Appendix B2
Geo Insight Report

emapsite

Building A2 (Office 1052) Cody Technology Park, Old Ively Road,
Farnborough, GU14 0LX

Report Reference: EMS-546959_736029

Your Reference: EMS_546959_736029

Report Date 3 Jun 2019

Report Delivery Method: Email - pdf

Geo Insight

Address: South Tees Development,

Dear Sir/ Madam,

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

If you would like further assistance regarding this report then please contact the emapsite customer services team on 0118 9736883 quoting the above report reference number.

Yours faithfully,

emapsite customer services team

Enc.
Groundsure Geo Insight

Geo Insight

Address:	**South Tees Development,**
Date:	**3 Jun 2019**
Reference:	**EMS-546959_736029**
Client:	**emapsite**

NW N NE

W E

SW S SE

Aerial Photograph Capture date:	06-May-2016
Grid Reference:	454663,521385
Site Size:	55.1282ha

Contents Page

Overview of Findings

The Groundsure Geo Insight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 and 1:10,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Non-coal mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

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

Section 1: Geology 1:10,000 Scale		
1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	Yes
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	Yes
	1.2.2 Are there any records of landslip within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	No

Section 2: Geology 1:50,000 Scale		
2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	Yes
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	Yes
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	Yes
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	Yes
	2.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features	2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	2.3.2 Are there any records relating to permeability of bedrock ground within the study site boundary?	Yes
	2.3.3 Are there any records of linear features within 500m of the study site boundary?	No

Section 3: Radon

3. Radon	3.1Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
	3.2Radon Protection	No radon protective measures are necessary.

Section 4: Ground Workings	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	27	21	69	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	5
4.3 Current Ground Workings	0	1	1	2	3

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	5
5.2 Coal Mining	0	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	1	0	1	1	1
5.5 Non–Coal Mining Cavities	1	0	1	1	2
5.5 Natural Cavities	0	0	0	0	0

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0

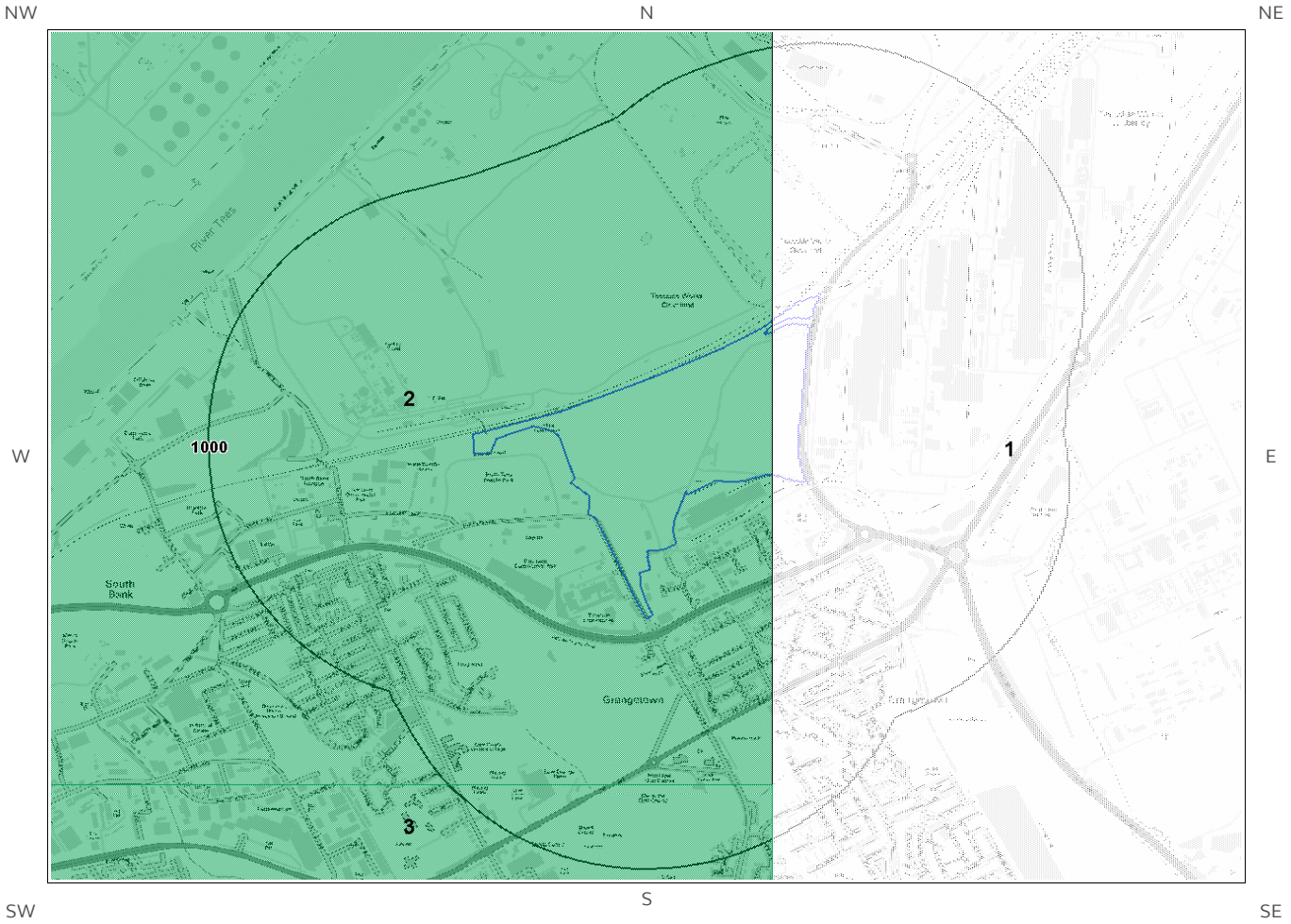
Section 6: Natural Ground Subsidence	On-site
6.1 Shrink-Swell Clay	Low
6.2 Landslides	Very Low
6.3 Ground Dissolution of Soluble Rocks	Negligible
6.4 Compressible Deposits	Moderate
6.5 Collapsible Deposits	Very Low
6.5 Running Sand	Very Low

Section 7: Borehole Records	On-site	0-50m	51-250
7 BGS Recorded Boreholes	9	7	57

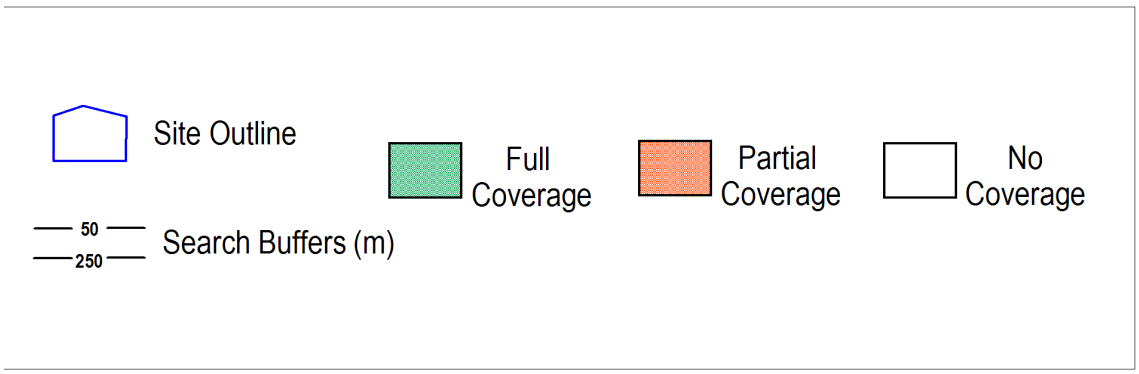
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250
8 Records of Background Soil Chemistry	22	3	0

Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500
9.1 Tunnels	0	2	0	Not Searched
9.2 Historical Railway and Tunnel Features	154	51	122	Not Searched
9.3 Historical Railways	22	6	0	Not Searched
9.4 Active Railways	24	46	62	Not Searched
9.5 Railway Projects	0	0	0	0

1:10,000 Scale Availability



1_10,000 Availability Legend



Availability of 1:10,000 Scale Geology Mapping

The following information represents the availability of the key components of the 1:10,000 scale geological data.

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	No deposits are mapped	No coverage	No coverage	No coverage
2	0.0	Some deposits are mapped	Full	Full	No coverage
3	662.0	Some deposits are mapped	Full	Full	No coverage

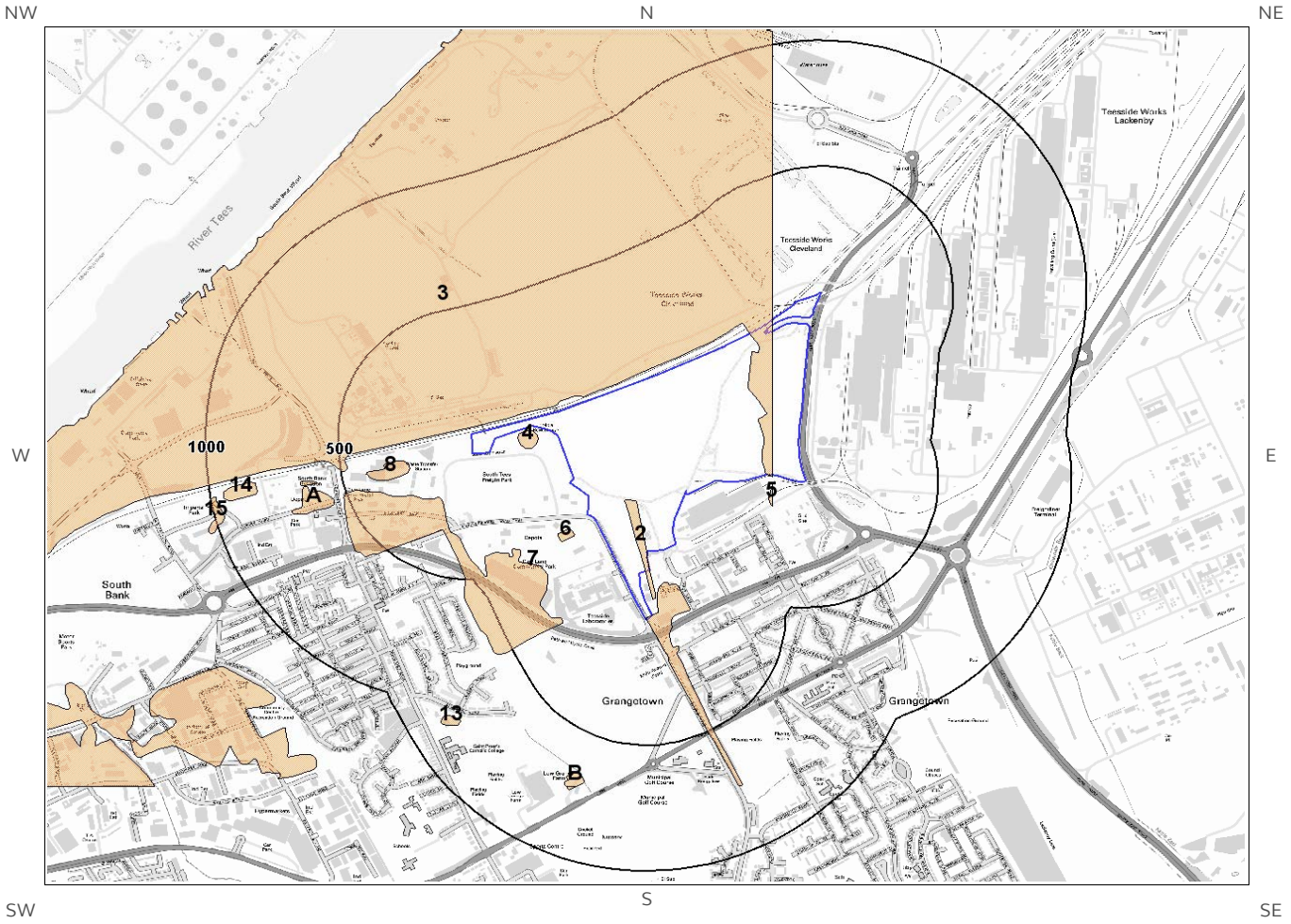
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not all themes are mapped or available on every map sheet. Therefore a coverage layer showing the availability of the four themes is presented above.

The definitions of coverage are as follows:

Geology	Full Coverage	Partial Coverage	No Coverage
Bedrock	The whole tile has been mapped	Some but not all the tile has been mapped	No coverage
Superficial	The whole tile has been mapped	Some but not all of the tile has been mapped	No coverage
Artificial	Some deposits are mapped on this tile	-	No deposits are mapped
Mass Movement	Some deposits are mapped on this tile	-	No coverage

1 Geology (1:10,000 scale).

1.1 Artificial Ground map (1:10,000 scale)



Artificial Ground Legend

Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Disturbed Ground (undivided)

Worked Ground (undivided)

Landscaped Ground (undivided)

Infilled Ground

Reclaimed Ground

1. Geology 1:10,000 scale

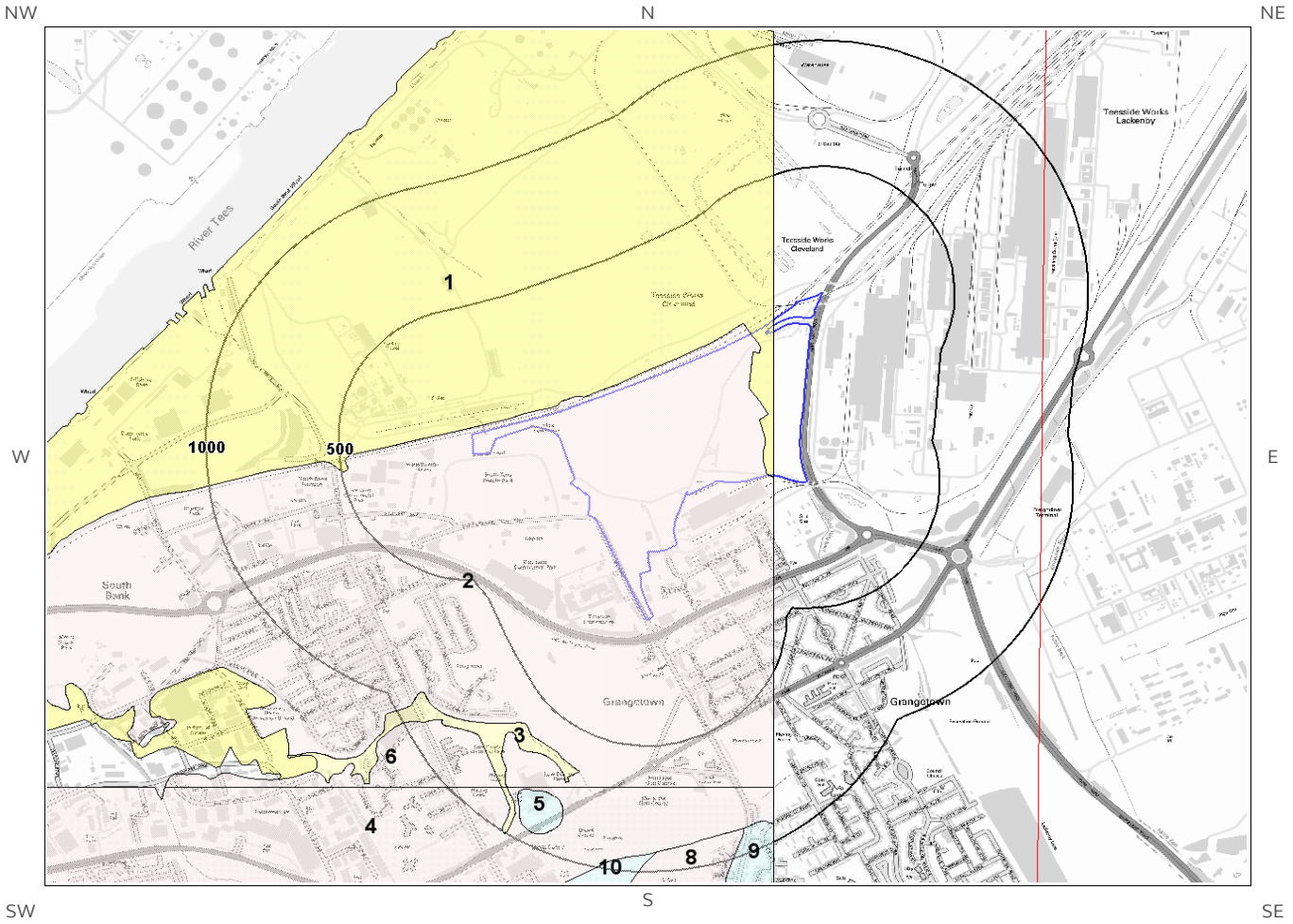
1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	9.0	S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
5	38.0	S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
6	87.0	SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
7	214.0	SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
8	244.0	W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

1.2 Superficial Deposits and Landslips map (1:10,000 scale)



Artificial Ground Legend

Site Outline

500
1000
Search Buffers (m)

1.2 Superficial Deposits and Landslips

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	TFD-XSZC	Tidal Flat Deposits - Sand, Silt And Clay	Sand, Silt And Clay
2	0.0	On Site	GLLDD-XCZ	Glaciolacustrine Deposits, Devensian - Clay And Silt	Clay And Silt

1.2.2 Landslip

Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale?

