Tata Steel UK Limited

EAF Project

Phase 1 Desk Study

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RSK GEOSCIENCES

June 2024

RSK GENERAL NOTES

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Office: RSK Environment Limited, The Old School House, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Tel 0117 947 1000

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Author	James Bloore BSc (Hons) FGS	**Technical reviewer**	Jeremy Leach
Signature		Signature	
Project manager	James Bloore BSc (Hons) FGS	**Quality reviewer**	Stacey Brown
Signature		Signature	

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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

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1 INTRODUCTION

1.1 Commissioning

RSK Environment Limited (RSK) were engaged by Tata Steel UK Limited, (18 Grosvenor Place, London, SW1X 7HS Company No. 05957565) herein referred to as the 'Client' to carry out a Phase 1 desk study services at the land at Tata Steelworks, Port Talbot, SA13 2NG.

The works were undertaken by means of client purchase order including client terms and conditions 4200102803 dated 11th May 2024, which forms the appointment between RSK and the Client.

References in this report to 'we', 'us', or 'our' shall mean RSK Geosciences as a trading name of RSK Environment Limited (company no.SC115530) at registered address 65 Sussex Street, Glasgow, G41 1DX.

The site location is provided in **Figure 1** and the site layout boundary to which this report refers is presented in **Figure 2**.

The report should be read and used in accordance with the limitations and constraints identified in the report text, and at **Appendix A – Service Constraints**.

1.2 Objectives

The site is being considered for the construction of an Electric Arc Furnace (EAF) and associated plant.

The objective of the work is:

- to identify any land contamination and geotechnical constraints to the proposed development and to support a future hybrid planning application
- to identify the need for any investigation or remediation works to demonstrate that the site is suitable for its proposed use

1.3 Scope of works

The scope of works has been developed in accordance with relevant British Standards and authoritative technical guidance as referenced through the report. The assessment of the contamination status of the site is in line with the technical approach presented in Land Contamination Risk Management (LCRM) (Environment Agency, 2021a) and in general accordance with BS 10175: 2011 + A2 2017 (BSI, 2017). It is also compliant with relevant planning policy and guidance.

The scope of works for the assessment has included the following:

Desk study:

- review of the history of development on the site and surroundings
- assessment of local geology, hydrogeology and hydrology
- to consider potential risks from coal mining activities

- to request and consider relevant information provided by the local planning authority
- review previous reports pertaining to the site condition where available
- completion of a site reconnaissance survey to assess the visual condition of the site
- development of an initial conceptual site model (CSM) and preliminary risk assessment
- preliminary consideration of geotechnical constraints and hazards
- provide recommendations for further works should this be required.

1.4 Existing reports

The following reports detailing previous works at the site were made available for review:

- RSK Report 315075 R01 Project Cronus Preliminary Risk Assessment February 2022
- RSK Report 315075 R03 Geoenvironmental Ground Investigation Report March 2022
- RSK Report 315075 R04 Supplementary Phase 2 Geoenvironmental Ground Investigation Report October 2022
- Wardell Armstrong 12th April 2024 ST20879-0001 Technical Note Coal Mining Risk Assessment

1.5 Limitations

This report is subject to the RSK service constraints given in **Appendix A** and limitations that may be described below and throughout this document.

This report was prepared in accordance with good practice guidance at the time of issue. Consideration should be considered in the light of changes in legislation, statutory requirements, or industry practices subsequent to the date of issue.

The opinions expressed in this report, and the comments and recommendations given, are based on the information obtained from the desk assessment and the site reconnaissance survey. No intrusive investigations have been undertaken to confirm the actual ground conditions and hence the environmental status of the site.

The study aims to principally identify and assess the potential risks and liabilities associated with contamination of the ground, on and in the vicinity of the site. While this includes consideration of current operations and housekeeping on the site, the report does not constitute a comprehensive environmental audit of the site, as covered under ISO 14001.

The coal yard located in the south west of the site was inaccessible during the site walkover due to recent closures therefore risks associated with these areas could not be assessed. It is understood that is to be used as a lay-down area as such possesses a low risk to future site users.

Although asbestos may not have been encountered as part of these works, asbestos could be present in soil in discrete areas and may be encountered in future ground investigation.

A detailed survey of invasive plant species is outside the scope of this investigation therefore detailed comments with regards to such species have been omitted from this report.

