PHASE 1 PRELIMINARY RISK ASSESSMENT

Redcar Energy Centre, Redcar

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Aaron Cousins	Associate Director	28th May 2020

Prepared by:

RPS

Aaron Cousins
Associate Director

8 Exchange Quay
Manchester, M5 6EJ

T +44 161 786 8550
E cousinsa@rpsgroup.com

Prepared for:

Redcar Holdings Limited

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EXECUTIVE SUMMARY

RPS was commissioned by Redcar Holdings Limited (the client) to undertake a Phase 1 Preliminary Environmental Risk Assessment for the proposed Redcar Energy Centre (REC) on land at the Redcar Bulk Terminal (hereafter referred to as the 'Application Site') as shown on Figure 1. The report has been commissioned prior to the proposed redevelopment of the Application Site to inform the associated planning process.

Current Site and Surrounding Land Use

A site inspection was not undertaken as part of this assessment. RPS personnel have however previously visited the site on 14 June 2019 and photographs from this visit were used to inform the assessment.

The Application Site currently comprises undeveloped land situated on the shore edge of the Teesmouth Estuary. At the time of the site visit there were a number of temporary cabins, lorries, trailers and skips present on site. The Application Site is located at the north western extent of the Redcar Steelworks. A pipeline gantry encroaches onto the east of the site.

History of Site and Surrounding Land use

A review of historical maps indicates that the Application Site was reclaimed from the Tees Estuary circa 1950 with the Redcar Jetty and associated Tramway crossing the southern extent of the site since prior to 1893. The Application Site shows evidence of earthworks from 1952 (likely to be associated with the reclamation process) and is identified as a Spoil Tip on maps dated 1967-1969.

The earliest maps to show structures on the Application Site (other than the Jetty) is dated 1980. This shows railway lines and conveyors on site and tanks on adjacent land to the east. The site is labelled as Teeside Works Redcar and is considered likely to have been part of the adjacent steelworks (now closed).

Environmental Setting

The Application Site is indicated to be underlain by a Secondary Undifferentiated Aquifer associated with the Tidal Flat Deposits. The underlying Bedrock consists of the Mercia Mudstone Formation which is classified as a Secondary B Aquifer.

The Application Site is not indicated to be located in a groundwater Source Protection Zone (SPZ) and there are no records of licensed groundwater abstractions in the vicinity of the site. The site is situated directly adjacent to the Teesmouth and Cleveland Coast Site of Special Scientific Interest (SSSI).

The nearest notable surface water feature is the River Tees Estuary located approximately 870 metres west of the Application Site.

There are no residential properties, schools, hospitals, care homes or other sensitive land uses in the near vicinity of the Application Site.

Outline Conceptual Site Model

There is the potential for soil and groundwater contamination to be present on the Application Site associated with historical use of the site and surrounding land (principally associated with the steel works) and also due to the presence of Made Ground which is understood to be of considerable thickness owing to the land reclamation process. There is also the potential for the generation of ground gas associated with Made Ground and nearby infilled land/landfills. Unmitigated, potential contaminants and ground gas could represent a risk to human health and controlled waters receptors, buildings structures and utilities.

Recommendations

The outline CSM has identified a number of potential pollutant linkages that may be active. It is therefore recommended that a detailed Phase 2 Site Investigation is undertaken. As a minimum, the investigation should be targeted to provide information on:

- the nature and depth of Made Ground beneath the Application Site;
- the nature and extent of soil and groundwater contamination beneath the Application Site; and,
- the ground gas regime beneath the Application Site.

It would be prudent to combine the site investigation undertaken for environmental purposes, as described above, with geotechnical testing and soil permeability testing to facilitate foundation / pavement design and drainage design.

It is recommended that this should be secured through a pre-commencement condition attached to any planning consent granted for the proposed development.

1 INTRODUCTION

1.1 Preamble

1.1.1 RPS was commissioned by Redcar Holdings Limited to undertake a Phase 1 Preliminary Environmental Risk Assessment of for the proposed Redcar Energy Centre (REC) on land at the Redcar Bulk Terminal. The report has been commissioned as part of the Environmental Impact Assessment process in support of the planning application.

1.1.2 The Application Site covers approximately 10.1 hectares and currently comprises open land within the demise of the Redcar Bulk Terminal. A site location plan is presented as Figure 1.

1.1.3 The proposed REC (hereafter referred to as 'the proposed development') will include:

- a Materials Recovery Facility incorporating a Bulk Storage Facility;
- an Energy Recovery Facility; and
- an Incinerator Bottom Ash recycling facility.

1.1.4 The REC would be capable of generating up to 49.9 Mega Watts of electricity (MWe) from up to 450,000 tonnes per annum of mixed residual Municipal Solid Waste, Commercial and Industrial waste and/or Refuse Derived Fuel.

1.2 Objectives

1.2.1 The primary purpose of the assessment is to support the proposed planning application and associated Environmental Impact Assessment in relation to the proposed development of REC.

1.2.2 The principal objectives of this assessment were as follows:

- to assess potential sources of contamination at the Application Site, associated with historical and current land uses both on site and in the surrounding area;
- to review the environmental setting to assess the sensitivity of the surrounding area to contamination/pollution;
- produce an outline Conceptual Site Model (CSM) detailing how any contamination may impact the identified receptors via pollutant linkages; and
- to make recommendations for further investigation of potential pollutant linkages, where considered necessary.

1.3 Legislation and Guidance

1.3.1 This report has been produced in general accordance with the following legislation and guidance:

- European Water Framework Directive 2000 (2000/60/EC);
- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017;
- The Groundwater Daughter Directive 2006; (2006/118/EC);
- Groundwater (England and Wales) Regulations 2009;
- The Water Resources Act 1991 (as amended 2009);
- The Water Act 2003;

- The Environment Act 1995;
- Environmental Liability Directive 2004 (2004/35/EC);
- Environmental Protection Act (EPA) 1990 (as amended);
- Contaminated Land (England) Regulations 2006 (as amended);
- Environmental Permitting (England and Wales) Regulations 2016 (as amended); and
- Wildlife and Countryside Act 1981 (as amended) (in terms of sites designated for their geological interest).
- The Town and Country Planning Act 1990 (as amended);
- British Standard BS10175 Investigation of Potentially Contaminated Sites (BSI, 2011 and amended 2017);
- Model Procedures for the Management of Land Contamination (CLR11) (Defra and the Environment Agency, 2004 (soon to be withdrawn and replaced by Land Contamination: Risk Management (LCRM));
- Construction Industry Research and Information Association (CIRIA) 132 (1996): A Guide for Safe Working on Contaminated Sites;
- CIRIA C552: Contaminated Land Risk Assessment - A Guide to Good Practice (CIRA, 2001);
- CIRIA 73: Role and Responsibility in Site Investigation (CIRIA, 1991);
- CIRIA Document C665 : Assessing Risks Posed by Hazardous Ground Gases to Buildings CIRIA (2007);
- British Standard requirements for the 'Code of practice for ground investigations' (ref. BS5930:2015);
- British Standard requirements for the 'Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings' (ref BS8485:2015+A1:2019); and
- Defra Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance (Defra, 2012).

1.3.2 Details of the limitations of this type of assessment are described in Annex A.

2 SITE RECONNAISSANCE AND DESK STUDY

2.1 Site Reconnaissance

2.1.1 This section of the report is based upon observations made during a site visit carried out on 14th of June 2019 as part of the wider RPS assessment. Selected photos are shown in Annex B.

General view of the Application Site. For further photos see Annex B.

The Application Site

Table 1 – Summary of on-site activities

Section	Description
Background:	The Application Site is located approximately 4.5 km west of Redcar town centre and 8.5km north east of Middlesbrough town centre It is irregular in shape and occupies an area of approximately 10.1ha.
Site Layout:	The Application Site is open in character and there are a number of small corrugated metal buildings located on the eastern part of the site. Access to the Application Site is via a series of internal access roads which serve the industrial area. The internal road merges with the A1085 Trunk Road
Activity / Operations:	The Application Site has been recently used for the storage of materials associated with the Redcar Bulk Terminal. A pipeline gantry encroaches onto the Application Site from the steelworks to the east. It is assumed there may be a number of buried pipelines and relict underground obstructions associated with past uses.
Surface Cover:	The majority of the Application Site is covered by bare dark brown/grey coloured ground. There are limited areas of low vegetation and grass near the boundaries . There is a limited area of hardstanding in east of the Application Site.

The Surrounding Area

2.1.2 The Application Site is located in an area of predominantly industrial land use. At the time of the site inspection, neighbouring land consisted of the following:

- The docks associated with the Redcar Bulk Terminal approximately 950 metres to the west;
- PD Ports Teesport and associated areas of storage, a major deep sea complex handling 28 million tonnes per year approximately 2.5km to the south;
- Tesco Distribution Teesport approximately 1.8km to the south of the Application Site which acts as a distribution warehouse to Tesco stores;
- BOC gas plant for the production of industrial gas approximately 2.5km to the south east of the Application Site;
- The biomass fuelled Teesport Renewable Energy Plant, which is due to be commissioned in 2020, approximately 3km to the south west of the Application Site and the Tata steel works 3km to the south east;
- A large water treatment works, Bran Sands, operated by Northumbria Water approximately 1.8km to the south east of the Application Site.
- Able Port - this facility is used for shipbreaking and decommissioning of oil rigs - is located approximately 3.5km to the west of the Application Site, on the opposite side of the Tees Estuary.
- Hartlepool Nuclear power station directly adjacent to Able Port on the opposite side of the Tees Estuary from the application site.
- The Teesside Refinery approximately 1.6km to the south west of the Application Site, the refinery was both an oil refinery and chemical plant. Refining was suspended in 2009, however, the site continues to operate as a terminal and storage facility.

2.2 Site History

Historical Map Review

2.2.1 The following review is based on past editions of readily available Ordnance Survey (OS) maps. These include scales of 1:1,250, 1:2,500 and 1:10,000 dated 1893 to 2020. Historical mapping is provided in Annex D.

Table 3 – Historical Site Uses

On-site Land Use and Features	Dates
The Application Site is located on an area of foreshore between the high and low tidal limits labelled as Bran Sand.	1893 - 1969
Redcar Jetty and associated Tramway crosses the south of the Application Site	1893 - 1969
Tramway spur extending across the centre of the Application Site; land is raised either side of tramway spreading across majority of site suggesting earthworks occurred.	1952 - 1969
Application Site labelled as Spoil Heap	1952 - 1969
Long rectangular structures in south eastern area of the site (likely to be associated with Steel Works)	1980 - present
Access roadway at southern boundary.	1980 -present
Conveyors, roadways and auxiliary buildings, associated with steelworks. Application Site labelled as Teesside Works Redcar,	1980 - 1991

2.2.2 As series of aerial photographs dating from 1999 to recent that are provided within the Groundsure data report provided in Annex E, suggest that the Application Site was used for the surface storage of material associated with the Steel Works during 1999 (possibly linear steel products) with a compound in the eastern extent which appears to include small buildings, skips and containers. Later aerial photographs suggest that the majority of the site was vacant apart from the compounds area, which had been extended, and contained further skips and possible areas of stockpiled materials/waste.

Table 4 – Historical Neighbouring Site Uses

Surrounding Land Uses (250m radius)	Orientation	Distance (metres)	Dates	
			From	To
Teeside Works (Redcar Steelworks)	N, S & E	Adjacent	1980	present
Tanks	SE	10	1980	Present
Conveyors	S	50	1980	present
Conveyors	SE	50	1980	Present
Tramway	NE	200	1893	1969

2.2.3 The Application Site and the surrounding area to the north, east and south have formed part of Redcar Steel Works with associated infrastructure such as tanks and conveyors since circa 1980.

Site Planning History

2.2.4 Relevant planning records for the site, obtained from Redcar and Cleveland Borough Council planning website are summarised as follows:

- Planning Application: R/2020/0224/LAC, NET ZERO TEESSIDE PROJECT, LAND IN THE VICINITY OF SSI STEEL WORKS SITE, REDCAR TS10 5QW. DWD PROPERTY & PLANNING. Received: 04/05/2020

2.2.5 This application relates to the proposed Net Zero CCGT electricity generation and full chain carbon capture, transport and storage project. Reference to Figure 1 (NZT_200304_P36_v2) of the Statement of community consultation document published May 2020 (ref: 13626) indicates that the Application Site is located within an area designated for search for a proposed water abstraction and discharge corridor, linking the wider development to the North Sea.

2.3 Previous Reports

2.3.1 RPS has not been provided with any previous ground investigation related reports associated with the Application Site or adjacent land.

2.4 Environmental Setting

Geology

2.4.1 Based on British Geological Survey (BGS) mapping (1:50,000-scale) and the Environment Agency (EA) Groundwater Vulnerability mapping (1:100,000-scale), the stratigraphic sequence and aquifer classifications beneath the site are indicated to be as follows:

Table 5 – Descriptions of Geological Strata

Strata	Description and approximate thickness	Aquifer Classification
Artificial Ground	Associated with reclamation of the site from the foreshore. Anecdotal information suggests that use of steelworks waste for the reclamation which is likely to consist of slag and other foundry waste material.	N/A
Tidal Flat Deposits	Sand and silt.	Secondary Undifferentiated Aquifer
Mercia Mudstone Group	Dominantly red, occasionally green-grey mudstone and siltstone. over 1km	Secondary B Aquifer

2.4.2 Based on the BGS Historic Borehole index, a map of historic boreholes shows that there are no records of boreholes on the Application Site, however there are three records within 250 metres of the site, including two boreholes BGS ref: NZ52NE52 and NZ52NE54. The boreholes appear to have been drilled in the 1970s, ground levels at 7.04 metres and 2.53 metres above ordnance datum (AOD) respectively, following the tipping of spoil in the general area identified on historic mapping. A general stratigraphic sequence represented by these records is summarised below:

Table 6 – Descriptions of Geological Strata – BGS Borehole Logs

Description	Strata	Approximate Depth (m AOD)	Approximate Thickness (m)
Cobble sized SLAG.	Made Ground	From Ground Level to 0.44	1.00 to 6.60
Light brown slightly gravelly fine to medium SAND with occasional shell fragments. Gravel is rounded and fine.	Tidal Flat Deposits	From 0.44 to -13.00	11.50 to 13.00
Stiff reddish-brown mottled grey silty slightly gravelly CLAY. Gravel is rub-rounded to sub-angular, fine to medium.	Glacial Till	From -13.00 to -14.00	1.50 to 3.50

Description	Strata	Approximate Depth (m AOD)	Approximate Thickness (m)
Weak reddish-brown Mudstone. highly becoming moderately weathered red brown, closely fractured, with thin bands of very weak greenish grey siltstone.	Mercia Mudstone	from -14.00	Unproven

2.4.3 Made Ground is indicated both by the borehole records and geological and historical mapping to be present across the Application Site associated with tipping of waste material from the steelworks, significantly raising land levels. At present the nature and thickness of the Made Ground present on site is not known.

Hydrogeology

2.4.4 The Application Site is located above a Secondary Undifferentiated Aquifer relating to the Tidal Flat Deposits and a Secondary B Aquifer relating to the Mercia Mudstone.

- Secondary Undifferentiated Aquifer: These formations have varying characteristics in different locations.
- Secondary B Aquifer: These formations are generally formed of lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.

2.4.5 According to Environment Agency data, the Application Site is not located in a groundwater Source Protection Zone (SPZ).

2.4.6 Under the Water Framework Directive, the Environment Agency's local River Basin Management Plan classified groundwater chemical quality beneath the Application Site as 'poor' in 2015.

2.4.7 Information provided by the Environment Agency indicates that there are no records of active licensed groundwater abstractions within 2km of the Application Site.

Surface Water

2.4.8 There is a single watercourse within 1km of the Application Site which is classified within the Northumbria River Basin Management Plan published by the Environment Agency (2015) under the European Water Framework Directive (2000). A list of all nearby watercourses and water bodies is as follows:

Table 7 – Nearby Watercourses and Water Bodies

Watercourse / Body	Quality Classification	Approx. Distance and Direction from Site
River Tees	Chemical – 'Fail' (2016) Ecological – 'Moderate' (2016)	870 metres west

2.4.9 Information provided by the Environment Agency indicates that there are no records of active licensed surface water abstractions within 2km of the Application Site.

Environmentally Important Sites

2.4.10 Natural England data indicates a number of ecologically sensitive sites, that constitute environmental receptors as defined within Table 1 of the DEFRA Environmental Protection Act 1990: Part 2A - Contaminated Land Statutory Guidance (2012), located within a 1km radius of the Application Site.

2.4.11 The Application Site is located immediately adjacent to a Site of Special Scientific Interest (SSSI); the Teesmouth and Cleveland Coast which is located beyond the site's northern boundary.

2.4.12 The Teesmouth and Cleveland Coast SSSI is designated as a result of several nationally important features including geology, sand dunes, saltmarshes, breeding harbour seals, a wide range of breeding and non-breeding birds and a diverse assemblage of invertebrates associated with sand dunes.

2.4.13 The Application Site is also located 448 metres from the Redcar Rocks SSSI. This SSSI is designated for its geological importance and overlaps with the Teesmouth and Cleveland Coast SSSI.

2.4.14 The Application Site is located approximately 78 metres south east of the Teesmouth and Cleveland Coast Special Protection Area (SPA), a habitat for rare and migratory birds. This Area is also designated as a proposed Ramsar site, listed as a wetland of international importance.

Radon

2.4.15 According to the Indicative Atlas of Radon in England and Wales published by the Health Protection Agency (part of Public Health England) and the British Geological Survey, the Application Site is not located in an area at significant risk from radon gas.

Coal Mining

2.4.16 The Interactive Map Viewer on the Coal Authority website indicates that the Application Site is not located in a coal mining reporting area.

Non-Coal Mining

2.4.17 There are no records of non-coal mining or other mineral extractions within 1km of the Application Site.

2.5 Authorised Processes and Pollution Incidents

Landfills and Waste Sites

2.5.1 Information provided by a number of sources (detailed below) shows that there is one recorded licensed landfill site recorded within 250 metres of the Application Site, described within the following table.

Table 8 – Landfill / Waste Transfer / Waste Treatment Sites

Source of Record	Approx. Distance and Direction	Licence Details	Waste Type and Details
Environment Agency	433 metres East	Site Ref: 0700/CLE/087 Issue: 11/12/1979 Surrender: 13/04/1997	Landfill. Inert, Industrial EPR Ref: YP1/L/BRI012

2.5.2 Historical mapping indicates that the Application Site has been reclaimed from the foreshore and some mas identify the site as a spoil tip. Anecdotal information suggests that steelworks waste in the form of slag was tipped on the site during the reclamation process.

2.5.3 The Groundsure report identifies several surface ground workings within 250 metres of the Application Site including a refuse heap (on site – assumed to represent the spoil tip identified by historical mapping), sand pit (78 metres north east), unspecified pit (104 metres north east), refuse heap (114 metres west and 232 metres east) and multiple unspecified ground workings.

Environmental Permits

2.5.4 Environment Agency and Local Authority data indicates that there are three processes regulated by an Environmental Permit (under the Environmental Permitting Regulations 2010) within 500 metres of the Application Site. These are outlined in the table below:

Table 9 – Environmental Permits

Licence Holder	Approx. Distance and Direction from Site	Permitted Activity
British Steel Corporation Waste Management licence No: 68638 Issue: 19/07/1993 Expired: 01/04/1996	390 metres East	Industrial Waste Landfill (Factory curtilage) 25000 tonnes EPR Licence: BRI002 EPR reference: RP3793NV/A001
BRITISH STEEL LIMITED Installation Name: TEESSIDE BEAM MILL Issue: 21/04/2017 Effective: 31/01/2020	409 metres South east	Associated process Permit: QP3735JT EPR reference: VP3839DA
Corus Construction Waste Management licence No: 60141 Issue: 12/01/1983 Surrendered: 29/11/2018	449 metres West	Industrial Waste Landfill (Factory curtilage) 25000 tonnes EPR Licence: BRI001 EPR reference: TP3390ZV/S002

COMAH Sites

2.5.5 The Application Site is currently located within an operational COMAH facility. This relates to South Teesside Company Limited, a COMAH Upper Tier Operator.

Pollution Incidents

2.5.6 Environment Agency data indicates that there are no records of 'major' or 'significant' pollution incidents within 500 metres of the Application Site.

2.6 Unexploded Ordnance

2.6.1 Reference to the Zetica Regional Unexploded Bomb online interactive risk map indicates that the site is in an area of low potential risk from Unexploded Bombs. As the Application Site is not within

an area of known military history, in general accordance with CIRIA Report no further consideration of Unexploded Ordnance is considered necessary.

2.7 Ground Stability

2.7.1 Information provided by the BGS indicates that the Application Site is at very low or negligible risk of natural land stability associated with shrink swell clays, running sands, compressible deposits, collapsible deposits, landslides and ground dissolution.

2.7.2 Ground stability associated with the Made Ground and underlying natural deposits should be assessed as part of a detailed site investigation prior to redevelopment of the Application Site.

3 OUTLINE CONCEPTUAL SITE MODEL

3.1 Background

3.1.1 An outline conceptual site model (CSM) consists of an appraisal of the *source-pathway-receptor* 'contaminant linkages' which is central to the approach used to determine the existence of 'contaminated land' according to the definition set out under Part 2A of the Environmental Protection Act 1990. For a risk to exist (under Part 2A), all three of the following components must be present to facilitate a potential 'pollutant linkage'.

- **Source** referring to the source of contamination (Hazard).
- **Pathway** for the contaminant to move/migrate to receptor(s).
- **Receptor** (Target) that could be affected by the contaminant(s).

3.1.2 Receptors include human beings, other living organisms, crops, controlled waters and buildings / structures. The National Planning Policy Framework, used to address contaminated land through the planning process, follows the same principles as those set out under Part 2A. Further details on the Part 2A regime are presented within Annex C.

3.2 Potential Pollutant Linkages

3.2.1 Each stage of the potential pollutant linkages have been assessed individually on the basis of information obtained during the site reconnaissance, and desk study exercise and are discussed in the following section.

Potential Contaminant Sources

On Site – Current

3.2.2 Current and recent site use including the compound with various sheds, cabins, containers, skip and vehicle storage represents a potential source of contamination.

3.2.3 Pipelines, drainage infrastructure and any other relict infrastructure associated with steel works and other industrial land uses nearby also represent potential source of contamination.

3.2.4 Made Ground is likely to be present to a considerable depth beneath the site, where present this could represent a potential source of a wide range of contaminants of concern and / or ground gas.

On Site – Historical

3.2.5 Historical maps indicate the presence of a tramway / railway infrastructure across the site from the 1890s until the 1970s, and tipping of materials in the 1950s and 1960s. In the 1980s a number of conveyors, buildings and roadways were present on the site associated with the wider steel works. These historical activities represent the potential source of a number of contaminants in the ground beneath the site including hydrocarbons, metals, inorganic compounds, acids, alkalis, organic solvents, PCB's and asbestos.

Off-site – Current

3.2.6 Current off-site potential sources of contaminants of concern include the adjacent steelworks featuring tanks, pipelines, conveyors etc (recently closed). The processes associated with this

industry are likely to represent a range of sources of potential contaminants including hydrocarbons, metals, inorganic compounds, acids, alkalis, organic solvents, PCB's and asbestos.

Off-Site – Historical

3.2.7 Historical maps indicate large areas of spoil tipping near the site, storage of process materials, railways and roadways, all representing a potential source of contaminants. The area surrounding the site has a long historical of heavy industrial land uses including steel making and there is the potential for a wide range of contaminates to be present in soil and groundwater.

3.2.8 There is also the potential for a wide range of contaminants and ground gases to be present associated with infilling of land and tipping.

Potential Pathways

3.2.9 In areas of the site covered by buildings or hardstanding the risks to future on site human health receptors via the pathways of dermal contact and ingestion may be reduced mitigated. However, at present the majority of the site comprises bare ground, where the pathways of dermal contact and ingestion could be active. In addition, there would be potential for the airborne migration of soil /dust from these areas to the wider site and off-site.

3.2.10 There is the potential for ground gas and volatile contaminants of concern in soil and/or groundwater (if present) beneath the site to impact future site users via the inhalation pathway in indoor areas.

3.2.11 There is the potential for contaminants of concern (if present) beneath the site to migrate on or off-site via granular horizons of the Made Ground (if present) and the tidal flat deposits. These may impact controlled waters and off-site human heath receptors via the dermal contact, ingestion and vapour inhalation pathways.

3.2.12 There is also the potential for any buried relict structures and utility structures to act as a pathway for contaminants.

Potential Receptors

3.2.13 Potential human health receptors include current site users, future site users and off-site human health receptors.

3.2.14 The risk to construction workers during the redevelopment process will need to be assessed prior to any earthworks.

3.2.15 The nearest surface water feature is the River Tees which is located adjacent to the north of the site. This represents a sensitive receptor and is designated as a SSSI. The groundwater associated with the Tidal Flat Deposits and Bedrock represent moderately sensitive receptors and may act as migration pathways to the River Tees.

3.3 Outline Conceptual Site Model

3.3.1 An outline CSM has been developed on the basis of the site reconnaissance and desk study. The CSM is used to identify potential sources, pathways and receptors (i.e. potential pollutant linkages) on site and is summarised in the table below:

Table 10 – Outline Conceptual Site Model

Potential Source	Contaminants of Concern	*Via*	Potential Pathways	Linkage Potentially Active?	Receptors
On site – current: Waste storage, Materials storage, Vehicles, Pipelines and buried infrastructure Made Ground **On site – historical:** Steelworks and associated infrastructure	hydrocarbons, metals, inorganic compounds, acids, alkalis, organic solvents, PCB's and asbestos.	Soil	Direct contact/ingestion	✓	Current and Future site users
			Inhalation of volatiles	✓	
			Airborne migration of soil or dust	✓	Off-site users
			Leaching of mobile contaminants	✓	Secondary Undifferentiated Aquifer -Tidal Flat Deposits Secondary B Aquifer – Mercia Mudstone
		Groundwater	Direct contact/ingestion	✓ ✓	Current and Future site users Off-site users
			Inhalation of volatiles	✓ ✓	Current and Future site users Off-site users
			Vertical and lateral migration in permeable strata	✓ ✓	Secondary Undifferentiated Aquifer -Tidal Flat Deposits Secondary B Aquifer – Mercia Mudstone River Tees Estuary
Off-site – current: Steelworks **Off site – historical:** Steelworks Railways	hydrocarbons, metals, inorganic compounds, acids, alkalis, organic solvents, PCB's and asbestos.	Groundwater	Direct contact/ingestion	✓	Current and Future site users
			Inhalation of volatiles	✓	Current and Future site users
On and off-site – Made Ground / natural strata or bio-degradation of contamination	Carbon dioxide and methane	Ground Gas	Inhalation of ground gas	✓ ✓	Current and Future site users Off-site users
			Explosive risks	✓ ✓	Current and Future site users Off-site users

3.3.2 The risk assessment is based upon the available information relating to the site. Should ground conditions inconsistent with those outlined in this report be encountered RPS should be contacted to enable further assessment.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1.1 The outline CSM produced upon completion of the desk study assessment has identified a number of potential pollutant linkages that may be active. It is therefore recommended that the potential for these linkages to be active is assessed through a Phase 2 Geo-Environmental Site Investigation, to be secured through a pre-commencement condition attached to the issue of planning consent. The scope of this investigation should include the following as a minimum:

- Drilling of a number of shallow and deep boreholes and trial pits across the site targeting identified potential sources and pollutant linkages;
- Installation of groundwater and gas monitoring wells;
- Collection of soil and groundwater samples from beneath the site with chemical analysis of these samples for contaminants of concern;
- Ground gas monitoring from wells on multiple weekly occasions;
- Assessment of ground conditions and generic quantitative risk assessment of soil and groundwater chemical analysis results to determine the potential for the identified potential pollutant linkages to remain active upon redevelopment of the site; and
- Provision of recommendations (where necessary) for remediation/mitigation measures to ensure that any identified potential pollutant linkages are not active upon redevelopment of the site.

4.1.2 It would be prudent to combine any site investigation undertaken for environmental purposes with a geotechnical site investigation to investigate ground stability. This would facilitate preliminary foundation and pavement design.