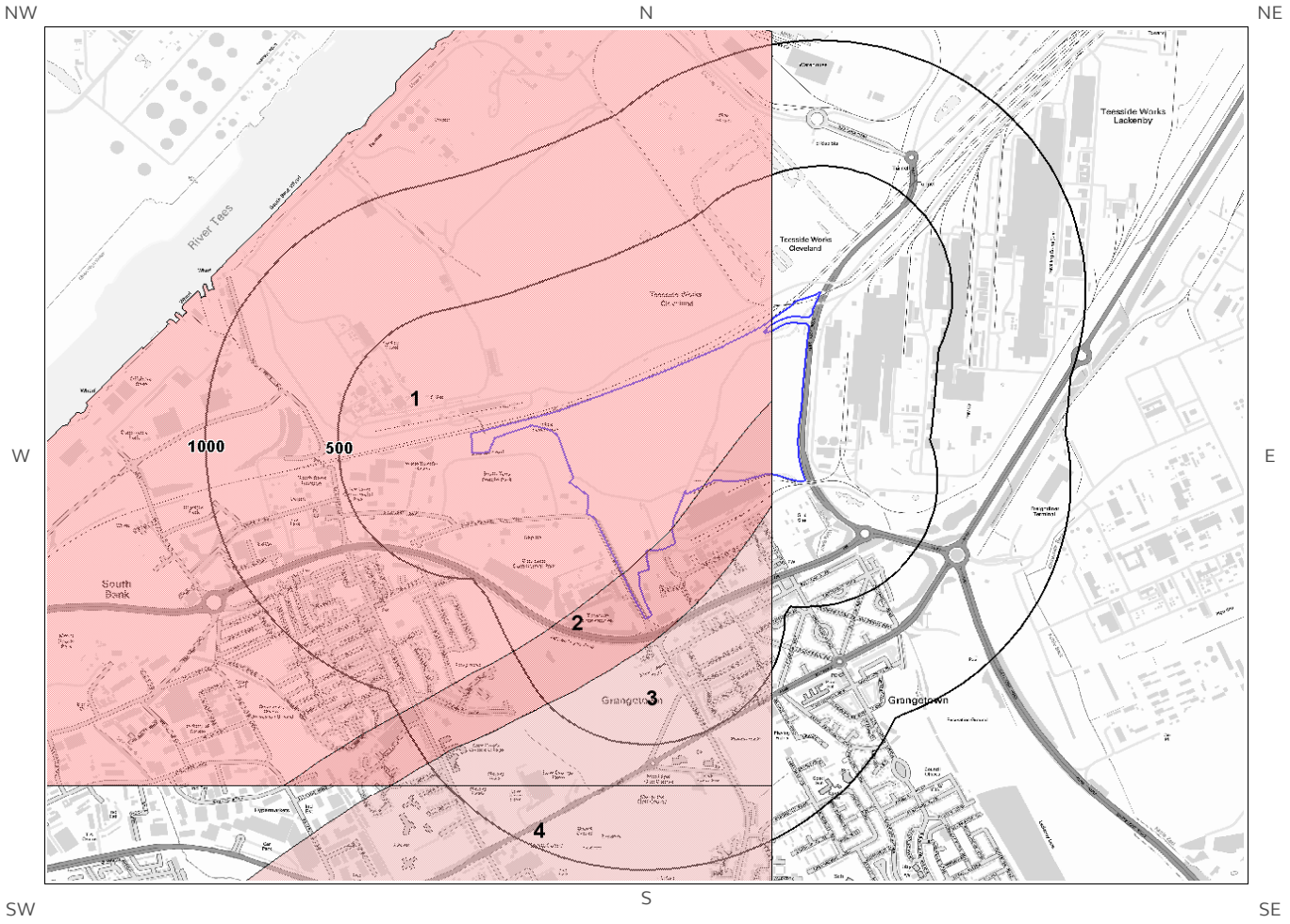
No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:10,000 scale

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3 Bedrock and linear features map (1:10,000 scale)



Bedrock and linear features Legend

Site Outline

500
1000
Search Buffers (m)

1.3 Bedrock and linear features

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary at 1:10,000 scale.

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	MMG-MDSS	Mercia Mudstone Group - Mudstone, Siltstone And Sandstone	Rhaetian Age - Early Triassic Epoch
2	0.0	On Site	PNG-MDST	Penarth Group - Mudstone	Rhaetian Age
3	81.0	SE	RMU-MDLM	Redcar Mudstone Formation - Mudstone And Limestone, Interbedded	Pliensbachian Age - Hettangian Age

1.3.2 Linear features

Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale? No

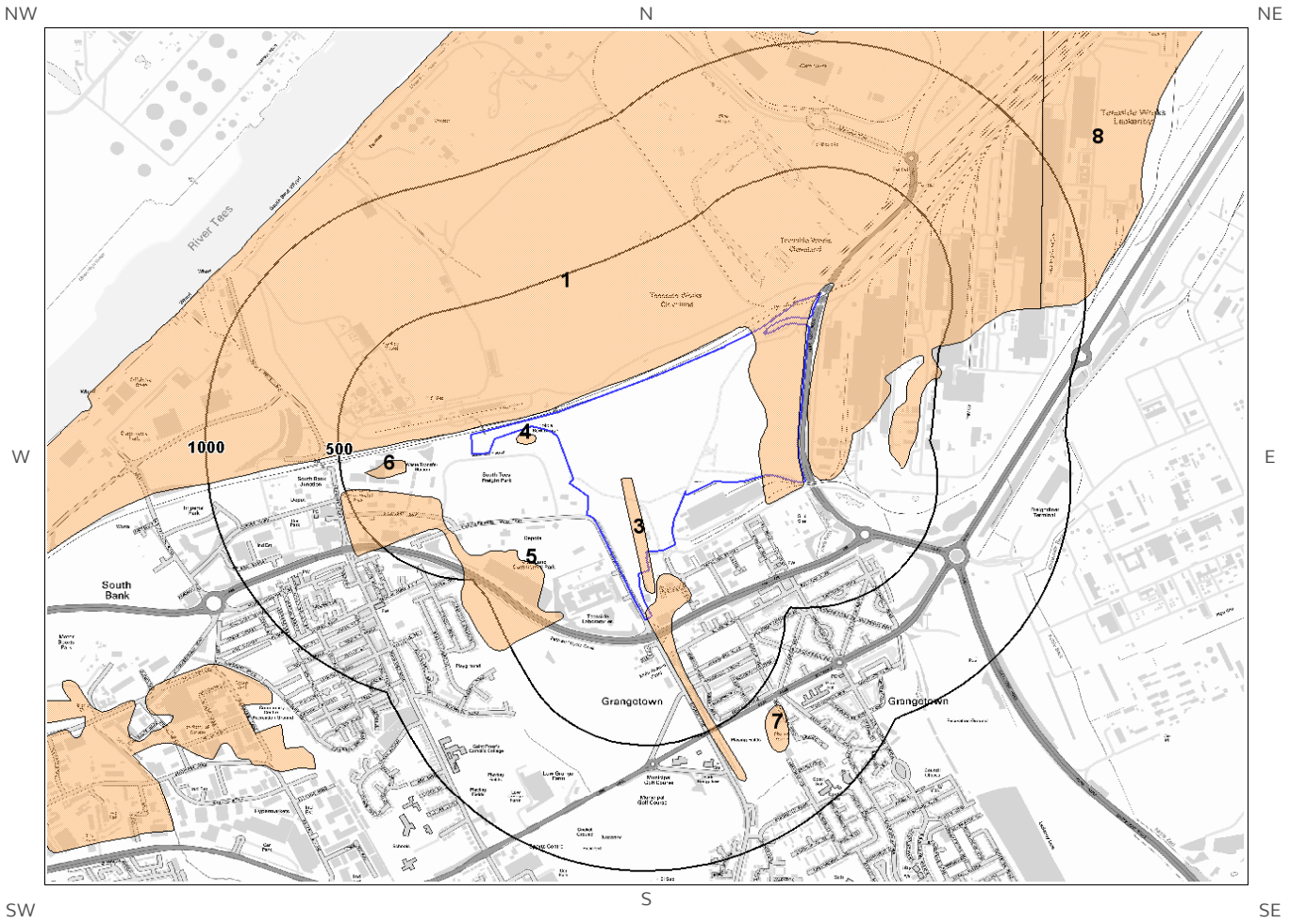
Database searched and no data found at this scale.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Disturbed Ground (undivided)

Worked Ground (undivided)

Landscaped Ground (undivided)

Infilled Ground

Reclaimed Ground

2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 033

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? Yes

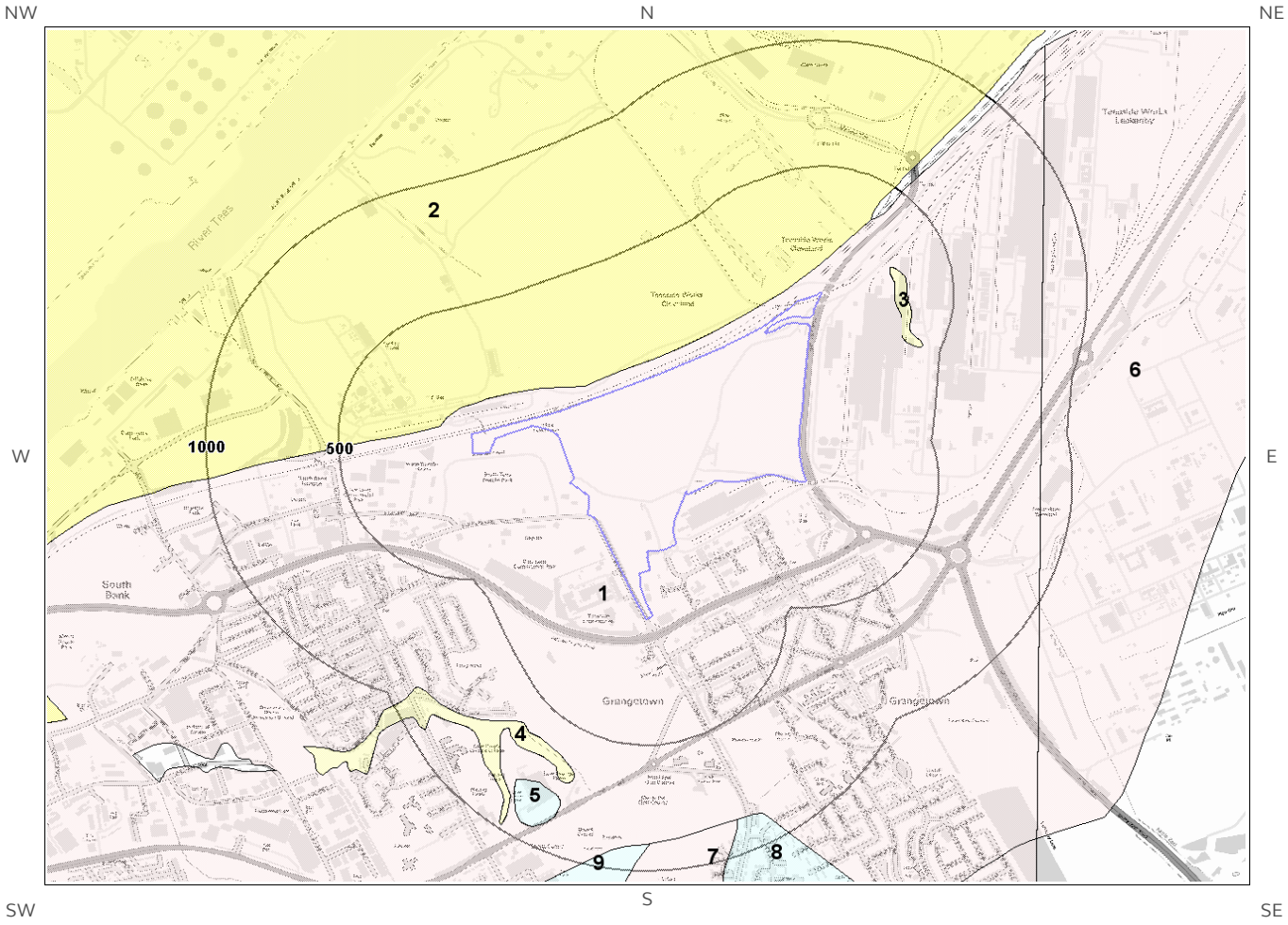
ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	0.0	On Site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
3	0.0	On Site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
4	14.0	S	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
5	220.0	SW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
6	254.0	W	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

2.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	Very High	Low
0.0	On Site	Mixed	Very High	Low
0.0	On Site	Mixed	Very High	Low
0.0	On Site	Mixed	Very High	Low
14.0	S	Mixed	Very High	Low

2.2 Superficial Deposits and Landslips map (1:50,000 scale)



Site Outline

500
1000
Search Buffers (m)

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	GLLDD-XCZ	GLACIOLACUSTRINE DEPOSITS, DEVENSIAN	CLAY AND SILT
2	59.0	N	TFD-XSZC	TIDAL FLAT DEPOSITS	SAND, SILT AND CLAY
3	270.0	E	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	Low	Very Low
0.0	On Site	Mixed	Low	Very Low

