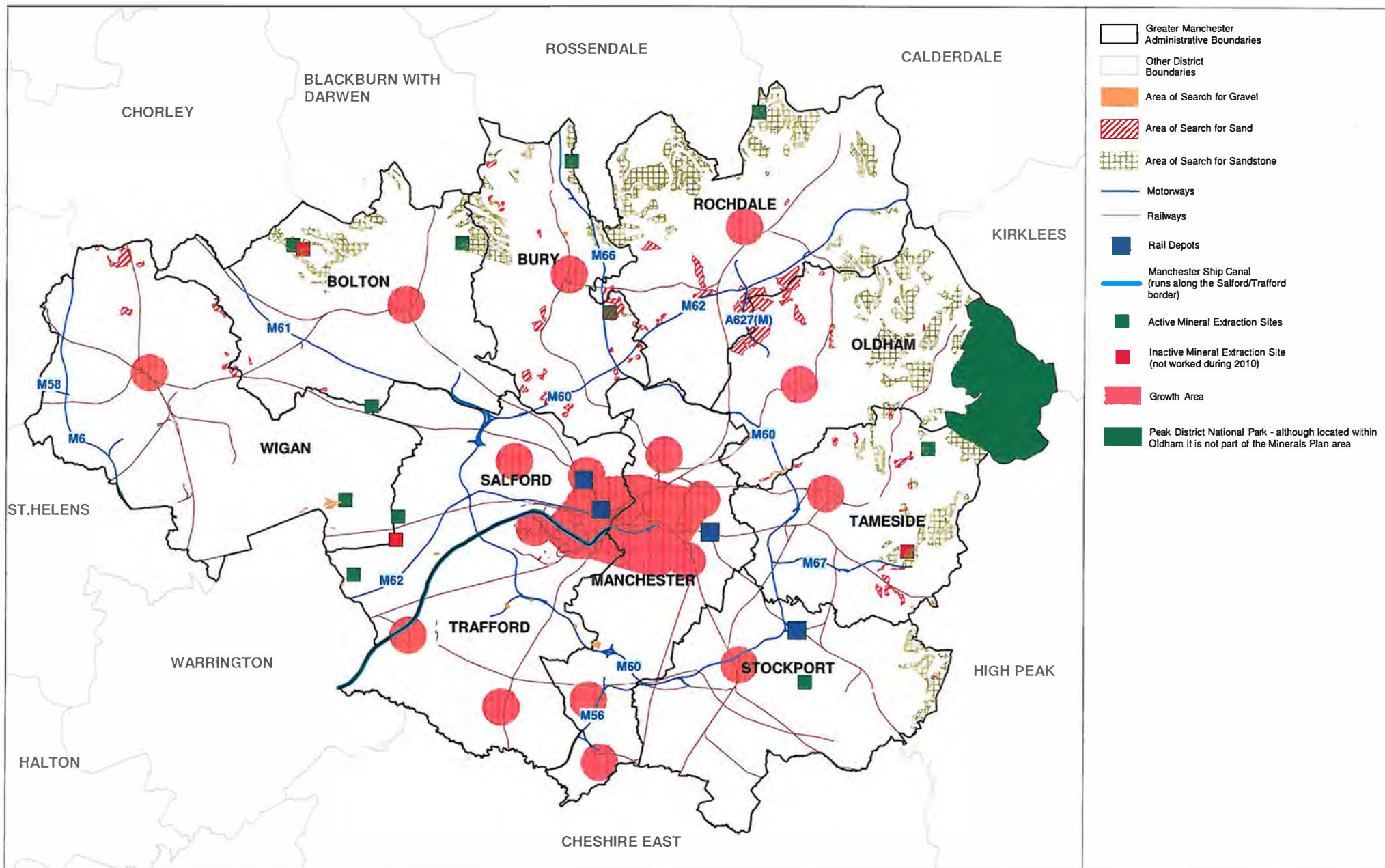
Buckton Vale
Harwood Quarry
Fletcher Bank Quarry
Middle Hill Quarry
Montcliffe Quarry