FIGURES

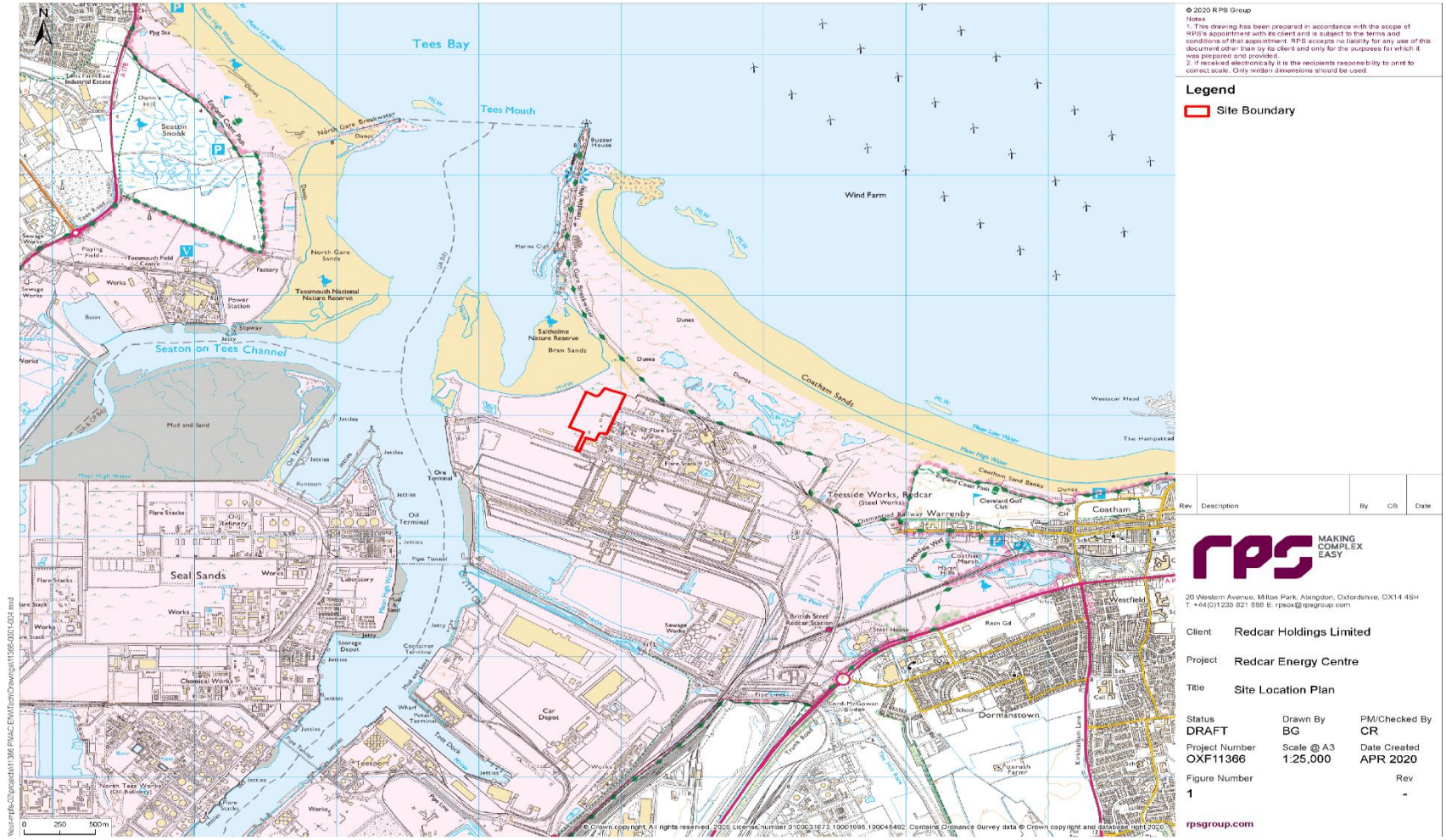

Figure 1: Site Location Plan

ANNEXES

Annex A

General Notes

GENERAL NOTES

1. A "desk study" means that no site visits have been carried out as any part thereof, unless otherwise specified.
2. This report provides available factual data for the site obtained only from the sources described in the text and related to the site on the basis of the location information provided by the Client.
3. The desk study information is not necessarily exhaustive and further information relevant to the site may be available from other sources.
4. The accuracy of maps cannot be guaranteed and it should be recognised that different conditions on site may have existed between and subsequent to the various map surveys.
5. No sampling or analysis has been undertaken in relation to this desk study.
6. Any borehole data from British Geological Survey sources is included on the basis that: "The British Geological Survey accept no responsibility for omissions or misinterpretation of the data from their Data Bank as this may be old or obtained from non-BGS sources and may not represent current interpretation".
7. Where any data supplied by the Client or from other sources, including that from previous site investigations, have been used it has been assumed that the information is correct. No responsibility can be accepted by RPS for inaccuracies in the data supplied by any other party.
8. This report is prepared and written in the context of an agreed scope of work and should not be used in a different context. Furthermore, new information, improved practices and changes in legislation may necessitate a re-interpretation of the report in whole or in part after its original submission.
9. The copyright in the written materials shall remain the property of the RPS Company but with a royalty-free perpetual licence to the Client deemed to be granted on payment in full to the RPS Company by the Client of the outstanding amounts.
10. The report is provided for sole use by the Client and is confidential to them, their professional advisors, no responsibility whatsoever for the contents of the report will be accepted to any person other than the Client. [Unless otherwise agreed]
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Annex B

Photographs

Photo 1: Site entrance

Photo 2: Steelworks

Photo 3: Estuary at northern boundary

Photo 4: Estuary at northern boundary

Photo 5: Site boundary

Photo 6: General view of site

8, Exchange Quay, Manchester, M5 3EJ

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MAKING COMPLEX EASY

Client: Redcar Holdings

Date: May 2020

Project: Redcar Energy Centre

Appendix: B

Title: Site Photographs

Job Ref: JER8594

Annex C

Part 2A (The Contaminated Land Regime)

CONTAMINATED LAND DEFINITION

Under Section 57 of the Environmental Act 1995, Part 2A was inserted into the Environmental Protection Act 1990 to include provisions for the management of contaminated land.

Subsequent regulations were first implemented in England in April 2000, Scotland in July 2000 and Wales in July 2001[1], providing a definition of 'contaminated land' and setting out the nature of liabilities that can be incurred by owners of contaminated land and groundwater.

According to the Act, contaminated land is defined as 'any land which appears to the local authority in whose area the land is situated to be in such a condition, by reason of substances in, on or under the land that:

1. *significant harm* is being caused or there is a *significant possibility* of such harm being caused; or
2. *significant pollution* of controlled waters[2] is being caused or there is a significant possibility of such pollution being caused[3]'

The guidance on determining whether a particular possibility is significant is based on the principles of risk assessment and in particular on considerations of the magnitude or consequences of the different types of significant harm caused. The term 'possibility of significant harm being caused' should be taken, as referring to a measure of the probability, or frequency, of the occurrence of circumstances that could lead to significant harm being caused.

The following situations are defined where harm is to be regarded as significant:

1. Chronic or acute toxic effect, serious injury or death to humans
2. Irreversible or other adverse harm to the ecological system
3. Substantial damage to, or failure of, buildings
4. Disease, other physical damage or death of livestock or crops
5. The pollution of controlled waters[4].

With regard to radioactivity, contaminated land is defined as 'any land which appears to be in such a condition, by reason of substances in, on or under the land that harm is being caused, or there is a *significant possibility of such harm being caused*[5]'.

[1] In England by The Contaminated Land (England) Regulations 2000, updated by The Contaminated Land (England) (Amendment) Regulations 2012; in Scotland by The Contaminated Land (Scotland) Regulations 2000, updated by the Contaminated Land (Scotland) Regulations 2005; and in Wales by The Contaminated Land (Wales) Regulations 2001, updated by the Contaminated Land (Wales) Regulations 2006.

[2] In Scotland the term "controlled water" has been updated to "water environment" under the Contaminated Land (Scotland) Regulations 2005 in line with the Water Environment and Water Services (Scotland) Act 2003.

[3] The definition was amended in 2012 by implementation of the Water Act 2003.

[4] Groundwater in this context does not include waters within underground strata but above the saturated zone.

[5] The Radioactive Contaminated Land (Modification of Enactments) (England) Regulations 2006 and Contaminated Land (Wales) Regulations 2006.

The Risk Assessment Methodology

Risk assessment is the process of collating known information on a hazard or set of hazards in order to estimate actual or potential risks to receptors. The receptor may be humans, a water resource, a sensitive local ecosystem or future construction materials. Receptors can be connected with the hazard via one or several exposure pathways (e.g. the pathway of direct contact). Risks are generally managed by isolating or removing the hazard, isolating the receptor, or by intercepting the exposure pathway. Without the three essential components of a source (hazard), pathway and receptor, there can be no risk. Thus, the mere presence of a hazard at a site does not mean that there will necessarily be attendant risks.

The Risk Assessment

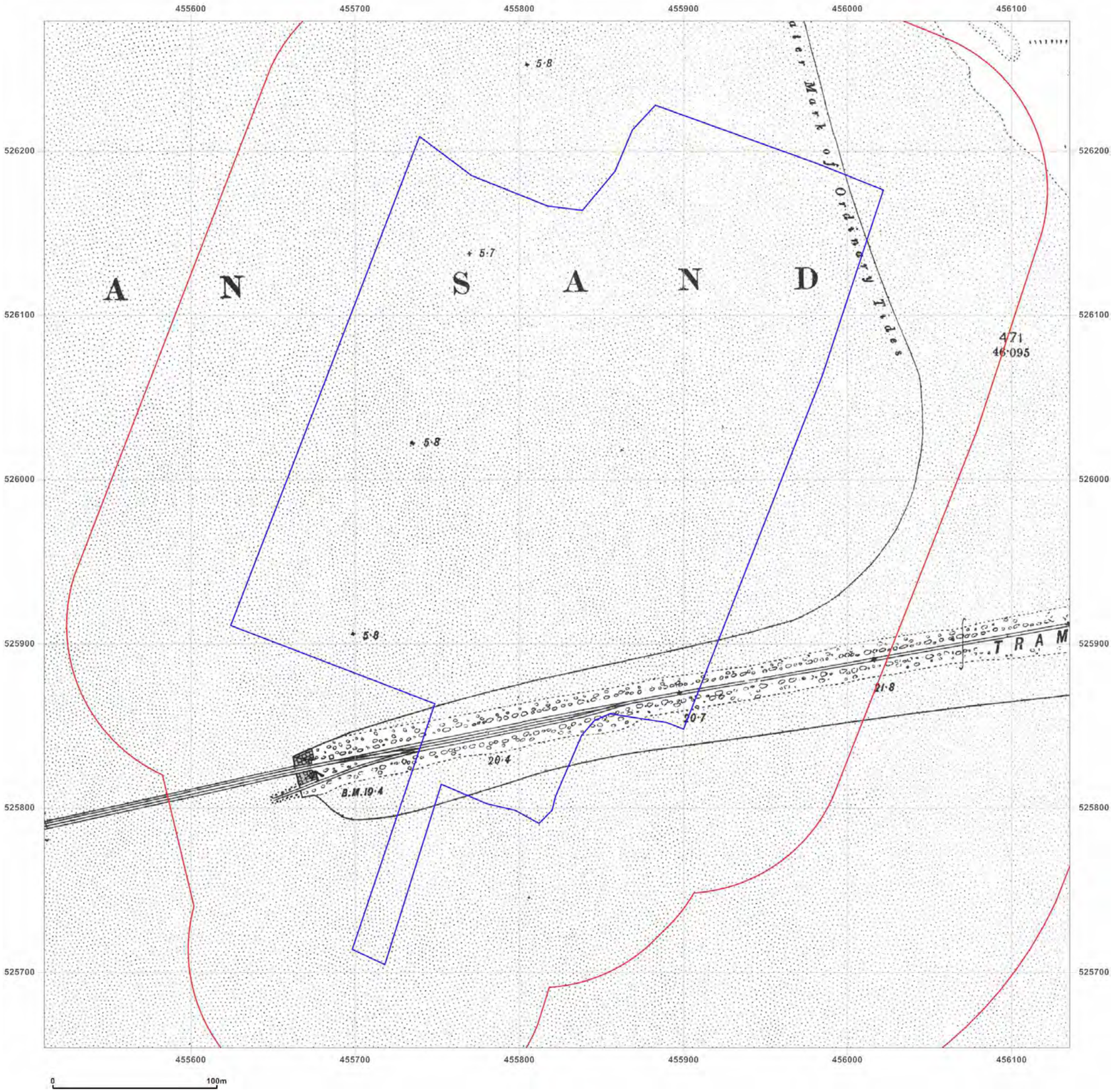
By considering where a viable pathway exists which connects a source with a receptor, this assessment will identify where pollutant linkages may exist. A pollutant linkage is the term used by the DEFRA in their standard procedure on risk assessment. If there is no pollutant linkage, then there is no risk. Therefore, only where a viable pollutant linkage is established does this assessment go on to consider the level of risk. Risk should be based on a consideration of both:

- The likelihood of an event (probability) - takes into account both the presence of the hazard and receptor and the integrity of the pathway.
- The severity of the potential consequence - takes into account both the potential severity of the hazard and the sensitivity of the receptor.

For further information please see the Contaminated Land section on the DEFRA website (www.defra.gov.uk).

Annex D

Historical Mapping



Groundsure INSIGHTS

Site Details:

HOPPER 172M FROM LAFARGE TARMAC, TARMAC WHARF, TEESPORT 133M FROM UNNAMED ROAD, RIVERSIDE ROAD, SEAL SANDS, TS6 6UF

Client Ref: JER8594
Report Ref: RPS-6736416
Grid Ref: 455823, 525966

Map Name: County Series

Map date: **1894**

Scale: 1:2,500

Printed at: 1:2,500

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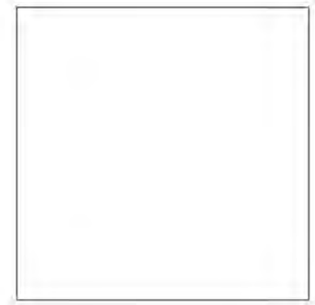
Surveyed 1894
Revised 1894
Edition N/A
Copyright N/A
Levelled N/A



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Map legend available at:
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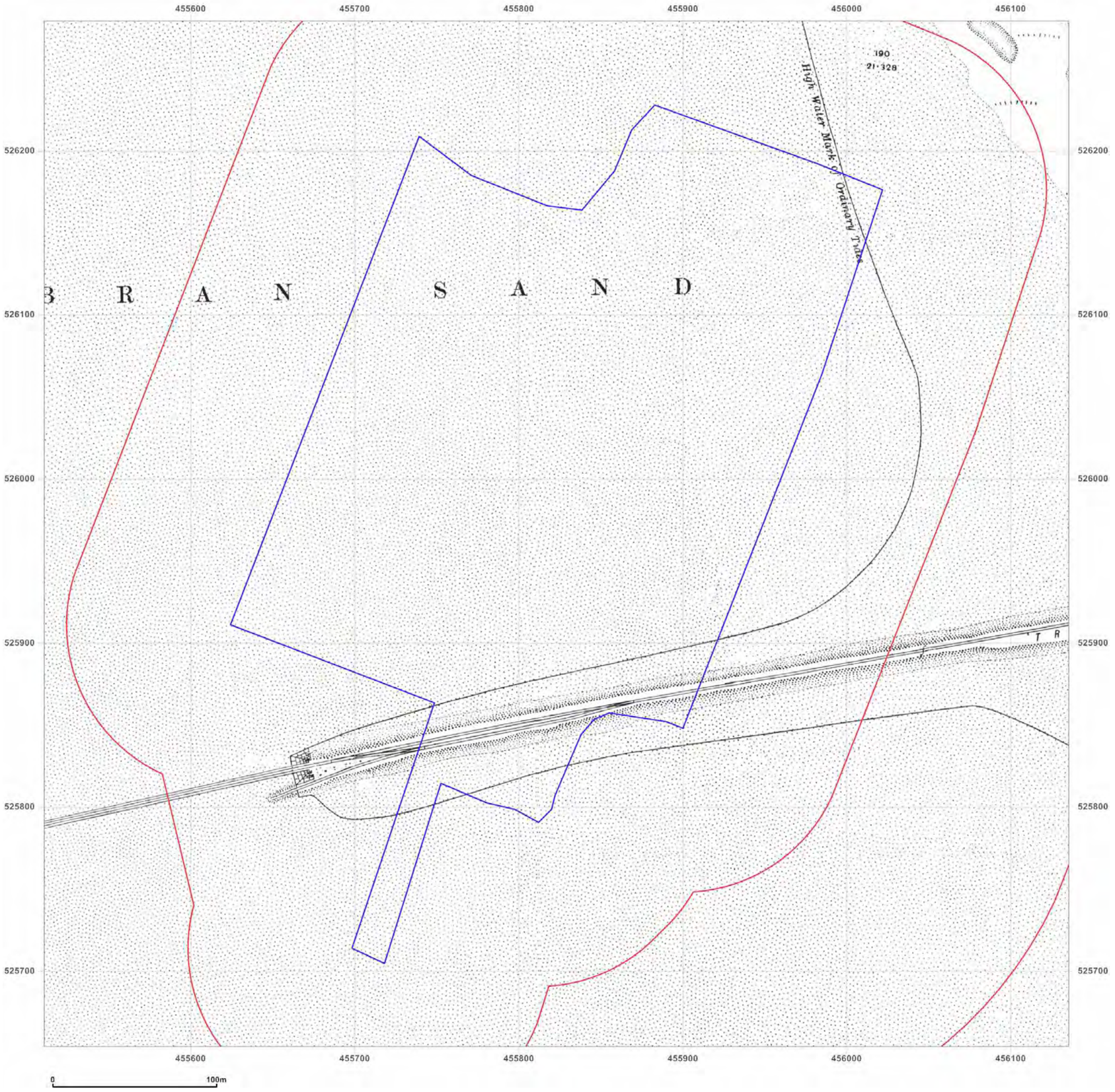

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Site Details:

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Client Ref: JER8594
Report Ref: RPS-6736416
Grid Ref: 455823, 525966

Map Name: County Series
Map date: **1915**
Scale: 1:2,500
Printed at: 1:2,500

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Edition N/A
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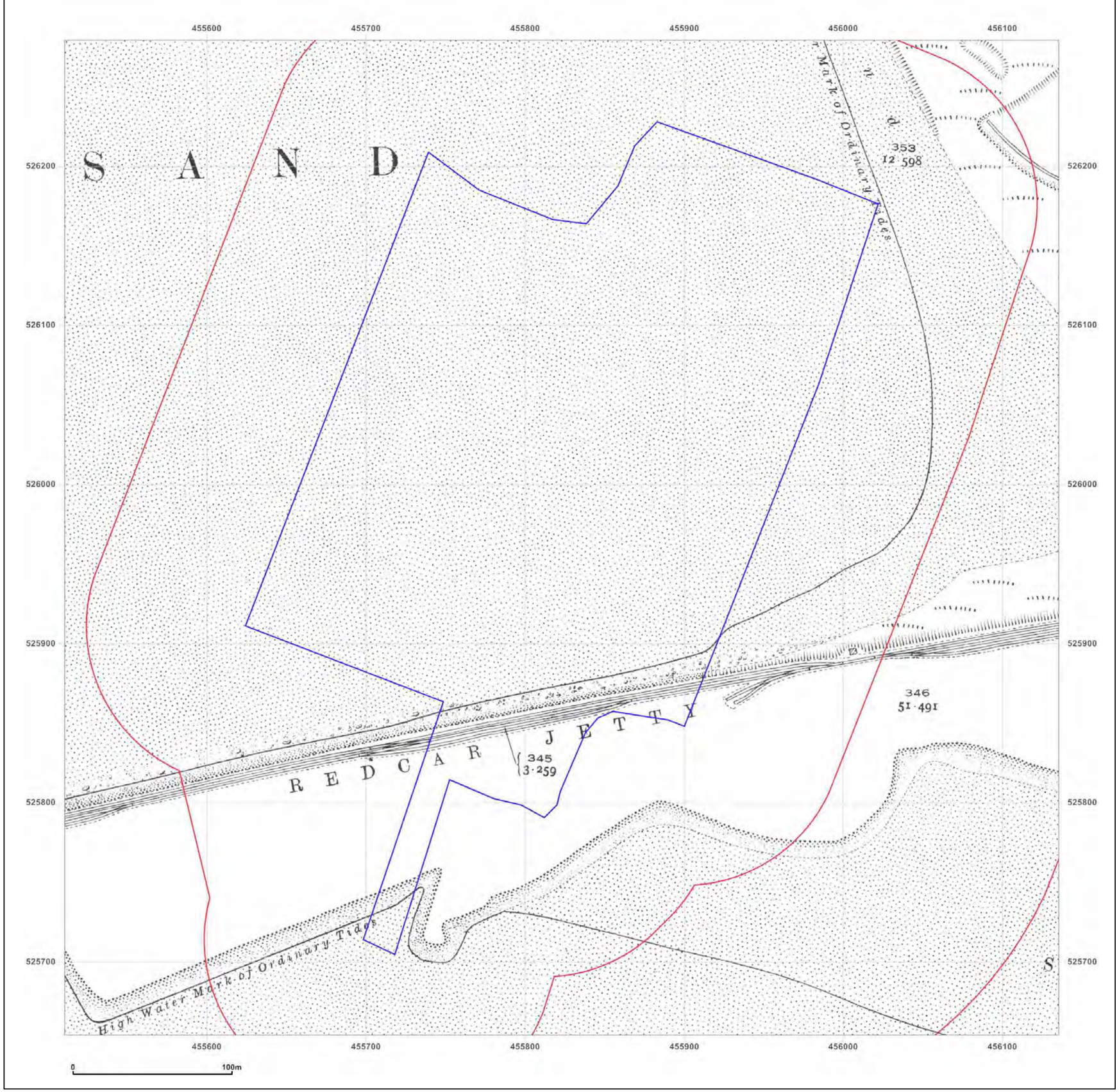

Groundsure INSIGHTS

Site Details:

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Client Ref: JER8594
Report Ref: RPS-6736416
Grid Ref: 455823, 525966

Map Name: County Series

Map date: **1929**

Scale: 1:2,500

Printed at: 1:2,500

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Revised 1927
Edition N/A
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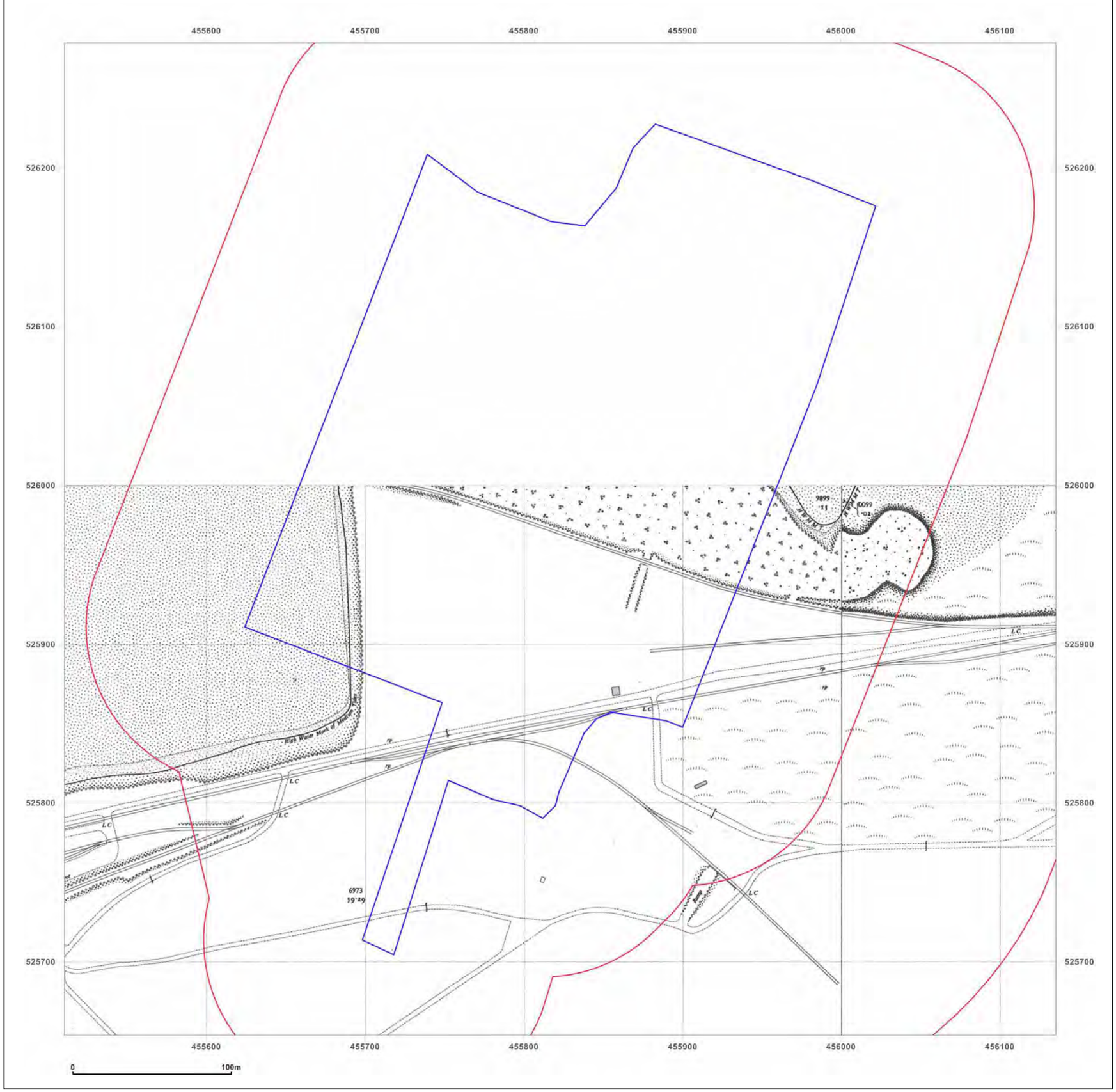

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Client Ref: JER8594
Report Ref: RPS-6736416
Grid Ref: 455823, 525966

Map Name: National Grid
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Printed at: 1:2,500

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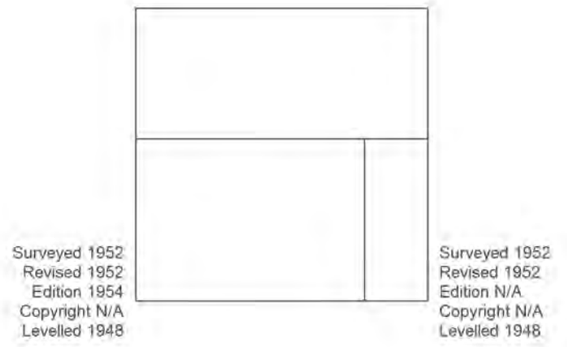

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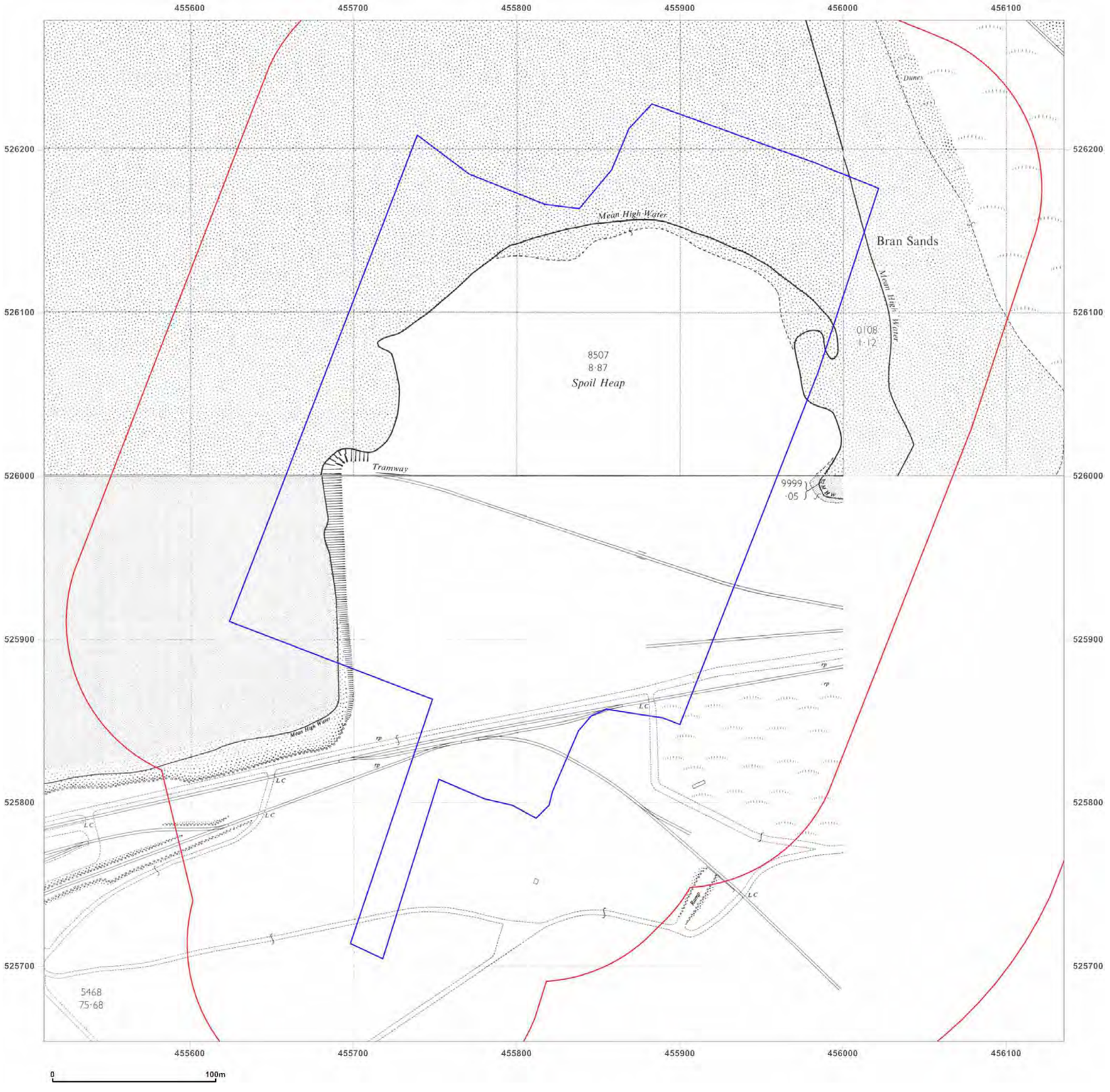

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Site Details:

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Client Ref: JER8594
Report Ref: RPS-6736416
Grid Ref: 455823, 525966

Map Name: National Grid

Map date: **1967**

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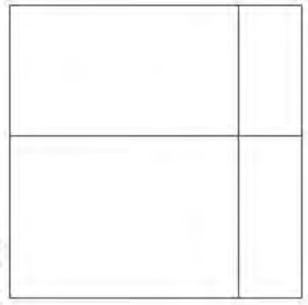
Surveyed 1967
Revised 1967
Edition N/A
Copyright 1968
Levelled 1959



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Edition N/A
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Revised 1967
Edition N/A
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Levelled 1959

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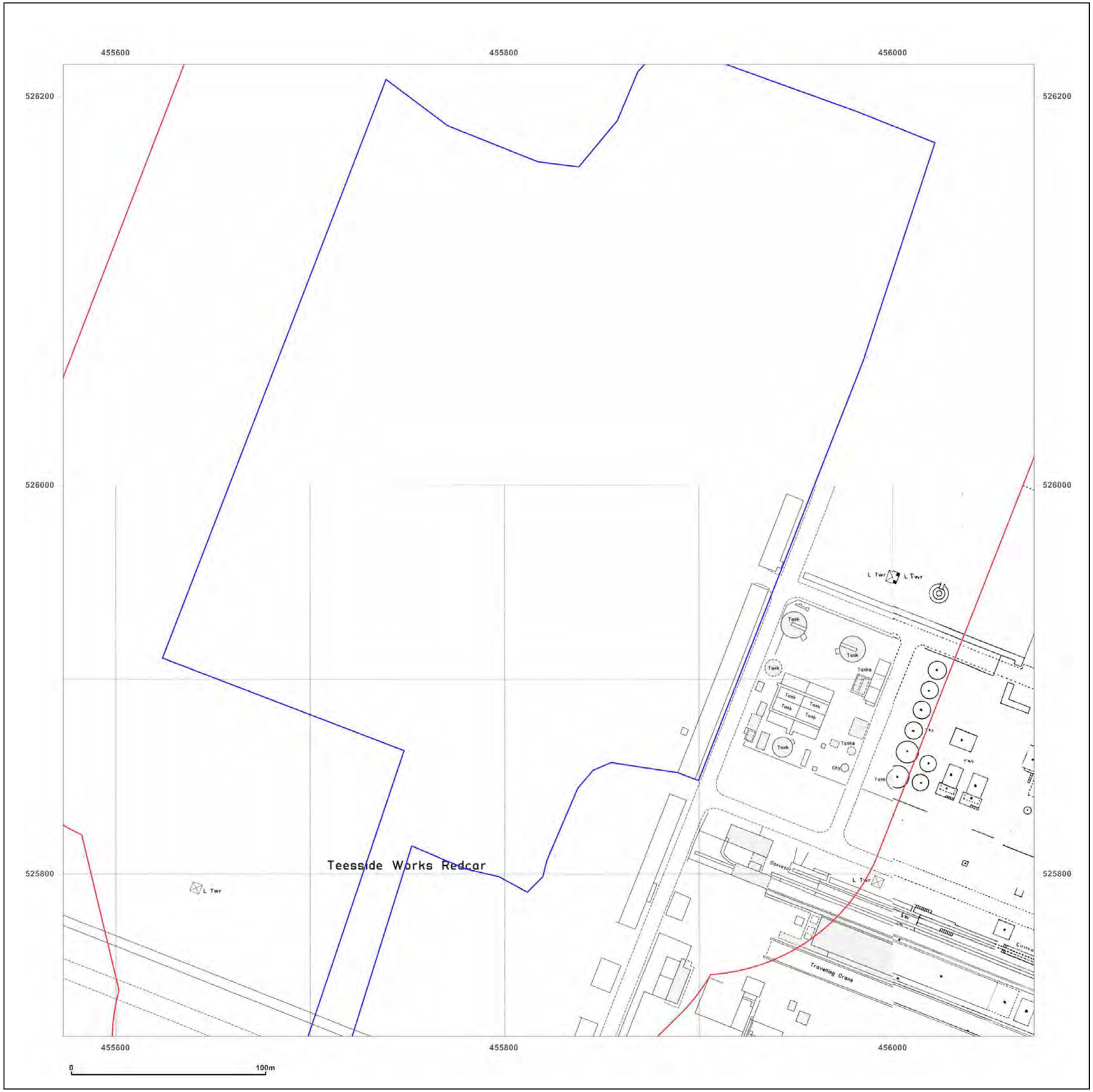