2.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

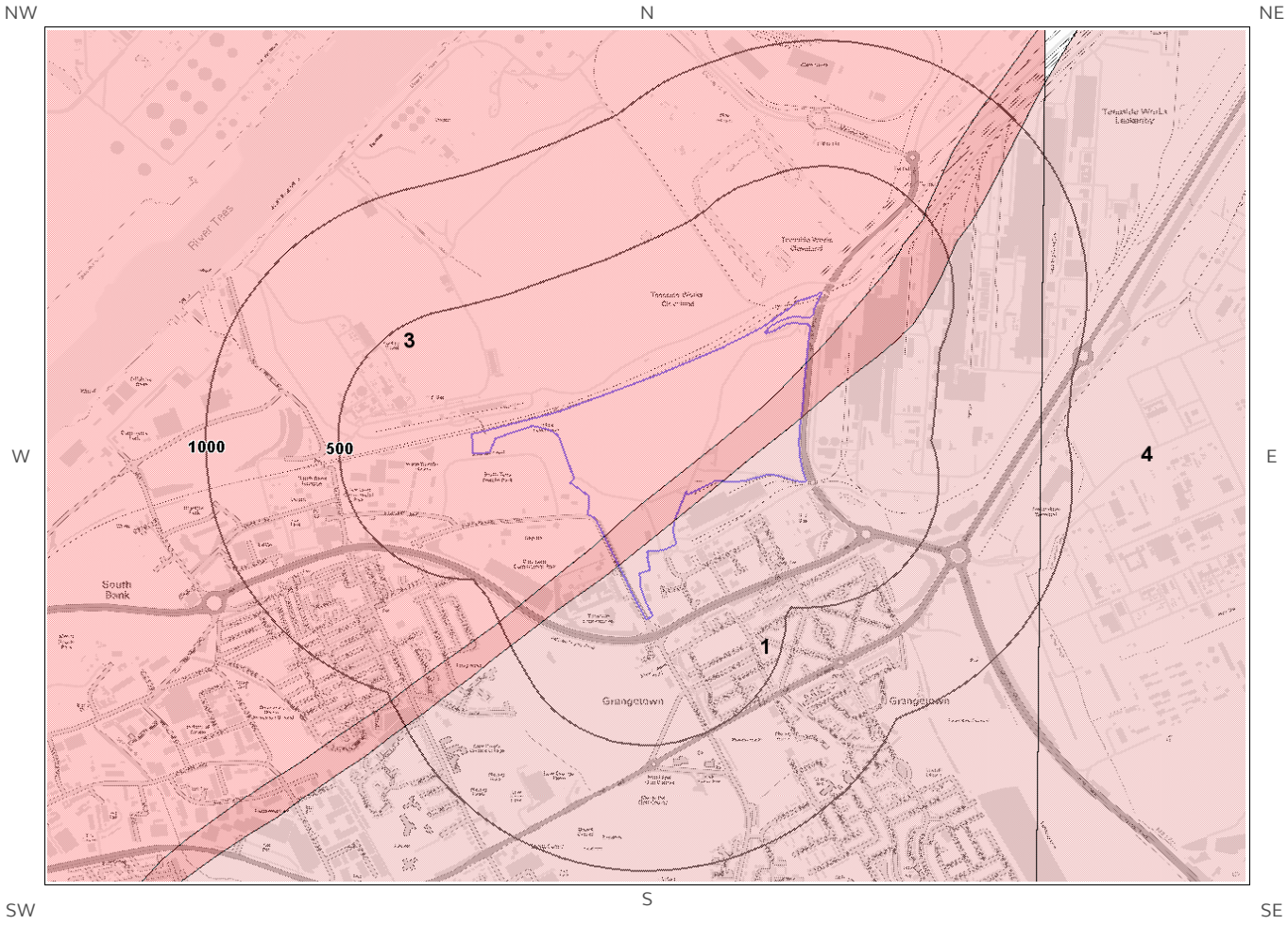
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site boundary? No

Database searched and no data found.

2.3 Bedrock and linear features map (1:50,000 scale)



Site Outline

500
1000
Search Buffers (m)

2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 033

2.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	RMU-MDST	REDCAR MUDSTONE FORMATION - MUDSTONE	HETTANGIAN
2	0.0	On Site	PNG-MDST	PENARTH GROUP - MUDSTONE	RHAETIAN
3	0.0	On Site	MMG-MDST	MERCIA MUDSTONE GROUP - MUDSTONE	-

2.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site boundary? Yes

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	Low	Low
0.0	On Site	Fracture	Low	Low
0.0	On Site	Fracture	Low	Low
0.0	On Site	Fracture	Low	Low
0.0	On Site	Fracture	Low	Low
0.0	On Site	Fracture	Low	Low

2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nation wide coverage.

3 Radon Data

3.1 Radon Affected Areas

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

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

3.2 Radon Protection

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

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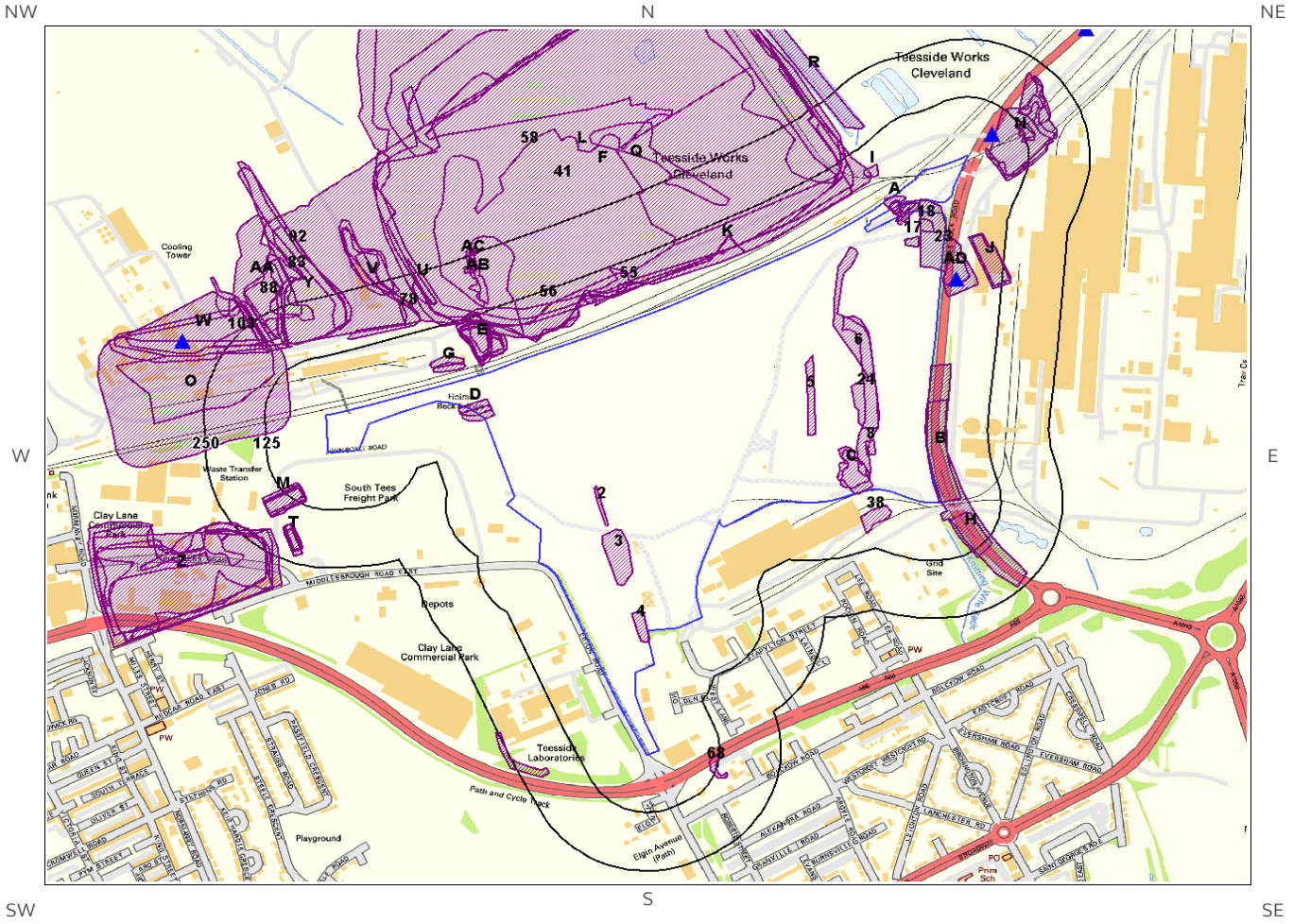
4 Ground Workings map



Ground Workings Legend

Site Outline

125
250
Search Buffers (m)

Historic Surface Ground Workings

Historic Underground Workings

Current Ground Workings

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Use	Date
1D	0.0	On Site	454175 521412	Pond	1893
2	0.0	On Site	454434 521200	Refuse Heap	1913
3	0.0	On Site	454466 521089	Refuse Heap	1893
4	0.0	On Site	454512 520941	Refuse Heap	1897
5	0.0	On Site	454860 521439	Refuse Heap	1913
6	0.0	On Site	454954 521564	Refuse Heap	1955
7C	0.0	On Site	454948 521283	Ponds	1893
8	0.0	On Site	454983 521326	Cooling Pond	1927
9A	0.0	On Site	455034 521853	Pond	1893
10A	0.0	On Site	455032 521842	Unspecified Pit	1913
11A	0.0	On Site	455032 521842	Unspecified Pit	1923
12A	0.0	On Site	455035 521845	Unspecified Pit	1913
13A	0.0	On Site	455035 521845	Unspecified Pit	1927
14A	0.0	On Site	455058 521837	Unspecified Pit	1893
15A	0.0	On Site	455062 521831	Unspecified Pit	1913
16A	0.0	On Site	455056 521828	Unspecified Pit	1897
17	0.0	On Site	455070 521771	Unspecified Heap	1913
18	0.0	On Site	455099 521806	Refuse Heap	1893
19	0.0	On Site	455137 521265	Cuttings	1952
20B	0.0	On Site	455135 521319	Cuttings	1974
21B	0.0	On Site	455135 521319	Cuttings	1991

ID	Distance (m)	Direction	NGR	Use	Date
22B	0.0	On Site	455135 521319	Cuttings	1983
23	0.0	On Site	455145 521756	Old Clay Pits	1913
24	0.0	On Site	454984 521437	Cuttings	1950
25C	0.0	On Site	454955 521274	Ponds	1897
26D	0.0	On Site	454181 521400	Pond	1897
27A	0.0	On Site	455034 521845	Unspecified Pit	1913
28AD	4.0	E	455159 521703	Unspecified Heaps	1893
29E	18.0	N	454189 521545	Reservoir	1923
30E	22.0	N	454173 521547	Reservoir	1897
31G	25.0	N	454123 521499	Pond	1897
32F	26.0	N	454452 521934	Refuse Heap	1913
33E	27.0	N	454188 521554	Reservoir	1913
34E	27.0	N	454188 521555	Reservoir	1913
35E	30.0	N	454190 521556	Reservoir	1913
36E	30.0	N	454203 521555	Reservoir	1927
37Q	30.0	N	454509 521983	Refuse Heap	1913
38	31.0	S	454994 521172	Refuse Heap	1927
39F	35.0	N	454475 521935	Refuse Heap	1927
40G	37.0	N	454118 521511	Pond	1893
41	37.0	N	454345 521932	Refuse Heap	1893
42E	37.0	N	454169 521561	Pond	1893
43	39.0	E	455236 521949	Unspecified Ground Workings	1913
44H	44.0	SE	455189 521138	Cuttings	1983
45H	44.0	SE	455189 521138	Cuttings	1991
46H	44.0	SE	455189 521138	Cuttings	1974
47N	44.0	E	455294 521997	Unspecified Pit	1893
48J	50.0	E	455228 521729	Reservoirs	1930
49I	54.0	NW	454985 521924	Unspecified Pit	1992
50I	54.0	NW	454985 521924	Unspecified Pit	1988

ID	Distance (m)	Direction	NGR	Use	Date
51J	55.0	E	455232 521732	Reservoirs	1952
52K	58.0	NW	454691 521765	Pond	1913
53K	58.0	NW	454691 521765	Pond	1923
54L	61.0	NW	454427 522283	Refuse Heaps	1955
55	63.0	N	454490 521670	Pond	1927
56	66.0	N	454415 521653	Refuse Heap	1950
57L	71.0	N	454441 522125	Refuse Heap	1988
58	71.0	N	454441 522125	Refuse Heap	1992
59O	73.0	W	453602 521424	Slag Brick Works	1950
60M	93.0	SW	453783 521217	Ponds	1893
61M	93.0	SW	453783 521217	Reservoirs	1913
62M	93.0	SW	453783 521217	Reservoirs	1927
63M	93.0	SW	453789 521212	Reservoirs	1913
64M	93.0	SW	453789 521212	Reservoirs	1923
65	94.0	NW	454043 522135	Refuse Heap	1950
66M	94.0	SW	453787 521212	Reservoirs	1913
67M	99.0	SW	453788 521208	Ponds	1897
68	107.0	E	454662 520637	Unspecified Ground Workings	1955
69N	115.0	NE	455300 522003	Pond	1913
70N	115.0	NE	455300 522003	Pond	1930
71N	120.0	NE	455301 522012	Pond	1893
72O	136.0	NW	453603 521456	Slag Brick Works	1927
73AB	139.0	N	454181 521696	Pond	1927
74P	140.0	NE	455303 522064	Unspecified Ground Workings	1913
75P	140.0	NE	455303 522064	Unspecified Ground Workings	1930
76V	140.0	N	453962 521690	Refuse Heap	1913
77P	143.0	NE	455321 522075	Unspecified Ground Workings	1952
78	146.0	N	454041 521620	Unspecified Pit	1893
79Q	152.0	NW	454553 521939	Refuse Heap	1950

ID	Distance (m)	Direction	NGR	Use	Date
80R	153.0	NW	454839 522175	Settling Pond	1992
81R	153.0	NW	454839 522175	Settling Pond	1988
82Y	163.0	N	453837 521677	Refuse Heap	1913
83	164.0	N	453802 521747	Refuse Heap	1927
84S	164.0	NW	453665 521615	Unspecified Ground Workings	1992
85S	164.0	NW	453665 521615	Unspecified Ground Workings	1988
86T	171.0	SW	453804 521135	Reservoir	1913
87T	171.0	SW	453804 521135	Reservoir	1927
88	171.0	NW	453749 521637	Pond	1927
89U	173.0	N	454066 521684	Refuse Heap	1950
90T	173.0	SW	453803 521133	Reservoir	1950
91T	173.0	SW	453803 521133	Reservoir	1913
92	173.0	N	453806 521756	Refuse Heap	1950
93T	174.0	SW	453802 521132	Reservoir	1913
94W	175.0	NW	453603 521582	Refuse Heap	1913
95U	176.0	N	454069 521661	Refuse Heap	1955
96V	177.0	N	453960 521713	Unspecified Pit	1955
97T	182.0	SW	453803 521122	Reservoir	1923
98W	187.0	NW	453640 521576	Clay Pit	1897
99AA	192.0	NW	453751 521690	Refuse Heap	1955
100W	194.0	NW	453608 521582	Pond	1913
101X	195.0	SW	454238 520664	Unspecified Ground Workings	1988
102X	195.0	SW	454238 520664	Unspecified Ground Workings	1992
103	205.0	NW	453693 521567	Unspecified Pit	1893
104Z	205.0	SW	453588 521029	Refuse Heap	1927
105Y	208.0	N	453797 521672	Unspecified Ground Workings	1950
106Z	209.0	SW	453579 521032	Refuse Heap	1955
107AA	211.0	NW	453764 521655	Pond	1897
108AB	213.0	N	454164 521724	Ponds	1897

ID	Distance (m)	Direction	NGR	Use	Date
109AC	216.0	N	454170 521736	Pond	1913
110AC	216.0	N	454170 521736	Pond	1923
111V	220.0	N	453962 521729	Refuse Heap	1927
112V	222.0	N	453968 521706	Refuse Heap	1950
113AC	227.0	N	454164 521744	Pond	1893
114Z	229.0	SW	453577 521029	Refuse Heap	1913
115Z	231.0	SW	453586 521055	Refuse Heap	1913
116Z	233.0	SW	453573 521031	Refuse Heap	1893
117Z	237.0	SW	453577 521036	Sand Pit	1913