The comments given in this report and the opinions expressed are primarily based on third party data and investigations, while RSK have undertaken a review of the information provided RSK cannot be held liable for the quality of the data provided. There may be conditions pertaining to the site that have not been disclosed by the investigations and therefore could not be taken into account.

2 SITE DETAILS

2.1 Site location

Site location details are presented in Table 1 and a site location plan is provided on **Figure 1**.

Table 1 Site location details

Site name	EAF Project
Full site address and Post code	Port Talbot, SA13 2NG
National Grid reference (centre of site)	277369 186217

2.2 Site description

The site boundary and current site layout are shown on **Figure 2**. The Site covers an area of c. 157 hectares. It is currently occupied by an active steelworks operated by Tata Steel.

For the purpose of this assessment the site has been separated into areas of proposed development (Area1), focusing on the development and construction of the EAF. The associated infrastructure for the development including the widening of existing roadways, car park and lay down areas have been considered as a separate area (Area 2). Area 1 is located to the east and north of the reservoir. The areas are shown on Insert 1 and 2 respectively below;

Insert 1 Area 1- shown in yellow

Insert 2 Area 2- shown in blue

The site itself is currently being used for multiple different uses. The centre of the site is being used as a scrapyard, majority of it being scrap metal from old appliances, industrial equipment, cars, and other items. The area just north of the scrap yard is used to store and screen different aggregates such as slag and concrete. The north eastern area of the site is mainly being used as steel slab storage yards. South of the slab yards are the HAA stockyards, which store and sort multiple types of aggregate such as slag, concrete, and other types of industrial rubble. To the west of the slab and stock yards is an area of vegetation with bushes and grass, the northern part of it is being used to store more aggregate, waste wood and other materials. Immediately south of this area is being used to store coal and associated infrastructure to supply Morfa Coke ovens off site to the west. Directly west of the coal storage area (disused) is cylindrical structure used to store gas which is also associated with the neighbouring coke oven. The southern end of the site is an undeveloped flat grass land area with no other current land use. The extreme northwest of the site encroaches onto the work reservoir, a water body located within the wider steelworks.

Area 1

The majority of the development will take place incorporating the existing areas of the HARSCO yard, BOS (Basic Oxygen Steelmaking) Plant, HRP- North Slab Yard and Continuous casting plant.

The HARSCO yard is located north of the lagoon and responsible for the processing of slag and comprises a number of large stockpiles. There is a central roadway for plant movement which is raised several metres. There was evidence of surface oil spills in some locations. The HARSCO yard comprises c. 10 hectares of the proposed development area.

The BOS plant is in an approximately rectangular building with railway lines leading in from the north. The area runs north to south adjacent to the HARSCO Yard. It is responsible for the production of steel from raw materials. The BOS Plant and rail lines in the proximity cover c. 5.60 hectares.

The HRP-North Slab Yard is the storage yard for the steel slab post production and is located on the north eastern boundary of the development site. This comprises surface road stone and rough vegetation and some above ground utility pipes and covers c. 4.5 hectares.

The areas have been shown on **Figure 3**.

Area 2

There are multiple roads running through the site and a several rail lines generally running north-south in the eastern part of the site. These connect the coal storage, slab and stock yards to the Paddington to Swansea main line railway to the northeast.

The area surrounding the site is predominately part of the steelworks. Directly west of the site is the Morfa Coke Ovens and associated infrastructure, where coal is blended and heated to form coke for iron production. Approximately 450m west is the Bristol Channel. South of the works reservoir and adjacent to the site boundary is a steel service centre. North of the works reservoir is the Basic Oxygen Steelmaking (BOS) plant and the Concast plant, where steel is made, treated and processed to ultimately form steel slabs. North of the BOS and Concast plants are various stock storage yards that also appear to contain aggregates such as slag, and two gas holders for the BOS plant and blast furnace. Further north of this is the Sinter plant and raw materials stock yards where iron ore, limestone, coal and coke are stored. To the east of the sinter plant are the blast furnaces and power plant where iron is produced from coke, iron ore and sinter as well as other materials.

The area directly east of the site and situated in the southeast of the wider steelworks is the Hot Mill where hot rolled products such as Hot Rolled Coils are produced from steel slabs. Again, throughout the steelworks are access roads and rail to transport products and raw materials.

Beyond the steelworks itself are residential and commercial areas to the north, residential and open fields hills to the east, a reservoir is present approximately 360m to the southeast, moorland to the south with Morfa beach and the Bristol channel to the west.