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Client Ref: JER8594
Report Ref: RPS-6736416
Grid Ref: 455823, 525966

Map Name: National Grid
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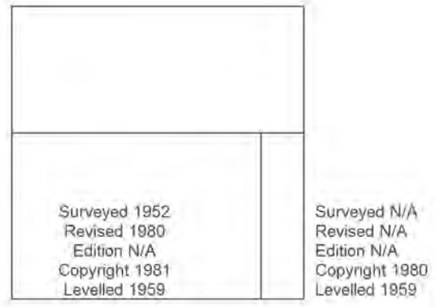

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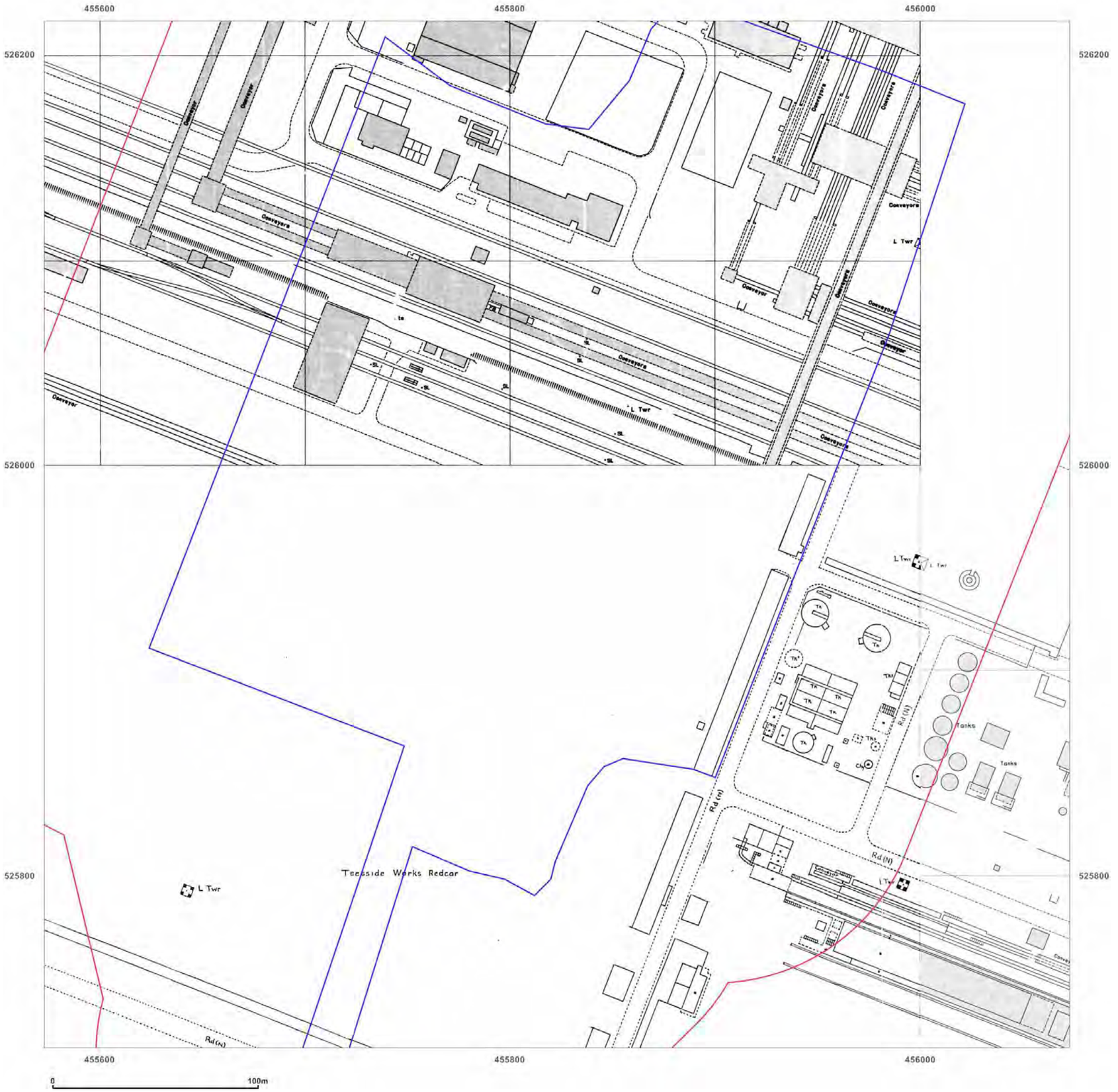

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Site Details:

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Client Ref: JER8594
Report Ref: RPS-6736416
Grid Ref: 455823, 525966

Map Name: National Grid
Map date: **1980-1982**
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Printed at: 1:2,000

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Surveyed 1952
Revised 1980
Edition 1982
Copyright N/A
Levelled 1959

Surveyed 1959
Revised 1980
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Surveyed 1952
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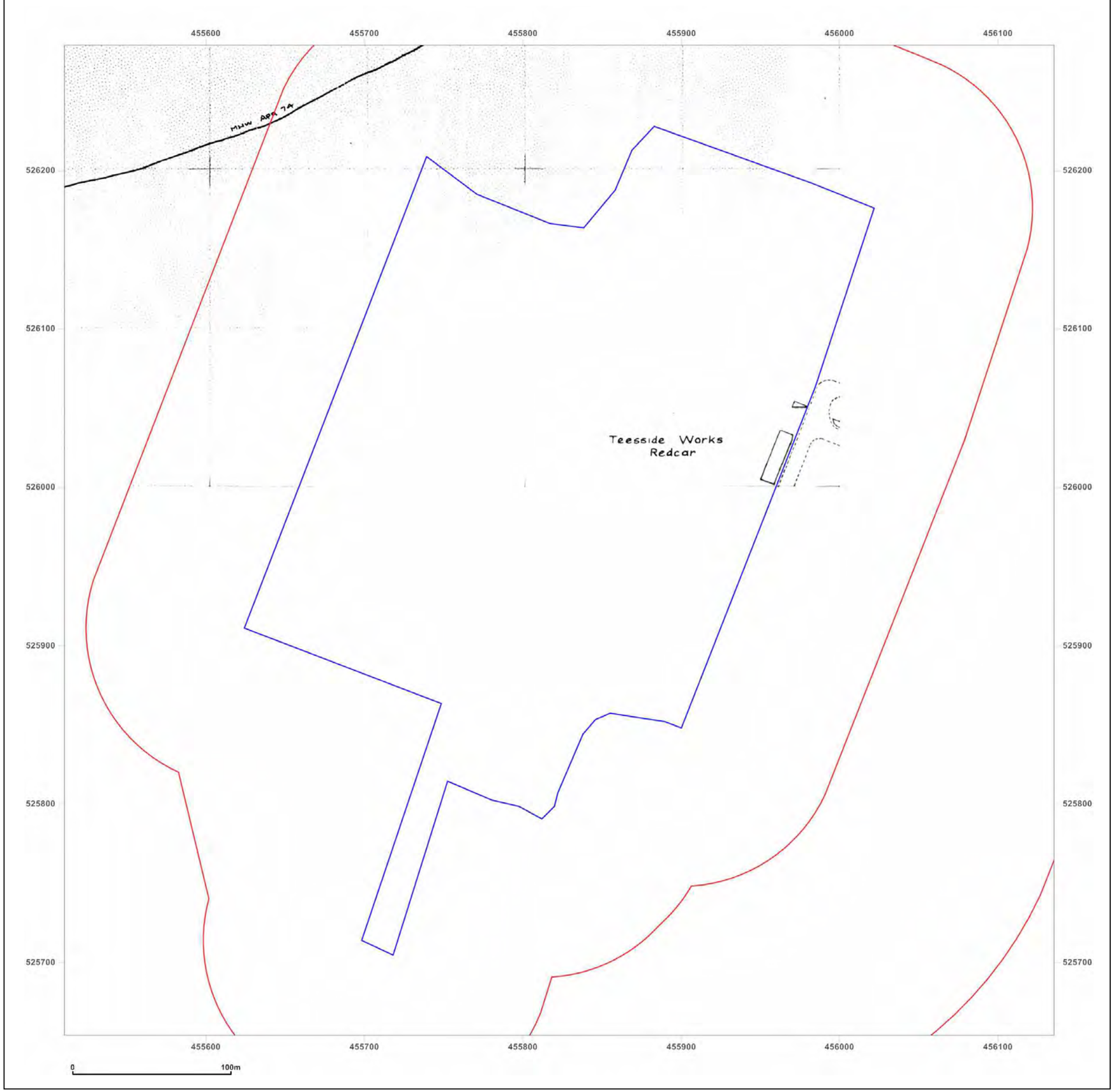

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Site Details:

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Client Ref: JER8594
Report Ref: RPS-6736416
Grid Ref: 455823, 525966

Map Name: National Grid

Map date: **1991**

Scale: 1:2,500

Printed at: 1:2,500

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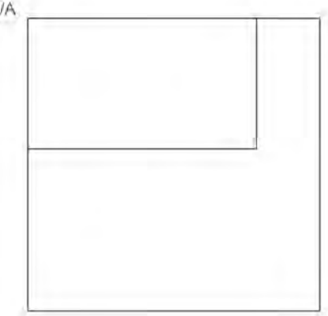
Revised 1991
Edition N/A
Copyright 1991
Levelled N/A



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Client Ref: JER8594
Report Ref: RPS-6736416
Grid Ref: 455823, 525966

Map Name: National Grid
Map date: **1993**
Scale: 1:1,250
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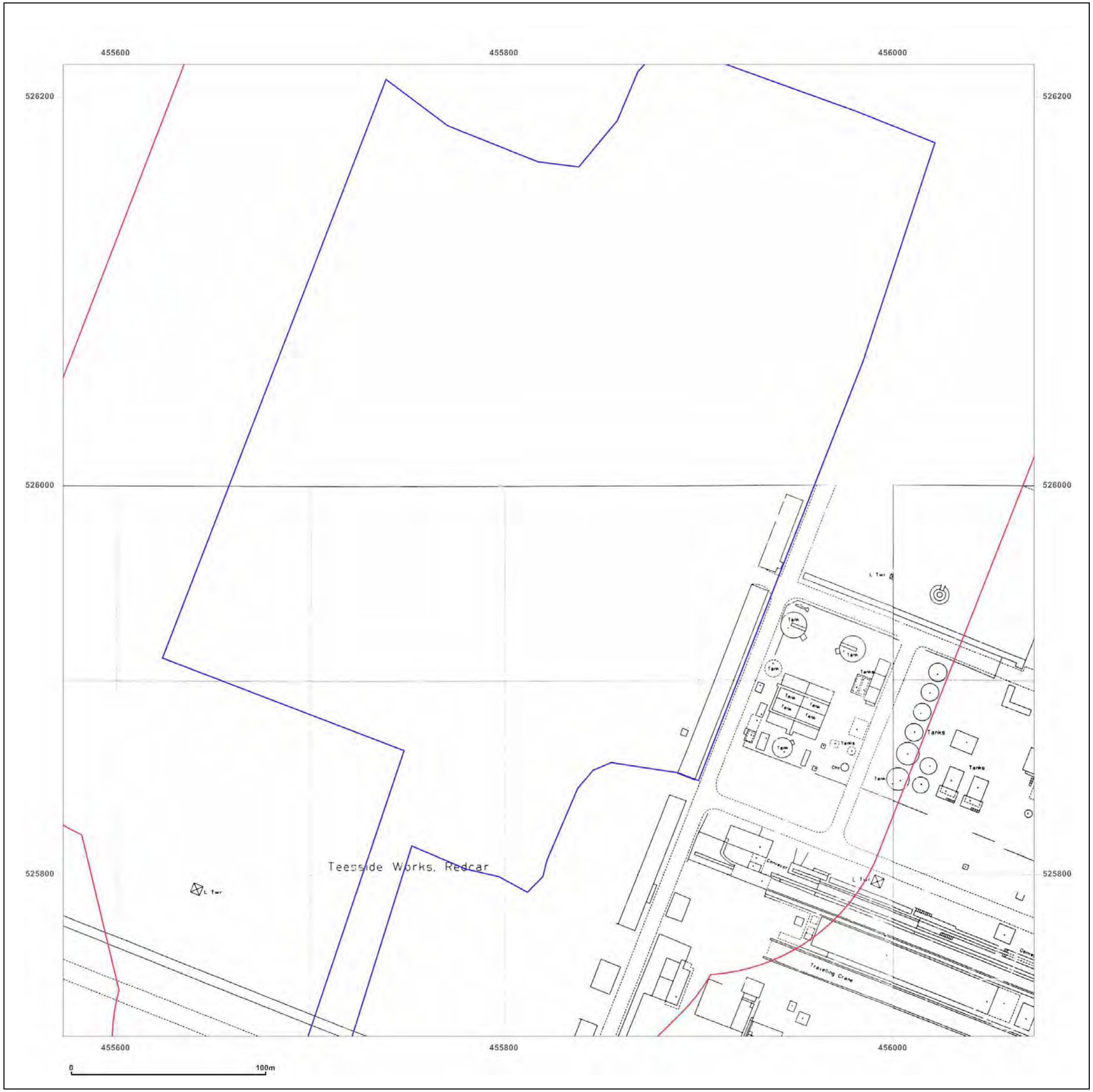

Groundsure INSIGHTS

Site Details:

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Client Ref: JER8594
Report Ref: RPS-6736416
Grid Ref: 455823, 525966

Map Name: National Grid
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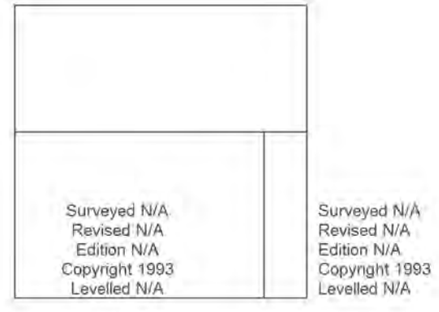

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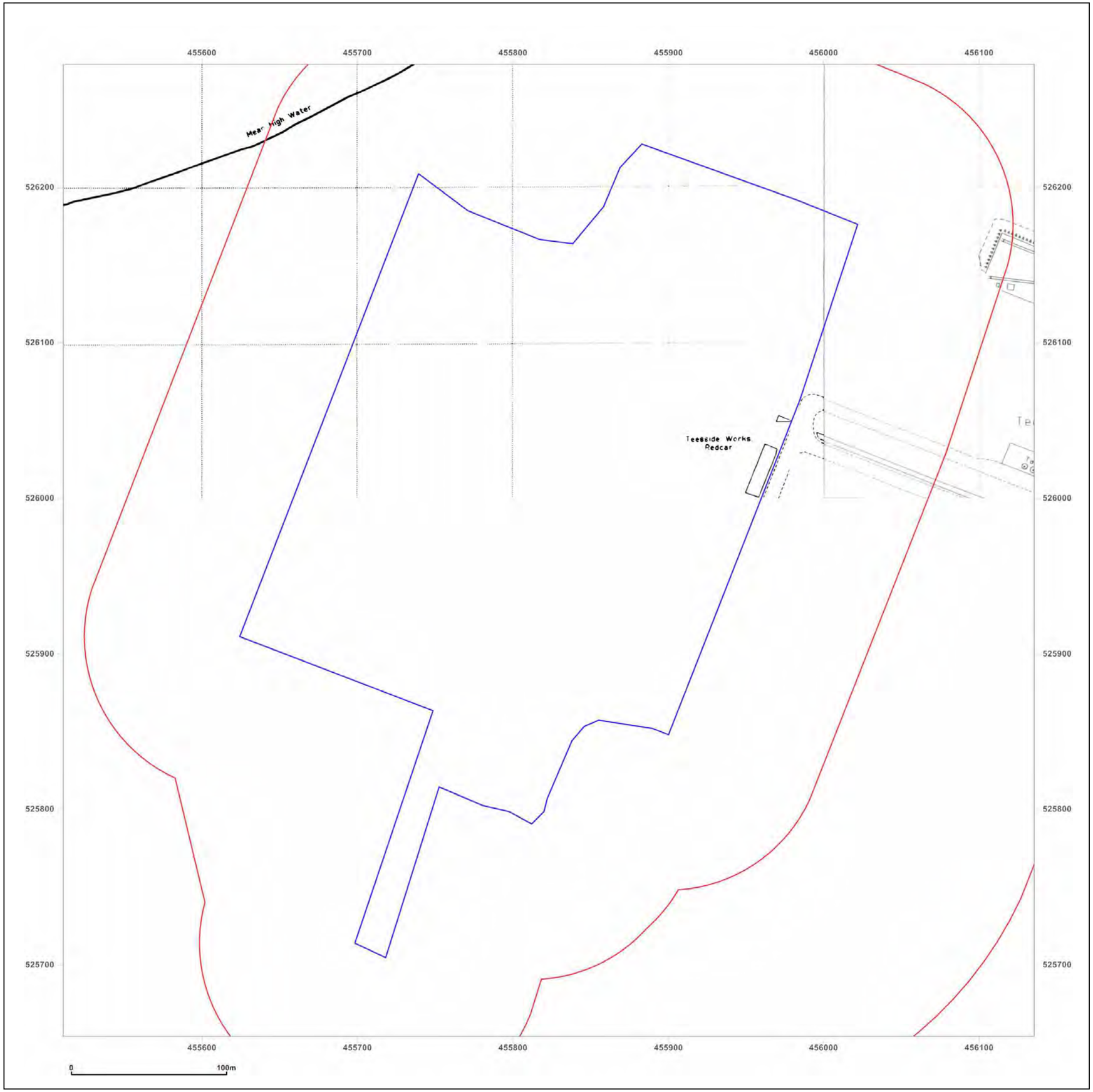

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Site Details:

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Client Ref: JER8594
Report Ref: RPS-6736416
Grid Ref: 455823, 525966

Map Name: National Grid
Map date: **1993**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed 1993
Revised N/A
Edition N/A
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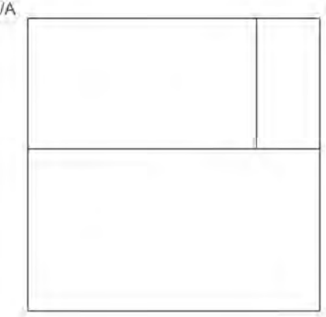

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Production date: 14 April 2020

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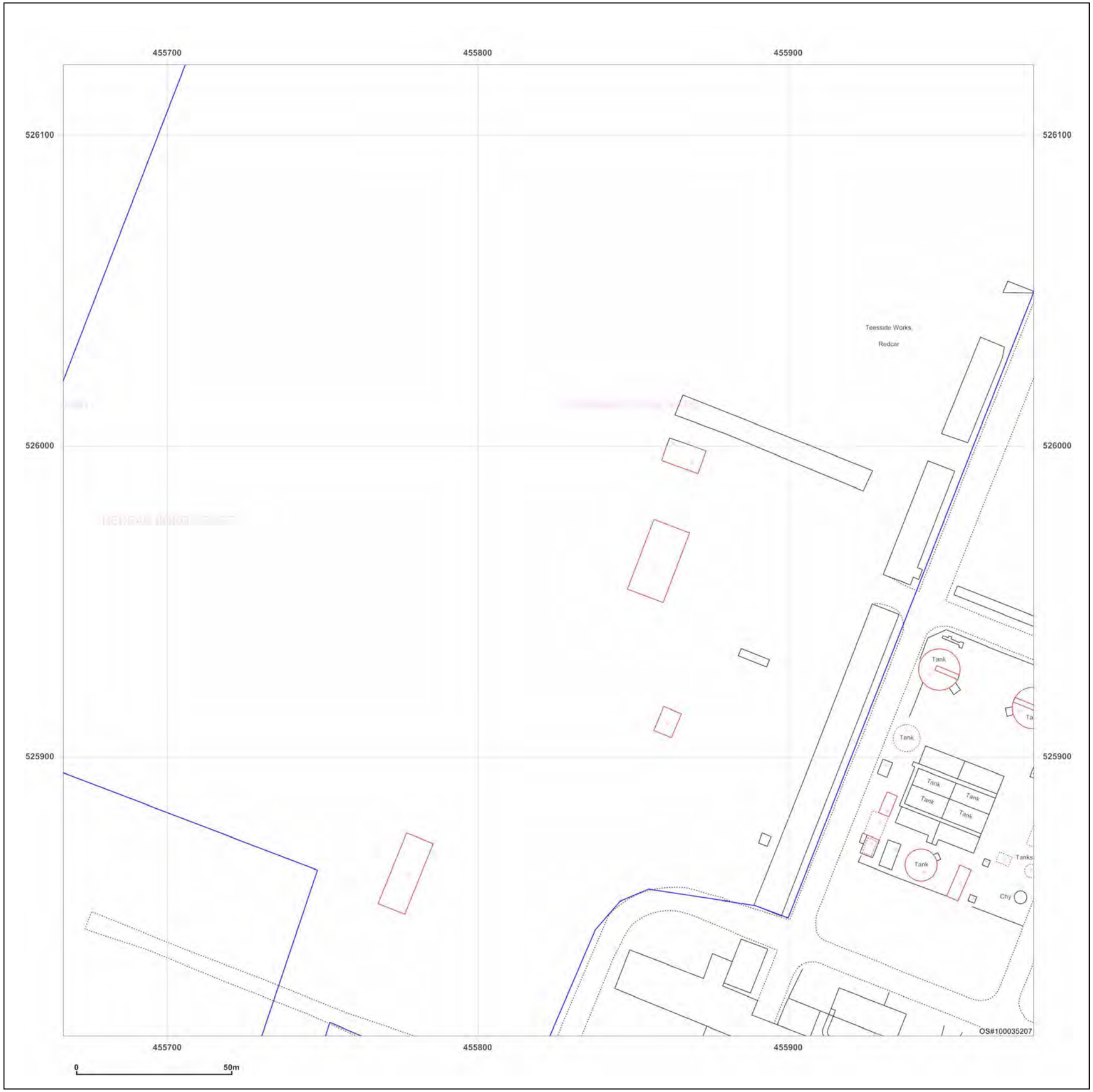

Groundsure INSIGHTS

Site Details:

HOPPER 172M FROM LAFARGE TARMAC, TARMAC WHARF, TEESPORT 133M FROM UNNAMED ROAD, RIVERSIDE ROAD, SEAL SANDS, TS6 6UF

Client Ref: JER8594
Report Ref: RPS-6736416
Grid Ref: 455823, 525966

Map Name: LandLine
Map date: **2003**
Scale: 1:1,250
Printed at: 1:1,250

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Annex E

Database Information

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

HOPPER 172M FROM LAFARGE TARMAC, TARMAC WHARF, TEESPORT 133M FROM UNNAMED ROAD, RIVERSIDE ROAD, SEAL SANDS, TS6 6UF

Order Details

Date: 14/04/2020

Your ref: JER8594

Our Ref: RPS-6736417

Client: RPS Consultants Ltd

Site Details

Location: 455783 525929

Area: 10.4 ha

Authority: Redcar and Cleveland Council

Contact us with any questions at:
info@groundsure.com
08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	**1.1**	**Historical industrial land uses**	5	4	15	20	-
15	**1.2**	**Historical tanks**	0	12	32	29	-
18	**1.3**	**Historical energy features**	0	0	0	4	-
19	1.4	Historical petrol stations	0	0	0	0	-
19	1.5	Historical garages	0	0	0	0	-
19	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
20	**2.1**	**Historical industrial land uses**	5	4	16	19	-
22	**2.2**	**Historical tanks**	0	24	50	51	-
27	**2.3**	**Historical energy features**	0	0	0	6	-
27	2.4	Historical petrol stations	0	0	0	0	-
28	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
29	3.1	Active or recent landfill	0	0	0	0	-
29	3.2	Historical landfill (BGS records)	0	0	0	0	-
30	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
30	**3.4**	**Historical landfill (EA/NRW records)**	0	0	0	1	-
30	**3.5**	**Historical waste sites**	0	0	0	1	-
31	**3.6**	**Licensed waste sites**	0	0	0	3	-
32	3.7	Waste exemptions	0	0	0	0	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
33	**4.1**	**Recent industrial land uses**	0	5	72	-	-
36	4.2	Current or recent petrol stations	0	0	0	0	-
37	4.3	Electricity cables	0	0	0	0	-
37	4.4	Gas pipelines	0	0	0	0	-
37	4.5	Sites determined as Contaminated Land	0	0	0	0	-

37	**4.6**	**Control of Major Accident Hazards (COMAH)**	3	0	0	0	-
38	4.7	Regulated explosive sites	0	0	0	0	-
38	4.8	Hazardous substance storage/usage	0	0	0	0	-
38	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
38	**4.10**	**Licensed industrial activities (Part A(1))**	0	0	0	2	-
39	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
39	4.12	Radioactive Substance Authorisations	0	0	0	0	-
39	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
39	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
40	4.15	Pollutant release to public sewer	0	0	0	0	-
40	4.16	List 1 Dangerous Substances	0	0	0	0	-
40	4.17	List 2 Dangerous Substances	0	0	0	0	-
40	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	1	0	-
41	4.19	Pollution inventory substances	0	0	0	0	-
41	4.20	Pollution inventory waste transfers	0	0	0	0	-
41	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
42	**5.1**	**Superficial aquifer**	Identified (within 500m)				
44	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
45	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
46	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
47	5.5	Groundwater vulnerability- local information	None (within 0m)				
48	5.6	Groundwater abstractions	0	0	0	0	0
49	**5.7**	**Surface water abstractions**	0	0	0	0	2
49	5.8	Potable abstractions	0	0	0	0	0
50	5.9	Source Protection Zones	0	0	0	0	-
50	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
51	6.1	Water Network (OS MasterMap)	0	0	0	-	-

51	6.2	Surface water features	0	0	0	-	-
52	**6.3**	**WFD Surface water body catchments**	1	-	-	-	-
52	**6.4**	**WFD Surface water bodies**	0	1	0	-	-
53	**6.5**	**WFD Groundwater bodies**	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
54	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
55	**7.2**	**Historical Flood Events**	0	0	1	-	-
55	7.3	Flood Defences	0	0	0	-	-
55	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
55	7.5	Flood Storage Areas	0	0	0	-	-
56	7.6	Flood Zone 2	None (within 50m)				
56	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
57	**8.1**	**Surface water flooding**	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
59	**9.1**	**Groundwater flooding**	Moderate (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
60	**10.1**	**Sites of Special Scientific Interest (SSSI)**	1	0	0	0	6
61	**10.2**	**Conserved wetland sites (Ramsar sites)**	0	0	1	0	5
62	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
63	**10.4**	**Special Protection Areas (SPA)**	0	0	1	0	5
64	**10.5**	**National Nature Reserves (NNR)**	0	0	0	0	2
64	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
64	10.7	Designated Ancient Woodland	0	0	0	0	0
65	10.8	Biosphere Reserves	0	0	0	0	0
65	10.9	Forest Parks	0	0	0	0	0
65	10.10	Marine Conservation Zones	0	0	0	0	0
65	10.11	Green Belt	0	0	0	0	0
65	**10.12**	**Proposed Ramsar sites**	0	0	1	0	8

66	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
66	**10.14**	**Potential Special Protection Areas (pSPA)**	0	0	1	0	0
67	10.15	Nitrate Sensitive Areas	0	0	0	0	0
67	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
68	**10.17**	**SSSI Impact Risk Zones**	4	-	-	-	-
70	**10.18**	**SSSI Units**	1	0	2	1	10
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
75	11.1	World Heritage Sites	0	0	0	-	-
75	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
75	11.3	National Parks	0	0	0	-	-
75	11.4	Listed Buildings	0	0	0	-	-
76	11.5	Conservation Areas	0	0	0	-	-
76	11.6	Scheduled Ancient Monuments	0	0	0	-	-
76	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
77	**12.1**	**Agricultural Land Classification**	Non Agricultural (within 250m)				
78	12.2	Open Access Land	0	0	0	-	-
78	12.3	Tree Felling Licences	0	0	0	-	-
78	12.4	Environmental Stewardship Schemes	0	0	0	-	-
78	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
79	**13.1**	**Priority Habitat Inventory**	1	0	4	-	-
80	**13.2**	**Habitat Networks**	3	0	0	-	-
80	13.3	Open Mosaic Habitat	0	0	0	-	-
80	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
81	**14.1**	**10k Availability**	Identified (within 500m)				
82	**14.2**	**Artificial and made ground (10k)**	1	0	0	0	-
83	**14.3**	**Superficial geology (10k)**	1	0	2	1	-

84	14.4	Landslip (10k)	0	0	0	0	-
85	**14.5**	**Bedrock geology (10k)**	1	0	0	0	-
86	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
87	**15.1**	**50k Availability**	Identified (within 500m)				
88	**15.2**	**Artificial and made ground (50k)**	1	1	0	1	-
89	**15.3**	**Artificial ground permeability (50k)**	1	0	-	-	-
90	**15.4**	**Superficial geology (50k)**	1	1	2	1	-
91	**15.5**	**Superficial permeability (50k)**	Identified (within 50m)				
91	15.6	Landslip (50k)	0	0	0	0	-
91	15.7	Landslip permeability (50k)	None (within 50m)				
92	**15.8**	**Bedrock geology (50k)**	1	1	0	1	-
93	**15.9**	**Bedrock permeability (50k)**	Identified (within 50m)				
93	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
94	**16.1**	**BGS Boreholes**	0	3	13	-	-
Page	Section	Natural ground subsidence					
96	**17.1**	**Shrink swell clays**	Very low (within 50m)				
97	**17.2**	**Running sands**	Very low (within 50m)				
98	**17.3**	**Compressible deposits**	Very low (within 50m)				
99	**17.4**	**Collapsible deposits**	Negligible (within 50m)				
100	**17.5**	**Landslides**	Very low (within 50m)				
101	**17.6**	**Ground dissolution of soluble rocks**	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
103	18.1	Natural cavities	0	0	0	0	-
104	18.2	BritPits	0	0	0	0	-
104	**18.3**	**Surface ground workings**	1	0	10	-	-
105	18.4	Underground workings	0	0	0	0	0
105	18.5	Historical Mineral Planning Areas	0	0	0	0	-