4.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? Yes

The following Historical Underground Working Features are provided by Groundsure:

ID	Distance (m)	Direction	NGR	Use	Date
Not shown	880.0	S	454848 519840	Unspecified Old Shaft	1940
Not shown	880.0	S	454843 519838	Unspecified Old Shaft	1913
Not shown	880.0	S	454843 519838	Unspecified Old Shaft	1927
Not shown	880.0	S	454843 519838	Unspecified Old Shaft	1893
Not shown	884.0	S	454847 519835	Unspecified Old Shaft	1923

4.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

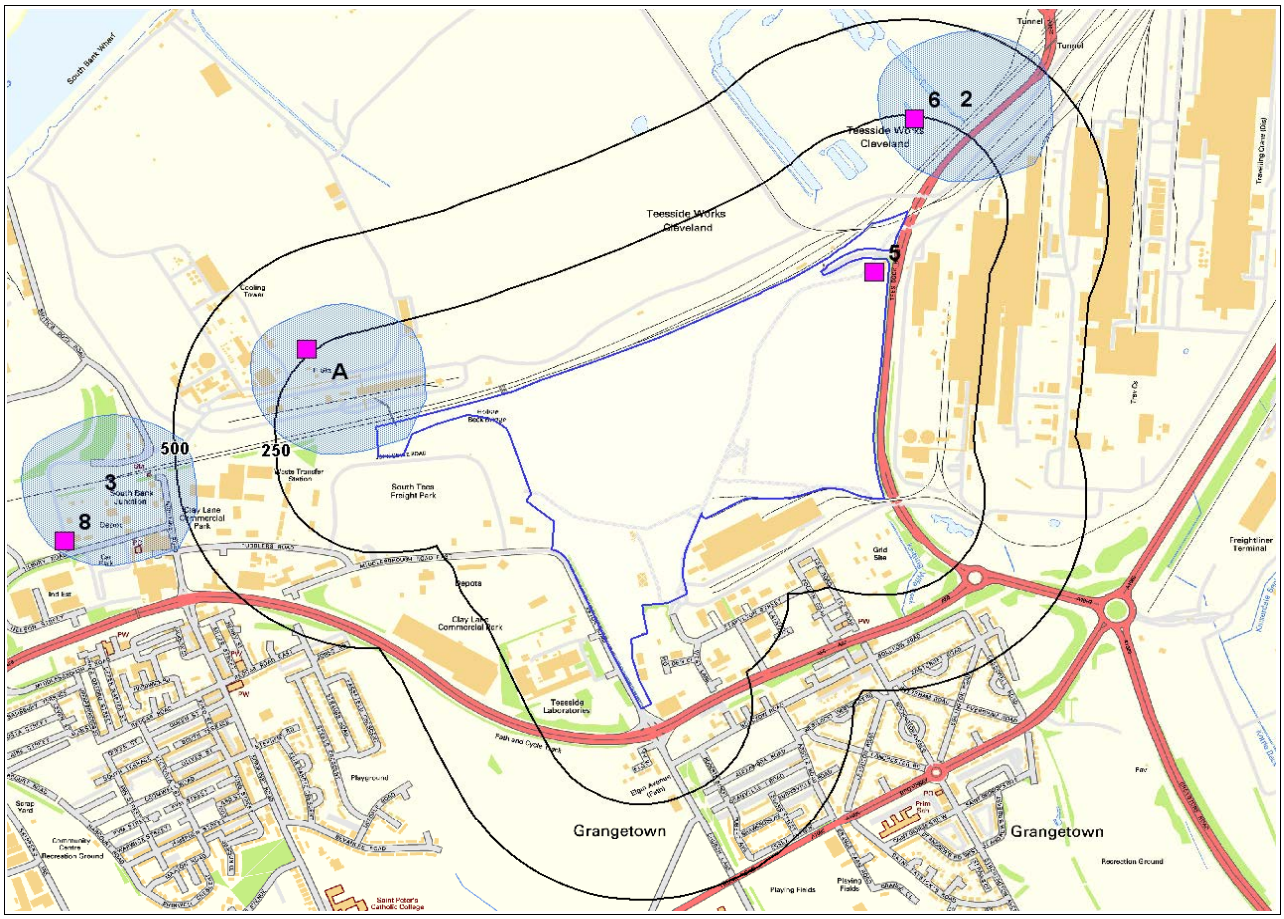
ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
123AD	31.0	E	455159 521690	Clay & Shale	Grangetown Clat Pits	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
124N	67.0	NE	455232 522002	Clay & Shale	Kinkerdale Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
125W	334.0	NW	453577 521556	Clay & Shale	South Bank Iron Works Clay Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
126	365.0	NE	455425 522229	Clay & Shale	Kinkerdale Brick Yard	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	786.0	W	453126 521081	Clay & Shale	South Bank Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	814.0	E	455989 522070	Clay & Shale	Lackenby Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	984.0	SE	455900 520600	Clay & Shale	ICI Borrow Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

5 Mining, Extraction & Natural Cavities map

NW N NE

W E

SW S SE



Mining, Extraction and Natural Cavities Legend

Site Outline

250
500
Search Buffers (m)

Historical Mining

Non-Coal Mining Cavities

Natural Cavities (point data)

Natural Cavities (polygon data)

Non-Coal Mining

Highly likely

Likely

Unlikely

Highly unlikely

Rare

5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? Yes

The following Historical Mining information is provided by Groundsure:

ID	Distance (m)	Direction	NGR	Details	Date
Not shown	880.0	S	454848 519840	Unspecified Old Shaft	1940
Not shown	880.0	S	454843 519838	Unspecified Old Shaft	1893
Not shown	880.0	S	454843 519838	Unspecified Old Shaft	1913
Not shown	880.0	S	454843 519838	Unspecified Old Shaft	1927
Not shown	884.0	S	454847 519835	Unspecified Old Shaft	1923

5.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

5.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

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

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1A	0.0	On Site	Abandoned Brine Wells	Salt - brine	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
2	111.0	NE	Abandoned Brine Wells	Salt - brine	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
3	454.0	W	Abandoned Brine Wells	Salt - brine	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
Not shown	859.0	S	Easton G	Gypsum	Small scale underground mining may have occurred; mine adits, shafts and tunnels may be present. Potential for localised difficult ground conditions are at a level where they should be considered

5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled “Review of mining instability in Great Britain, 1990” PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? Yes

The following Non-Coal Mining Cavities information provided by Peter Brett Associates:

ID	Distance (m)	Direction	NGR	Address	Superficial Deposits	Bedrock Deposits	Extracted Mineral
5	0.0	On Site	455100 521800	GRANGETOWN, Cleveland	-	-	Alabaster, Anhdryite, Gypsum
6	243.0	N	455200 522200	BRINE WELL, Cleveland	-	-	Brine, Rock Salt, Salt, Halite
7A	266.0	NW	453700 521600	BRINE WELL, Cleveland	-	-	Brine, Rock Salt, Salt, Halite
8	805.0	W	453100 521100	BRINE WELL, Cleveland	-	-	Brine, Rock Salt, Salt, Halite
Not shown	810.0	S	454800 519900	TEESVILLE TRIAL, Cleveland	-	-	Alabaster, Anhdryite, Gypsum

5.6 Natural Cavities

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level..

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.10 Clay Mining

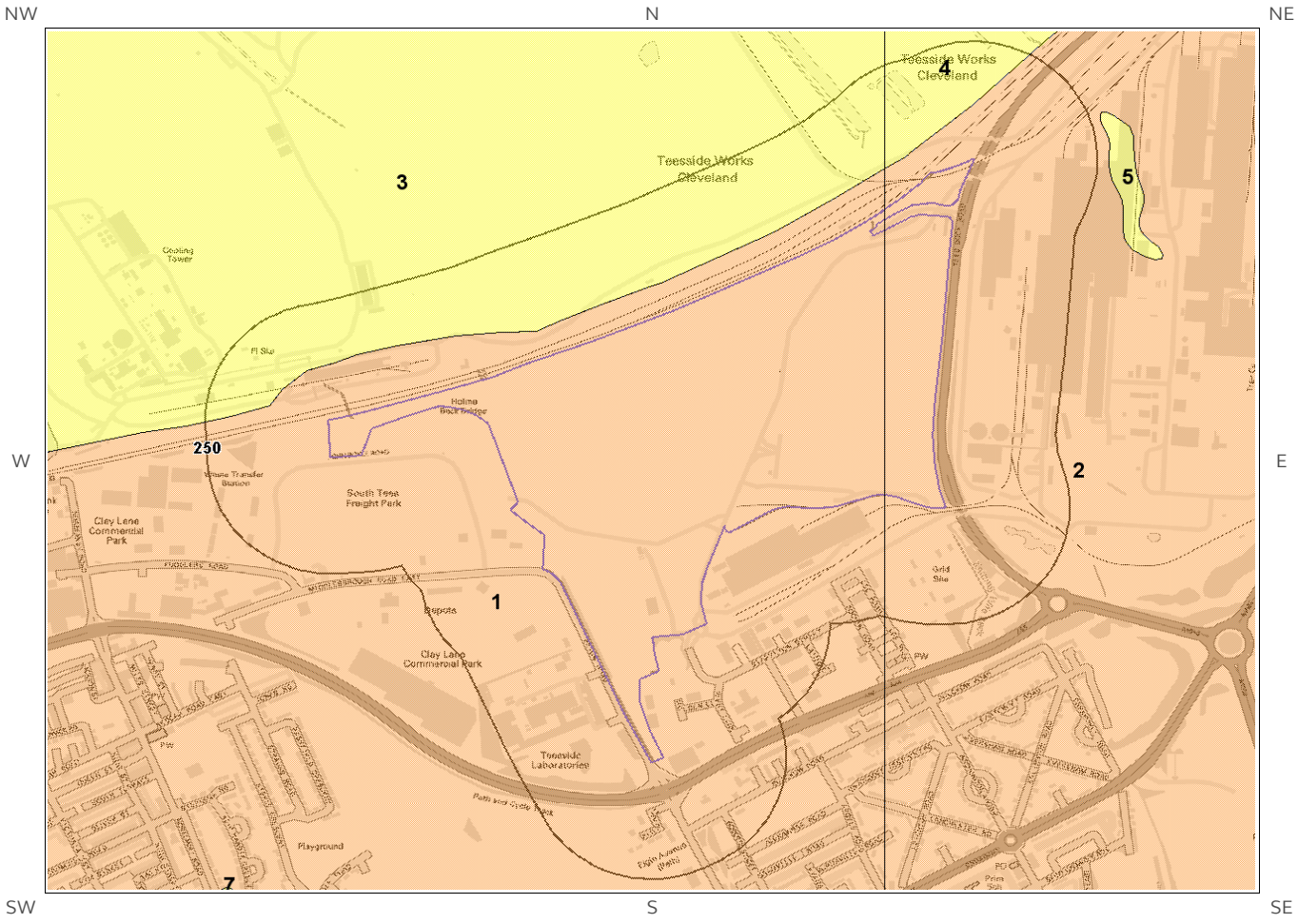
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map



Shrink Swell Clay Legend

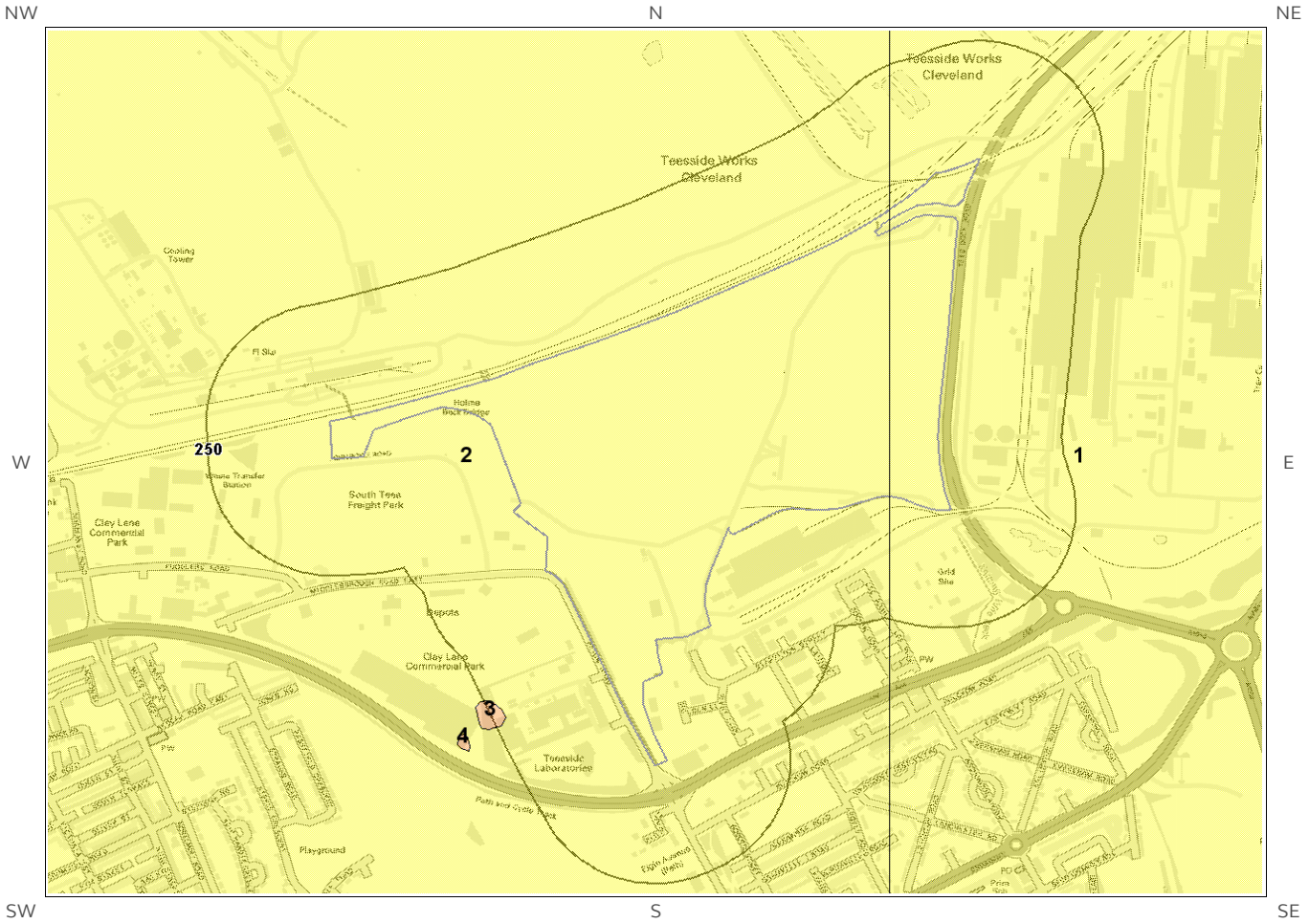
Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