Map 2 - Areas of Search for Minerals in Greater Manchester

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Scale @ A3
1cm = 1.85km

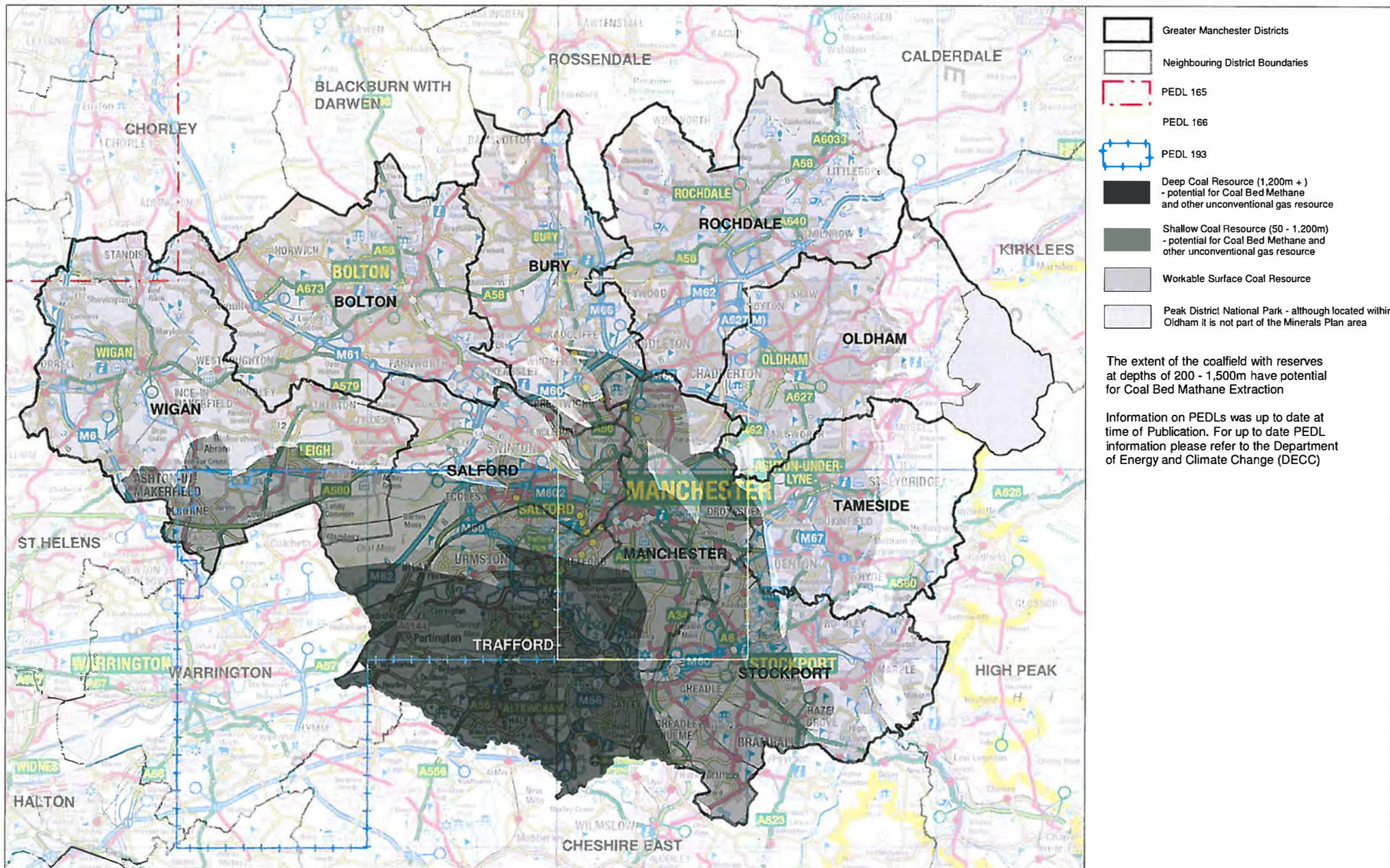


- Greater Manchester Administrative Boundaries
- Other District Boundaries
- Area of Search for Gravel
- Area of Search for Sand
- Area of Search for Sandstone
- Motorways
- Railways
- Rail Depots
- Manchester Ship Canal (runs along the Salford/Trafford border)
- Active Mineral Extraction Sites
- Inactive Mineral Extraction Site (not worked during 2010)
- Growth Area
- Peak District National Park - although located within Oldham it is not part of the Minerals Plan area

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Scale @ A3
 1cm = 1.85km

Map 2a - Greater Manchester Spatial Distribution of Mineral Sites and Rail Depots with Key Locational Criteria

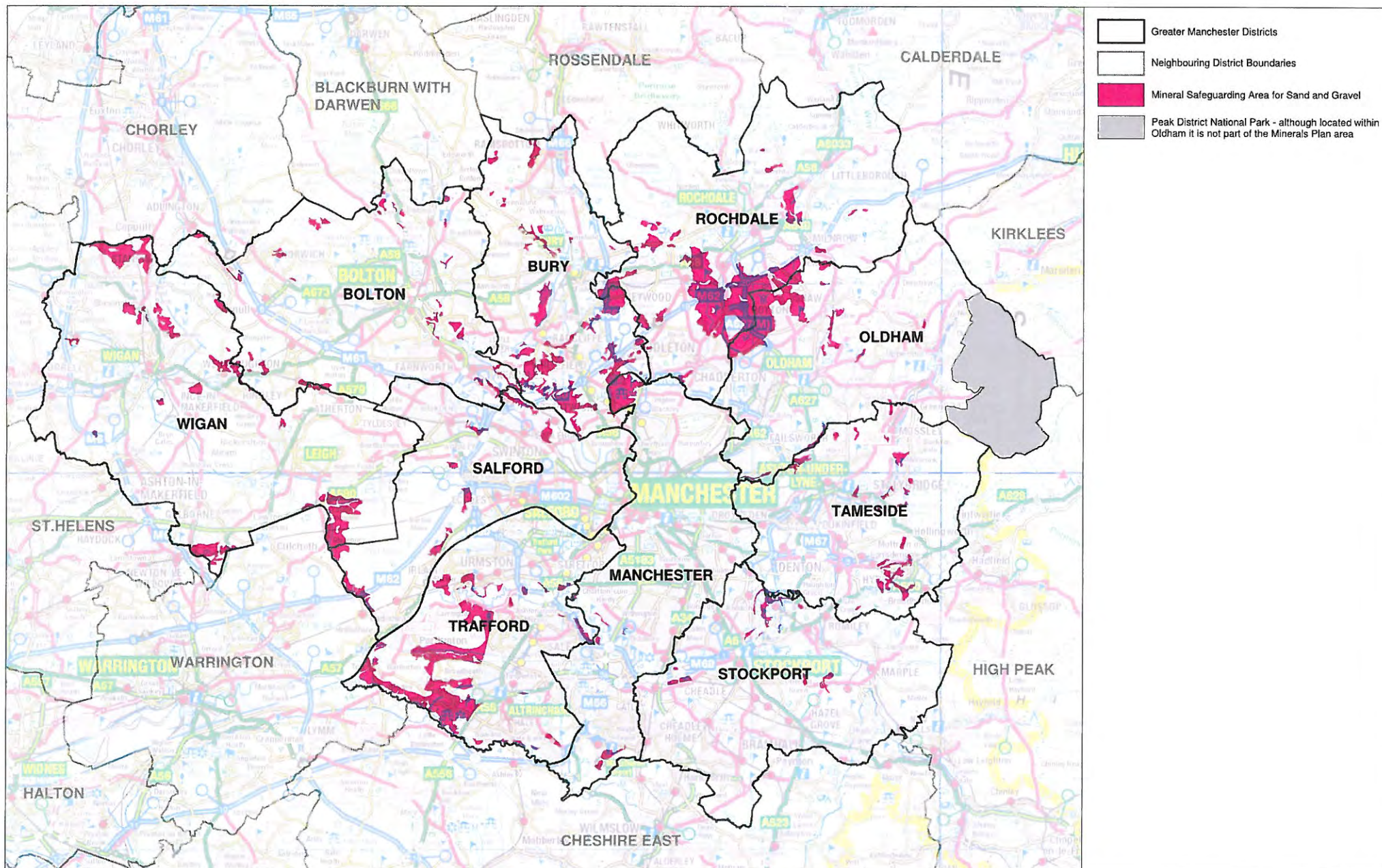


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Scale @ A3
1cm = 1.85km

Map 3 - Coal Resource and Petroleum Exploration Development Licenses (PEDLs) in Greater Manchester