105	18.6	Non-coal mining	0	0	0	0	0
105	18.7	Mining cavities	0	0	0	0	0
105	18.8	JPB mining areas	None (within 0m)				
106	18.9	Coal mining	None (within 0m)				
106	18.10	Brine areas	None (within 0m)				
106	18.11	Gypsum areas	None (within 0m)				
106	18.12	Tin mining	None (within 0m)				
106	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
107	**19.1**	**Radon**	Less than 1% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
108	**20.1**	**BGS Estimated Background Soil Chemistry**	5	5	-	-	-
108	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
109	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-

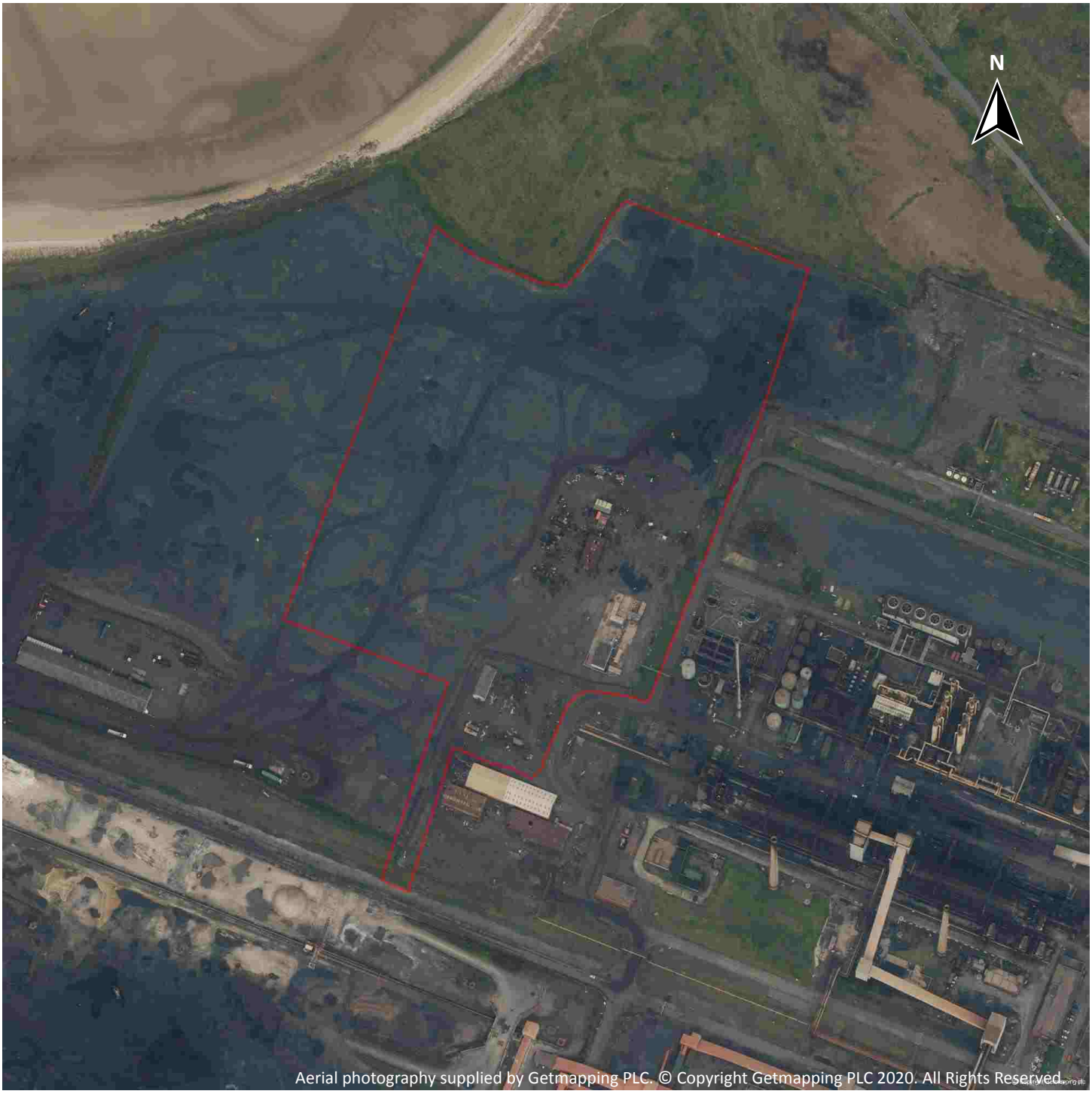
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
110	21.1	Underground railways (London)	0	0	0	-	-
110	21.2	Underground railways (Non-London)	0	0	0	-	-
111	21.3	Railway tunnels	0	0	0	-	-
111	**21.4**	**Historical railway and tunnel features**	8	1	19	-	-
112	21.5	Royal Mail tunnels	0	0	0	-	-
112	21.6	Historical railways	0	0	0	-	-
113	**21.7**	**Railways**	0	0	3	-	-
113	21.8	Crossrail 1	0	0	0	0	-
113	21.9	Crossrail 2	0	0	0	0	-
113	21.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 18/07/2018

Site Area: 10.4ha

Recent site history - 2016 aerial photograph



Capture Date: 06/05/2016

Site Area: 10.4ha

Recent site history - 2012 aerial photograph

Capture Date: 30/03/2012

Site Area: 10.4ha

Recent site history - 2007 aerial photograph

Capture Date: 07/09/2007

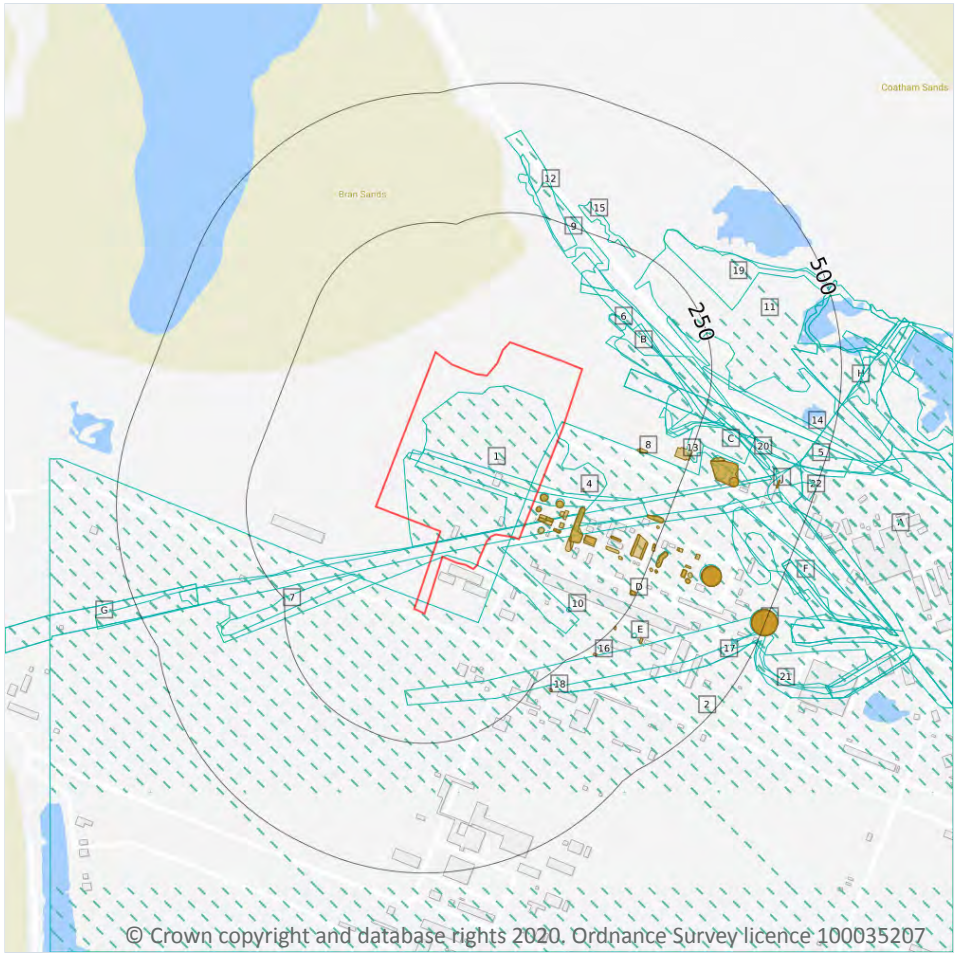
Site Area: 10.4ha

Recent site history - 1999 aerial photograph

Capture Date: 10/09/1999

Site Area: 10.4ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

1.1 Historical industrial land uses

Records within 500m	44

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
1	**On site**	**Refuse Heap**	**1969**	**1328120**

ID	Location	Land use	Dates present	Group ID
2	**On site**	**Unspecified Works**	**1980**	**1387726**
3	**On site**	**Railway Sidings**	**1927**	**1399328**
A	**On site**	**Railway Sidings**	**1969**	**1342528**
A	**On site**	**Railway Sidings**	**1940**	**1385384**
A	8m E	Unspecified Tank	1980	1325963
A	11m E	Unspecified Tank	1980	1325965
A	28m E	Unspecified Tank	1980	1325966
A	40m E	Unspecified Tank	1980	1325962
B	78m NE	Sand Pit	1940	1307376
5	87m E	Railway Sidings	1980	1403546
A	88m E	Unspecified Tanks	1980	1319152
6	104m NE	Unspecified Pit	1927	1336703
7	114m W	Refuse Heap	1969	1328128
B	137m N	Railway Sidings	1940	1401805
9	153m N	Unspecified Ground Workings	1940	1309867
10	162m SE	Unspecified Tank	1980	1325969
C	170m E	Unspecified Ground Workings	1969	1309868
11	186m NE	Unspecified Ground Workings	1969 - 1980	1370233
B	188m NE	Unspecified Ground Workings	1940	1375465
12	200m N	Tramway Sidings	1893	1323207
A	226m E	Unspecified Tanks	1980	1319154
14	232m E	Refuse Heap	1940	1328119
15	237m NE	Unspecified Ground Workings	1940	1309865
A	262m E	Unspecified Tanks	1980	1319155
17	271m SE	Refuse Heap	1969	1375256
19	285m NE	Unspecified Heap	1940	1312075
E	285m SE	Unspecified Tank	1980	1325970
C	292m E	Unspecified Tanks	1980	1319153

ID	Location	Land use	Dates present	Group ID
20	329m E	Unspecified Heap	1940	1312074
F	342m E	Refuse Heap	1940	1389271
A	348m E	Unspecified Tank	1980	1325968
F	364m E	Refuse Heap	1969	1348777
G	377m SW	Railway Sidings	1954	1345369
G	377m SW	Railway Sidings	1940	1350256
H	405m E	Slag Works	1940	1323523
H	405m E	Refuse Heap	1940	1328118
I	413m E	Iron and Steel Works	1927	1402131
I	418m E	Unspecified Works	1969	1392723
21	455m SE	Refuse Heap	1940	1353962
22	455m E	Refuse Heap	1940	1328127
I	456m E	Iron and Steel Works	1940	1352010
I	456m E	Railway Sidings	1940	1398225
K	472m E	Unspecified Tank	1980	1325971

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**73**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
A	8m E	Unspecified Tank	1981 - 1993	213482
A	9m E	Unspecified Tank	1993	222398
A	10m E	Unspecified Tank	1980	214631

ID	Location	Land use	Dates present	Group ID
A	10m E	Unspecified Tank	1980 - 1981	211974
A	20m E	Unspecified Tank	1980 - 1993	216200
A	21m E	Unspecified Tank	1980 - 1993	208279
A	22m E	Unspecified Tank	1981	208689
A	28m E	Unspecified Tank	1980 - 1993	220819
A	34m E	Unspecified Tank	1981 - 1993	211026
A	34m E	Unspecified Tank	1980	212740
A	41m E	Unspecified Tank	1993	215727
A	42m E	Unspecified Tank	1980 - 1981	219845
A	55m E	Tanks	1993	208634
A	56m E	Tanks	1981 - 1993	212702
A	56m E	Tanks	1981	208146
A	56m E	Tanks	1980	209853
A	63m E	Tanks	1981	206247
A	63m E	Tanks	1980	206248
A	66m E	Tanks	1981	209756
4	78m E	Unspecified Tank	1980 - 1993	210571
A	88m E	Tanks	1980 - 1981	222489
A	89m E	Unspecified Tank	1993	209868
A	89m E	Unspecified Tank	1980	207717
A	89m E	Tanks	1993	212952
A	90m E	Unspecified Tank	1981	220477
A	117m E	Tanks	1980 - 1981	209263
A	118m E	Tanks	1993	208839
8	149m E	Tanks	1984 - 1993	207922
A	161m E	Tanks	1980 - 1993	217669
A	163m E	Tanks	1980	213636
A	164m E	Tanks	1981 - 1993	208739

ID	Location	Land use	Dates present	Group ID
A	191m E	Tanks	1980 - 1993	208476
A	210m E	Tanks	1980	212114
A	211m E	Tanks	1981 - 1993	210579
A	214m E	Tanks	1980	222048
A	214m E	Tanks	1981 - 1993	219047
13	222m E	Tanks	1984 - 1993	210543
A	230m E	Tanks	1981 - 1993	220080
D	237m SE	Tanks	1980 - 1981	212015
D	238m SE	Tanks	1993	214321
A	238m E	Unspecified Tank	1980 - 1993	211282
A	245m E	Tanks	1980 - 1981	211535
A	246m E	Tanks	1993	220758
E	250m SE	Unspecified Tank	1980 - 1981	215872
A	255m E	Unspecified Tank	1980 - 1993	214698
16	262m SE	Unspecified Tank	1981	202868
A	263m E	Tanks	1980 - 1981	212782
A	264m E	Tanks	1993	216470
A	266m E	Unspecified Tank	1980 - 1981	214376
A	267m E	Unspecified Tank	1993	215184
18	274m SE	Unspecified Tank	1980 - 1993	208072
C	291m E	Tanks	1980	215596
A	291m E	Unspecified Tank	1980 - 1993	221103
C	292m E	Tanks	1981 - 1993	214721
C	293m E	Unspecified Tank	1984 - 1993	222332
A	294m E	Unspecified Tank	1980 - 1993	211383
E	302m SE	Unspecified Tank	1980 - 1993	219592
A	315m E	Tanks	1980	210559
A	317m E	Tanks	1981 - 1993	210150

ID	Location	Land use	Dates present	Group ID
A	318m E	Tanks	1993	206250
A	327m E	Unspecified Tank	1980 - 1981	210300
A	328m E	Unspecified Tank	1980 - 1993	210090
A	329m E	Unspecified Tank	1993	219004
A	329m E	Tanks	1980 - 1993	215577
C	337m E	Unspecified Tank	1981	202856
A	352m E	Gas Holder	1980	212745
A	353m E	Gas Holder	1993	216993
A	353m E	Gas Holder	1981	213336
J	427m E	Tanks	1980 - 1981	217772
J	427m E	Tanks	1993	214149
K	474m E	Gas Holder	1980	216131
K	475m E	Gas Holder	1993	217797
K	475m E	Gas Holder	1981	212053

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**4**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
A	352m E	Gas Holder	1980	127539
A	353m E	Gas Holder	1981 - 1993	119662
K	474m E	Gas Holder	1980	127749
K	475m E	Gas Holder	1981 - 1993	126923

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

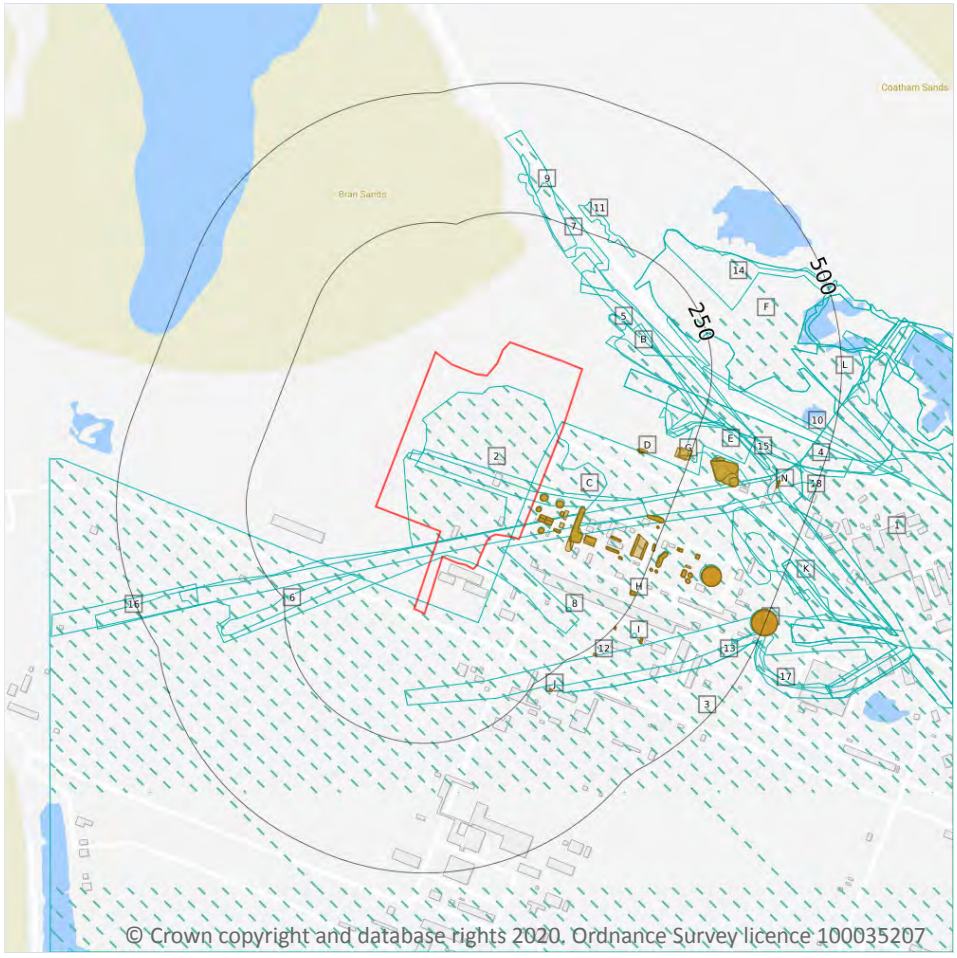
1.6 Historical military land

Records within 500m	0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.

2 Past land use - un-grouped



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

2.1 Historical industrial land uses

Records within 500m	44

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 20**

ID	Location	Land Use	Date	Group ID
1	**On site**	**Railway Sidings**	**1927**	**1399328**
2	**On site**	**Refuse Heap**	**1969**	**1328120**
3	**On site**	**Unspecified Works**	**1980**	**1387726**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Railway Sidings**	**1969**	**1342528**
A	**On site**	**Railway Sidings**	**1940**	**1385384**
A	8m E	Unspecified Tank	1980	1325963
A	11m E	Unspecified Tank	1980	1325965
A	28m E	Unspecified Tank	1980	1325966
A	40m E	Unspecified Tank	1980	1325962
B	78m NE	Sand Pit	1940	1307376
4	87m E	Railway Sidings	1980	1403546
A	88m E	Unspecified Tanks	1980	1319152
5	104m NE	Unspecified Pit	1927	1336703
6	114m W	Refuse Heap	1969	1328128
B	137m N	Railway Sidings	1940	1401805
7	153m N	Unspecified Ground Workings	1940	1309867
8	162m SE	Unspecified Tank	1980	1325969
E	170m E	Unspecified Ground Workings	1969	1309868
F	186m NE	Unspecified Ground Workings	1969	1370233
F	186m NE	Unspecified Ground Workings	1980	1370233
B	188m NE	Unspecified Ground Workings	1940	1375465
9	200m N	Tramway Sidings	1893	1323207
A	226m E	Unspecified Tanks	1980	1319154
10	232m E	Refuse Heap	1940	1328119
11	237m NE	Unspecified Ground Workings	1940	1309865
A	262m E	Unspecified Tanks	1980	1319155
13	271m SE	Refuse Heap	1969	1375256
14	285m NE	Unspecified Heap	1940	1312075
I	285m SE	Unspecified Tank	1980	1325970
E	292m E	Unspecified Tanks	1980	1319153
15	329m E	Unspecified Heap	1940	1312074

ID	Location	Land Use	Date	Group ID
K	342m E	Refuse Heap	1940	1389271
A	348m E	Unspecified Tank	1980	1325968
K	364m E	Refuse Heap	1969	1348777
16	377m SW	Railway Sidings	1940	1350256
L	405m E	Refuse Heap	1940	1328118
L	405m E	Slag Works	1940	1323523
M	413m E	Iron and Steel Works	1927	1402131
M	418m E	Unspecified Works	1969	1392723
17	455m SE	Refuse Heap	1940	1353962
18	455m E	Refuse Heap	1940	1328127
M	456m E	Railway Sidings	1940	1398225
M	456m E	Iron and Steel Works	1940	1352010
O	472m E	Unspecified Tank	1980	1325971

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**125**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 20**

ID	Location	Land Use	Date	Group ID
A	8m E	Unspecified Tank	1993	213482
A	9m E	Unspecified Tank	1993	222398
A	10m E	Unspecified Tank	1980	214631
A	10m E	Unspecified Tank	1981	213482
A	10m E	Unspecified Tank	1981	211974
A	10m E	Unspecified Tank	1980	211974
A	20m E	Unspecified Tank	1993	216200

ID	Location	Land Use	Date	Group ID
A	21m E	Unspecified Tank	1993	208279
A	22m E	Unspecified Tank	1980	208279
A	22m E	Unspecified Tank	1980	216200
A	22m E	Unspecified Tank	1981	208689
A	22m E	Unspecified Tank	1981	208279
A	28m E	Unspecified Tank	1993	220819
A	28m E	Unspecified Tank	1980	220819
A	29m E	Unspecified Tank	1981	220819
A	34m E	Unspecified Tank	1993	216200
A	34m E	Unspecified Tank	1993	211026
A	34m E	Unspecified Tank	1980	212740
A	34m E	Unspecified Tank	1980	216200
A	34m E	Unspecified Tank	1981	211026
A	34m E	Unspecified Tank	1981	216200
A	41m E	Unspecified Tank	1993	215727
A	42m E	Unspecified Tank	1981	219845
A	43m E	Unspecified Tank	1980	219845
A	55m E	Tanks	1993	208634
A	56m E	Tanks	1993	212702
A	56m E	Tanks	1981	208146
A	56m E	Tanks	1980	209853
A	57m E	Tanks	1981	212702
A	63m E	Tanks	1981	206247
A	63m E	Tanks	1980	206248
A	66m E	Tanks	1981	209756
C	78m E	Unspecified Tank	1980	210571
C	79m E	Unspecified Tank	1993	210571
A	88m E	Tanks	1980	222489

ID	Location	Land Use	Date	Group ID
A	89m E	Unspecified Tank	1993	209868
A	89m E	Unspecified Tank	1980	207717
A	89m E	Tanks	1981	222489
A	89m E	Tanks	1993	212952
A	90m E	Unspecified Tank	1981	220477
A	117m E	Tanks	1980	209263
A	117m E	Tanks	1981	209263
A	118m E	Tanks	1993	208839
D	149m E	Tanks	1993	207922
D	153m E	Tanks	1984	207922
A	161m E	Tanks	1980	217669
A	162m E	Tanks	1981	217669
A	162m E	Tanks	1993	217669
A	163m E	Tanks	1980	213636
A	164m E	Tanks	1981	208739
A	164m E	Tanks	1993	208739
A	191m E	Tanks	1980	208476
A	192m E	Tanks	1981	208476
A	192m E	Tanks	1993	208476
A	210m E	Tanks	1980	212114
A	211m E	Tanks	1981	210579
A	211m E	Tanks	1993	210579
A	214m E	Tanks	1980	222048
A	214m E	Tanks	1993	219047
A	214m E	Tanks	1981	219047
G	222m E	Tanks	1993	210543
G	228m E	Tanks	1984	210543
A	230m E	Tanks	1981	220080

ID	Location	Land Use	Date	Group ID
A	230m E	Tanks	1993	220080
H	237m SE	Tanks	1980	212015
H	238m SE	Tanks	1993	214321
A	238m E	Unspecified Tank	1980	211282
H	238m SE	Tanks	1981	212015
A	239m E	Unspecified Tank	1981	211282
A	239m E	Unspecified Tank	1993	211282
A	245m E	Tanks	1980	211535
A	246m E	Tanks	1993	220758
A	246m E	Tanks	1981	211535
I	250m SE	Unspecified Tank	1980	215872
I	251m SE	Unspecified Tank	1981	215872
A	255m E	Unspecified Tank	1980	214698
A	257m E	Unspecified Tank	1981	214698
A	257m E	Unspecified Tank	1993	214698
12	262m SE	Unspecified Tank	1981	202868
A	263m E	Tanks	1980	212782
A	264m E	Tanks	1981	212782
A	264m E	Tanks	1993	216470
A	266m E	Unspecified Tank	1980	214376
A	267m E	Unspecified Tank	1981	214376
A	267m E	Unspecified Tank	1993	215184
J	274m SE	Unspecified Tank	1993	208072
J	275m SE	Unspecified Tank	1980	208072
J	275m SE	Unspecified Tank	1981	208072
E	291m E	Tanks	1980	215596
A	291m E	Unspecified Tank	1980	221103
A	292m E	Unspecified Tank	1981	221103

ID	Location	Land Use	Date	Group ID
A	292m E	Unspecified Tank	1993	221103
E	292m E	Tanks	1993	214721
E	292m E	Tanks	1981	214721
E	293m E	Unspecified Tank	1993	222332
A	294m E	Unspecified Tank	1980	211383
A	295m E	Unspecified Tank	1981	211383
A	295m E	Unspecified Tank	1993	211383
E	299m E	Unspecified Tank	1984	222332
I	302m SE	Unspecified Tank	1980	219592
I	304m SE	Unspecified Tank	1981	219592
I	304m SE	Unspecified Tank	1993	219592
A	315m E	Tanks	1980	210559
A	317m E	Tanks	1993	210150
A	317m E	Tanks	1981	210150
A	318m E	Tanks	1993	206250
A	327m E	Unspecified Tank	1980	210300
A	328m E	Unspecified Tank	1980	210090
A	329m E	Unspecified Tank	1993	219004
A	329m E	Unspecified Tank	1981	210090
A	329m E	Unspecified Tank	1981	210300
A	329m E	Tanks	1980	215577
A	329m E	Unspecified Tank	1993	210090
A	329m E	Tanks	1981	215577
A	330m E	Tanks	1993	215577
E	337m E	Unspecified Tank	1981	202856
A	352m E	Gas Holder	1980	212745
A	353m E	Gas Holder	1993	216993
A	353m E	Gas Holder	1981	213336

ID	Location	Land Use	Date	Group ID
N	427m E	Tanks	1980	217772
N	427m E	Tanks	1981	217772
N	427m E	Tanks	1993	214149
O	474m E	Gas Holder	1980	216131
O	475m E	Gas Holder	1993	217797
O	475m E	Gas Holder	1981	212053

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**6**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 20**

ID	Location	Land Use	Date	Group ID
A	352m E	Gas Holder	1980	127539
A	353m E	Gas Holder	1993	119662
A	353m E	Gas Holder	1981	119662
O	474m E	Gas Holder	1980	127749
O	475m E	Gas Holder	1993	126923
O	475m E	Gas Holder	1981	126923

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	**0**

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

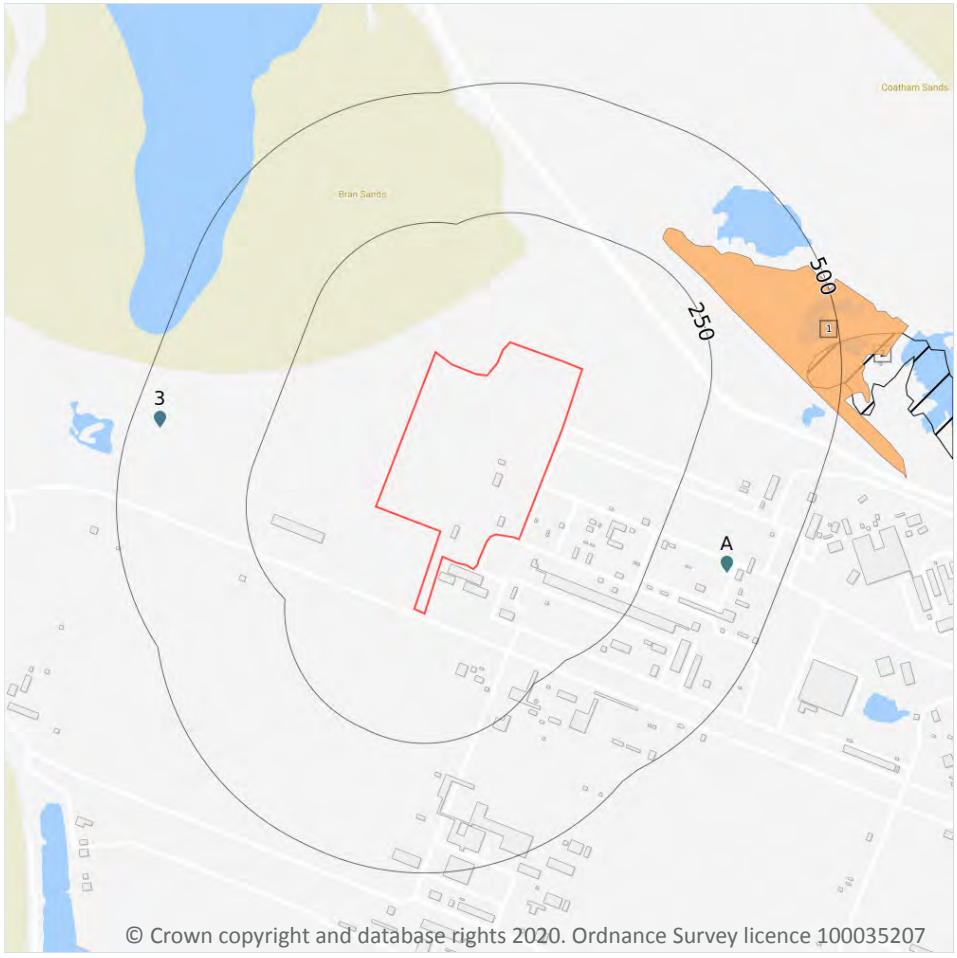
2.5 Historical garages

Records within 500m	0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Historical landfill (EA/NRW)

Historical waste sites

Licensed waste sites

3.1 Active or recent landfill

Records within 500m	0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

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

3.2 Historical landfill (BGS records)

Records within 500m	0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m	1

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

Features are displayed on the Waste and landfill map on **page 29**

ID	Location	Details		
2	433m E	Site Address: Warrenby, Land Adjacent To Redcar Blast Furnace, Redcar, Cleveland Licence Holder Address: Teesside Division, Steel House, Redcar, Cleveland	Waste Licence: Yes Site Reference: 0700/CLE/087 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: YP1/L/BRI012 Licence Issue: 11/12/1979 Licence Surrender: 13/04/1997	Operator: - Licence Holder: British Steel Plc First Recorded - Last Recorded: -

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

3.5 Historical waste sites

Records within 500m	1

Waste site records derived from Local Authority planning records and high detail historical mapping.