2.3 Surrounding land uses

The site is located in Port Talbot, within a predominantly industrial and commercial setting. Immediate surrounding land uses are described in Table 2.

Table 2 Surrounding land uses

North	Industrial steelworks, River Afan and harbour with residential and commercial area further north.
East	Industrial steelworks, residential area, open fields and hills

South	Open fields and moorland, reservoir to the south east owned by Tata Steel UK Limited
West	Coke ovens related to steelworks with beach and Bristol Channel further west

2.4 Proposed development plans

Details of the proposed ground levels have been provided therefore for the purpose of this report and are shown below in Table 3

Table 3 Proposed ground levels

Planning number	Description	Proposed GL
1	Canopy Hood	8200
2	Consteel Conveyor	8200
3	Fume Treatment Plant	8200
4	Shredded Scrap Yard	
5	Hot Briquetted Iron Dolo & Lime Bunker	8200
6	Ferro Alloys Bunker	8200
7	Fire Water Pump House	8200
8	Primary Pump House	8100
9	Secondary Pump House	7500
21	Main Power Centre	7000
22	Power Compensation Building	7000
23	National Grid Compound	7000
10	Melt Shop Power Distribution Building	7000
24	Incoming Scrap Yard Electrical Building	6000
11	Melt Shop WTP Electrical Building	8200
12	Melt Shop FEP Electrical Building	8200
13	Compressor House	8200
25	Scrap Storage & Processing Yard	7000
26	Overflow Scrapyard	7000
27	Non Ferrous Processing Area	6000
28	Scanning Facilities	5000
29	Railway Weigh Bridge	5000
14	Car Parking Area	7200
15	Changing & Office Block Building	7300
16	Emergency Tank	8200
17	Lagoon Water Pump House	8200
18	Green Walkway Extension	7300
30	HBI & Pig Iron Storage Area	5000
19	Active Carbon Injection Silos	8200

Based upon the available information provided for the southern section of the site from topographical drawings, there appears to be relatively little change between current and proposed development site levels (c.1m). Topographical information is not currently available for the area north of the site reservoir and OS mapping doesn't provide the level of detail required to comment.

The proposed layout of the site, at the time of preparing this report, is shown in **Appendix B**.

3 DESK-BASED ASSESSMENT

The desk-based assessment was designed to generally meet the objectives of a preliminary or Phase 1 investigation, as defined by BS 10175:2011+A2:2017 (BSI, 2017) and BS 5930:2015, and is set in context of a Tier 1 preliminary risk assessment as defined in LCRM.

The "vicinity" of the site for the purposes of this report is defined as locations situated within an approximate 250m radius of the site, although certain sources and/ or sensitive targets further than 250m distance from the site may also have been considered.

3.1 Site history

3.1.1 Historical development record

The development history of the site and surrounding area based upon assessment of historical plans. The records have been separated to assess the historical uses of the site for the areas of the proposed developments and the areas of non-development (i.e lay down areas and infrastructure) is detailed in Table 4 and Table 5 respectively. Table 6summarises the historical summary of the surround area.

The historical maps reviewed are shown within the environmental database report in **Appendix C**.

Table 4 Summary of historical development on site for the proposed developments areas

Date from	Date to	Historical Land Use (on-site)	Area of site
1876	1921	The area is predominately undeveloped, there are a number of buildings associated with the Morfa Colliery labelled 'Pit row', 'office row' and 'Overman's Row 'in the southern part of the site. A railway line is present serving both Grange Pit and Abbot Pit shown east and south of the area. The area is shown to mainly comprise of marsh/dunes. The remains of a hermitage is noted from 1897 towards the west within the site boundary.	All
1947	-	The 2 pits are no longer labelled and the colliery development is reduced in size	
1965	Present day	The site is shown in a similar layout to the present day. The reservoir is shown with large scale development of the steelworks to the east, north and south east of the proposed development area .	