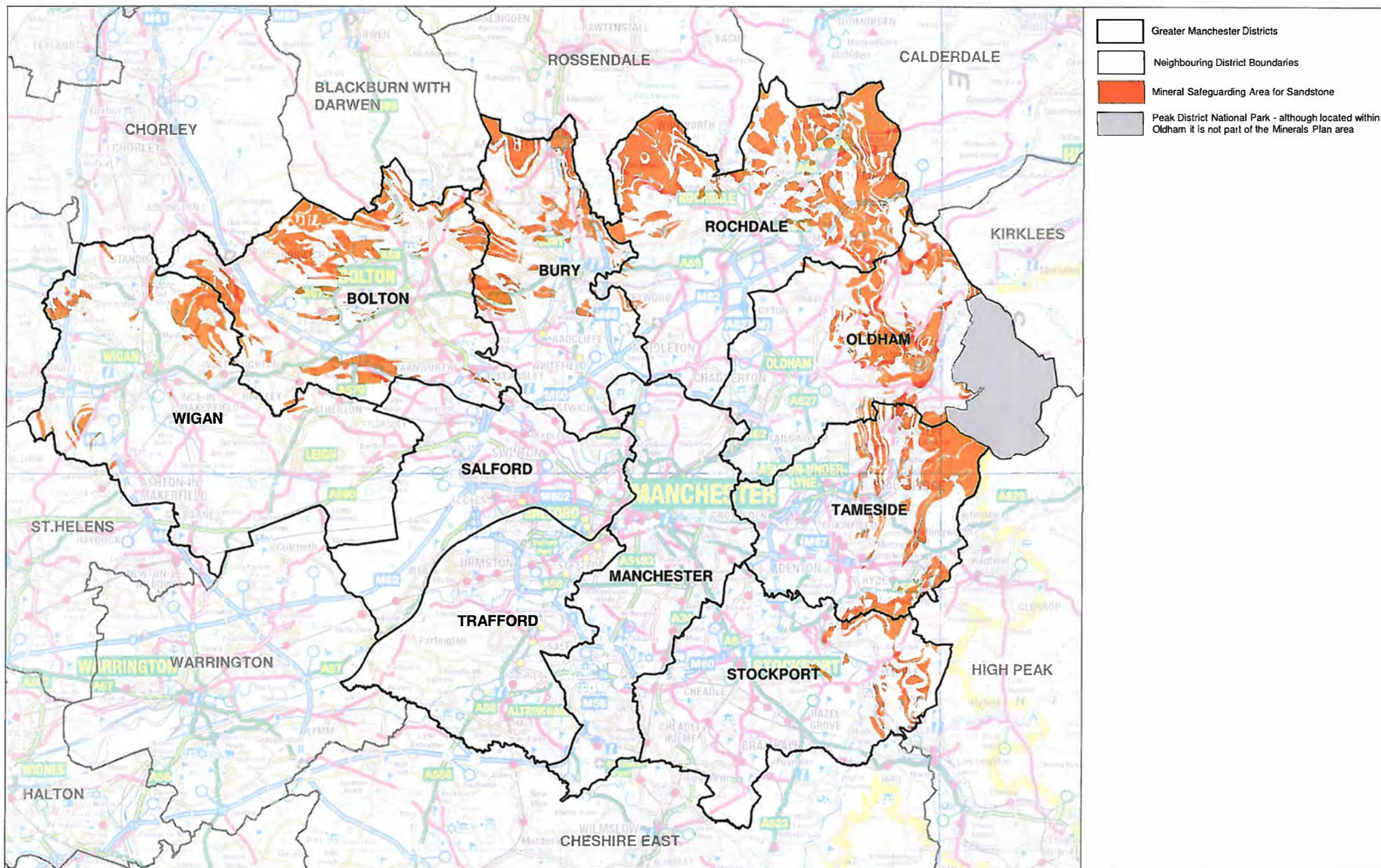


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Scale @ A3
 1cm = 1.85km

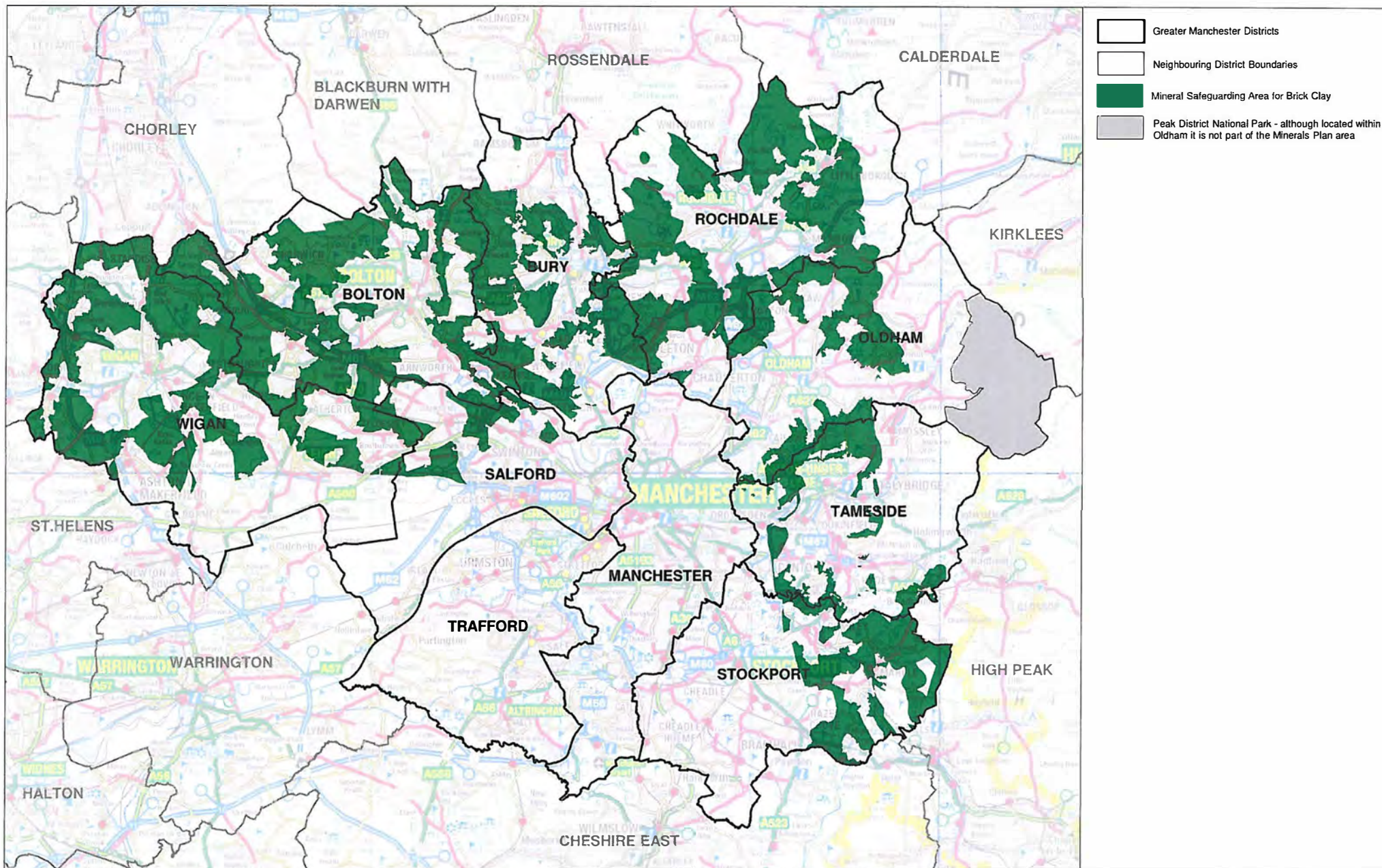
**Map 4 - Mineral Safeguarding
 Area for Glaciofluvial Sand
 and Gravel**