Features are displayed on the Waste and landfill map on **page 29**

ID	Location	Address	Further Details	Date
1	287m NE	Site Address: N/A	Type of Site: Ground Workings and Refuse Heap Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1929

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m **3**

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

Features are displayed on the Waste and landfill map on **page 29**

ID	Location	Details		
A	390m E	Site Name: Blast Furnace Plant, Bsc Redcar Works Complex Site Address: Redcar, Cleveland, TS10 5NT Correspondence Address: Steel House, Redcar, Cleveland, TS10 5QW	Type of Site: Industrial Waste Landfill (Factory curtilage) Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: BRI002 EPR reference: - Operator: British Steel Corporation Waste Management licence No: 68638 Annual Tonnage: 0	Issue Date: 19/07/1993 Effective Date: - Modified:: - Surrendered Date: - Expiry Date: 01/04/1996 Cancelled Date: - Status: Expired
A	390m E	Site Name: Blast Furnace Plant, B S C Redcar Works Complex Site Address: Redcar, Cleveland, TS10 5NT Correspondence Address: -	Type of Site: Industrial Waste Landfill (Factory curtilage) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRI002 EPR reference: EA/EPR/RP3793NV/A001 Operator: British Steel Corporation Waste Management licence No: 68638 Annual Tonnage: 75000	Issue Date: 19/07/1993 Effective Date: - Modified:: - Surrendered Date: - Expiry Date: 01/04/1996 Cancelled Date: - Status: Expired
3	449m W	Site Name: B S Redcar Works Site Address: Teesside Division, Steel House, Redcar, Cleveland, TS10 5QW Correspondence Address: -	Type of Site: Industrial Waste Landfill (Factory curtilage) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRI001 EPR reference: EA/EPR/TP3390ZV/S002 Operator: Corus Construction & Industrial (British Steel Plc) Waste Management licence No: 60141 Annual Tonnage: 0	Issue Date: 12/01/1983 Effective Date: - Modified:: - Surrendered Date: Nov 29 2018 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered

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

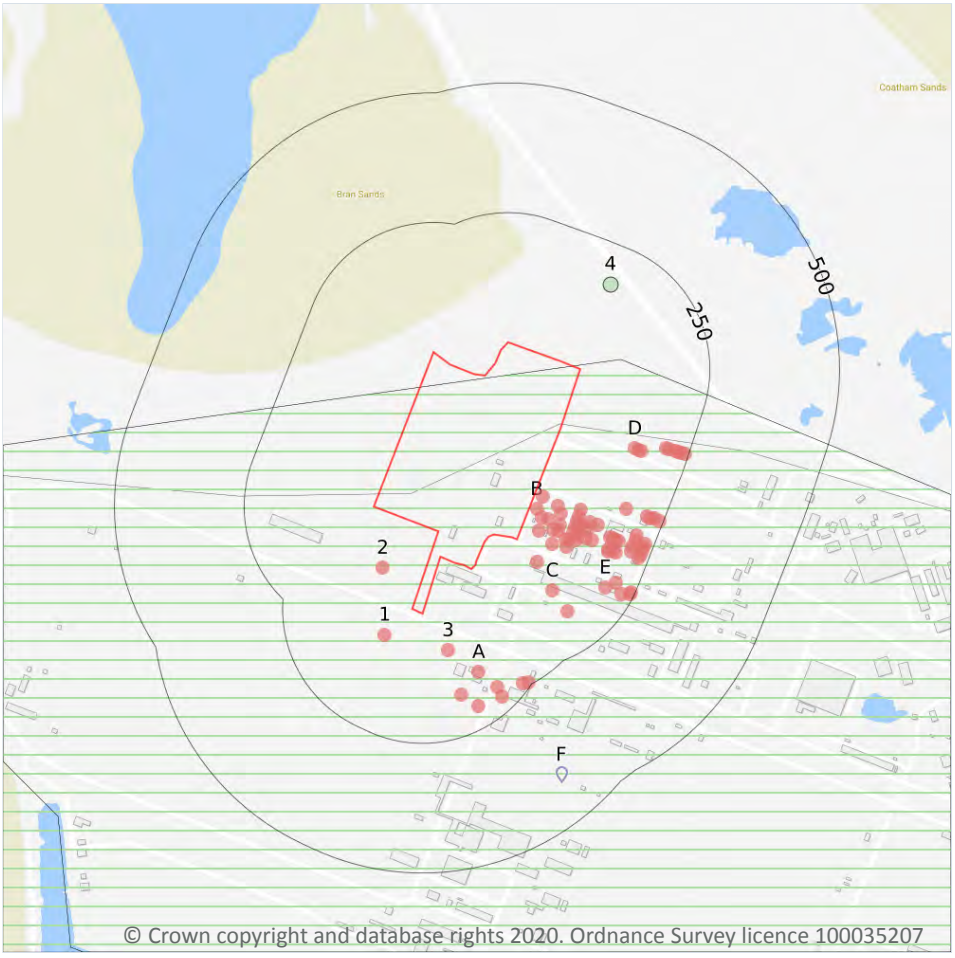
3.7 Waste exemptions

Records within 500m	0

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

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

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Recent industrial land uses

Control of Major Accident Hazards

Part A(1) industrial activities

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	**77**

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 33**

ID	Location	Company	Address	Activity	Category
B	14m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	15m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	28m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	34m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features

ID	Location	Company	Address	Activity	Category
B	42m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	50m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	57m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	59m SE	Conveyor	North Yorkshire, TS10	Conveyors	Industrial Features
B	61m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	67m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	67m E	Chimney	North Yorkshire, TS10	Chimneys	Industrial Features
B	68m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
1	73m SW	Conveyor	North Yorkshire, TS10	Conveyors	Industrial Features
2	79m W	Pylon	North Yorkshire, TS10	Electrical Features	Infrastructure and Facilities
3	86m SE	Pylon	North Yorkshire, TS10	Electrical Features	Infrastructure and Facilities
B	86m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	94m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	94m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	94m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	95m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	95m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	96m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	96m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	104m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	106m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	107m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	107m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	119m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
C	120m SE	Travelling Crane	North Yorkshire, TS10	Travelling Cranes and Gantries	Industrial Features
B	120m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	122m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features

ID	Location	Company	Address	Activity	Category
B	135m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	135m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
D	148m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
D	155m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
A	156m SE	Conveyor	North Yorkshire, TS10	Conveyors	Industrial Features
D	162m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	165m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
C	169m SE	Chimney	North Yorkshire, TS10	Chimneys	Industrial Features
B	171m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	171m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	172m E	Tanks	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
A	174m SE	Conveyor	North Yorkshire, TS10	Conveyors	Industrial Features
B	174m E	Cooling Tower	North Yorkshire, TS10	Chimneys	Industrial Features
B	177m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	180m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	183m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	187m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
E	194m SE	Conveyor	North Yorkshire, TS10	Conveyors	Industrial Features
A	202m SE	Conveyors	North Yorkshire, TS10	Conveyors	Industrial Features
D	206m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
A	208m SE	Conveyor	North Yorkshire, TS10	Conveyors	Industrial Features
E	208m SE	Conveyors	North Yorkshire, TS10	Conveyors	Industrial Features
D	210m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	212m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	212m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	213m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	213m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	217m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features

ID	Location	Company	Address	Activity	Category
A	221m SE	Conveyors	North Yorkshire, TS10	Conveyors	Industrial Features
D	223m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	224m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
E	227m SE	Conveyor	North Yorkshire, TS10	Conveyors	Industrial Features
D	230m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	232m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	232m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	232m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	232m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	232m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	232m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
D	235m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
A	236m SE	Conveyor	North Yorkshire, TS10	Conveyors	Industrial Features
E	242m SE	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
B	242m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
E	243m SE	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
D	243m E	Tank	North Yorkshire, TS10	Tanks (Generic)	Industrial Features
A	244m SE	Conveyor	North Yorkshire, TS10	Conveyors	Industrial Features

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	3

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

Features are displayed on the Current industrial land use map on **page 33**

ID	Location	Company	Address	Operational status	Tier
A	**On site**	**British Steel Corporation ltd(bsc)**	**British Steel Corporation ltd (bsc), Redcar Works, Redcar**	**Historical NIHHS Site**	**-**
A	**On site**	**Sahaviriya Steel Industries Uk Limited**	**Sahaviriya Steel Industries Uk Limited, Steel House, Redcar, Cleveland, TS10 5QW**	**Historical COMAH Site**	**COMAH Upper Tier Operator**
A	**On site**	**South Tees Site Company Limited**	**South Tees Site Company Limited, Redcar, Steel House, Trunk Road, Redcar, Cleveland, TS10 5QW**	**Current COMAH Site**	**COMAH Upper Tier Operator**

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	2

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on **page 33**

ID	Location	Details	
F	409m SE	Operator: BRITISH STEEL LIMITED Installation Name: TEESSIDE BEAM MILL EPR/VP3839DA Process: ASSOCIATED PROCESS Permit Number: QP3735JT Original Permit Number: VP3839DA	EPR Reference: - Issue Date: 19/12/2018 Effective Date: 19/12/2018 Last date noted as effective: 30/01/2020 Status: SUPERCEDED

ID	Location	Details	
F	409m SE	Operator: BRITISH STEEL LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/VP3839DA Process: ASSOCIATED PROCESS Permit Number: VP3839DA Original Permit Number: VP3839DA	EPR Reference: - Issue Date: 21/04/2017 Effective Date: 21/04/2017 Last date noted as effective: 30/01/2020 Status: SUPERCEDED

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

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m **0**

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m **0**

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

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

4.13 Licensed Discharges to controlled waters

Records within 500m **0**

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m **0**

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

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

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

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

4.17 List 2 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	1

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on **page 33**

ID	Location	Details	
4	173m N	Incident Date: 06/12/2002 Incident Identification: 124998 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Other General Biodegradable Material or Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m	0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m	0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

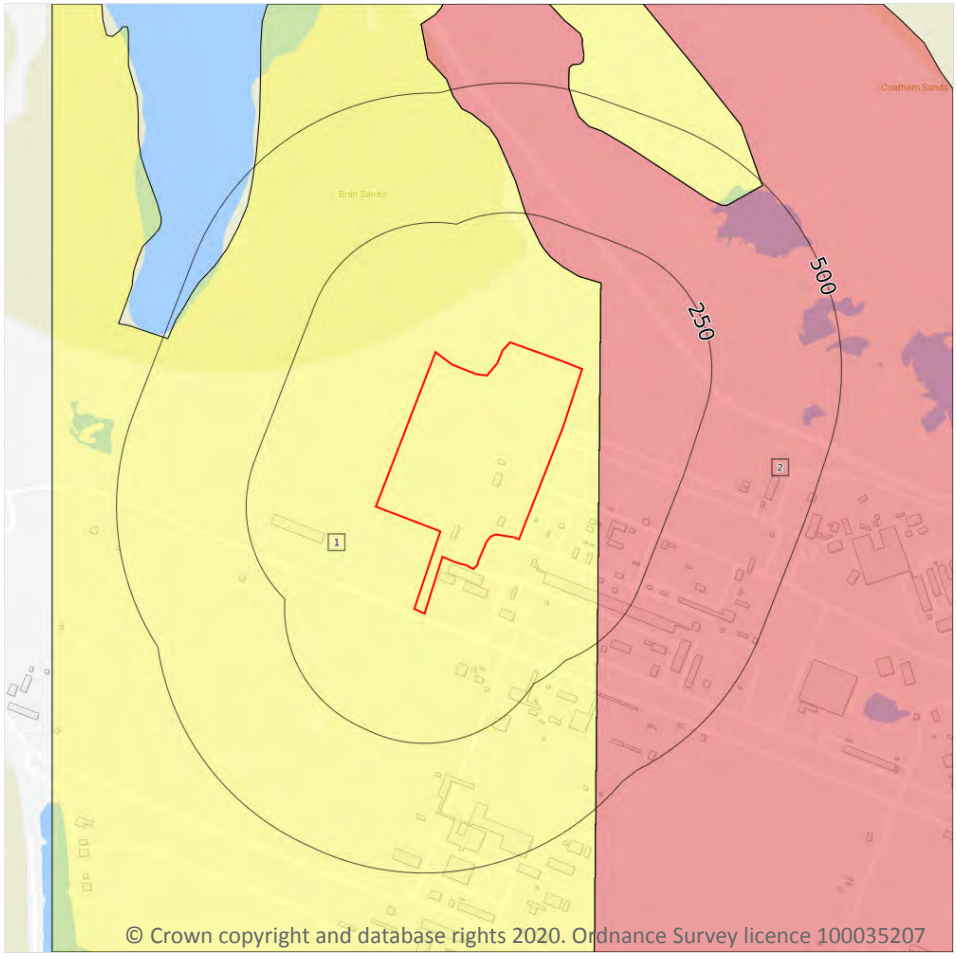
4.21 Pollution inventory radioactive waste

Records within 500m	0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive
- Unknown

5.1 Superficial aquifer

Records within 500m	2

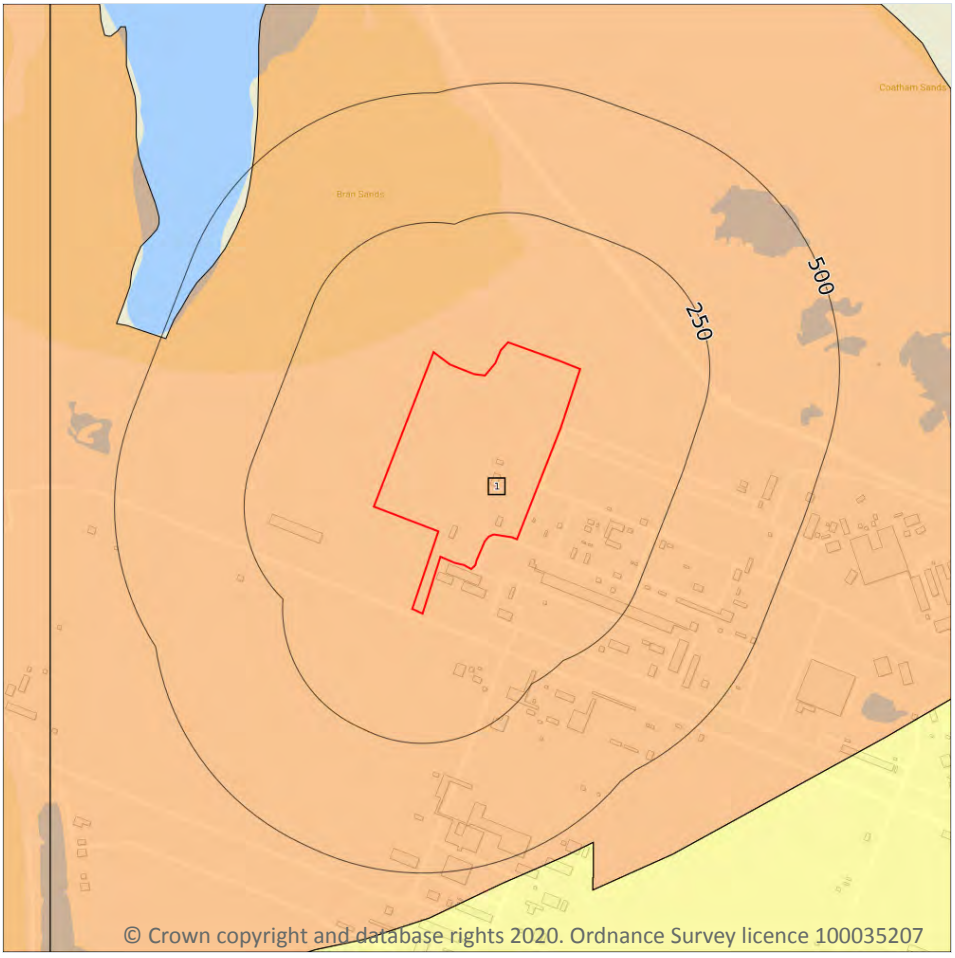
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 42**

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	34m E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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

Bedrock aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive

5.2 Bedrock aquifer

Records within 500m	1

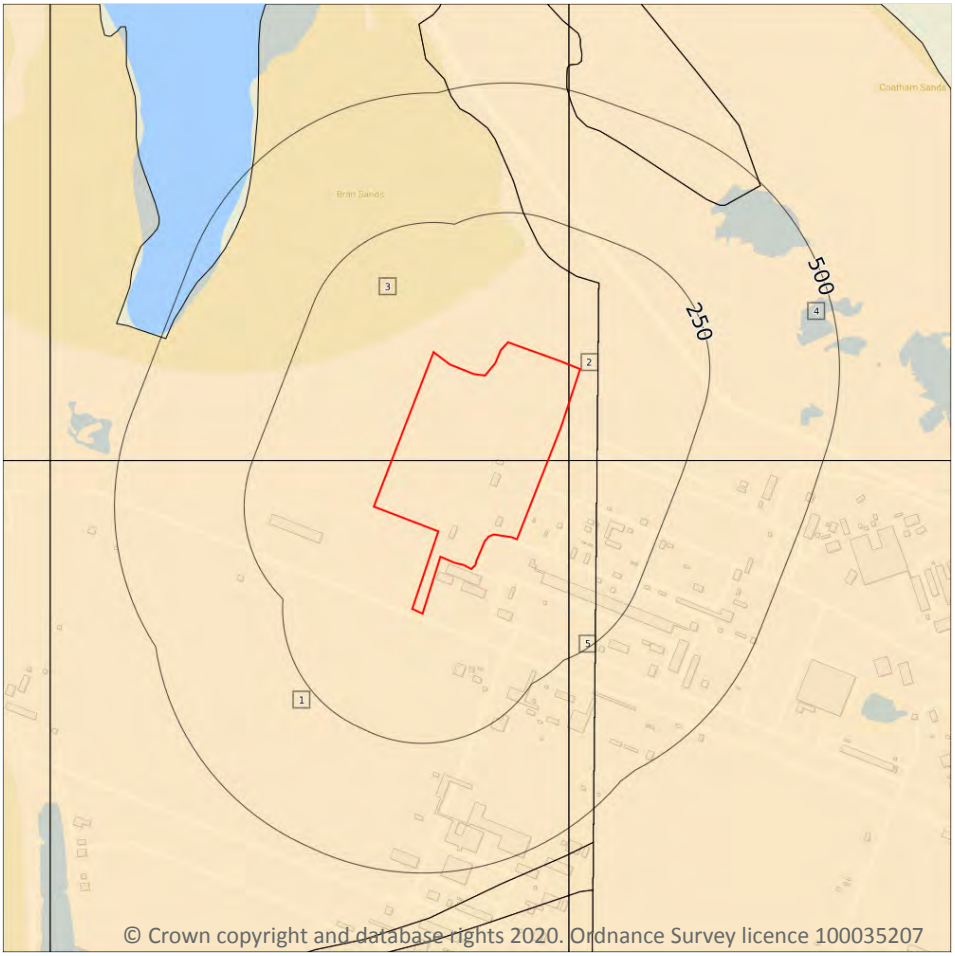
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 44**

ID	Location	Designation	Description
1	On site	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers

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

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability
- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability
- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information
- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	5

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 45**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	**On site**	**Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: High Infiltration value: No Data% Dilution value: No Datamm/year**	**Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High**	**Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures**
2	**On site**	**Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: <300mm/year**	**Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: No Data**	**Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures**
3	**On site**	**Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: High Infiltration value: No Data% Dilution value: No Datamm/year**	**Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures**
4	34m E	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
5	37m E	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High	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

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.

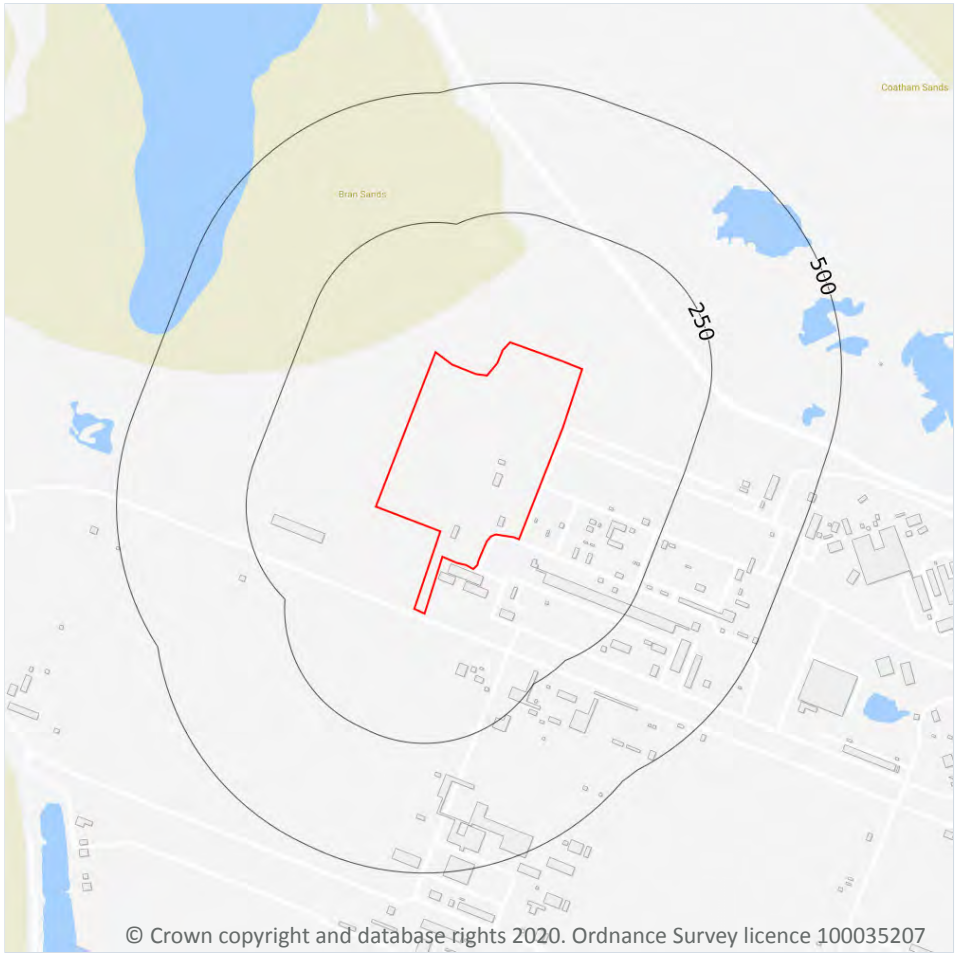
5.5 Groundwater vulnerability- local information

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
- 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	0

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.

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

5.7 Surface water abstractions

Records within 2000m	2

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 48**

ID	Location	Details	
-	924m W	Status: Historical Licence No: 1/25/04/135 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: SURFACE WATER Point: RIVER TEES ESTUARY Data Type: Point Name: BRITISH STEEL PLC Easting: 454700 Northing: 525900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 19/05/1975 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -
-	924m W	Status: Historical Licence No: 1/25/04/135 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: SURFACE WATER Point: RIVER TEES ESTUARY Data Type: Point Name: CORUS UK LTD Easting: 454700 Northing: 525900	Annual Volume (m^3): 263832000 Max Daily Volume (m^3): 722828 Original Application No: - Original Start Date: 19/05/1975 Expiry Date: - Issue No: 101 Version Start Date: 17/04/2000 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	0

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

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

5.9 Source Protection Zones

Records within 500m	0

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

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

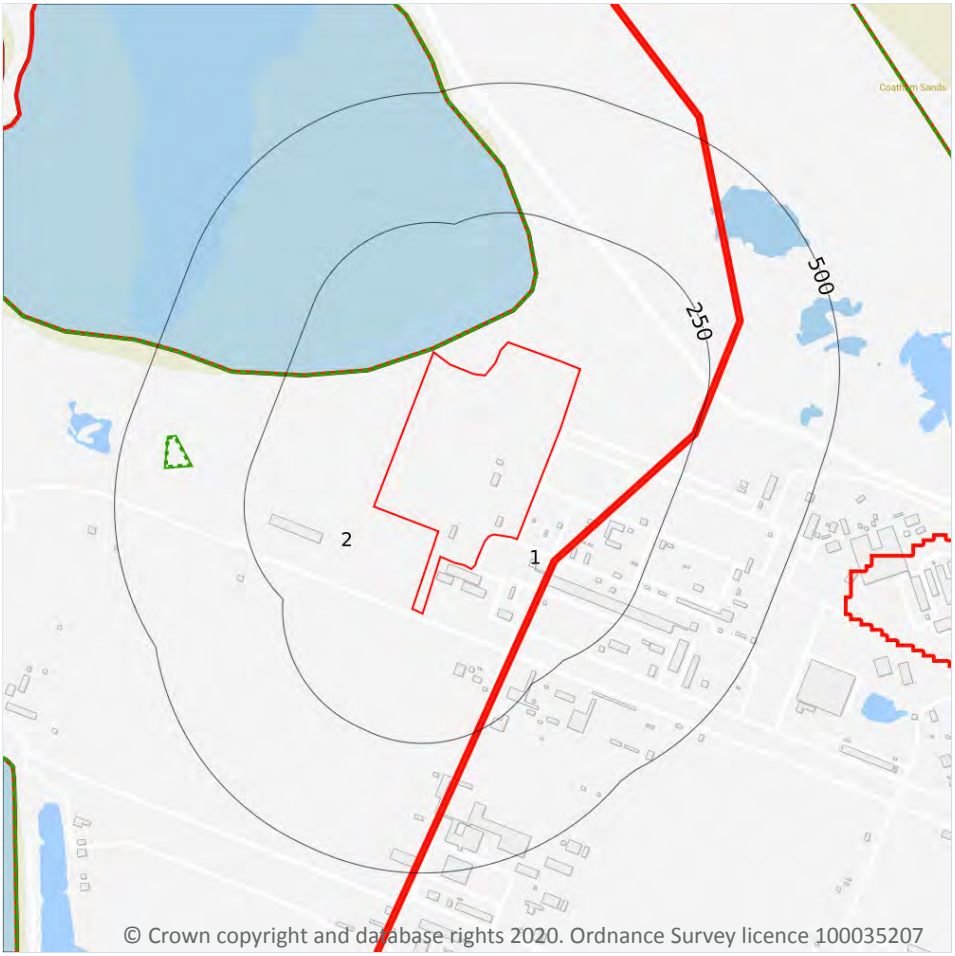
5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

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

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

6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	0

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

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	0

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.

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 51**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
2	**On site**	**Coastal Catchment**	**Not part of a river WB catchment**	**10**	**Tees Lower and Estuary**	**Tees**

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 51**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
3	4m N	Transitional	Tees	GB510302509900	Moderate	Fail	Moderate	2016

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

6.5 WFD Groundwater bodies

Records on site	1

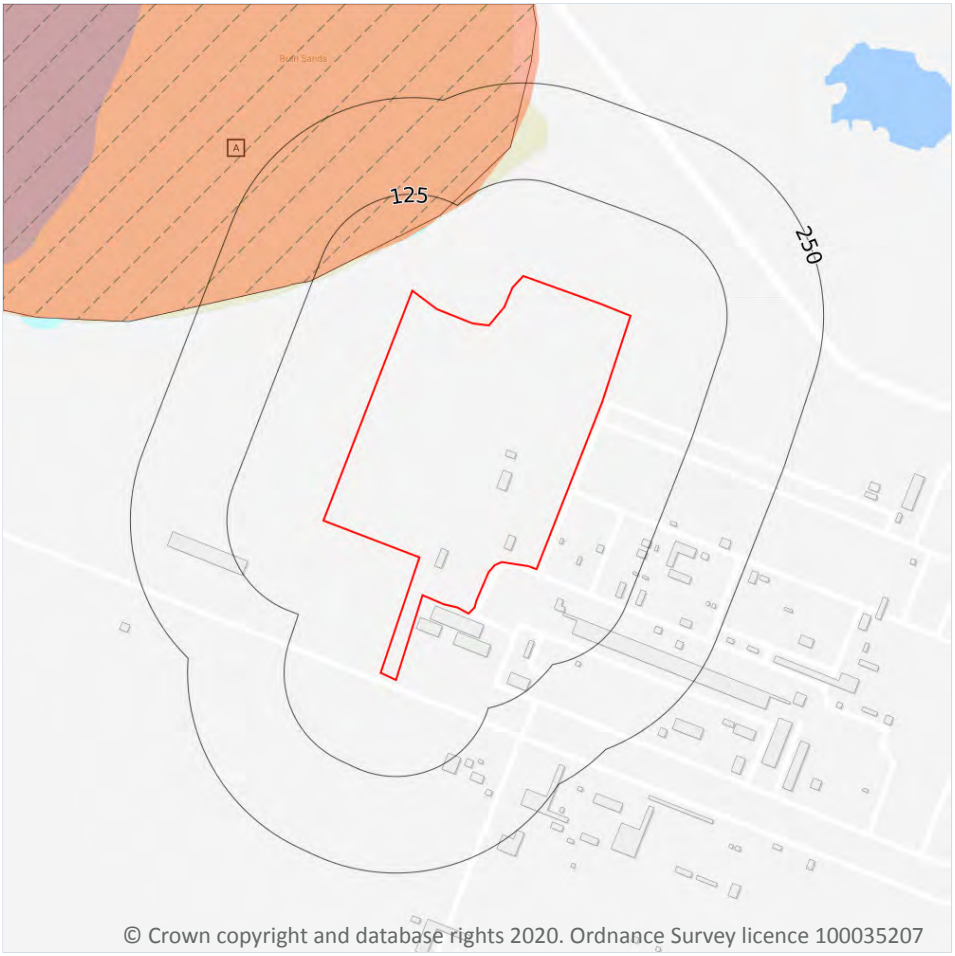
Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on **page 51**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
1	**On site**	**Tees Mercia Mudstone & Redcar Mudstone**	**GB40302G701300**	**Poor**	**Poor**	**Good**	**2015**

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

7 River and coastal flooding



Site Outline

Search buffers in metres (m)

Environment Agency river and coastal flooding:

- High
- Medium
- Low
- Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

7.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m	0

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

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

7.2 Historical Flood Events

Records within 250m	1

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

Features are displayed on the River and coastal flooding map on **page 54**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
A	71m NW	Tees Estuary, Including Port Clarence	2013-12-05 2013-12-06	Sea	Operational failure/breach of defence	Tidal

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.