6.2 Landslides map



Landslides Legend

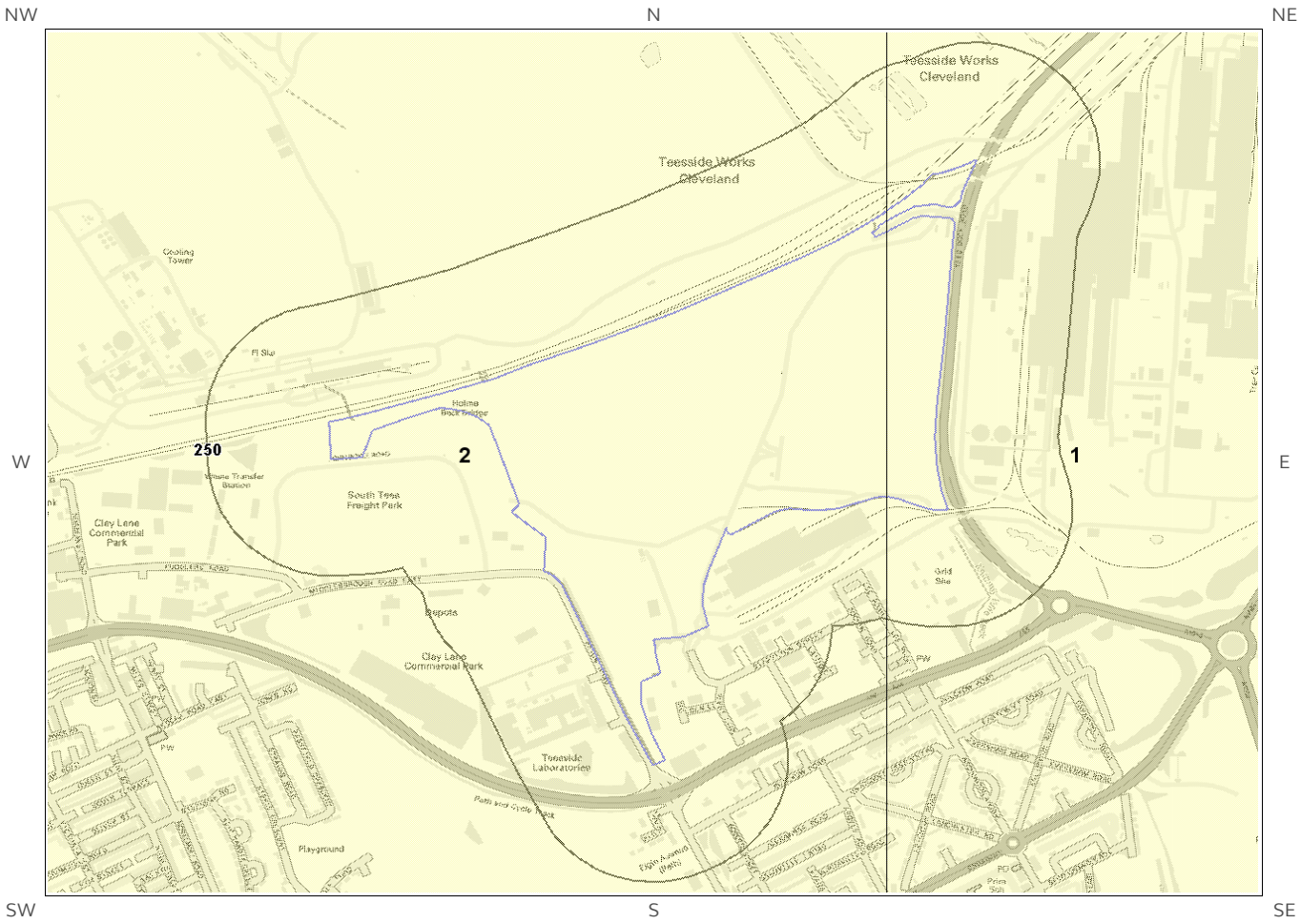
Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

6.3 Ground Dissolution of Soluble Rocks map



Ground Dissolution Soluble Rocks Legend

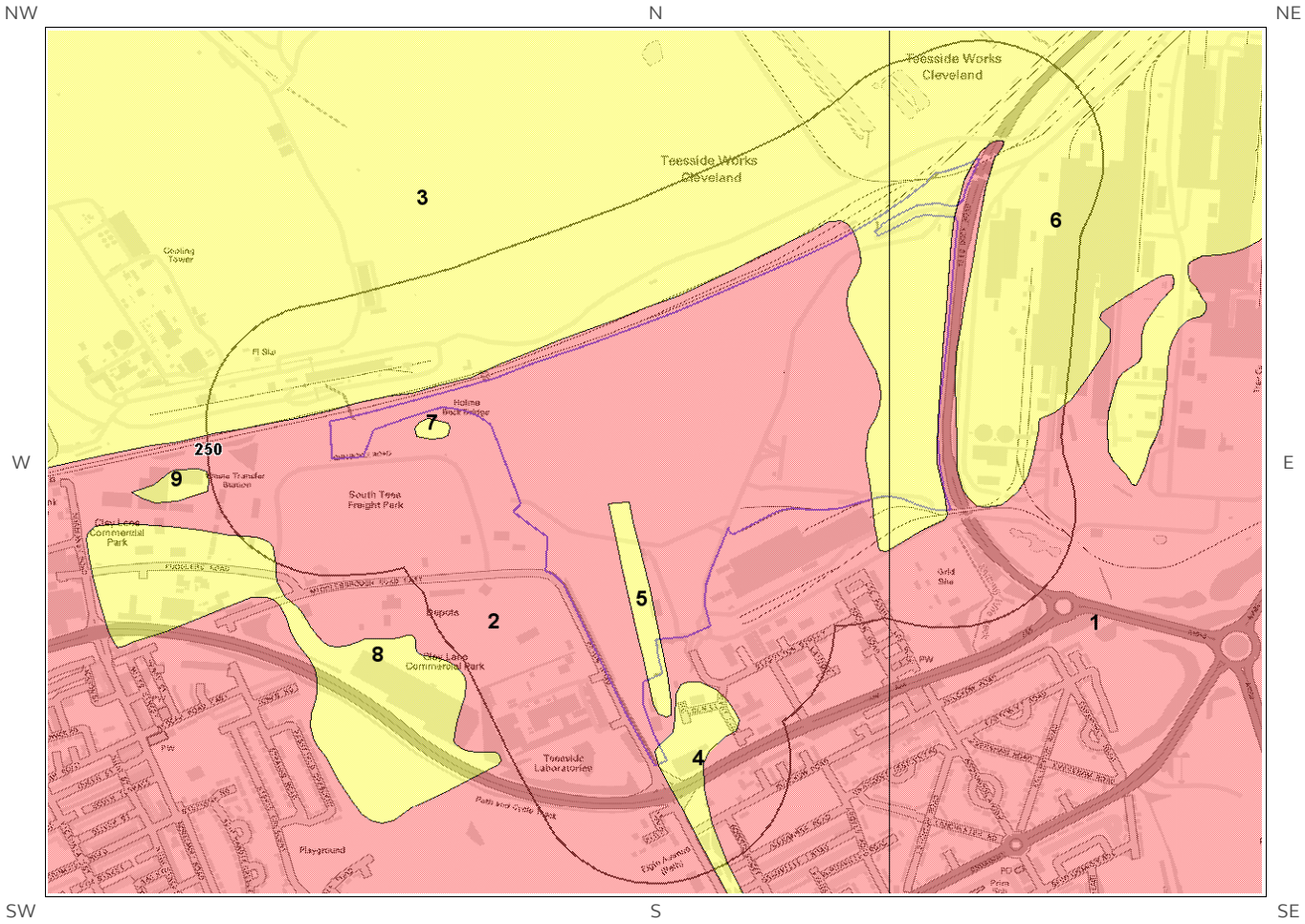
Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

6.4 Compressible Deposits map



Compressible Deposits Legend

Site Outline

125
250
Search Buffers (m)

No Data / Null

Negligible

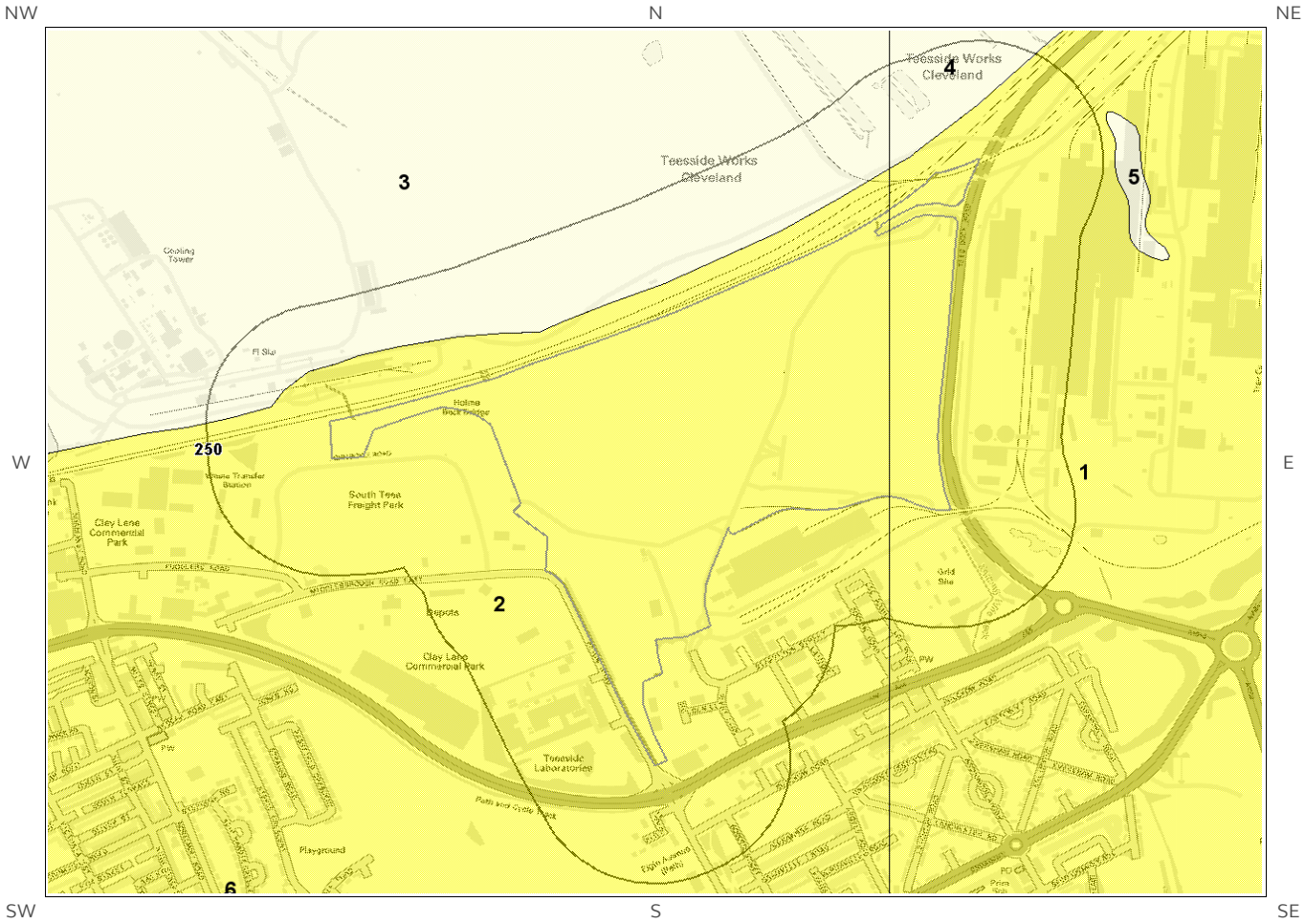
Very Low

Low

Moderate

High

6.5 Collapsible Deposits map



Collapsible Deposits Legend

Site Outline

125
250
Search Buffers (m)

No Data / Null

Negligible

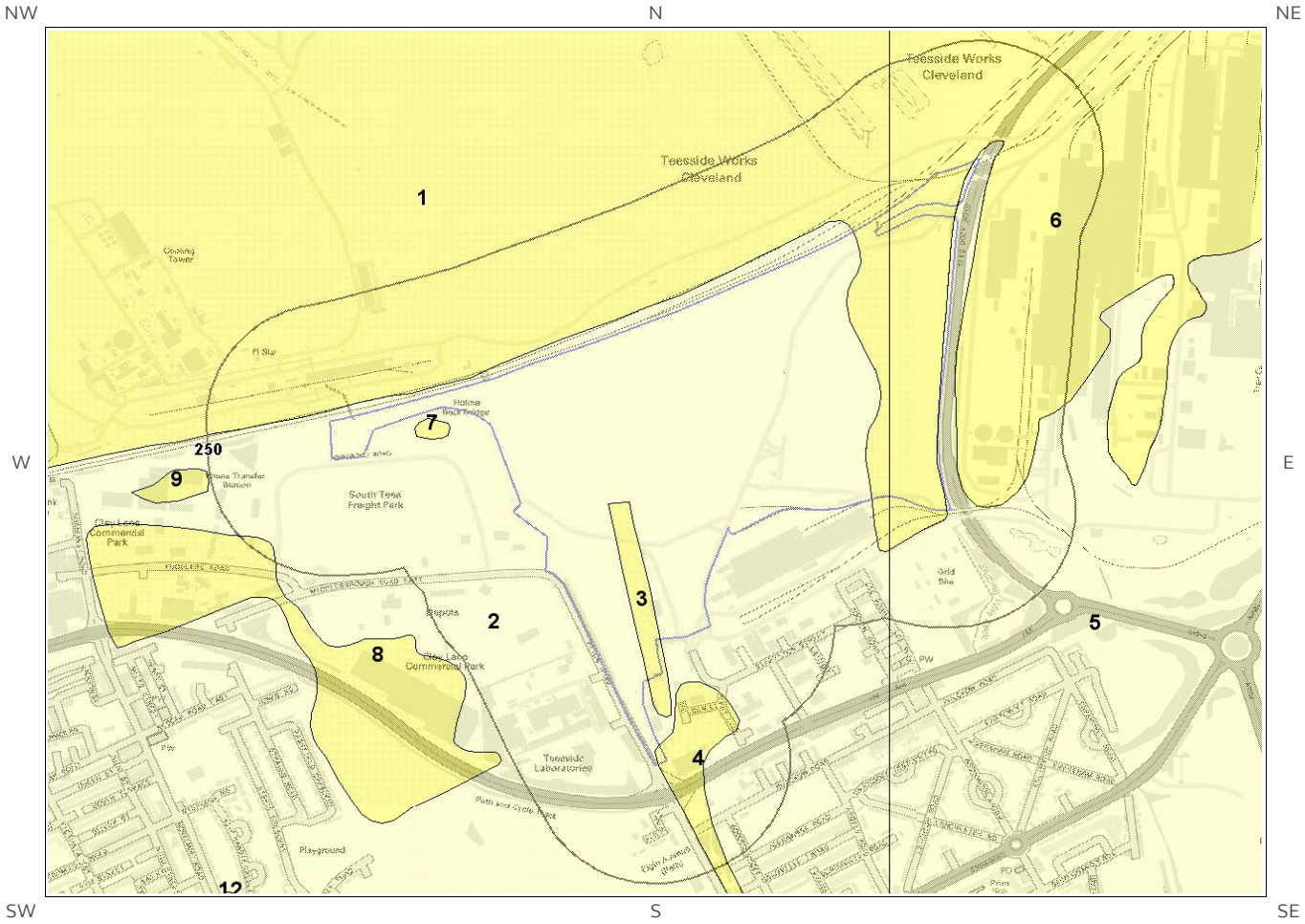
Very Low

Low

Moderate

High

6.6 Running Sand map



Running Sand Legend

Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

6 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site*[*] boundary? Moderate

6.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.
2	0.0	On Site	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

* This includes an automatically generated 50m buffer zone around the site

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
2	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

6.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.
2	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

6.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Moderate	Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property - possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

ID	Distance (m)	Direction	Hazard Rating	Details
2	0.0	On Site	Moderate	Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property - possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.
3	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
4	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
5	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
6	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
7	14.0	S	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

6.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
2	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