Map 5 - Mineral Safeguarding Area for Sandstone

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Scale @ A3
1cm = 1.85km

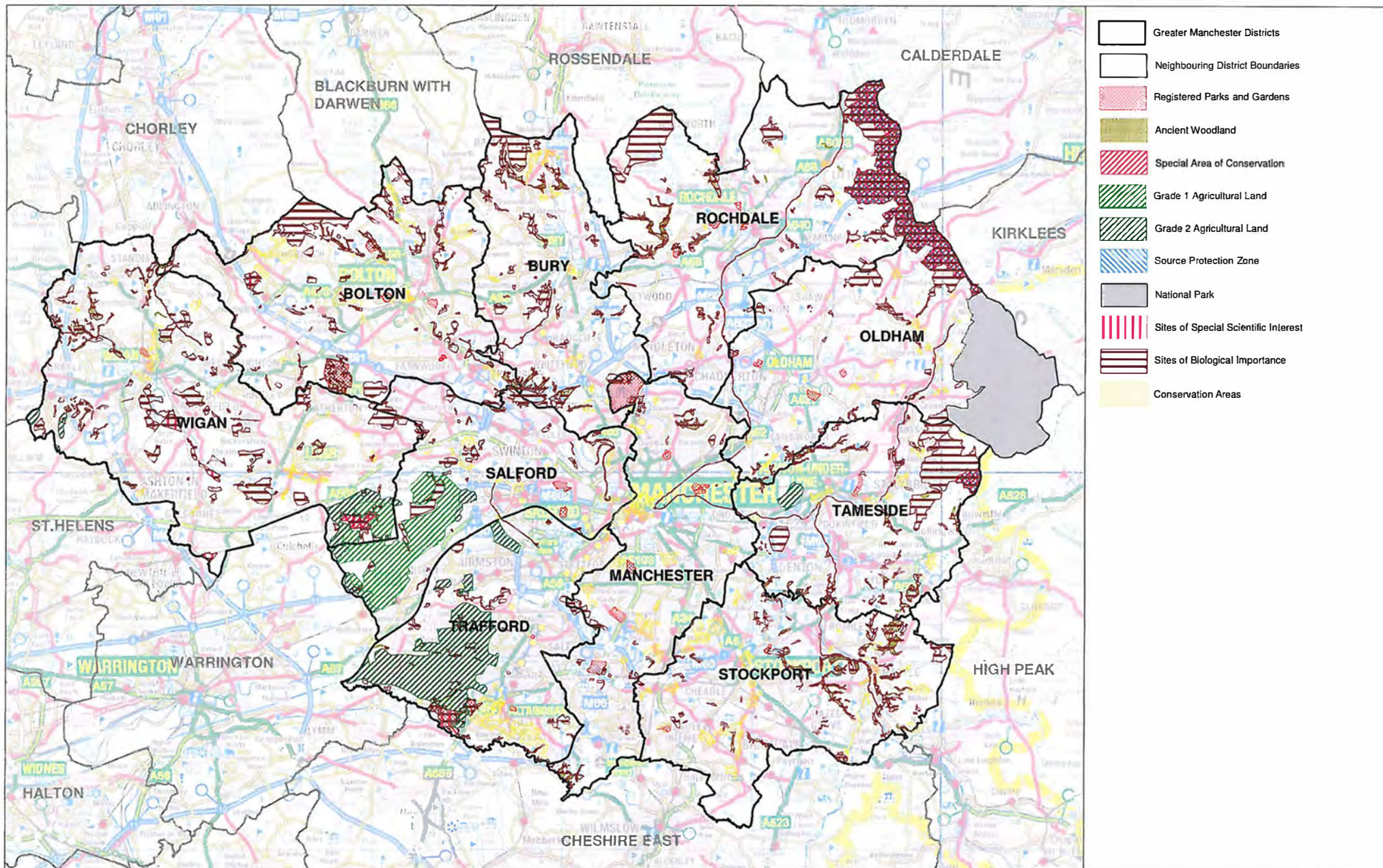


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Scale @ A3
 1cm = 1.85km