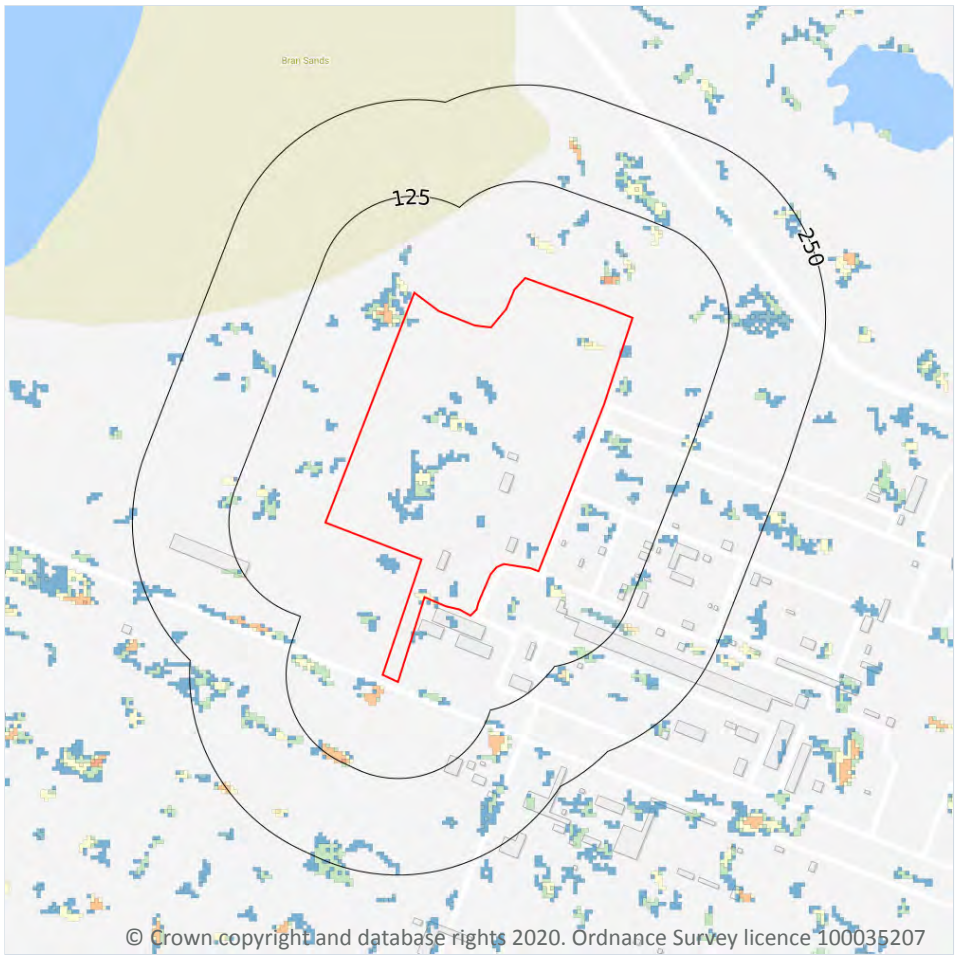
7.7 Flood Zone 3

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 100 year, 0.3m - 1.0m**
Highest risk within 50m	**1 in 30 year, 0.3m - 1.0m**

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

Features are displayed on the Surface water flooding map on **page 57**

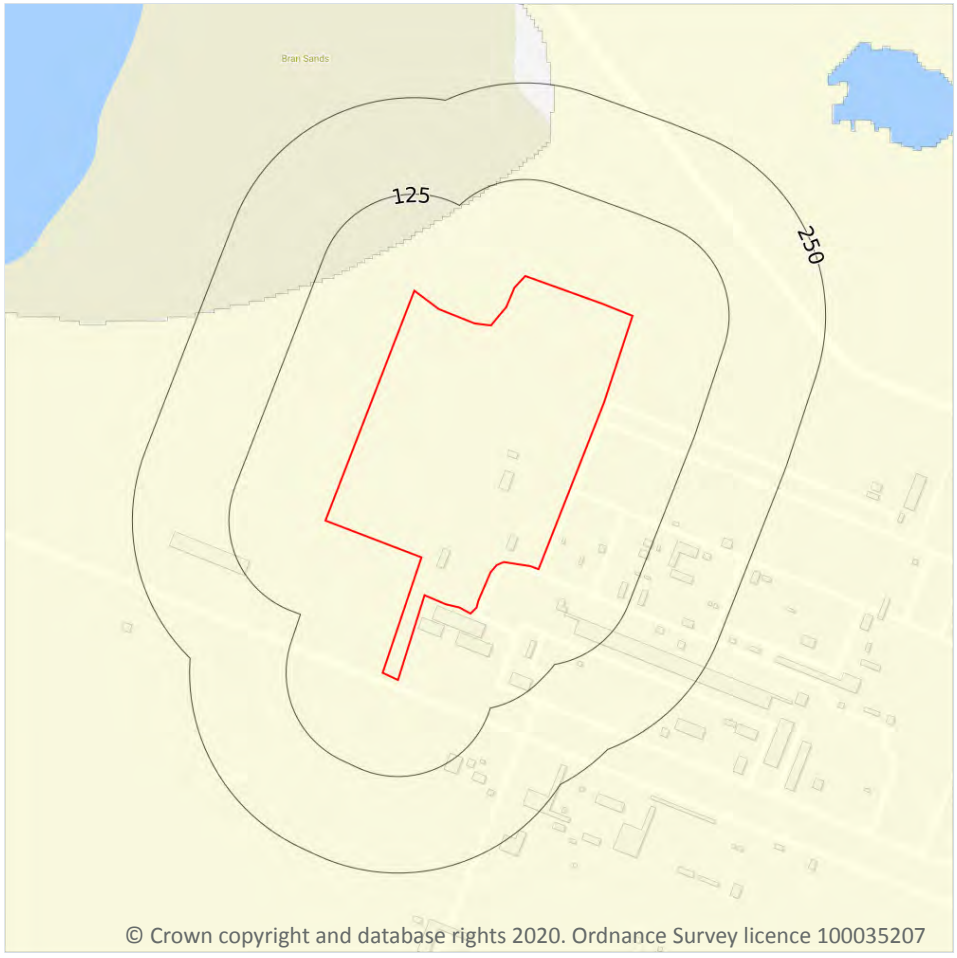
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

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

9.1 Groundwater flooding

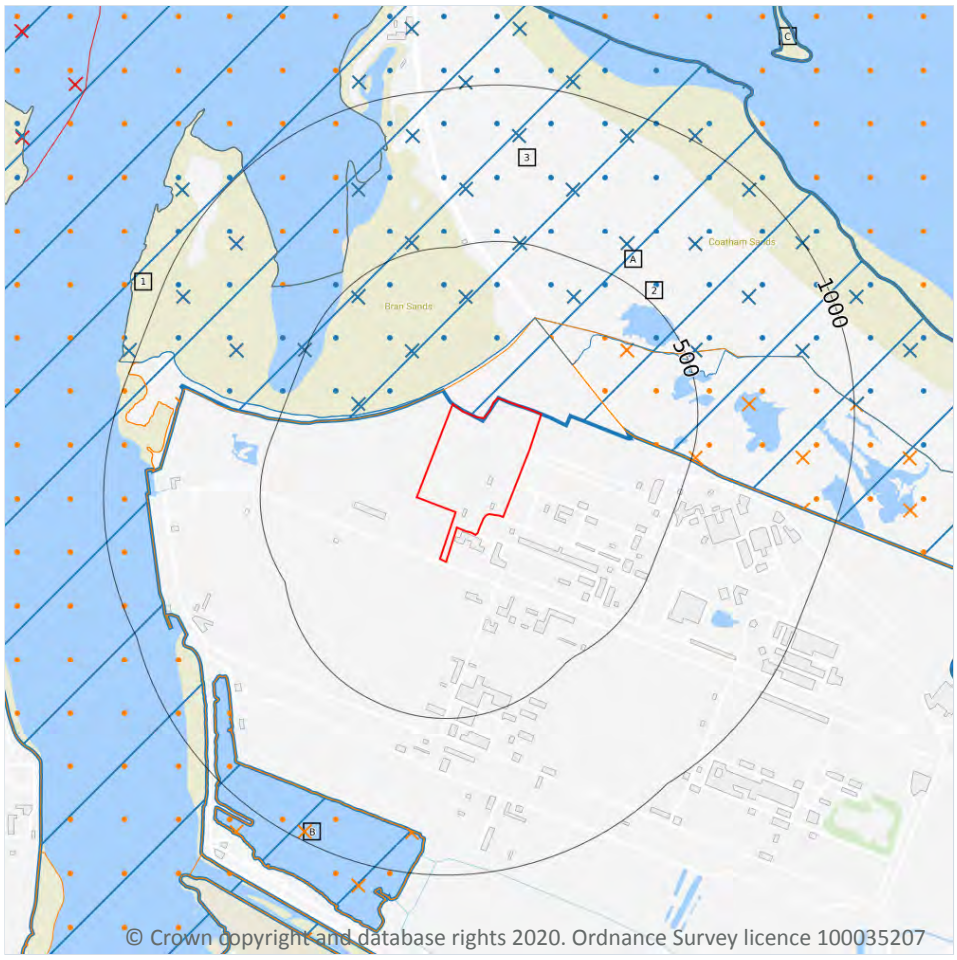
Highest risk on site	**Moderate**
Highest risk within 50m	**Moderate**

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 59**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

- Sites of Special Scientific Interest (SSSI)
- Conserved wetland sites (Ramsar sites)
- Special Protection Areas (SPA)
- National Nature Reserves (NNR)
- Proposed Ramsar sites
- Potential Special Protection Areas (pSPA)

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	7

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.

Features are displayed on the Environmental designations map on **page 60**

ID	Location	Name	Data source
1	**On site**	**Teesmouth and Cleveland Coast**	**Natural England**

ID	Location	Name	Data source
B	780m SW	Teesmouth and Cleveland Coast	Natural England
C	1367m NE	Teesmouth and Cleveland Coast	Natural England
-	1370m E	Teesmouth and Cleveland Coast	Natural England
-	1504m N	Teesmouth and Cleveland Coast	Natural England
6	1506m E	Teesmouth and Cleveland Coast	Natural England
-	1557m N	Teesmouth and Cleveland Coast	Natural England

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m **6**

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.

Features are displayed on the Environmental designations map on **page 60**

ID	Location	Site	Details
A	63m NW	Name: Teesmouth and Cleveland Coast Site status: Listed Data source: Natural England	Overview: Medium-large site encompassing a range of habitats (sand and mudflats, rocky shore, saltmarsh, freshwater marsh and sand dunes) on and around an estuary which has been much-modified by human activities. Together these habitats support internationally important numbers of waterbirds. Ramsar criteria: -
C	1367m NE	Name: Teesmouth and Cleveland Coast Site status: Listed Data source: Natural England	Overview: Medium-large site encompassing a range of habitats (sand and mudflats, rocky shore, saltmarsh, freshwater marsh and sand dunes) on and around an estuary which has been much-modified by human activities. Together these habitats support internationally important numbers of waterbirds. Ramsar criteria: -

ID	Location	Site	Details
-	1503m N	Name: Teesmouth and Cleveland Coast Site status: Listed Data source: Natural England	Overview: Medium-large site encompassing a range of habitats (sand and mudflats, rocky shore, saltmarsh, freshwater marsh and sand dunes) on and around an estuary which has been much-modified by human activities. Together these habitats support internationally important numbers of waterbirds. Ramsar criteria: -
E	1542m NW	Name: Teesmouth and Cleveland Coast Site status: Listed Data source: Natural England	Overview: Medium-large site encompassing a range of habitats (sand and mudflats, rocky shore, saltmarsh, freshwater marsh and sand dunes) on and around an estuary which has been much-modified by human activities. Together these habitats support internationally important numbers of waterbirds. Ramsar criteria: -
-	1557m N	Name: Teesmouth and Cleveland Coast Site status: Listed Data source: Natural England	Overview: Medium-large site encompassing a range of habitats (sand and mudflats, rocky shore, saltmarsh, freshwater marsh and sand dunes) on and around an estuary which has been much-modified by human activities. Together these habitats support internationally important numbers of waterbirds. Ramsar criteria: -
-	1614m W	Name: Teesmouth and Cleveland Coast Site status: Listed Data source: Natural England	Overview: Medium-large site encompassing a range of habitats (sand and mudflats, rocky shore, saltmarsh, freshwater marsh and sand dunes) on and around an estuary which has been much-modified by human activities. Together these habitats support internationally important numbers of waterbirds. Ramsar criteria: -

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	**6**

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.

Features are displayed on the Environmental designations map on **page 60**

ID	Location	Name	Species of interest	Habitat description	Data source
A	64m NW	Teesmouth and Cleveland Coast	Eurasian teal; Red knot; Common shelduck; Northern shoveler; Sanderling; Little tern; Common redshank; Sandwich tern; Great cormorant	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Coastal sand dunes, Sand beaches, Machair; Salt marshes, Salt pastures, Salt steppes; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites	Natural England
C	1367m NE	Teesmouth and Cleveland Coast	Eurasian teal; Red knot; Common shelduck; Northern shoveler; Sanderling; Little tern; Common redshank; Sandwich tern; Great cormorant	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Coastal sand dunes, Sand beaches, Machair; Salt marshes, Salt pastures, Salt steppes; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites	Natural England
-	1504m N	Teesmouth and Cleveland Coast	Eurasian teal; Red knot; Common shelduck; Northern shoveler; Sanderling; Little tern; Common redshank; Sandwich tern; Great cormorant	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Coastal sand dunes, Sand beaches, Machair; Salt marshes, Salt pastures, Salt steppes; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites	Natural England
E	1542m NW	Teesmouth and Cleveland Coast	Eurasian teal; Red knot; Common shelduck; Northern shoveler; Sanderling; Little tern; Common redshank; Sandwich tern; Great cormorant	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Coastal sand dunes, Sand beaches, Machair; Salt marshes, Salt pastures, Salt steppes; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites	Natural England
-	1557m N	Teesmouth and Cleveland Coast	Eurasian teal; Red knot; Common shelduck; Northern shoveler; Sanderling; Little tern; Common redshank; Sandwich tern; Great cormorant	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Coastal sand dunes, Sand beaches, Machair; Salt marshes, Salt pastures, Salt steppes; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites	Natural England

ID	Location	Name	Species of interest	Habitat description	Data source
-	1615m W	Teesmouth and Cleveland Coast	Eurasian teal; Red knot; Common shelduck; Northern shoveler; Sanderling; Little tern; Common redshank; Sandwich tern; Great cormorant	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Coastal sand dunes, Sand beaches, Machair; Salt marshes, Salt pastures, Salt steppes; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites	Natural England

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

10.5 National Nature Reserves (NNR)

Records within 2000m	**2**

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.

Features are displayed on the Environmental designations map on **page 60**

ID	Location	Name	Data source
7	1522m NW	Teesmouth	Natural England
-	1640m W	Teesmouth	Natural England

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	0

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

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

10.12 Proposed Ramsar sites

Records within 2000m	9

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.

Features are displayed on the Environmental designations map on **page 60**

ID	Location	Name	Status
2	54m NW	Teesmouth and Cleveland Coast	Proposed
B	780m SW	Teesmouth and Cleveland Coast	Proposed
4	1200m SW	Teesmouth and Cleveland Coast	Proposed
C	1367m NE	Teesmouth and Cleveland Coast	Proposed
-	1504m N	Teesmouth and Cleveland Coast	Proposed
E	1542m NW	Teesmouth and Cleveland Coast	Proposed
-	1557m N	Teesmouth and Cleveland Coast	Proposed
8	1572m SW	Teesmouth and Cleveland Coast	Proposed
-	1615m W	Teesmouth and Cleveland Coast	Proposed

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	**1**

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.

Features are displayed on the Environmental designations map on **page 60**

ID	Location	Name	Status
3	176m NE	Teesmouth and Cleveland Coast Extension	Potential

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.

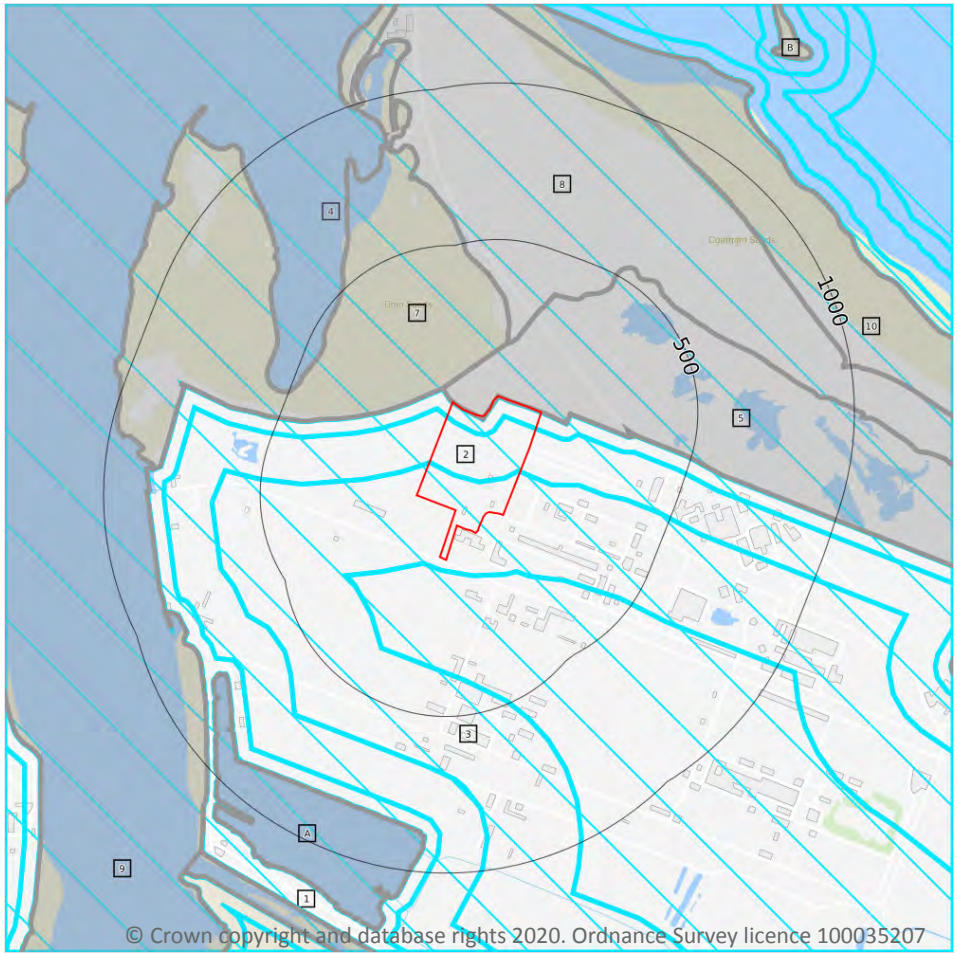
10.16 Nitrate Vulnerable Zones

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	4

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 68**

ID	Location	Type of developments requiring consultation
1	**On site**	**All applications - All Planning Applications - Except Householder Applications.**

ID	Location	Type of developments requiring consultation
2	**On site**	**All applications - All Planning Applications (Except Householder) Outside Or Extending Outside Existing Settlements/urban Areas Affecting Greenspace, Farmland, Semi Natural Habitats Or Landscape Features Such As Trees, Hedges, Streams, Rural Buildings/structures.** **Infrastructure - Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals.** **Wind and Solar - Solar schemes with footprint > 0.5ha, all 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.** **Rural non-residential - Large non residential developments outside existing settlements/urban areas where net additional gross internal floorspace is > 1,000m² or footprint exceeds 0.2ha.** **Residential - Residential development of 10 units or more.** **Rural residential - Any residential developments outside of existing settlements/urban areas with a total net gain in residential units.** **Air pollution - Any development that could cause AIR POLLUTION or DUST either in its construction or operation (incl: industrial/commercial processes, livestock & poultry units, slurry lagoons/manure stores).** **Combustion - All general combustion processes. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.** **Waste - Mechanical and biological waste treatment, inert landfill, non-hazardous landfill, hazardous landfill, household civic amenity recycling facilities construction, demolition and excavation waste, other waste management.** **Composting - Any composting proposal. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management.** **Discharges - Any discharge of water or liquid waste that is discharged to ground (ie to seep away) or to surface water, such as a beck or stream (NB this does not include discharges to mains sewer which are unlikely to pose a risk at this location).** **Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply .**

ID	Location	Type of developments requiring consultation
3	On site	**All applications - All Planning Applications (Except Householder) Outside Or Extending Outside Existing Settlements/urban Areas Affecting Greenspace, Farmland, Semi Natural Habitats Or Landscape Features Such As Trees, Hedges, Streams, Rural Buildings/structures. Infrastructure - Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals. Wind and Solar - Solar schemes with footprint > 0.5ha, all 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. Rural non-residential - Large non residential developments outside existing settlements/urban areas where net additional gross internal floorspace is > 1,000m² or footprint exceeds 0.2ha. Residential - Residential development of 10 units or more. Rural residential - Any residential developments outside of existing settlements/urban areas with a total net gain in residential units. Air pollution - Any development that could cause AIR POLLUTION (incl: industrial/commercial processes, livestock & poultry units, slurry lagoons/manure stores). Combustion - All general combustion processes. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Mechanical and biological waste treatment, inert landfill, non-hazardous landfill, hazardous landfill, household civic amenity recycling facilities construction, demolition and excavation waste, other waste management. Composting - Any composting proposal. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Discharges - Any discharge of water or liquid waste that is discharged to ground (ie to seep away) or to surface water, such as a beck or stream (NB this does not include discharges to mains sewer which are unlikely to pose a risk at this location). Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply .**
4	On site	**All applications - All Planning Applications.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	**14**

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.

Features are displayed on the SSSI Impact Zones and Units map on **page 68**

ID:	5
Location:	On site
SSSI name:	Teesmouth and Cleveland Coast
Unit name:	
Broad habitat:	
Condition:	Not Recorded

Reportable features:

Feature name	Feature condition	Date of assessment
-	-	-

ID: 7
Location: 54m NW
SSSI name: Teesmouth and Cleveland Coast
Unit name:
Broad habitat:
Condition: Not Recorded
Reportable features:

Feature name	Feature condition	Date of assessment
-	-	-

ID: 8
Location: 170m N
SSSI name: Teesmouth and Cleveland Coast
Unit name:
Broad habitat:
Condition: Not Recorded
Reportable features:

Feature name	Feature condition	Date of assessment
-	-	-

ID: 9
Location: 448m NW
SSSI name: Redcar Rocks
Unit name:
Broad habitat:
Condition: Not Recorded
Reportable features:

Feature name	Feature condition	Date of assessment
-	-	-

ID: A
Location: 780m SW
SSSI name: Teesmouth and Cleveland Coast
Unit name:
Broad habitat:
Condition: Not Recorded
Reportable features:

Feature name	Feature condition	Date of assessment
-	-	-

ID: 10
Location: 884m NE
SSSI name: Redcar Rocks
Unit name:
Broad habitat:
Condition: Not Recorded
Reportable features:

Feature name	Feature condition	Date of assessment
-	-	-

ID: 11
Location: 1200m SW
SSSI name: Teesmouth and Cleveland Coast
Unit name:
Broad habitat:
Condition: Not Recorded
Reportable features:

Feature name	Feature condition	Date of assessment
-	-	-

ID: B
Location: 1367m NE
SSSI name: Redcar Rocks
Unit name:
Broad habitat:
Condition: Not Recorded
Reportable features:

Feature name	Feature condition	Date of assessment
-	-	-

ID: -
Location: 1504m N
SSSI name: Redcar Rocks
Unit name:
Broad habitat:
Condition: Not Recorded
Reportable features:

Feature name	Feature condition	Date of assessment
-	-	-

ID: 15
Location: 1542m NW
SSSI name: Teesmouth and Cleveland Coast
Unit name:
Broad habitat:
Condition: Not Recorded
Reportable features:

Feature name	Feature condition	Date of assessment
-	-	-

ID: -
Location: 1557m N
SSSI name: Redcar Rocks
Unit name:
Broad habitat:
Condition: Not Recorded
Reportable features:

Feature name	Feature condition	Date of assessment
-	-	-

ID: -
Location: 1661m W
SSSI name: Teesmouth and Cleveland Coast
Unit name:
Broad habitat:
Condition: Not Recorded
Reportable features:

Feature name	Feature condition	Date of assessment
-	-	-

ID: -
Location: 1663m W
SSSI name: Teesmouth and Cleveland Coast
Unit name:
Broad habitat:
Condition: Not Recorded
Reportable features:

Feature name	Feature condition	Date of assessment
-	-	-

ID: -
Location: 1752m E
SSSI name: Teesmouth and Cleveland Coast
Unit name:
Broad habitat:
Condition: Not Recorded
Reportable features:

Feature name	Feature condition	Date of assessment
-	-	-

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	0

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.

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

11.5 Conservation Areas

Records within 250m	0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

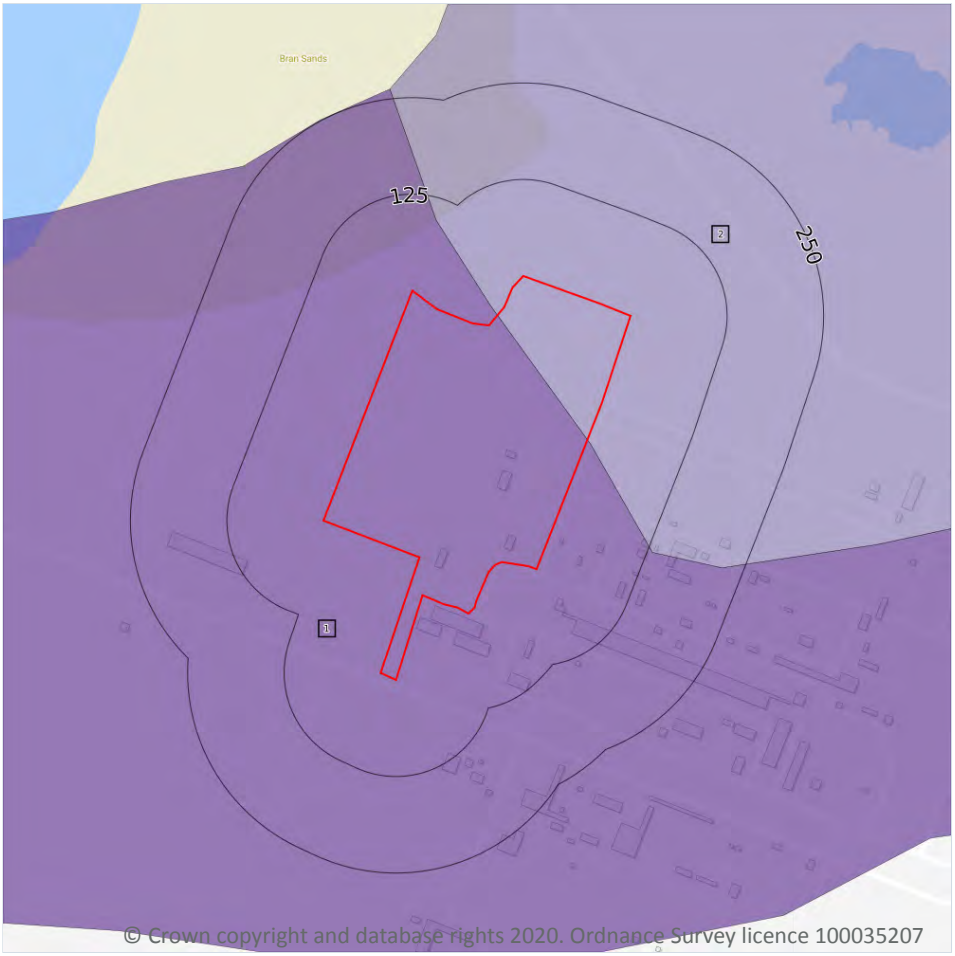
11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	2

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

Features are displayed on the Agricultural designations map on **page 77**

ID	Location	Classification	Description
1	**On site**	**Urban**	-
2	**On site**	**Non Agricultural**	-

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

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

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

12.3 Tree Felling Licences

Records within 250m	0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

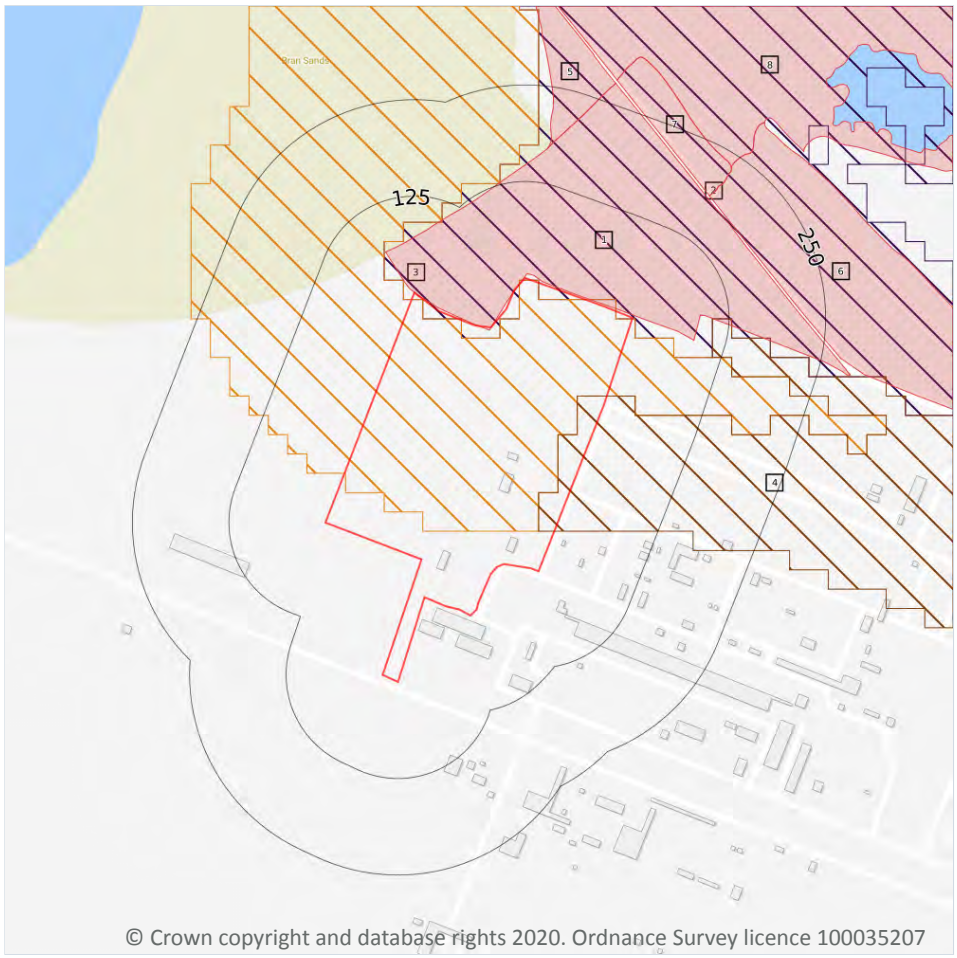
12.5 Countryside Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

13 Habitat designations



Site Outline

Search buffers in metres (m)

Priority Habitat Inventory
Open Mosaic Habitat
Limestone Pavement Orders

Habitat Networks

Primary Habitat
Restorable Habitat
Associated Habitats
Habitat Restoration-Creation
Network Enhancement Zone 1
Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m	**5**

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

Features are displayed on the Habitat designations map on **page 79**

ID	Location	Main Habitat	Other habitats
1	**On site**	**Coastal sand dunes**	**Main habitat: CSDUN (INV > 50%)**
5	170m N	Coastal sand dunes	Main habitat: RBEDS (INV > 50%); CSDUN (INV > 50%)
6	176m NE	Coastal sand dunes	Main habitat: CSDUN (INV > 50%)
7	187m NE	Coastal sand dunes	Main habitat: RBEDS (INV > 50%); CSDUN (INV > 50%, ENSIS L1)

ID	Location	Main Habitat	Other habitats
8	234m NE	Coastal sand dunes	Main habitat: RBEDS (INV > 50%); CSDUN (INV > 50%, ENSIS L1)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	**3**

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

Features are displayed on the Habitat designations map on **page 79**

ID	Location	Type	Habitat
2	**On site**	**Primary Habitat**	**Coastal sand dunes**
3	**On site**	**Network Enhancement Zone 1**	**Not specified**
4	**On site**	**Network Enhancement Zone 2**	**Not specified**

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	**0**

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

This data is sourced from Natural England.