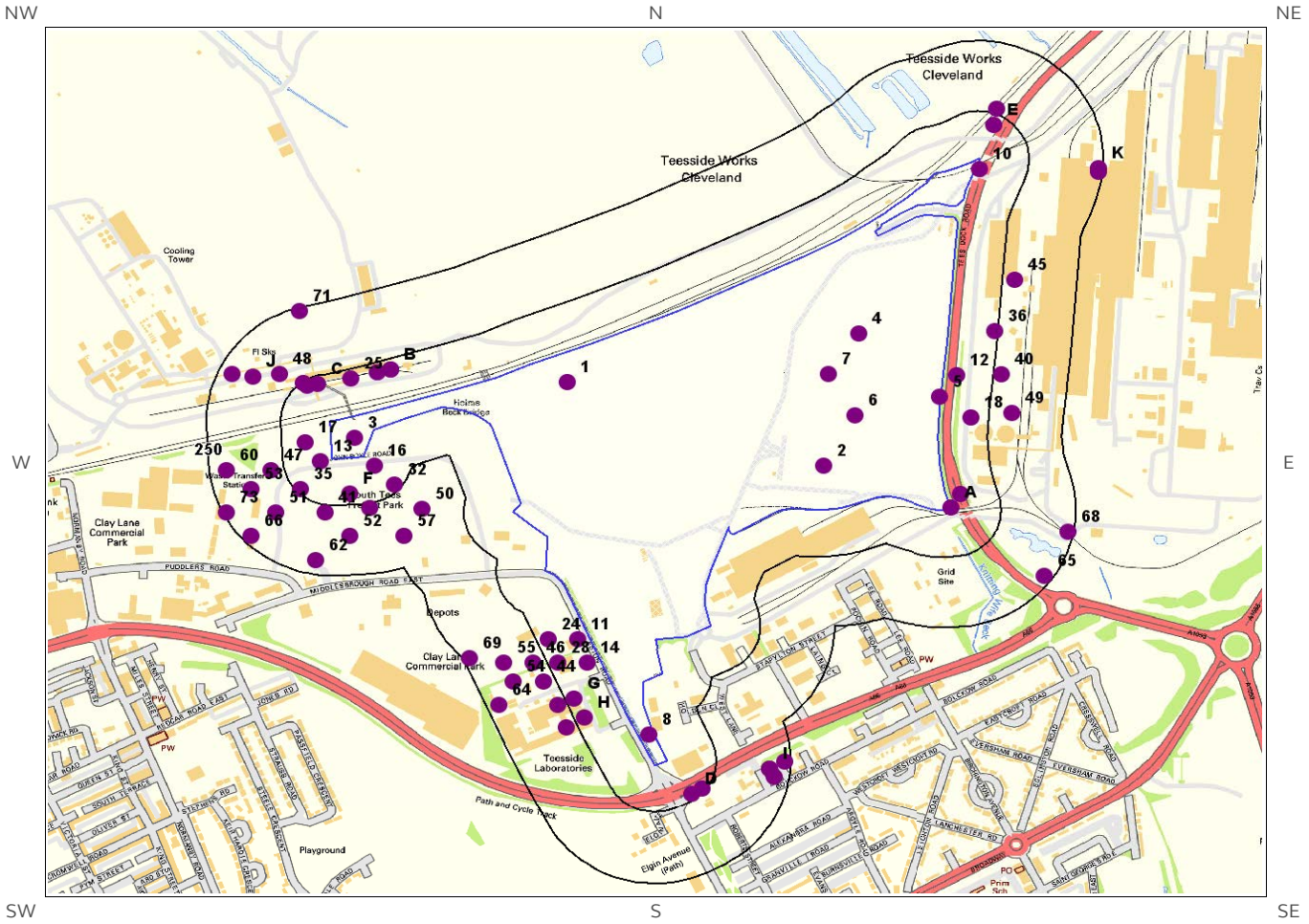
6.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
2	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

ID	Distance (m)	Direction	Hazard Rating	Details
3	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
4	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
5	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
6	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
7	14.0	S	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

7 Borehole Records map



Borehole Records Legend

Site Outline

Borehole Locations

125
250
Search Buffers (m)

7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary: 73

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	0.0	On Site	454348 521478	NZ52SW130	Not available	PROPOSED FURNACE NO 6 MILL
2	0.0	On Site	454866 521300	NZ52SW131/D	9	MEDIUM SECTION MILL 4
3	0.0	On Site	453920 521360	NZ52SW631	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 21
4	0.0	On Site	454938 521582	NZ52SW131/A	10	MEDIUM SECTION MILL 1
5	0.0	On Site	455103 521447	NZ52SE17/B	9	NORTH LACKENBY RD/RAIL BRIDGE 2A
6	0.0	On Site	454930 521407	NZ52SW131/C	9	MEDIUM SECTION MILL 3
7	0.0	On Site	454875 521495	NZ52SW131/B	8	MEDIUM SECTION MILL 2
8	0.0	On Site	454514 520727	NZ52SW186	Not available	CLEVELAND WORKS
9A	0.0	E	455126 521212	NZ52SE20/A	9	BRIDGE SITE TESS DOCK ROAD 1
10	7.0	SE	455182 521932	NZ52SE17/A	8	NORTH LACKENBY RD/RAIL BRIDGE 1A
11	24.0	SW	454370 520930	NZ52SW13658/5	2	GRANGETOWN CAPLAB PROJECT 5
12	26.0	E	455137 521494	NZ52SE2/C	9	LACKENBY NEW TRUNK ROAD 3
13	26.0	W	453850 521310	NZ52SW629	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 19
14	27.0	SW	454390 520880	NZ52SW13658/10	2	GRANGETOWN CAPLAB PROJECT 10
15A	27.0	E	455145 521240	NZ52SE2/B	9	LACKENBY NEW TRUNK ROAD 2
16	31.0	SE	453960 521300	NZ52SW630	23	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 20
17	54.0	W	453820 521350	NZ52SW632	16	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 22
18	65.0	E	455166 521404	NZ52SE23/E	10	LACKENBY ROD MILL
19B	75.0	N	453993 521505	NZ52SW972	18	S BANK COKE OVENS, THIRD RAIL MIDDLESBROUGH 6A
20B	76.0	N	453992 521506	NZ52SW970	5	S BANK COKE OVENS, THIRD RAIL MIDDLESBROUGH 6

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
21E	76.0	NE	455212 522027	NZ52SE28	Not available	BOREHOLE NO 8
22B	76.0	N	453965 521499	NZ52SW971	16	S BANK COKE OVENS, THIRD RAIL MIDDLESBROUGH 5A
23B	77.0	N	453966 521500	NZ52SW969	6	S BANK COKE OVENS, THIRD RAIL MIDDLESBROUGH 5
24	78.0	SW	454310 520930	NZ52SW13658/3	2	GRANGETOWN CAPLAB PROJECT 3
25	79.0	N	453911 521487	NZ52SW968	23	S BANK COKE OVENS, THIRD RAIL MIDDLESBROUGH 4
26F	79.0	S	453910 521240	NZ52SW622	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 12
27H	81.0	SW	454384 520763	NZ52SW197/4	11	BSC GRANGETOWN 4
28	81.0	SW	454330 520880	NZ52SW13658/7	2	GRANGETOWN CAPLAB PROJECT 7
29C	81.0	N	453845 521474	NZ52SW967	22	S BANK COKE OVENS, THIRD RAIL MIDDLESBROUGH 3
30G	83.0	SW	454363 520803	NZ52SW197/2	6	BSC GRANGETOWN 2
31C	87.0	NW	453823 521470	NZ52SW966	22	S BANK COKE OVENS, THIRD RAIL MIDDLESBROUGH 2
32	88.0	SE	454000 521260	NZ52SW621	6	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 11/A/B/C
33D	89.0	SE	454600 520600	NZ52SW469	275	CLEVELAND STEEL WORKS
34D	93.0	SE	454621 520613	NZ52SW18	Not available	CLEVELAND STEEL WORKS
35	94.0	SW	453810 521250	NZ52SW623	17	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 13
36	94.0	E	455214 521587	NZ52SE23/B	11	LACKENBY ROD MILL
37C	97.0	NW	453816 521477	NZ52SW965	22	S BANK COKE OVENS, THIRD RAIL MIDDLESBROUGH 1
38E	110.0	N	455218 522061	NZ52SE20/B	8	BRIDGE SITE TESS DOCK ROAD 2
39F	112.0	S	453950 521210	NZ52SW620	14	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 10
40	115.0	E	455226 521495	NZ52SE23/C	10	LACKENBY ROD MILL
41	119.0	S	453860 521200	NZ52SW619	10	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 09
42G	119.0	SW	454330 520790	NZ52SW197/1	11	BSC GRANGETOWN 1
43H	124.0	SW	454346 520742	NZ52SW197/3	6	BSC GRANGETOWN 3
44	125.0	SW	454300 520840	NZ52SW13658/9	2	GRANGETOWN CAPLAB PROJECT 9

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
45	125.0	E	455254 521697	NZ52SE23/A	8	LACKENBY ROD MILL
46	127.0	SW	454280 520880	NZ52SW13658/4	2	GRANGETOWN CAPLAB PROJECT 4
47	128.0	W	453750 521290	NZ52SW628	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 18
48	143.0	NW	453768 521496	NZ52SW203/H	Not available	BORES AT COLE OVENS CLEVELAND WORKS S BANK
49	146.0	E	455248 521414	NZ52SE23	Not available	ROD MILL SITE LACKENBY
50	163.0	SE	454056 521209	NZ52SW133	Not available	CLAY LANE WORKS B
51	165.0	SW	453760 521200	NZ52SW618	24	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 08
52	169.0	S	453910 521150	NZ52SW612	20	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 02
53	179.0	W	453710 521250	NZ52SW624	16	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 14
54	180.0	SW	454240 520840	NZ52SW13658/6	2	GRANGETOWN CAPLAB PROJECT 6
55	181.0	SW	454220 520880	NZ52SW13658/2	2	GRANGETOWN CAPLAB PROJECT 2
56J	182.0	NW	453715 521491	NZ52SW203/G	Not available	BORES AT COLE OVENS CLEVELAND WORKS S BANK
57	190.0	SE	454020 521150	NZ52SW611	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 01
58I	208.0	E	454757 520655	NZ52SW1046	Not available	BOLCKOW ROAD GRANGETOWN TP1
59I	208.0	E	454757 520655	NZ52SW1047	Not available	BOLCKOW ROAD GRANGETOWN TP1
60	217.0	W	453660 521290	NZ52SW627	16	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 17
61I	220.0	E	454767 520637	NZ52SW1048	Not available	BOLCKOW ROAD GRANGETOWN TP2
62	220.0	S	453840 521100	NZ52SW613	11	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 03
63J	221.0	NW	453673 521495	NZ52SW203/F	Not available	BORES AT COLE OVENS CLEVELAND WORKS S BANK
64	228.0	SW	454210 520790	NZ52SW13658/8	2	GRANGETOWN CAPLAB PROJECT 8
65	234.0	SE	455313 521066	NZ52SE2/A	9	LACKENBY NEW TRUNK ROAD 1
66	235.0	SW	453710 521150	NZ52SW614	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 04
67I	238.0	E	454788 520670	NZ52SW1049	Not available	BOLCKOW ROAD GRANGETOWN TP3
68	238.0	E	455360 521160	NZ52SE176	10	BSC REDCAR, ICI CORRIDOR TO LACKENBY 4312

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
69	239.0	SW	454151 520891	NZ52SW1013	Not available	BSC LAND SOUTH OF MIDDLESBROUGH ROAD TP4
70K	241.0	E	455423 521935	NZ52SE216	4	SLOW COOLING PIT, CONCAST PLANT, BRITISH STEEL CORPORATION, LACKENBY 1
71	241.0	N	453809 521630	NZ52SW129	Not available	TALL CHIMNEY BORE
72K	242.0	E	455423 521928	NZ52SE217	9	SLOW COOLING PIT, CONCAST PLANT, BRITISH STEEL CORPORATION, LACKENBY 2
73	245.0	SW	453660 521200	NZ52SW617	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 07

The borehole records are available using the hyperlinks below: Please note that if the donor of the borehole record has requested the information be held as commercial-in-confidence, the additional data will be held separately by the BGS and a formal request must be made for its release.

#2: scans.bgs.ac.uk/sobi_scans/boreholes/917125
#3: scans.bgs.ac.uk/sobi_scans/boreholes/17184400
#4: scans.bgs.ac.uk/sobi_scans/boreholes/917122
#5: scans.bgs.ac.uk/sobi_scans/boreholes/796677
#6: scans.bgs.ac.uk/sobi_scans/boreholes/917124
#7: scans.bgs.ac.uk/sobi_scans/boreholes/917123
#9A: scans.bgs.ac.uk/sobi_scans/boreholes/796697
#10: scans.bgs.ac.uk/sobi_scans/boreholes/796676
#11: scans.bgs.ac.uk/sobi_scans/boreholes/917864
#12: scans.bgs.ac.uk/sobi_scans/boreholes/796655
#13: scans.bgs.ac.uk/sobi_scans/boreholes/17184381
#14: scans.bgs.ac.uk/sobi_scans/boreholes/917873
#15A: scans.bgs.ac.uk/sobi_scans/boreholes/796654
#16: scans.bgs.ac.uk/sobi_scans/boreholes/17184387
#17: scans.bgs.ac.uk/sobi_scans/boreholes/17184405
#18: scans.bgs.ac.uk/sobi_scans/boreholes/796711
#19B: scans.bgs.ac.uk/sobi_scans/boreholes/18919194
#20B: scans.bgs.ac.uk/sobi_scans/boreholes/18919192
#22B: scans.bgs.ac.uk/sobi_scans/boreholes/18919193
#23B: scans.bgs.ac.uk/sobi_scans/boreholes/18919191
#24: scans.bgs.ac.uk/sobi_scans/boreholes/917862
#25: scans.bgs.ac.uk/sobi_scans/boreholes/18919190
#26F: scans.bgs.ac.uk/sobi_scans/boreholes/17182515
#27H: scans.bgs.ac.uk/sobi_scans/boreholes/917366
#28: scans.bgs.ac.uk/sobi_scans/boreholes/917866
#29C: scans.bgs.ac.uk/sobi_scans/boreholes/18919189
#30G: scans.bgs.ac.uk/sobi_scans/boreholes/917364
#31C: scans.bgs.ac.uk/sobi_scans/boreholes/18919188
#32: scans.bgs.ac.uk/sobi_scans/boreholes/17182514
#33D: scans.bgs.ac.uk/sobi_scans/boreholes/917754
#35: scans.bgs.ac.uk/sobi_scans/boreholes/17182516
#36: scans.bgs.ac.uk/sobi_scans/boreholes/796709
#37C: scans.bgs.ac.uk/sobi_scans/boreholes/18919187
#38E: scans.bgs.ac.uk/sobi_scans/boreholes/796698
#39F: scans.bgs.ac.uk/sobi_scans/boreholes/17182513
#40: scans.bgs.ac.uk/sobi_scans/boreholes/796710
#41: scans.bgs.ac.uk/sobi_scans/boreholes/17182512
#42G: scans.bgs.ac.uk/sobi_scans/boreholes/917363
#43H: scans.bgs.ac.uk/sobi_scans/boreholes/917365
#44: scans.bgs.ac.uk/sobi_scans/boreholes/917868
#45: scans.bgs.ac.uk/sobi_scans/boreholes/796708
#46: scans.bgs.ac.uk/sobi_scans/boreholes/917863
#47: scans.bgs.ac.uk/sobi_scans/boreholes/17184380
#51: scans.bgs.ac.uk/sobi_scans/boreholes/17182511
#52: scans.bgs.ac.uk/sobi_scans/boreholes/17182504
#53: scans.bgs.ac.uk/sobi_scans/boreholes/17182517
#54: scans.bgs.ac.uk/sobi_scans/boreholes/917865
#55: scans.bgs.ac.uk/sobi_scans/boreholes/917861
#57: scans.bgs.ac.uk/sobi_scans/boreholes/17182501
#60: scans.bgs.ac.uk/sobi_scans/boreholes/17184376
#62: scans.bgs.ac.uk/sobi_scans/boreholes/17182506
#64: scans.bgs.ac.uk/sobi_scans/boreholes/917867
#65: scans.bgs.ac.uk/sobi_scans/boreholes/796653
#66: scans.bgs.ac.uk/sobi_scans/boreholes/17182507
#68: scans.bgs.ac.uk/sobi_scans/boreholes/12837120
#70K: scans.bgs.ac.uk/sobi_scans/boreholes/17761600