Map 6 - Mineral Safeguarding
 Area for Brick Clay

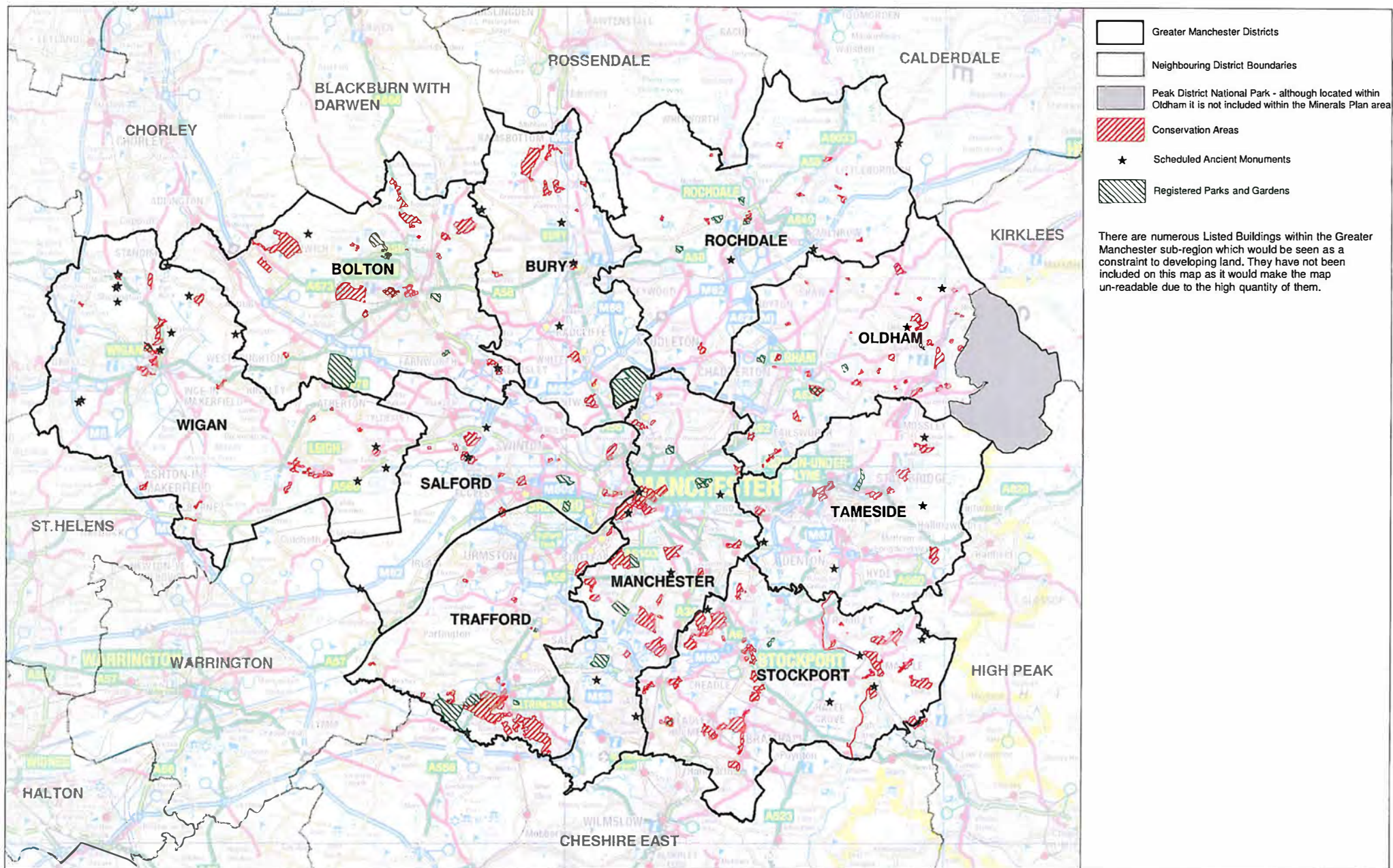


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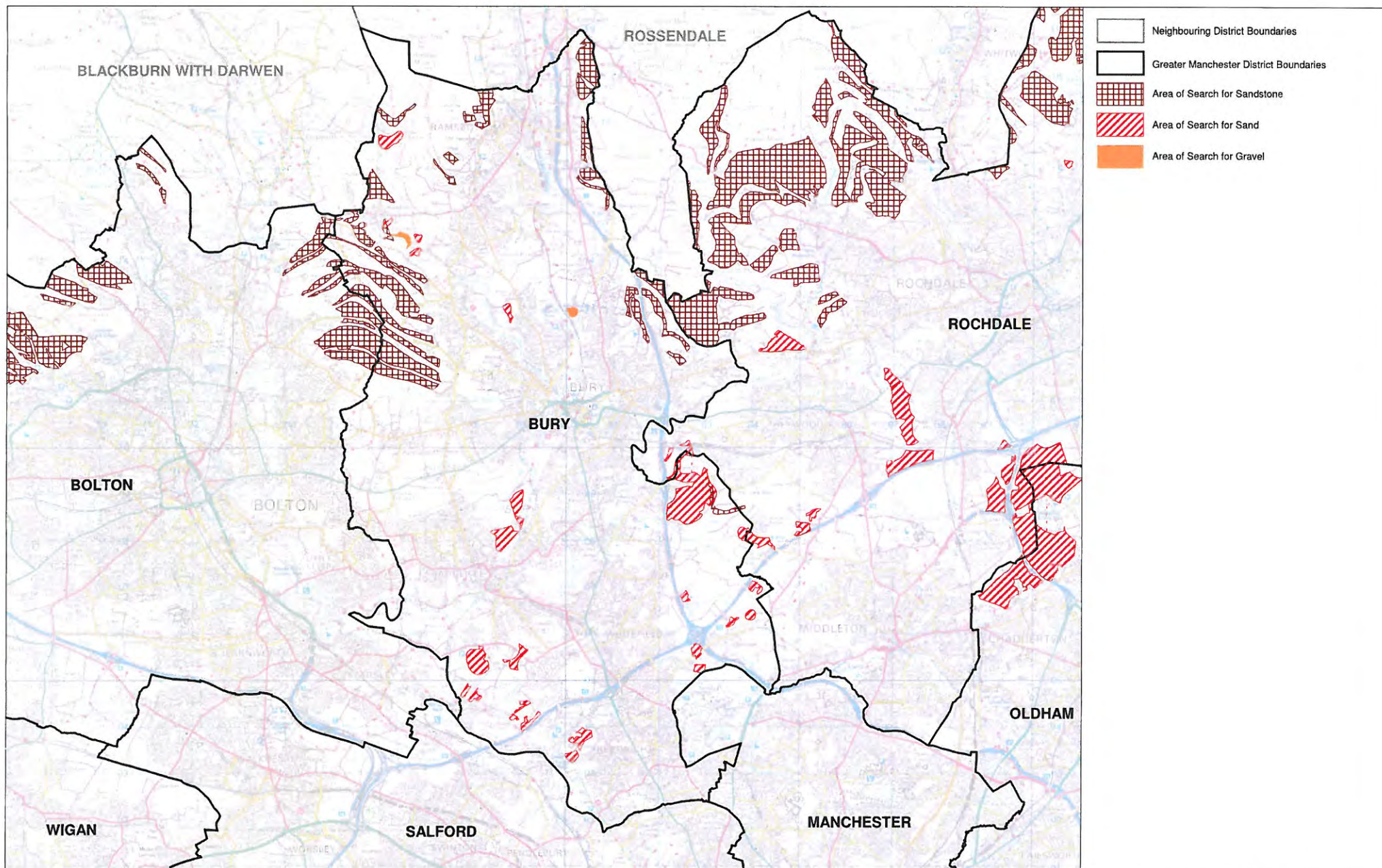
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Scale @ A3
1cm = 1.85km