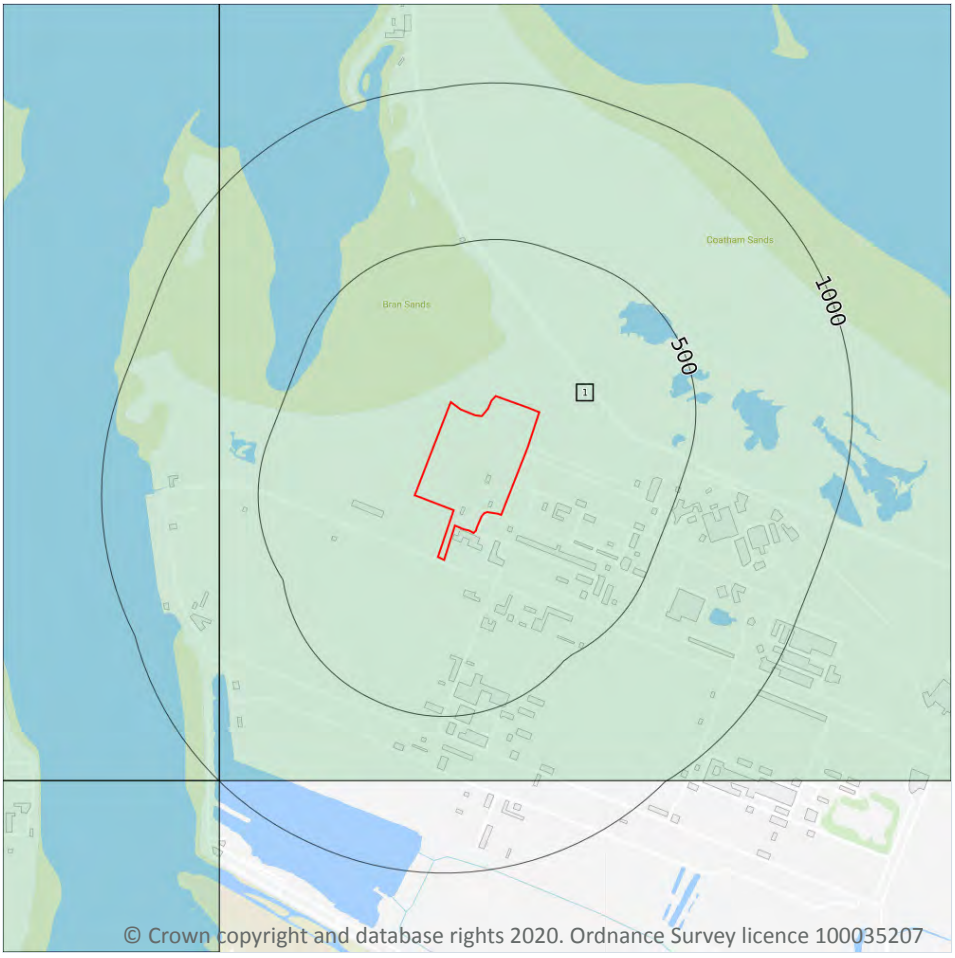
13.4 Limestone Pavement Orders

Records within 250m	**0**

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	1

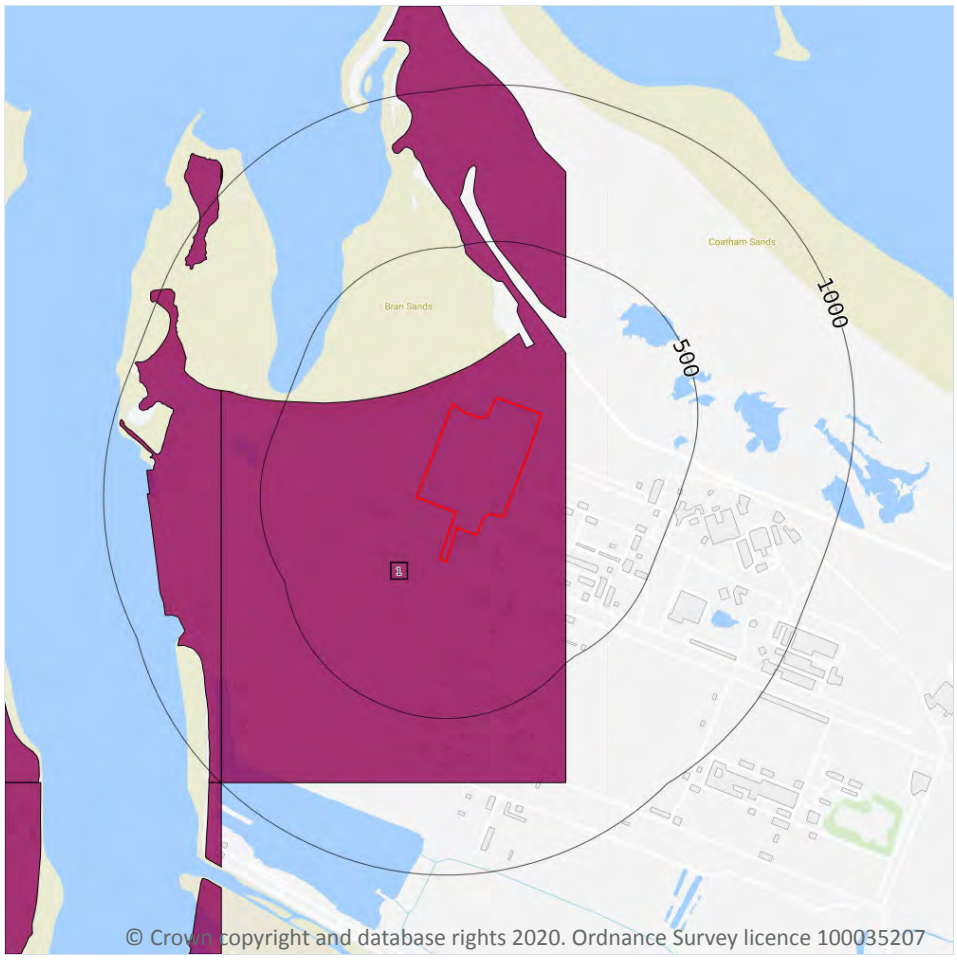
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 81**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**NZ52NE**

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	1

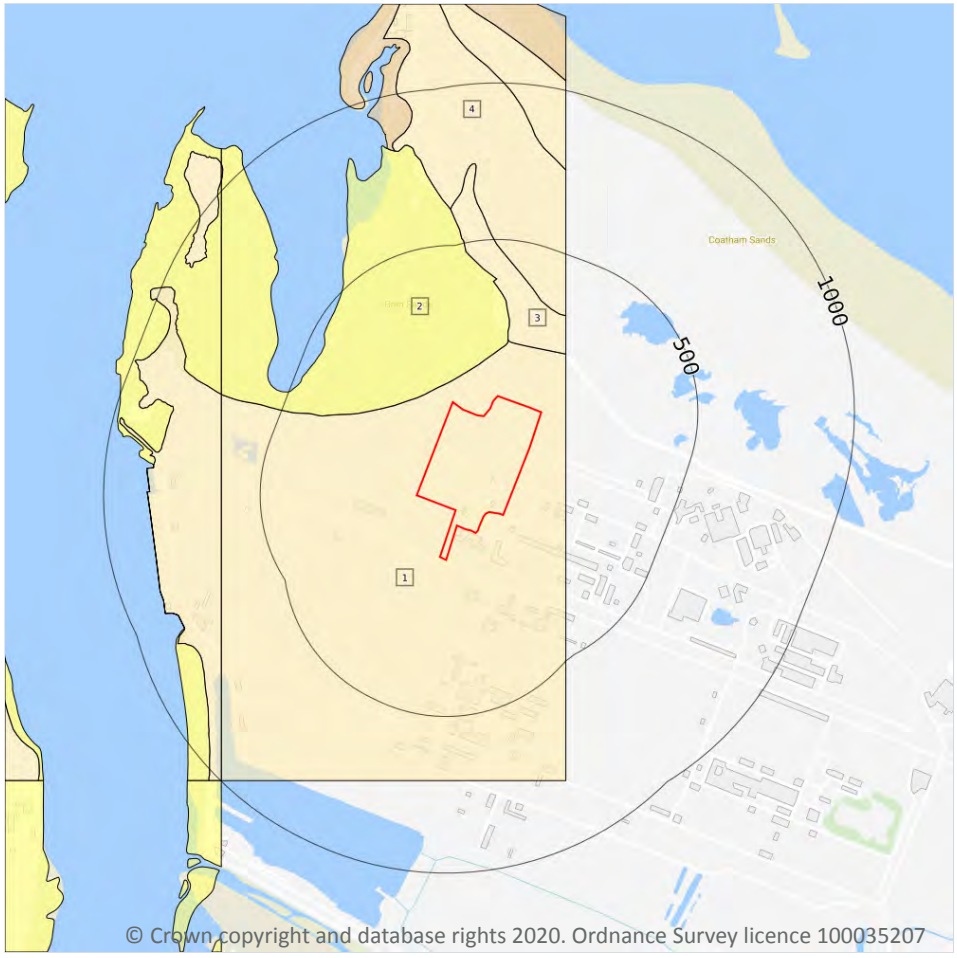
Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 82**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**MGR-ARTDP**	**Made Ground (Undivided)**	**Artificial Deposit**

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m **4**

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 83**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**MEA-XSZC**	**Marine Or Estuarine Alluvium - Sand, Silt And Clay**	**Sand, Silt And Clay**
2	62m NW	TFD-XSZC	Tidal Flat Deposits - Sand, Silt And Clay	Sand, Silt And Clay
3	177m N	BSA-S	Blown Sand - Sand	Sand
4	313m N	MEA-XSZC	Marine Or Estuarine Alluvium - Sand, Silt And Clay	Sand, Silt And Clay

This data is sourced from the British Geological Survey.

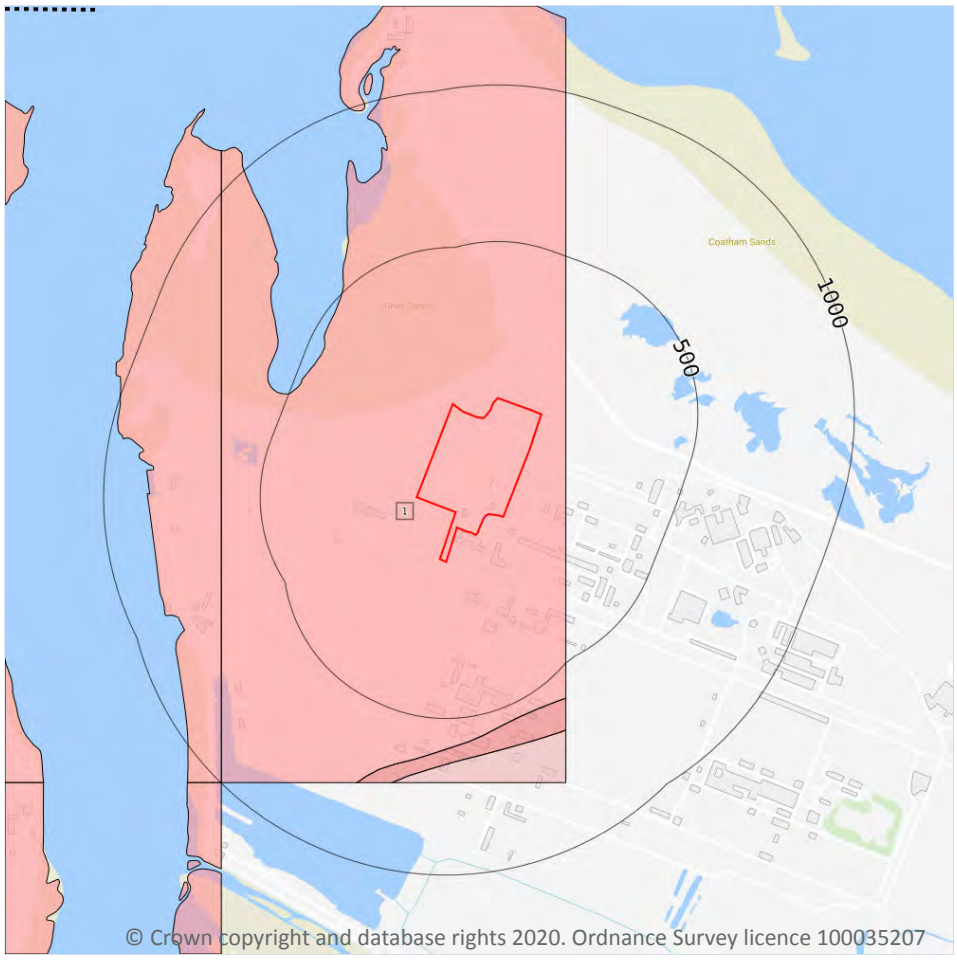
14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

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

14.5 Bedrock geology (10k)

Records within 500m	1

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 85**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**MMG-MDST**	**Mercia Mudstone Group - Mudstone**	**Rhaetian Age - Early Triassic Epoch**

This data is sourced from the British Geological Survey.

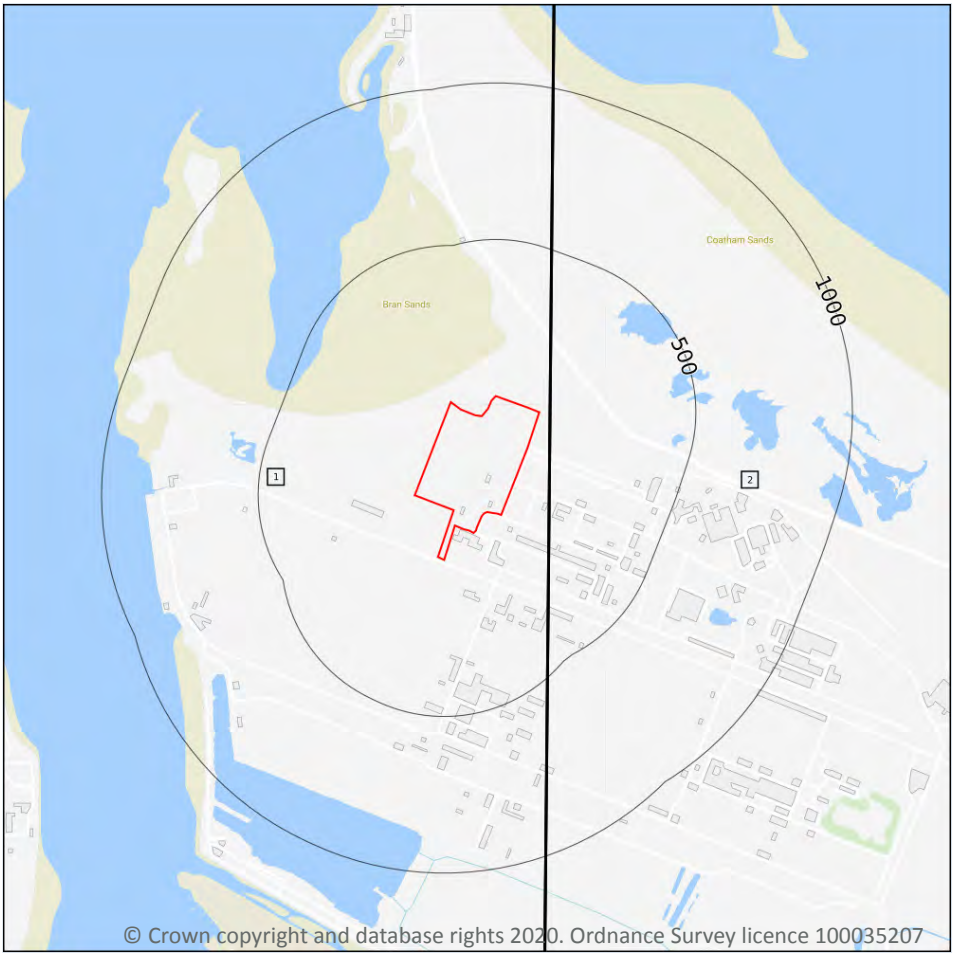
14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

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.

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	2

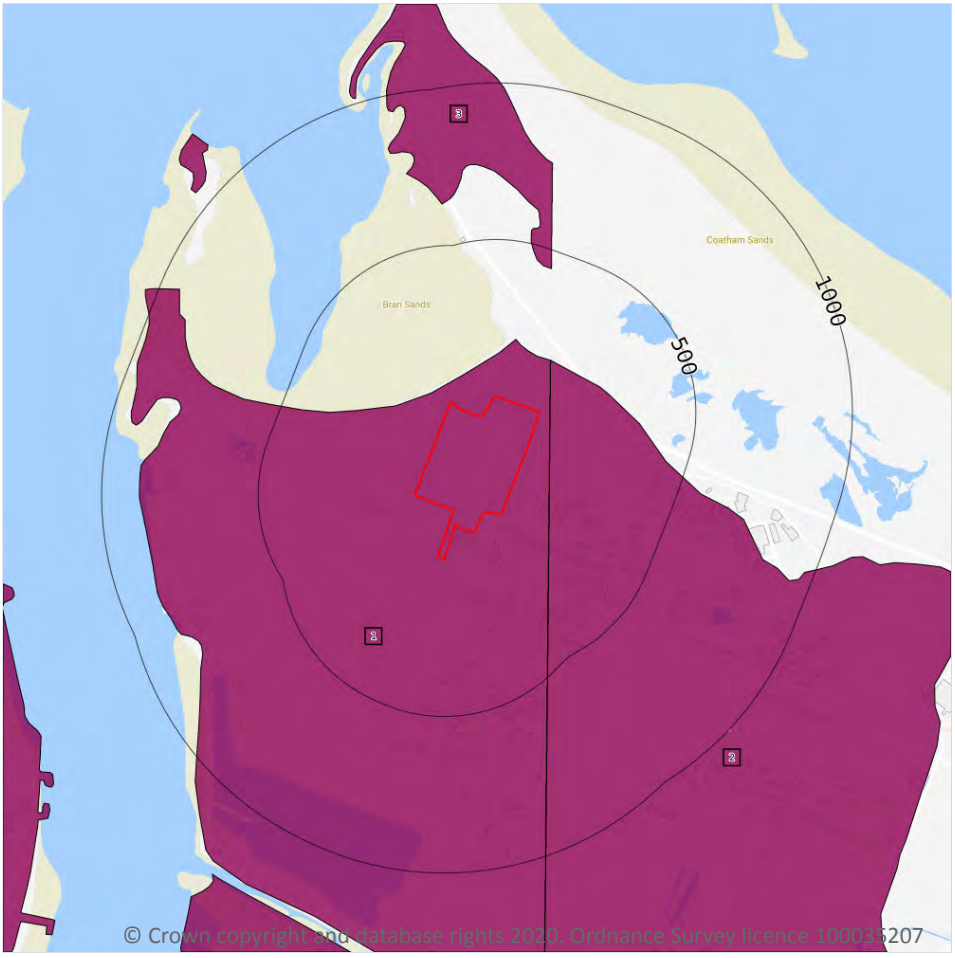
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 87**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW033_stockton_v4**
2	34m E	Full	Full	Full	Full	EW034_guisborough_v4

This data is sourced from the British Geological Survey.

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



Site Outline

Search buffers in metres (m)

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

15.2 Artificial and made ground (50k)

Records within 500m	3

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

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 88**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**MGR-ARTDP**	**MADE GROUND (UNDIVIDED)**	**ARTIFICIAL DEPOSIT**
2	34m E	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
3	443m N	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

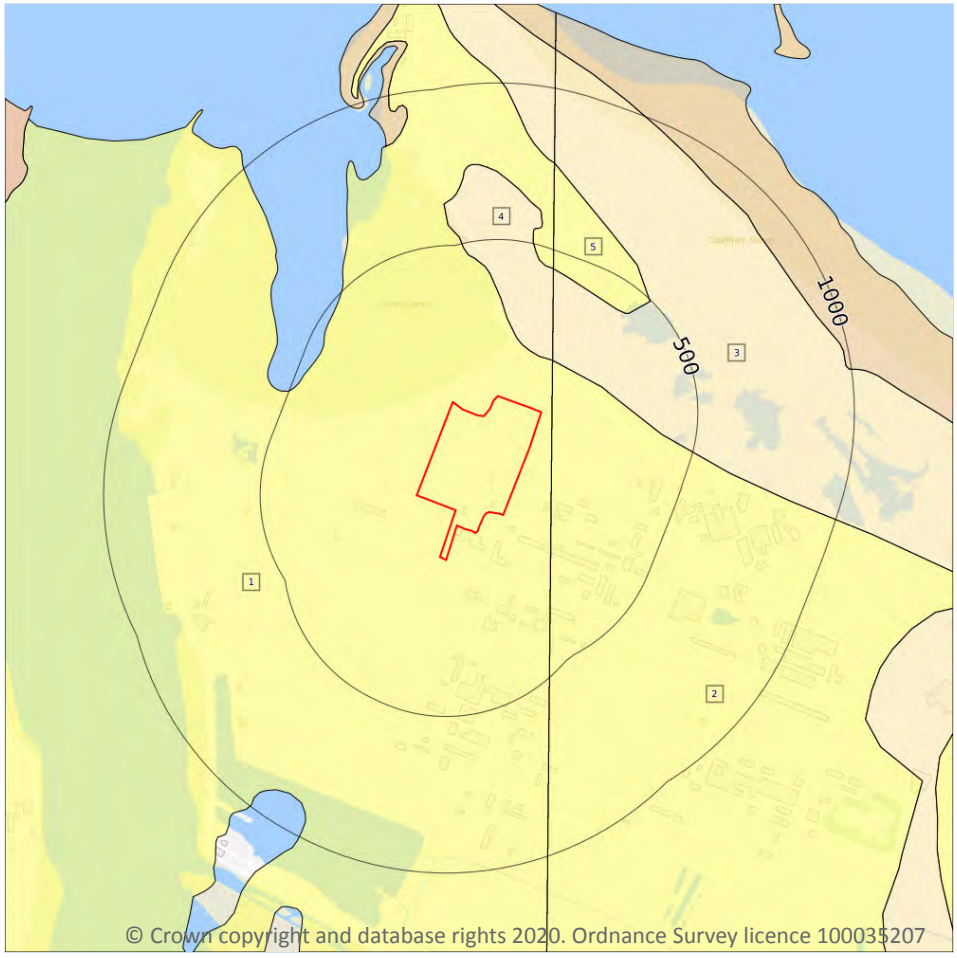
Records within 50m	1

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).

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m **5**

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 90**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TFD-XSZC**	**TIDAL FLAT DEPOSITS**	**SAND, SILT AND CLAY**
2	34m E	TFD-XSZ	TIDAL FLAT DEPOSITS	SAND AND SILT
3	163m NE	BSA-S	BLOWN SAND	SAND
4	164m N	BSA-S	BLOWN SAND	SAND

ID	Location	LEX Code	Description	Rock description
5	407m NE	TFD-XSZC	TIDAL FLAT DEPOSITS	SAND, SILT AND CLAY

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	**2**

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Intergranular**	**High**	**Low**
34m SE	Intergranular	High	Moderate

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	**0**

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

This data is sourced from the British Geological Survey.

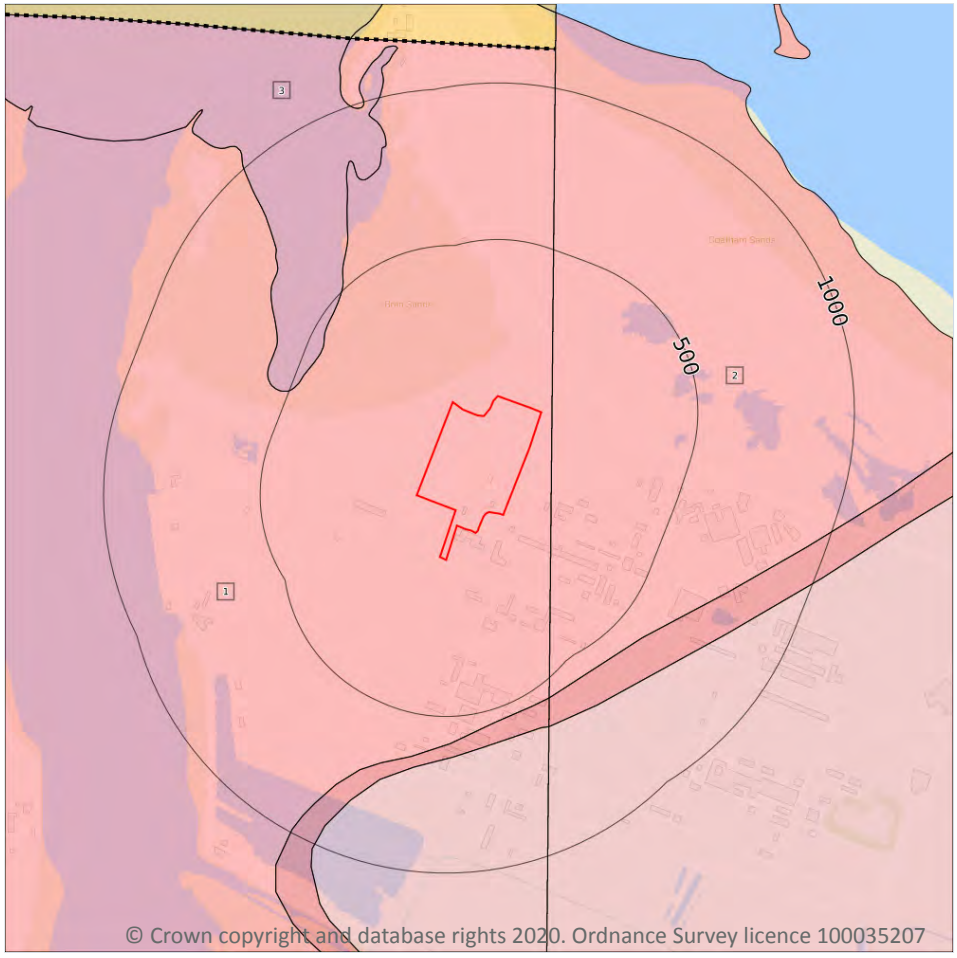
15.7 Landslip permeability (50k)

Records within 50m	**0**

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m	3

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 92**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**MMG-MDST**	**MERCIA MUDSTONE GROUP - MUDSTONE**	**-**
2	34m E	MMG-MDST	MERCIA MUDSTONE GROUP - MUDSTONE	-
3	449m NW	MMG-MDST	MERCIA MUDSTONE GROUP - MUDSTONE	-

This data is sourced from the British Geological Survey.

15.9 Bedrock 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 bedrock (the zone between the land surface and the water table).

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

This data is sourced from the British Geological Survey.

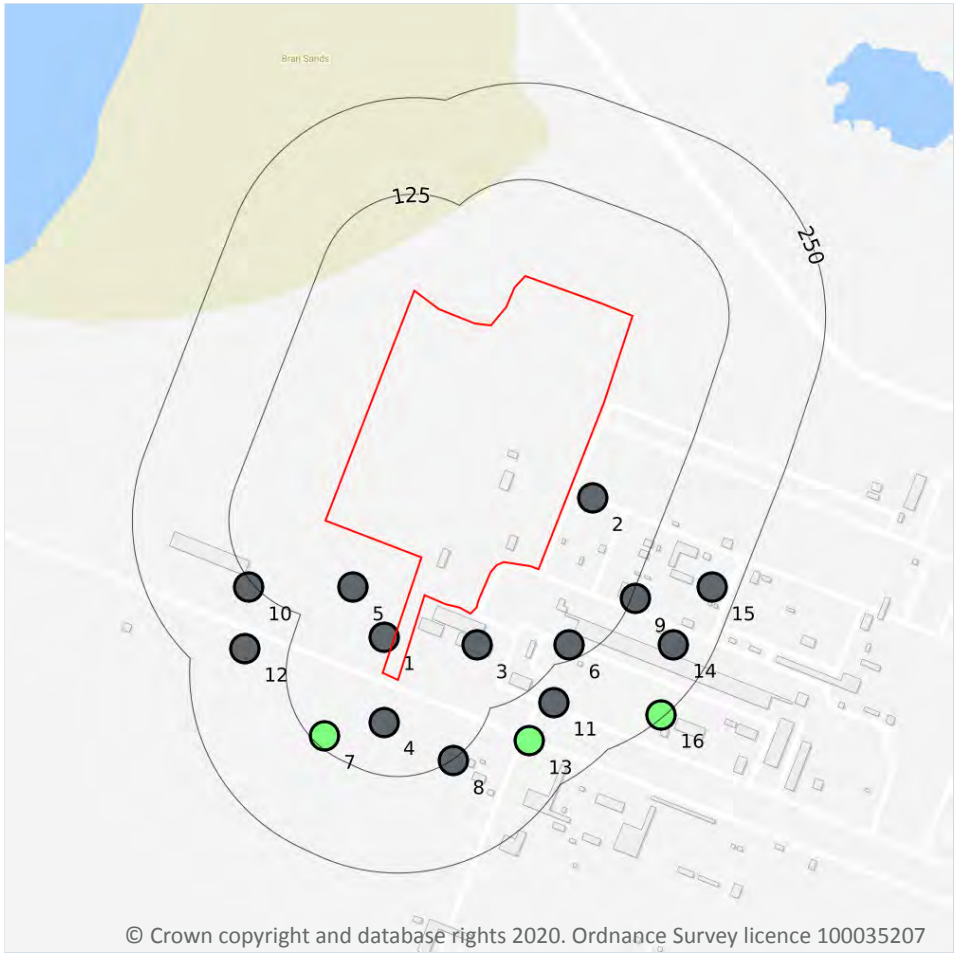
15.10 Bedrock faults and other linear features (50k)

Records within 500m	0

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.