#72K: scans.bgs.ac.uk/sobi_scans/boreholes/17761601
#73: scans.bgs.ac.uk/sobi_scans/boreholes/17182510

8 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary: 25

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	RuSoilExAs	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	RuSoilExAs	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	RuSoilExAs	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	RuSoilExAs	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
36.0	E	RuSoilExAs	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
43.0	N	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
43.0	N	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg

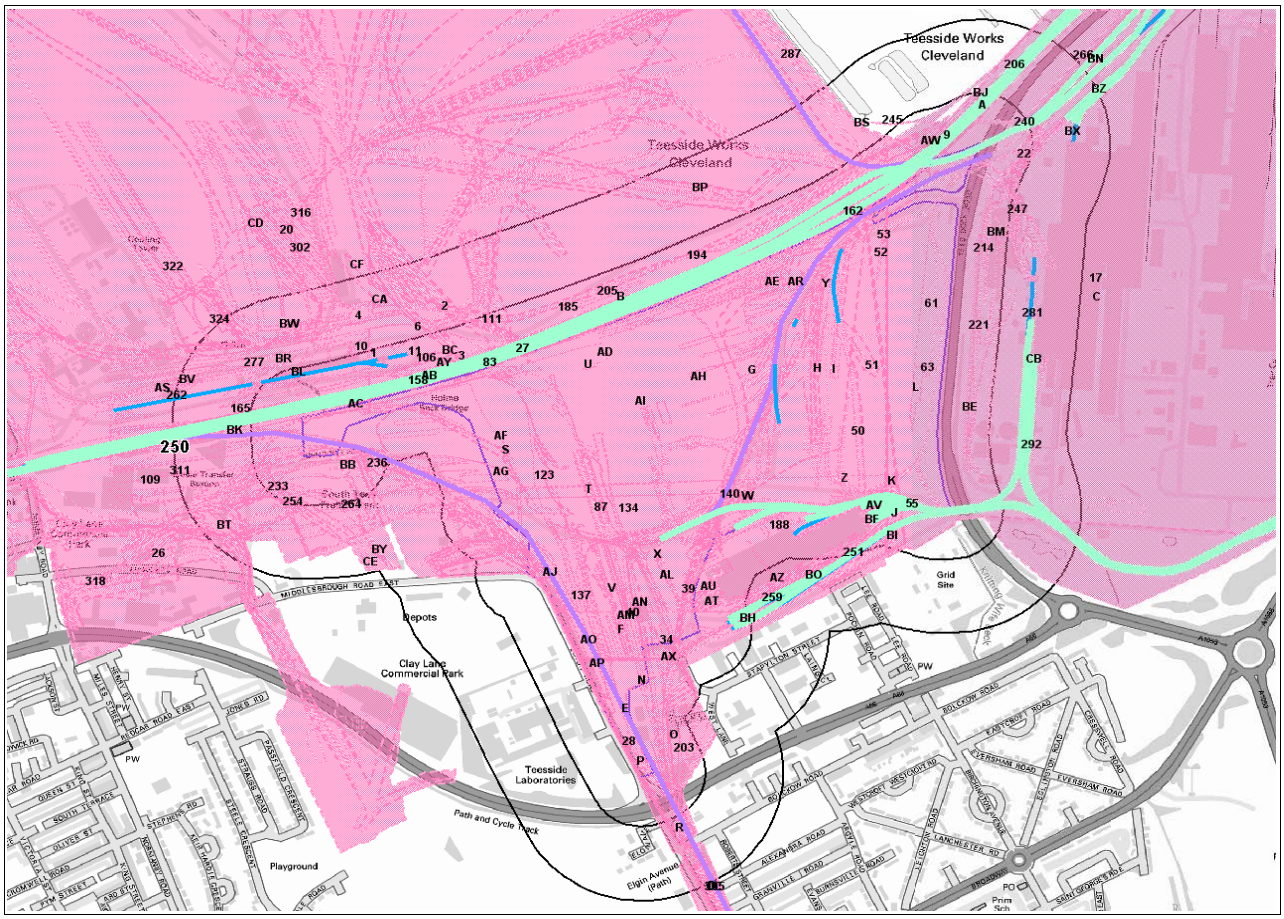
*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels map

NW N NE

W E

SW S SE



Railways and Tunnels Legend

- Site Outline
- Search Buffers (m): 250, 500
- Underground or Partially Underground Railway / Subway System
- Railway Tunnel (OS Mapping)
- Abandoned or Dismantled Railway (OpenStreetMap)
- Railway Track (OS Mapping)
- Railway Track (OpenStreetMap)
- High Speed 2
- High Speed 2 Revised Proposed Route
- Crossrail 1
- Railway and/or Tunnel Feature from Historical Mapping

9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary? No

Have any underground railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary? No

Have any other railway tunnels been identified within 250m of the site boundary? Yes

Distance (m)	Direction	Detail
13	NW	Railway Tunnel
47	NW	Railway Tunnel

Any records that have been identified are represented on the Railways and Tunnels map.

9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? Yes

Have any historical railway or tunnel features been identified within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Details	Date
1	0	On Site	452675 521167	Railway Sidings	1913
2	0	On Site	452675 521167	Railway Sidings	1927
3	0	On Site	453881 521412	Railway Sidings	1893

ID	Distance (m)	Direction	NGR	Details	Date
4	0	On Site	452659 521766	Railway Sidings	1913
5BC	0	On Site	453729 521594	Railway Sidings	1897
6	0	On Site	453574 521781	Railway Sidings	1950
7A	0	On Site	455166 522008	Railway Sidings	1930
8A	0	On Site	455166 522008	Railway Sidings	1913
9	0	On Site	455123 521964	Railway Sidings	1893
10	0	On Site	448153 520315	Railway Sidings	1923
11	0	On Site	452497 521344	Railway Sidings	1955
12B	0	On Site	453987 521823	Railway Sidings	1992
13B	0	On Site	453987 521823	Railway Sidings	1988
14S	0	On Site	453825 521355	Railway Sidings	1913
15C	0	On Site	456024 522385	Railway Sidings	1991
16C	0	On Site	456024 522385	Railway Sidings	1983
17	0	On Site	456024 522385	Railway Sidings	1974
18J	0	On Site	455018 521196	Railway Sidings	1952
19AW	0	On Site	455104 521950	Railway Sidings	1952
27	0	On Site	454299 521529	Tunnel	1929
28	0	On Site	454503 520731	Railway Sidings	1996
29E	0	On Site	454495 520793	Railway Sidings	1952
30E	0	On Site	454489 520797	Railway Sidings	1972
31Q	0	On Site	454618 520977	Railway Sidings	1983
32N	0	On Site	454528 520852	Railway Sidings	1977
33AX	0	On Site	454584 520898	Railway Sidings	1983
34	0	On Site	454579 520928	Railway Sidings	1952
35AP	0	On Site	454433 520857	Railway Sidings	1957
36F	0	On Site	454486 520958	Railway Sidings	1952
37F	0	On Site	454486 520958	Railway Sidings	1957
38P	0	On Site	454521 520693	Railway Sidings	1994
39	0	On Site	n/a	Railway	1929
40	0	On Site	n/a	Railway	1915

ID	Distance (m)	Direction	NGR	Details	Date
41F	0	On Site	n/a	Railway	1894
42V	0	On Site	n/a	Railway	1915
43G	0	On Site	454740 521484	Railway Sidings	1959
44G	0	On Site	454740 521484	Railway Sidings	1952
45Z	0	On Site	454904 521268	Railway Sidings	1959
46H	0	On Site	454867 521490	Railway Sidings	1959
47H	0	On Site	454864 521490	Railway Sidings	1952
48I	0	On Site	454899 521488	Railway Sidings	1952
49I	0	On Site	454894 521489	Railway Sidings	1959
50	0	On Site	454945 521371	Railway Sidings	1952
51	0	On Site	454972 521495	Railway Sidings	1952
52	0	On Site	454988 521726	Railway Sidings	1959
53	0	On Site	454995 521763	Railway Sidings	1976
54J	0	On Site	455005 521200	Railway Sidings	1987
55	0	On Site	455065 521216	Railway Sidings	1973
56K	0	On Site	455011 521259	Railway Sidings	1952
57K	0	On Site	455008 521254	Railway Sidings	1959
58K	0	On Site	455009 521246	Railway Sidings	1952
59L	0	On Site	455059 521445	Railway Sidings	1959
60L	0	On Site	455059 521434	Railway Sidings	1973
61	0	On Site	455090 521739	Railway Sidings	1973
62	0	On Site	455069 521272	Railway Sidings	1959
63	0	On Site	455080 521490	Railway Sidings	1973
64M	0	On Site	455243 521814	Railway Sidings	1915
65	0	On Site	455222 521844	Railway Sidings	1929
66	0	On Site	454571 520637	Railway Sidings	1952
67O	0	On Site	454615 520678	Railway Sidings	1977
68N	0	On Site	454556 520844	Railway Sidings	1952
69O	0	On Site	454635 520500	Railway Sidings	1952
70O	0	On Site	454635 520500	Railway Sidings	1957

ID	Distance (m)	Direction	NGR	Details	Date
71P	0	On Site	454521 520693	Railway Sidings	1994
72P	0	On Site	454515 520710	Railway Sidings	1983
73Q	0	On Site	454732 520977	Railway Sidings	1987
74P	0	On Site	454521 520693	Railway Sidings	1987
75R	0	On Site	n/a	Railway	1895
76R	0	On Site	n/a	Railway	1915
77AS	0	On Site	453500 521542	Railway Sidings	1952
78AG	0	On Site	454082 521250	Railway Sidings	1971
79	0	On Site	454060 521627	Railway Sidings	1984
80AF	0	On Site	454329 521239	Railway Sidings	1988
81S	0	On Site	454303 521323	Railway Sidings	1985
82AQ	0	On Site	454328 521118	Railway Sidings	1985
83	0	On Site	454234 521502	Railway Sidings	1971
84T	0	On Site	454424 521241	Railway Sidings	1988
85T	0	On Site	454424 521241	Railway Sidings	1985
86T	0	On Site	454432 521256	Railway Sidings	1988
87	0	On Site	454432 521256	Railway Sidings	1985
88U	0	On Site	454425 521497	Railway Sidings	1971
89U	0	On Site	454436 521504	Railway Sidings	1971
90V	0	On Site	454457 521064	Railway Sidings	1971
91AD	0	On Site	454457 521522	Railway Sidings	1971
92W	0	On Site	454568 521250	Railway Sidings	1971
93W	0	On Site	454569 521250	Railway Sidings	1983
94AK	0	On Site	454724 521319	Railway Sidings	1989
95X	0	On Site	454558 521111	Railway Sidings	1983
96AL	0	On Site	454581 521060	Railway Sidings	1952
97X	0	On Site	454553 521110	Railway Sidings	1971
98Y	0	On Site	454882 521687	Railway Sidings	1989
99Y	0	On Site	454882 521687	Railway Sidings	1989
100Z	0	On Site	454909 521268	Railway Sidings	1983

ID	Distance (m)	Direction	NGR	Details	Date
101H	0	On Site	454864 521490	Railway Sidings	1971
102H	0	On Site	454894 521489	Railway Sidings	1971
103	0	On Site	455094 521750	Railway Sidings	1984
104A A	0	On Site	455263 521291	Railway Sidings	1993
105A A	0	On Site	455264 521290	Railway Sidings	1983
106	0	On Site	453876 521498	Railway Sidings	1929
107A B	0	On Site	453876 521494	Railway Sidings	1915
108A B	0	On Site	453878 521496	Railway Sidings	1895
109	0	On Site	453750 521285	Railway Sidings	1978
110B K	0	On Site	453750 521292	Railway Sidings	1952
111	0	On Site	454043 521650	Railway Sidings	1952
112A C	0	On Site	453974 521416	Railway Sidings	1993
113A C	0	On Site	453991 521410	Railway Sidings	1958
114A D	0	On Site	454458 521522	Railway Sidings	1952
115U	0	On Site	454427 521496	Railway Sidings	1962
116A E	0	On Site	454750 521694	Railway Sidings	1959
117AI	0	On Site	454500 521468	Railway Sidings	1952
118A E	0	On Site	454750 521694	Railway Sidings	1952
119A F	0	On Site	454324 521250	Railway Sidings	1994
120A G	0	On Site	454250 521249	Railway Sidings	1952
121A G	0	On Site	454250 521250	Railway Sidings	1962
122A R	0	On Site	454789 521668	Railway Sidings	1976
123	0	On Site	454327 521289	Railway Sidings	1987
124A H	0	On Site	454658 521500	Railway Sidings	1959
125A H	0	On Site	454650 521491	Railway Sidings	1959
126AI	0	On Site	454569 521408	Railway Sidings	1959
127AI	0	On Site	454571 521406	Railway Sidings	1952
128T	0	On Site	454433 521256	Railway Sidings	1987
129T	0	On Site	454425 521243	Railway Sidings	1987

ID	Distance (m)	Direction	NGR	Details	Date
130G	0	On Site	454728 521459	Railway Sidings	1952
131G	0	On Site	454728 521459	Railway Sidings	1959
132AJ	0	On Site	454347 521075	Railway Sidings	1988
133AJ	0	On Site	454348 521075	Railway Sidings	1987
134	0	On Site	454501 521204	Railway Sidings	1959
135AJ	0	On Site	454363 521067	Railway Sidings	1994
136AK	0	On Site	454725 521319	Railway Sidings	1993
137	0	On Site	454410 521027	Railway Sidings	1987
138X	0	On Site	454562 521113	Railway Sidings	1952
139X	0	On Site	454562 521112	Railway Sidings	1959
140	0	On Site	454567 521250	Railway Sidings	1959
141W	0	On Site	454567 521250	Railway Sidings	1952
142AL	0	On Site	454581 521058	Railway Sidings	1952
143AN	0	On Site	454526 521016	Railway Sidings	1952
144AM	0	On Site	454496 520982	Railway Sidings	1959
145AM	0	On Site	454496 520982	Railway Sidings	1987
146AN	0	On Site	454542 521016	Railway Sidings	1952
147AO	0	On Site	454422 520912	Railway Sidings	1994
148AO	0	On Site	454422 520912	Railway Sidings	1994
149F	0	On Site	454485 520958	Railway Sidings	1957
150F	0	On Site	454486 520956	Railway Sidings	1972
151AN	0	On Site	454546 521007	Railway Sidings	1959
152AO	0	On Site	454424 520896	Railway Sidings	1959
153AO	0	On Site	454424 520896	Railway Sidings	1987
154AO	0	On Site	454424 520896	Railway Sidings	1983
155AP	0	On Site	454463 520906	Railway Sidings	1952
156AQ	0	On Site	n/a	Railway	1895
157V	0	On Site	n/a	Railway	1895
158	0	On Site	453253 521596	Railway Sidings	1899