**Map 8 - Environmental
Designations within Greater
Manchester**



There are numerous Listed Buildings within the Greater Manchester sub-region which would be seen as a constraint to developing land. They have not been included on this map as it would make the map un-readable due to the high quantity of them.



Map 11 Areas of Search for Aggregates in Bury

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Scale @ A3
1cm = 0.75km

APPENDIX 7
ZETICA UXO RISK MAP

UNEXPLODED BOMB RISK MAP



SITE LOCATION

Map Centre: 395454,411793



LEGEND

- High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- Low:** Areas indicated as having 15 bombs per 1000acre or less.

- military**
- industry**
- UXO find**
- transport**
- dock**
- Luftwaffe targets**
- utilities**
- Bombing decoy**
- other**

How to use your Unexploded Bomb (UXB) risk map?

The map indicates the potential for Unexploded Bombs (UXB) to be present as a result of World War Two (WWII) bombing.

You can incorporate the map into your preliminary risk assessment* for potential Unexploded Ordnance (UXO) for a site. Using this map, you can make an informed decision as to whether more in-depth detailed risk assessment* is necessary.

What do I do if my site is in a moderate or high risk area?

Generally, we recommend that a detailed UXO desk study and risk assessment is undertaken for sites in a moderate or high UXB risk area.

Similarly, if your site is near to a designated Luftwaffe target or bombing decoy then additional detailed research is recommended.

More often than not, this further detailed research will conclude that the potential for a significant UXO hazard to be present on your site is actually low.

Never plan site work or undertake a risk assessment using these maps alone. More detail is required, particularly where there may be a source of UXO from other military operations which are not reflected on these maps.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirms that there is a low potential for UXO to be present on your site then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

A low risk really means that there is no greater probability of encountering UXO than anywhere else in the UK.

If you are unsure whether other sources of UXO may be present, you can ask for one of our **pre-desk study assessments (PDSA)**

If I have any questions, who do I contact?

tel: **+44 (0) 1993 886682**

email: **uxo@zetica.com**

web: **www.zeticauxo.com**

The information in this UXB risk map is derived from a number of sources and should be used in conjunction with the accompanying notes on our website: (<https://zeticauxo.com/downloads-and-resources/risk-maps/>)

Zetica cannot guarantee the accuracy or completeness of the information or data used and cannot accept any liability for any use of the maps. These maps can be used as part of a technical report or similar publication, subject to acknowledgment. The copyright remains with Zetica Ltd.

It is important to note that this map is not a UXO risk assessment and should not be reported as such when reproduced.

*Preliminary and detailed UXO risk assessments are advocated as good practice by industry guidance such as CIRIA C681 'Unexploded Ordnance (UXO), a guide for the construction industry'.