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	16

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.

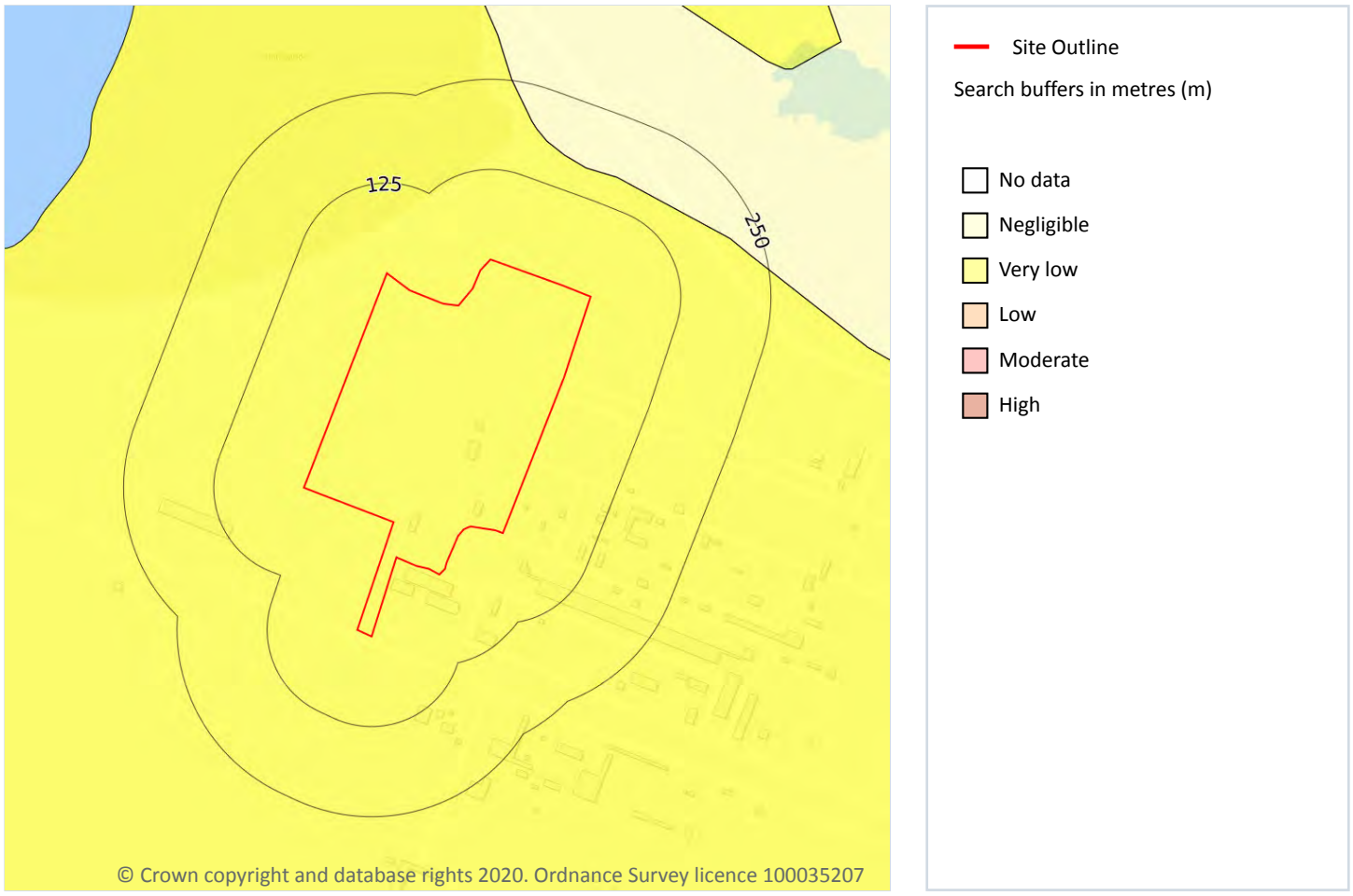
Features are displayed on the Boreholes map on **page 94**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	13m W	455700 525760	STEELWORKS EXTENSION, REDCAR	-	Y	N/A
2	32m E	455970 525940	STEELWORKS EXTENSION, REDCAR	-	Y	N/A
3	42m S	455820 525750	STEELWORKS EXTENSION, REDCAR	-	Y	N/A

ID	Location	Grid reference	Name	Length	Confidential	Web link
4	58m S	455700 525650	STEELWORKS EXTENSION, REDCAR	-	Y	N/A
5	68m S	455660 525825	STEELWORKS EXTENSION, REDCAR	-	Y	N/A
6	106m S	455940 525750	STEELWORKS EXTENSION, REDCAR	-	Y	N/A
7	111m SW	455623 525632	REDCAR STAGE II 3508	22.1	N	718371
8	127m SE	455790 525600	STEELWORKS EXTENSION, REDCAR	-	Y	N/A
9	130m E	456025 525810	STEELWORKS EXTENSION, REDCAR	-	Y	N/A
10	131m SW	455525 525825	STEELWORKS EXTENSION, REDCAR	-	Y	N/A
11	159m SE	455920 525675	STEELWORKS EXTENSION, REDCAR	-	Y	N/A
12	181m W	455520 525745	STEELWORKS EXTENSION, REDCAR	-	Y	N/A
13	182m SE	455888 525626	REDCAR WORKS	16.92	N	718323
14	201m SE	456075 525750	STEELWORKS EXTENSION, REDCAR	-	Y	N/A
15	218m E	456125 525825	STEELWORKS EXTENSION, REDCAR	-	Y	N/A
16	246m SE	456059 525660	REDCAR STAGE II 3709	25.06	N	718373

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m	1

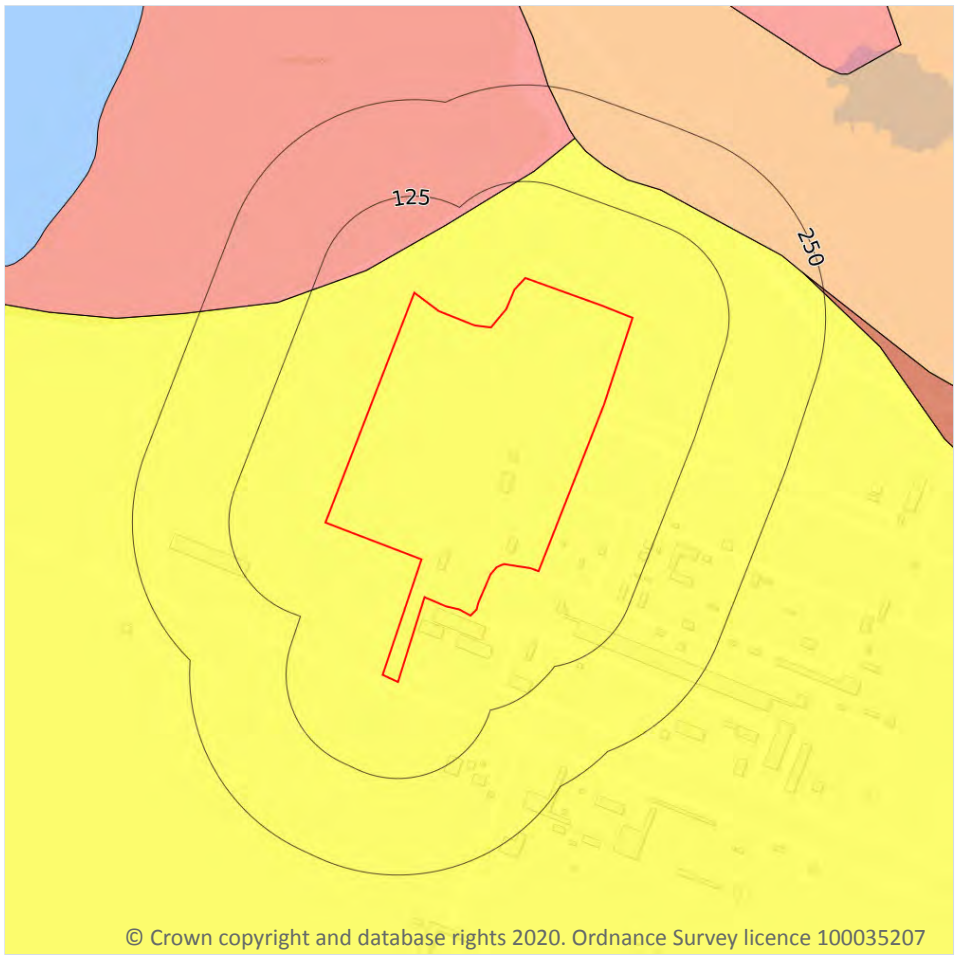
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 96**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	1

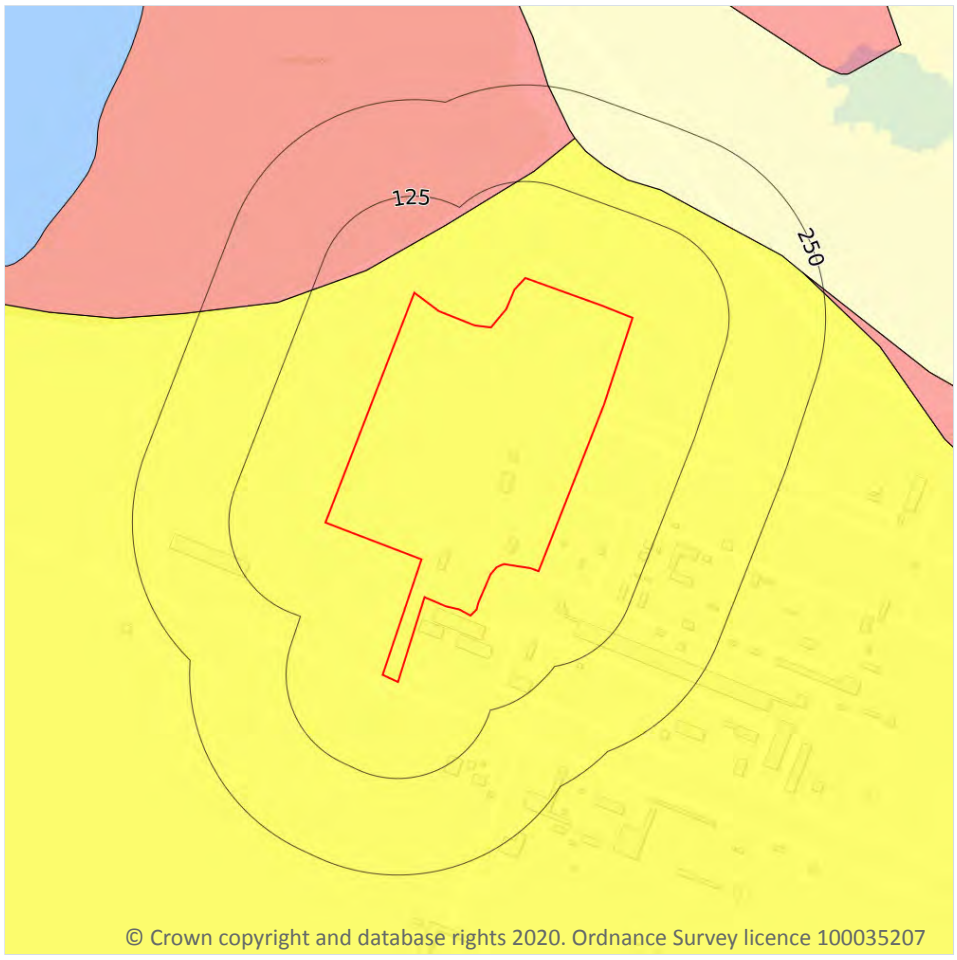
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 97**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	1

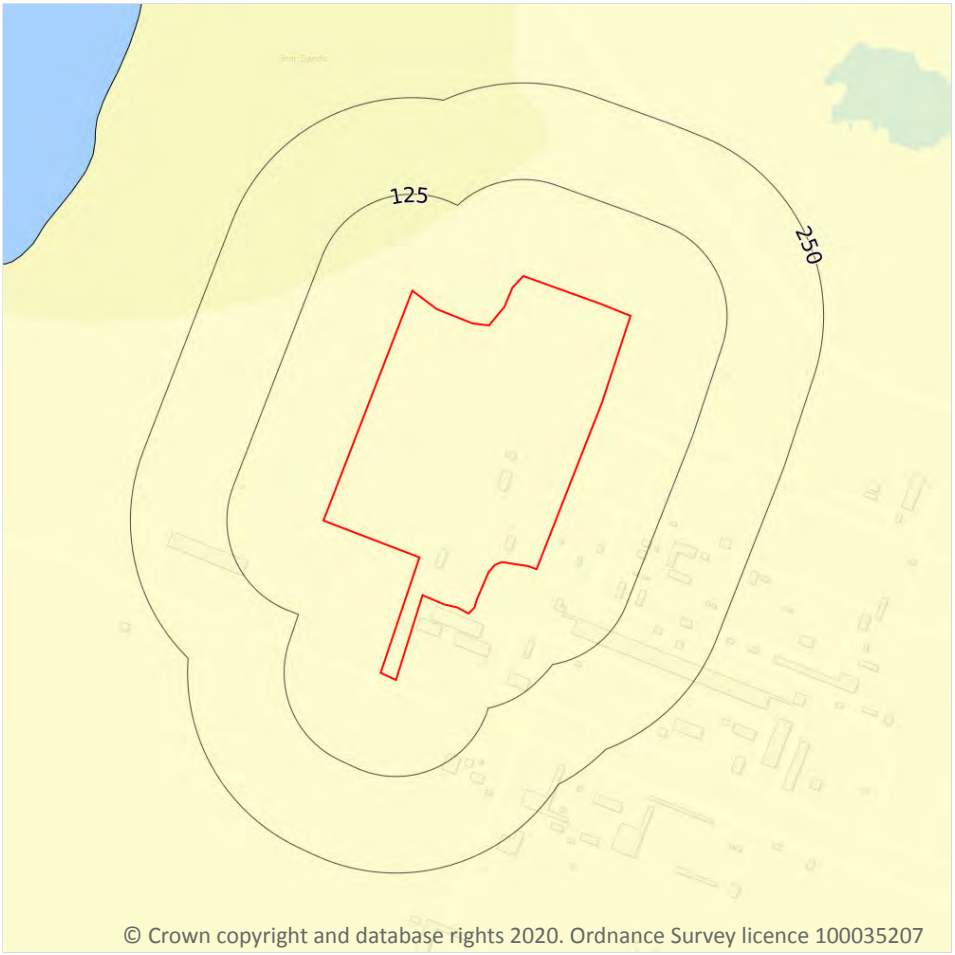
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 98**

Location	Hazard rating	Details
On site	**Very low**	**Compressibility and uneven settlement problems are not likely to be significant on the site for most land uses.**

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

17.4 Collapsible deposits

Records within 50m	**1**

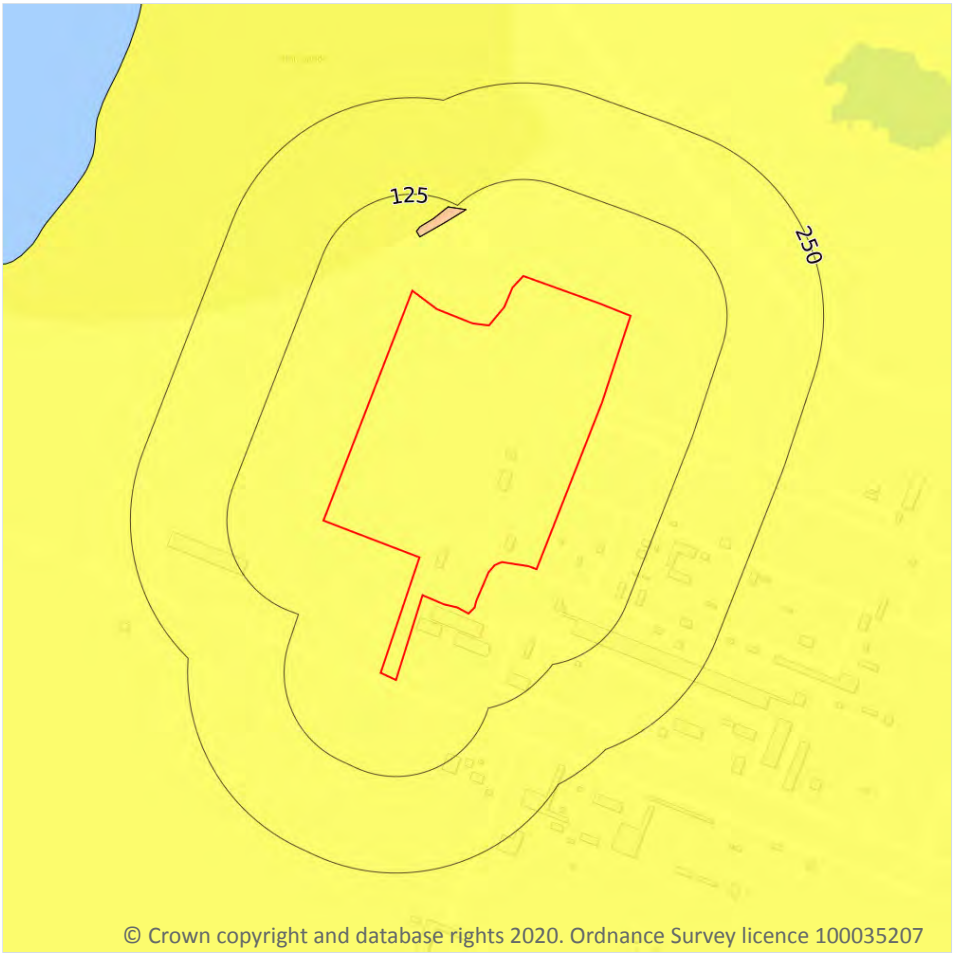
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 99**

Location	Hazard rating	Details
On site	**Negligible**	**Deposits with potential to collapse when loaded and saturated are believed not 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	1

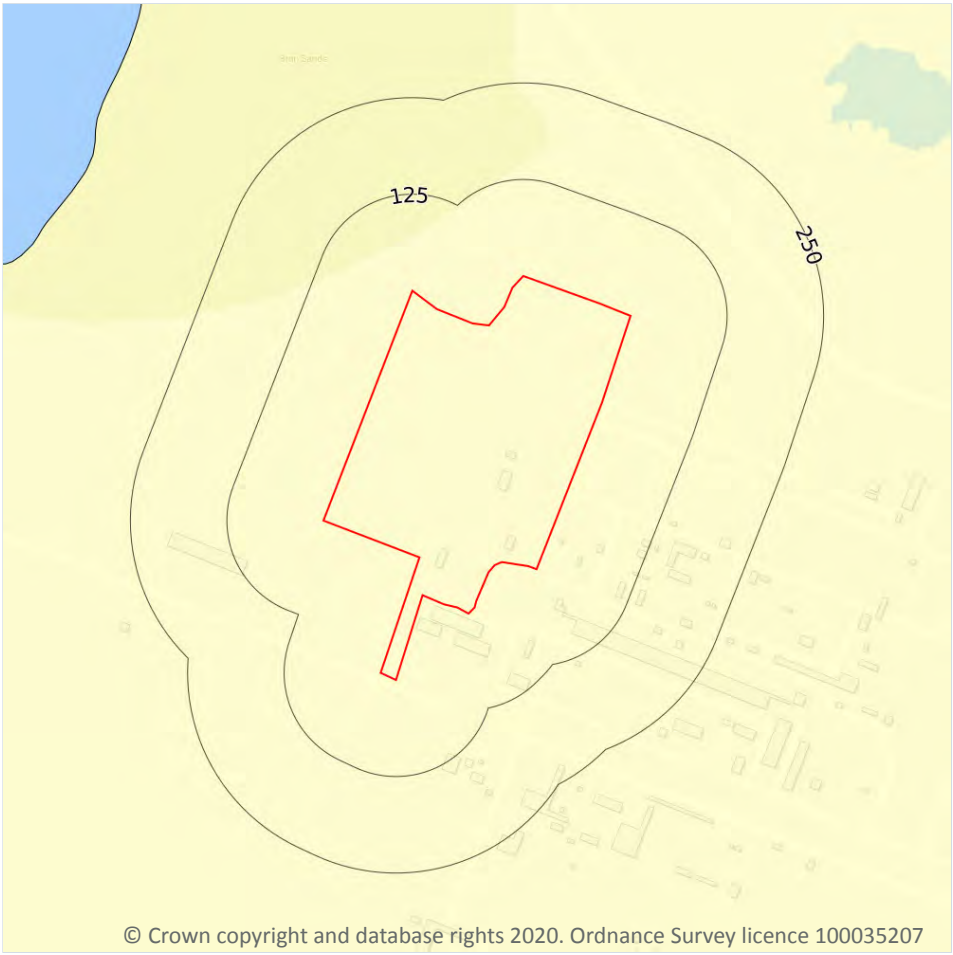
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 100**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

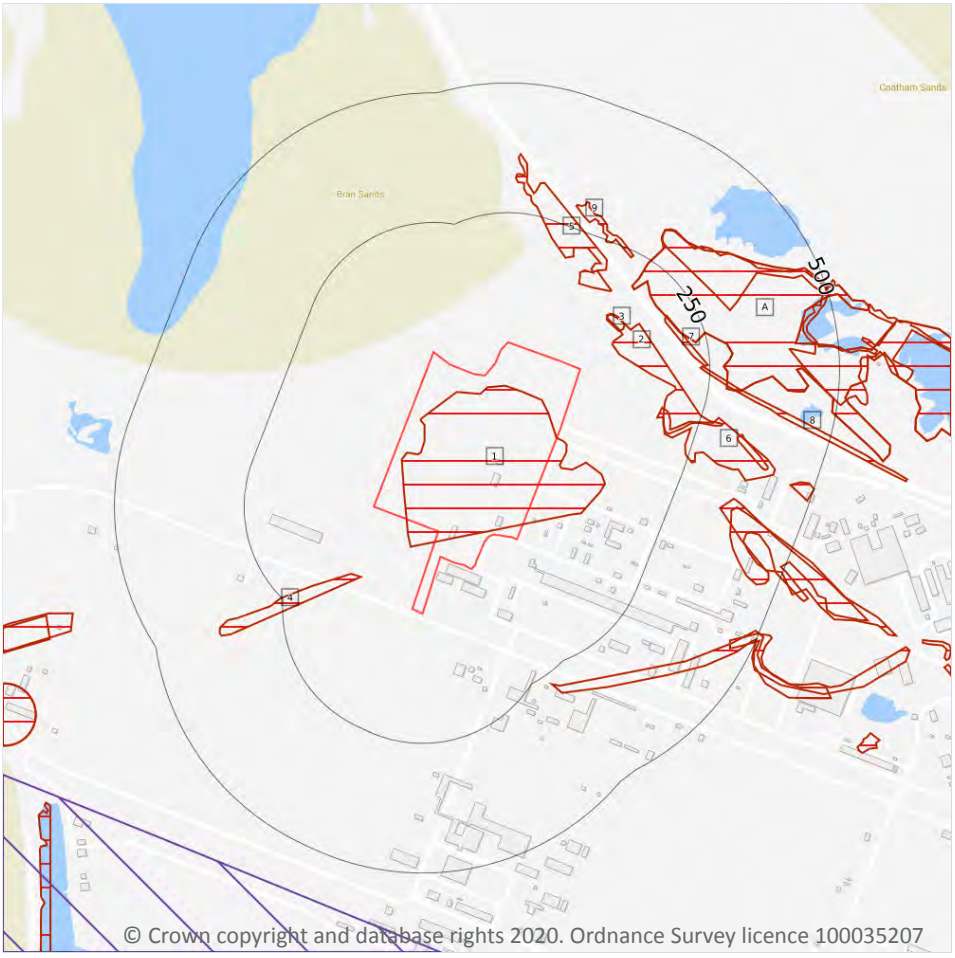
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 101**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

Natural cavities (Area)

Natural cavities (Point)

BritPits

Surface ground workings

Underground workings

Historical Mineral Planning Areas

Mining Cavities

Non Coal Mining

Sporadic underground mining of restricted extent possible

Localised small scale underground mining possible

Small scale mining possible

Underground mining known or likely within or in close proximity

Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m	0

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

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

18.2 BritPits

Records within 500m	0

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.

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	11

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 103**

ID	Location	Land Use	Year of mapping	Mapping scale
1	**On site**	**Refuse Heap**	**1969**	**1:10560**
2	78m NE	Sand Pit	1940	1:10560
3	104m NE	Unspecified Pit	1927	1:10560
4	114m W	Refuse Heap	1969	1:10560
5	153m N	Unspecified Ground Workings	1940	1:10560
6	170m E	Unspecified Ground Workings	1969	1:10560
A	186m NE	Unspecified Ground Workings	1969	1:10560
A	186m NE	Unspecified Ground Workings	1980	1:10000
7	188m NE	Unspecified Ground Workings	1940	1:10560
8	232m E	Refuse Heap	1940	1:10560
9	237m NE	Unspecified Ground Workings	1940	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

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

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

18.8 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.

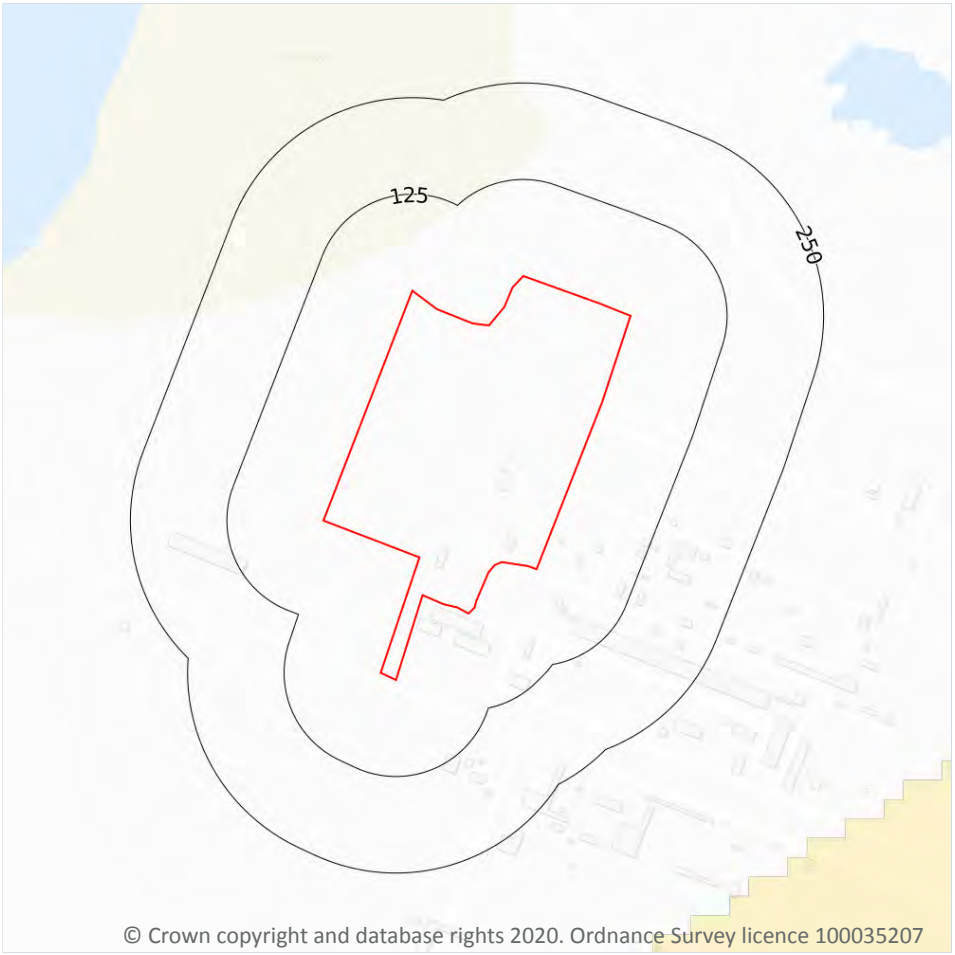
18.13 Clay mining

Records on site	0

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

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

19 Radon



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 107**

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	10

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 km^2. 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 km^2; 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 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
34m E	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
38m E	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
38m E	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
38m SE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
38m SE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 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 km^2).

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 km^2.

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

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

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	28

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

Features are displayed on the Railway infrastructure and projects map on **page 110**

Location	Land Use	Year of mapping	Mapping scale
On site	**Railway Sidings**	**1952**	**2500**
On site	**Railway Sidings**	**1967**	**2500**
On site	**Tramway Sidings**	**1894**	**2500**
On site	**Tramway Sidings**	**1915**	**2500**
On site	**Tramway Sidings**	**1967**	**2500**
On site	**Railway Sidings**	**1927**	**10560**
On site	**Railway Sidings**	**1969**	**10560**
On site	**Railway Sidings**	**1940**	**10560**
15m E	Railway Sidings	1929	2500
66m E	Railway Sidings	1952	2500
84m NE	Railway Sidings	1929	2500
87m SE	Railway Sidings	1980	1250
87m E	Railway Sidings	1980	10000
90m E	Railway Sidings	1993	2500
91m E	Railway Sidings	1984	2500
94m S	Railway Sidings	1980	1250
122m SE	Railway Sidings	1980	1250

Location	Land Use	Year of mapping	Mapping scale
123m SE	Railway Sidings	1993	1250
137m N	Railway Sidings	1940	10560
144m SE	Railway Sidings	1980	1250
151m SE	Railway Sidings	1980	1250
157m S	Railway Sidings	1952	2500
157m S	Railway Sidings	1967	2500
200m N	Tramway Sidings	1893	10560
208m SE	Railway Sidings	1981	1250
211m N	Tramway Sidings	1894	2500
211m N	Tramway Sidings	1915	2500
217m E	Tramway Sidings	1915	2500

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	3

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

Features are displayed on the Railway infrastructure and projects map on **page 110**

Location	Name	Type
97m E	-	rail
154m E	-	rail
172m E	-	rail

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.

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