ID	Distance (m)	Direction	NGR	Details	Date
159K	0	On Site	455005 521255	Railway Sidings	1952
160A R	0	On Site	454888 521669	Railway Sidings	1994
161A S	0	On Site	453502 521573	Railway Sidings	1958
162	1	NW	454937 521811	Railway Sidings	1952
163A T	2	E	454661 521016	Railway Sidings	1952
164A T	2	E	454661 521016	Railway Sidings	1959
165	7	N	453750 521401	Railway Sidings	1978
166A U	8	E	454655 521046	Railway Sidings	1989
167A U	8	E	454655 521046	Railway Sidings	1983
168A V	8	S	454974 521208	Railway Sidings	1989
169A U	8	E	454654 521046	Railway Sidings	1993
170A V	9	S	454965 521219	Railway Sidings	1993
171	11	W	453799 521324	Railway Sidings	1958
172J	14	S	455009 521206	Railway Sidings	1952
173J	14	S	455009 521206	Railway Sidings	1952
174A T	15	E	454658 521006	Railway Sidings	1959
175J	17	S	455014 521198	Railway Sidings	1959
176A V	18	S	454976 521204	Railway Sidings	1993
177A W	19	N	455098 521951	Railway Sidings	1952
20	20	N	452677 521746	Railway Sidings	1913
178A W	21	NW	455076 521942	Railway Sidings	1952
179A Z	23	E	454801 521080	Railway Sidings	1952
180A X	23	S	454589 520891	Railway Sidings	1952
181B B	27	S	453961 521293	Railway Sidings	1958
182A B	28	N	454041 521474	Railway Sidings	1987
183A Y	28	N	454143 521503	Railway Sidings	1971
184A Y	29	N	454141 521503	Railway Sidings	1984
185	29	N	454046 521647	Railway Sidings	1971
186A Z	31	SE	454780 521073	Railway Sidings	1959

ID	Distance (m)	Direction	NGR	Details	Date
187O	32	E	454623 520703	Railway Sidings	1952
188	33	SE	454792 521169	Railway Sidings	1952
189AV	34	S	454982 521189	Railway Sidings	1983
190AV	34	S	454988 521192	Railway Sidings	1989
191AV	35	S	454989 521193	Railway Sidings	1993
192BA	36	NW	453728 521397	Railway Sidings	1993
193	36	N	454802 521799	Railway Sidings	1959
194	36	N	454750 521772	Railway Sidings	1952
195BA	37	NW	453719 521396	Railway Sidings	1987
196BB	38	S	453915 521277	Railway Sidings	1958
197J	38	S	455016 521177	Railway Sidings	1959
198J	39	S	455016 521173	Railway Sidings	1952
199J	39	S	455016 521174	Railway Sidings	1952
200AW	44	NW	455078 521970	Railway Sidings	1973
201	44	E	455177 521657	Railway Sidings	1959
202BF	45	S	454971 521181	Railway Sidings	1952
203	46	E	454607 520692	Railway Sidings	1983
204BD	48	E	455189 521750	Railway Sidings	1973
205	48	N	454470 521647	Railway Sidings	1929
206	49	NW	455465 522346	Railway Sidings	1952
207AU	49	E	454682 521038	Railway Sidings	1959
208BC	49	N	454056 521503	Railway Sidings	1952
209BE	49	E	455163 521408	Railway Sidings	1959
210AU	49	E	454682 521038	Railway Sidings	1959
211BD	50	E	455190 521750	Railway Sidings	1984
212BE	52	E	455172 521394	Railway Sidings	1983
213BE	52	E	455168 521394	Railway Sidings	1987
214	52	E	455189 521735	Railway Sidings	1959
215Q	52	E	454716 520987	Railway Sidings	1994

ID	Distance (m)	Direction	NGR	Details	Date
216Q	52	E	454716 520987	Railway Sidings	1996
217Q	52	E	454716 520987	Railway Sidings	1994
218Q	53	E	454714 520989	Railway Sidings	1987
219Q	54	E	454713 520988	Railway Sidings	1983
220BE	54	E	455161 521381	Railway Sidings	1973
221	55	E	455179 521579	Railway Sidings	1959
222BG	57	N	454011 521513	Railway Sidings	1993
223BF	58	S	454965 521162	Railway Sidings	1959
224BG	58	N	454001 521508	Railway Sidings	1971
225BG	58	N	454002 521508	Railway Sidings	1984
226BH	58	E	454734 520981	Railway Sidings	1996
227BH	58	E	454734 520981	Railway Sidings	1994
228BH	58	E	454734 520981	Railway Sidings	1994
229BJ	61	NW	455185 522054	Railway Sidings	1965
230AZ	61	E	454834 521075	Railway Sidings	1952
231BM	63	E	455212 521767	Railway Sidings	1959
232BL	65	N	453865 521481	Railway Sidings	1952
21M	66	SE	455255 521834	Railway Sidings	1952
233	66	S	453814 521246	Railway Sidings	1958
234BI	66	S	455013 521149	Railway Sidings	1952
235BI	66	S	455013 521149	Railway Sidings	1952
236	66	E	454016 521297	Railway Sidings	1962
237BO	69	S	454885 521082	Railway Sidings	1993
238	70	S	453872 521242	Railway Sidings	1958
239BJ	74	N	455195 522095	Railway Sidings	1965
22	76	SE	455269 521920	Railway Sidings	1930
240	77	E	455269 521991	Railway Sidings	1984
241BK	77	W	453746 521346	Railway Sidings	1958
242BI	77	S	455010 521145	Railway Sidings	1959

ID	Distance (m)	Direction	NGR	Details	Date
243M	81	SE	455254 521806	Railway Sidings	1952
244M	81	SE	455250 521841	Railway Sidings	1952
245	82	NW	455010 521997	Railway Sidings	1959
246BI	83	S	455015 521131	Railway Sidings	1959
247	83	E	455256 521816	Railway Sidings	1959
248BI	84	S	455015 521130	Railway Sidings	1952
249BI	84	S	455015 521130	Railway Sidings	1952
250BG	85	N	453998 521534	Railway Sidings	1952
251	87	S	454934 521115	Railway Sidings	1959
252	87	N	453914 521540	Railway Sidings	1952
253BL	88	N	453892 521496	Railway Sidings	1952
254	91	S	453864 521224	Railway Sidings	1958
255BE	92	E	455203 521406	Railway Sidings	1959
256BN	92	NE	455416 522130	Railway Sidings	1984
257BM	92	E	455235 521788	Railway Sidings	1952
258BM	93	E	455235 521789	Railway Sidings	1952
259	98	E	454774 521024	Railway Sidings	1959
260BN	100	NE	455400 522129	Railway Sidings	1973
261BL	100	N	453840 521494	Railway Sidings	1952
262	100	NW	453630 521435	Railway Sidings	1958
263BO	106	S	454862 521055	Railway Sidings	1983
264	109	S	453968 521212	Railway Sidings	1958
265BN	111	NE	455388 522140	Railway Sidings	1952
266	112	NE	455638 522439	Railway Sidings	1952
267BR	115	N	453833 521509	Railway Sidings	1952
268BP	117	NW	454551 521872	Railway Sidings	1959
269BP	117	NW	454551 521872	Railway Sidings	1952
270BV	119	NW	453653 521466	Railway Sidings	1958
271BQ	120	NW	454177 521914	Railway Sidings	1952

ID	Distance (m)	Direction	NGR	Details	Date
272B Q	120	NW	454177 521914	Railway Sidings	1959
273B T	129	S	453750 521181	Railway Sidings	1978
274B R	130	N	453816 521522	Railway Sidings	1952
275B S	134	NW	454953 521990	Railway Sidings	1989
276B S	134	NW	454953 521990	Railway Sidings	1989
277	135	NW	453777 521503	Railway Sidings	1952
278B T	139	S	453770 521169	Railway Sidings	1958
279	147	N	453703 521774	Railway Sidings	1958
280B U	151	E	455279 521612	Railway Sidings	1984
281	153	E	455284 521612	Railway Sidings	1973
282B U	153	E	455278 521612	Railway Sidings	1994
283B V	154	NW	453681 521486	Railway Sidings	1952
284B W	158	N	453739 521601	Railway Sidings	1952
285B W	158	N	453769 521571	Railway Sidings	1978
286B Z	160	E	455431 522078	Railway Sidings	1984
287	167	NW	454717 522253	Railway Sidings	1974
288C B	170	E	455287 521510	Railway Sidings	1973
289B X	171	E	455363 521973	Railway Sidings	1973
290B X	171	E	455362 521979	Railway Sidings	1984
291B X	171	E	455362 521979	Railway Sidings	1994
292	172	E	455281 521336	Railway Sidings	1973
293	174	N	453701 521787	Railway Sidings	1978
294B Y	176	S	454015 521122	Railway Sidings	1952
295B Y	176	S	454015 521122	Railway Sidings	1959
296B Y	176	S	454019 521123	Railway Sidings	1952
297	182	W	453564 521236	Railway Sidings	1958
298C A	184	N	454022 521630	Railway Sidings	1952
299B Z	184	E	455418 522055	Railway Sidings	1973
300B Z	184	E	455410 522050	Railway Sidings	1993

ID	Distance (m)	Direction	NGR	Details	Date
301CA	185	N	454017 521629	Railway Sidings	1959
302	187	N	453854 521748	Railway Sidings	1952
303CB	189	E	455306 521509	Railway Sidings	1984
304BY	190	S	454015 521118	Railway Sidings	1952
305	190	SE	454751 520262	Railway Sidings	1977
306CC	190	SE	454681 520390	Railway Sidings	1952
307CC	190	SE	454681 520390	Railway Sidings	1954
308CA	190	N	454010 521632	Railway Sidings	1952
309CB	190	E	455307 521509	Railway Sidings	1973
310CB	191	E	455307 521508	Railway Sidings	1994
311	195	W	453634 521280	Railway Sidings	1958
312CA	200	N	454005 521646	Railway Sidings	1952
313CA	201	N	454004 521646	Railway Sidings	1959
314CD	202	N	453773 521802	Railway Sidings	1952
315CD	202	N	453771 521802	Railway Sidings	1952
23CC	204	SE	454689 520369	Railway Sidings	1893
24D	208	SE	454843 520071	Railway Sidings	1913
25D	208	SE	454843 520071	Railway Sidings	1927
316	208	N	453858 521814	Railway Sidings	1978
317	209	E	455465 521220	Railway Sidings	1973
26	212	SW	453527 521073	Tramway Sidings	1897
318	220	SW	453828 520930	Tramway Sidings	1915
319CE	224	S	454004 521096	Railway Sidings	1952
320CE	225	S	454004 521095	Railway Sidings	1952
321CE	225	S	454004 521095	Railway Sidings	1959
322	225	NW	453577 521737	Railway Sidings	1952
323	225	NW	453655 521620	Railway Sidings	1958
324	229	NW	453711 521589	Railway Sidings	1978
325CF	233	N	453977 521701	Railway Sidings	1952

ID	Distance (m)	Direction	NGR	Details	Date
326C F	233	N	453978 521701	Railway Sidings	1952
327C E	238	S	454001 521088	Railway Sidings	1952

Any records that have been identified are represented on the Railways and Tunnels map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? Yes

Have any historical railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Status
0	On Site	Abandoned
0	On Site	Razed
0	On Site	Disused
0	On Site	Razed
0	On Site	Abandoned
0	On Site	Razed
0	On Site	Disused
0	On Site	Razed
0	On Site	Razed
0	On Site	Razed
0	On Site	Disused
0	On Site	DisusedYes
0	On Site	Razed
0	On Site	Razed
0	On Site	Razed
0	On Site	Abandoned
0	On Site	Abandoned
0	On Site	Abandoned
0	On Site	Disused
0	On Site	Razed
0	On Site	Razed
0	On Site	DisusedYes
35	NW	Razed
35	NW	Disused
46	NE	Razed
46	NE	Razed
46	NE	Disused
46	NE	DisusedYes

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? Yes

Have any active railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Name	Type
0	On Site	Not given	rail
0	On Site	Not given	rail
0	On Site	Not given	rail
0	On Site	Not given	rail
0	On Site	Not given	rail
0	On Site	Not given	rail
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	rail
0	On Site	Not given	rail
0	On Site	Not given	rail
0	On Site	Not given	rail
0	On Site	Not given	rail
0	On Site	Not given	rail
1	S	Not given	rail
1	S	Not given	Multi Track
1	S	Not given	Multi Track
1	S	Not given	rail
2	S	Not given	rail
2	S	Not given	rail
3	S	Not given	rail
3	S	Not given	rail
4	S	Not given	rail
4	S	Not given	rail
5	E	Not given	rail
5	S	Not given	rail
5	E	Not given	rail
5	S	Not given	rail
7	SE	Not given	rail
7	N	Tees Valley Line	rail
7	S	Not given	Multi Track
7	S	Not given	Multi Track
7	SE	Not given	rail

Distance (m)	Direction	Name	Type
7	N	Tees Valley Line	rail
8	NW	Tees Valley Line	rail
8	N	Not given	Multi Track
8	N	Not given	Multi Track
8	NW	Tees Valley Line	rail
10	N	Tees Valley Line	rail
10	N	Tees Valley Line	rail
12	N	Tees Valley Line	rail
12	N	Tees Valley Line	rail
14	N	Not given	rail
14	N	Not given	rail
17	N	Not given	rail
17	N	Not given	rail
18	NW	Not given	Multi Track
18	NW	Not given	Multi Track
20	N	Not given	rail
20	N	Not given	rail
23	N	Not given	rail
23	N	Not given	rail
32	NW	Not given	rail
32	NW	Not given	rail
43	E	Not given	rail
43	E	Not given	rail
46	E	Not given	rail
46	E	Not given	rail
47	E	Not given	rail
47	E	Not given	rail
54	E	Not given	rail
54	E	Not given	rail
55	NW	Not given	Multi Track
55	NW	Not given	Multi Track
56	E	Not given	Multi Track
56	E	Not given	Multi Track
57	E	Not given	Multi Track
57	E	Not given	Multi Track
57	E	Not given	Multi Track
57	E	Not given	Multi Track
59	N	Not given	Multi Track
59	N	Not given	Multi Track
60	E	Not given	rail
60	E	Not given	rail
60	E	Not given	rail
60	E	Not given	rail
61	E	Not given	Multi Track
61	E	Not given	Multi Track
63	NE	Not given	rail
63	NE	Not given	rail
73	N	Not given	Multi Track
73	N	Not given	Multi Track
77	N	Not given	Multi Track
77	N	Not given	Multi Track
80	N	Not given	Multi Track
80	N	Not given	Multi Track

Distance (m)	Direction	Name	Type
93	N	Tees Valley Line	rail
93	N	Tees Valley Line	rail
95	N	Tees Valley Line	rail
95	N	Tees Valley Line	rail
118	NW	Not given	Multi Track
118	NW	Not given	Multi Track
151	E	Not given	rail
151	E	Not given	rail
155	E	Not given	rail
155	E	Not given	Multi Track
155	E	Not given	Multi Track
155	E	Not given	rail
156	E	Not given	Multi Track
156	E	Not given	Multi Track
156	E	Not given	Multi Track
156	E	Not given	Multi Track
158	E	Not given	Multi Track
158	E	Not given	Multi Track
163	E	Not given	rail
163	E	Not given	rail
167	E	Not given	rail
167	E	Not given	rail
174	E	Not given	rail
174	E	Not given	rail
176	E	Not given	Multi Track
176	E	Not given	Multi Track
176	E	Not given	Multi Track
176	E	Not given	Multi Track
179	E	Not given	Multi Track
179	E	Not given	Multi Track
184	E	Not given	rail
184	E	Not given	rail
189	E	Not given	rail
189	E	Not given	rail
239	E	Not given	Multi Track
239	E	Not given	Multi Track

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project? No

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

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