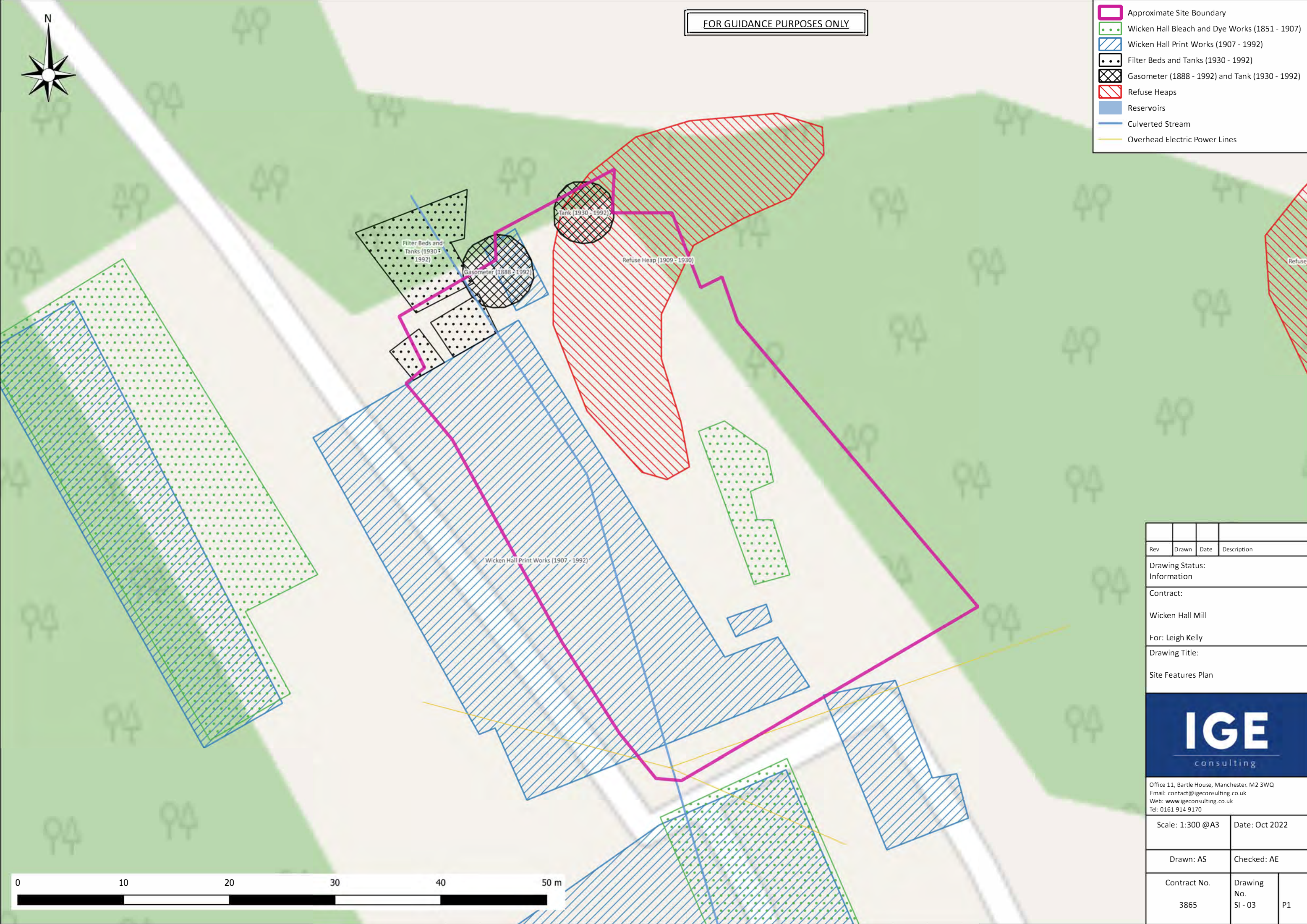
APPENDIX 8

SITE FEATURES PLAN



FOR GUIDANCE PURPOSES ONLY

- Approximate Site Boundary
- Wicken Hall Bleach and Dye Works (1851 - 1907)
- Wicken Hall Print Works (1907 - 1992)
- Filter Beds and Tanks (1930 - 1992)
- Gasometer (1888 - 1992) and Tank (1930 - 1992)
- Refuse Heaps
- Reservoirs
- Culverted Stream
- Overhead Electric Power Lines



Rev	Drawn	Date	Description
Drawing Status: Information			
Contract: Wicken Hall Mill			
For: Leigh Kelly			
Drawing Title: Site Features Plan			
IGE consulting Office 11, Bartle House, Manchester, M2 3WQ Email: contact@igeconsulting.co.uk Web: www.igeconsulting.co.uk Tel: 0161 914 9170			
Scale: 1:300 @A3		Date: Oct 2022	
Drawn: AS		Checked: AE	
Contract No. 3865		Drawing No. SI - 03	P1

APPENDIX 9

CONCEPTUAL SITE MODEL DIAGRAM

- Notes
- 1

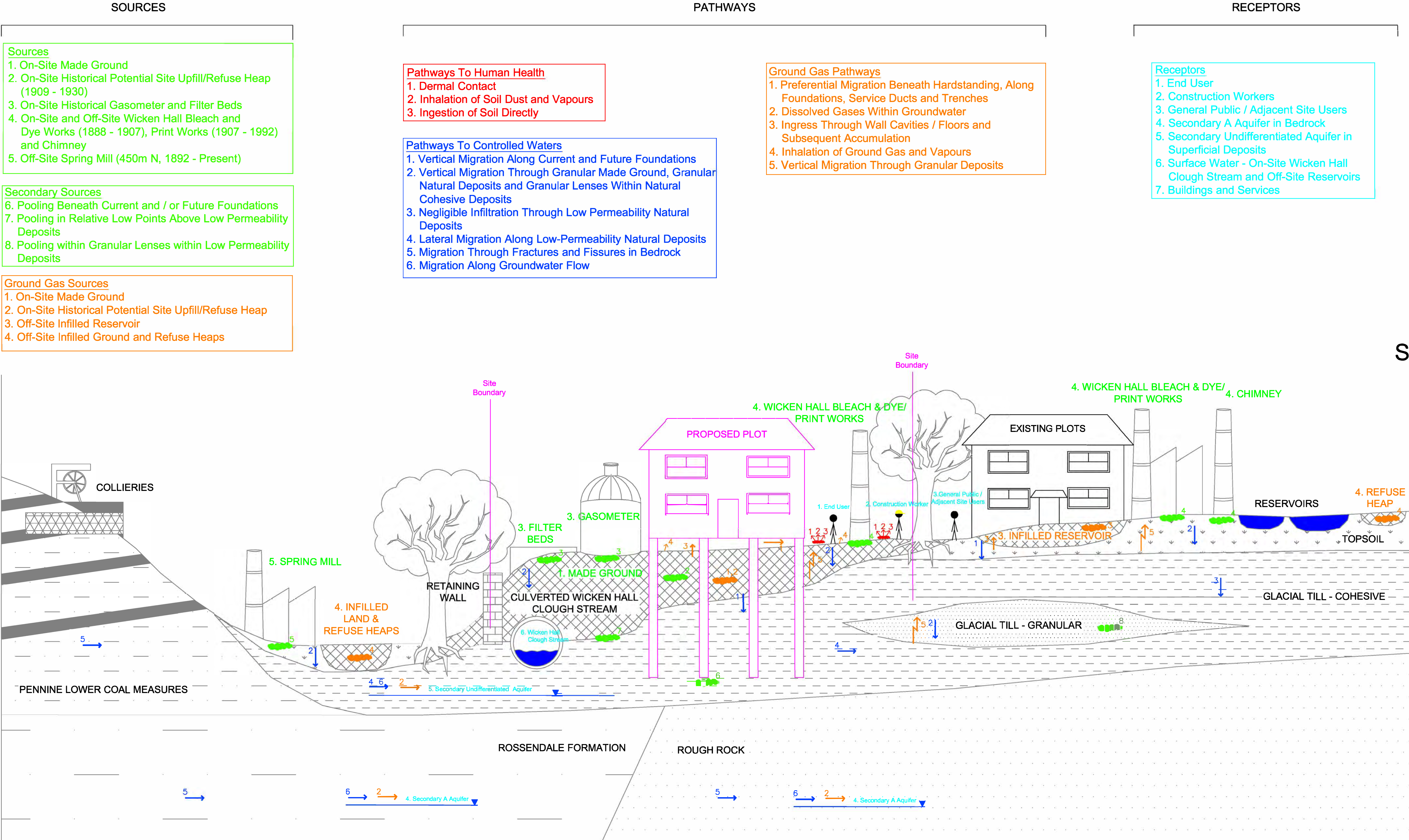
This drawings is indicative and not to scale.
- 2

This drawing is to be read in conjunction with all relevant Architects and Service Engineers drawings.

Key

- Topsoil
- Made Ground
- Glacial Till – Clay
- Glacial Till – Granular Pockets
- Pennine Lower Coal Measures
- Rough Rock
- Rossendale Formation

SE



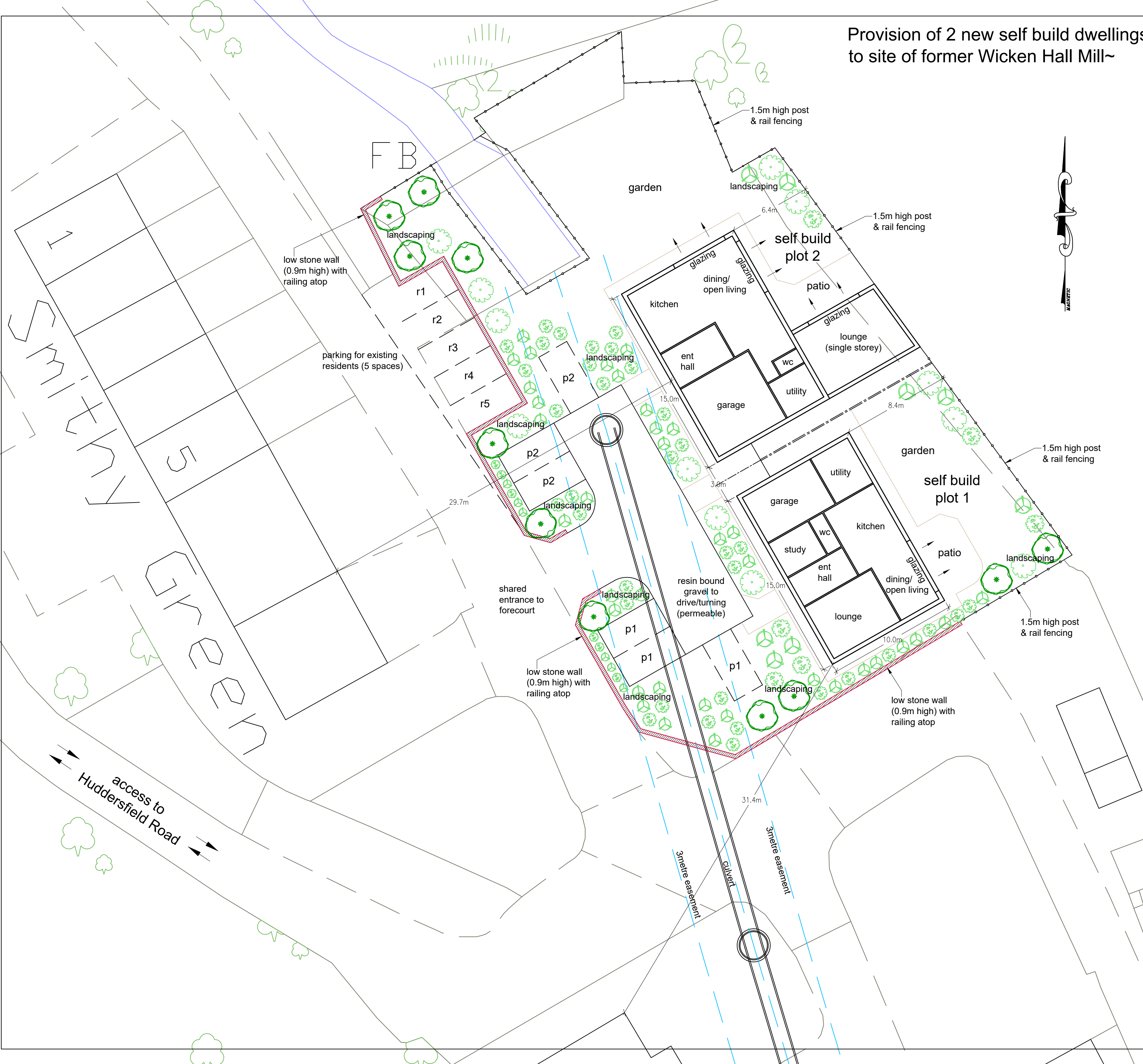
Rev	Drawn	Date	Description
Drawing Status			
INFORMATION			
Contract			
WICKEN HALL MILL			
FOR: LEIGH KELLY			
Drawing Title			
CONCEPTUAL SITE MODEL			
IGE consulting			
Office 16, Bartle House, Manchester, M2 3WQ email: contact@igiconsulting.co.uk web: www.igiconsulting.co.uk tel: 0161 914 9170			
Scale		Date	
NTS		OCT 2022	
Drawn		Checked	
AS		AE	
Contract No.		Drawing No.	
3865		SI-04 P1	

APPENDIX 10
PROPOSED SITE DEVELOPMENT PLAN

Provision of 2 new self build dwellings
to site of former Wicken Hall Mill~

DESIGN PRINCIPLES;

- Development and remediation of previously developed land (former Wicken Hall Mill).
- Access via existing Road (to Huddersfield Road A640).
- Low height dwellings (two storey) arranged in linear pattern along existing road, and replicating terraced blocks to Smithy Green.
- Use of traditional stone and slate materials.
- Landscape planting to boundaries and frontage with native tree species.



Amendments

Title
PROVISION OF 2 NEW SELF BUILD DWELLINGS TO
PREVIOUSLY DEVELOPED LAND AT SITE OF FORMER
WICKEN HALL MILL, OGDEN LANE, MILNROW~

Client
MR DEGSI

Dwg. No.
22/1281/701 - PROPOSED SITE FEASIBILITY LAYOUT

Date	Plot Scale	Drawn by	Status
05.05.2022	A2@1:200	JPE	ISSUE

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