Table 5 Summary of historical development on site for the non development areas

Date from	Date to	Historical Land Use (on-site)
1876	-	The site comprises mainly of open fields with associated field boundaries. Field boundaries are marked by drainage ditches. There is a large pond to the northeast of the site, with marsh land around it. At the north end of the site is a colliery and associated infrastructure such as pits, shafts and unspecified tanks as well as another coal pit west of the pond. A rail line runs from the north to Abbot Pit.
1897	-	Boundary of pond has been reduced.
1914	1949	Boundary of pond has been reduced.
1949	1965	Disused rifle range from 1965, unclear when it was active.
1965	-	Significant industrial infrastructure (steelworks) has been built on north and west of the site. A works reservoir has been dug out and encroaches the very northwest of the site, which is situated next to the steelmaking plant. Rail lines have been constructed to service the steelworks to the north, on and around the site, passing through in a general north to south direction. A variety of buildings have been constructed associated with the expansion of the steelworks. The buildings to the east appear associated with the large buildings just outside the site boundary, which in the present day is the hot mill. Disused rifle range to the west of the site. South end of the site remains unchanged as open fields dived by drains and ditches.
1982	-	Fields in the centre and west of the site are cleared of drains and disused rifle range is made level. Additional construction of small buildings associated with the steelworks to the centre north of the site, possibly associated with the Concast plant. A pond area has been developed around 'lower mother ditch'.
1988	1993	Several of the rail sidings have been dismantled running north to south and a new line has been constructed within the centre of the site. Buildings within the northwest of the site have been developed and additional infrastructure such as conveyors and pipelines added, these are assumed to be associated with the Grange Coke Ovens. Several conveyor systems for coal have been constructed to the centre and west of the site that appear to service the coke ovens situated just off site to the west. A gas holder in 1991 was constructed, again to service the coke ovens just off site. Fields in the south remain unchanged. A chimney was constructed in 1991 in the far north western corner
2001	-	A number of the smaller buildings have been demolished in the north western end of the site.
2006	-	Further demolition of buildings on the northwest of the site. Infrastructure present in the far northwest corner possibly

Date from	Date to	Historical Land Use (on-site)
		part of the aggregate screening and area just further south becoming part of the scrap metal remediation yard.
2009	-	Development of the HAA stockyards. Majority of it unused previous to 2009, now populated with aggregate and some associated infrastructure.
2013	-	Construction of gas holder to the south of existing one, associated with coke ovens. Development of a smaller circular coal yard just to the east of the new gas holder and connected to existing conveyor belts.
2015	-	Grass area just south of the scrap yard has hard standing area built.
2016	-	Hard standing area populated with what appears to be scrap metal.
2018	-	Another hard standing area constructed just south of the stockyard.
2020	2021	Original gas holder for coke ovens removed. Scrap yard filled with more scrap. Hard standing area south of stockyards extended east.

Table 6 Summary of historical development in the vicinity of the site

Date from	Date to	Historical Land Use (off-site)	Distance (m) and orientation
1876	1965	The site lies within mainly an agricultural area and moorland. Grasslands to the west, a beach and Bristol channel further out. To the North are buildings related to the colliery on site and a small railway coming from the north. To the east is the main railway line running north and south with agricultural fields east and west of it. South of the site is moorland.	-
1965	Present day	The steelworks is shown to extend further north with numerous buildings, roadways and railway lines The town of Port Talbot is shown comprising predominately as a residential development to the north.	

3.1.2 Unexploded ordnance

A review of publicly available unexploded ordnance (UXO) risk maps indicates that the site is in an area with low and medium potential for wartime bombs to be present (Zetica, 2024). A detailed UXO risk assessment has been carried out by RSK Ordnance, which

shows that the northern half of the site is classified as medium risk with the southernmost field are classified as low risk. A copy of the report is included in **Appendix D**.

3.2 Information from environmental database report

Relevant environmental permits and incidents detailed within the environmental database report (see **Appendix C**) are summarised below in Table .

Table 7 Summary of environmental permits, landfills and incidents

Data type	Entries on-site	Entries <250m from site	Entries >250m from site of relevance	Details
Agency and hydrological				
Environmental permits – incorporating Environmental Permitting Regulations (EPR) and/ or Pollution Prevention and Control (PPC) permits; former Integrated Pollution Controls (IPC), Local Authority Pollution Control (LAPC)	-	-	-	
Enforcement and prohibition notices	-	-	-	

Data type	Entries on-site	Entries <250m from site	Entries >250m from site of relevance	Details
Pollution incidents to controlled waters, Prosecutions relating to controlled waters, Substantiated pollution incident register, Water Industry Act referrals	21	51*	16*	On site (events where 'no impact' was recorded have not been summarised below; 30/05/2016 smoke resulting in Category 3 air impact. 31/05/2016 smoke resulting in Category 3 air impact. 08/06/2016 pollutant unknown Category 3 air impact. 29/03/2016 smoke resulting in Category 3 air impact. 07/08/2016 pollutant unknown Category 3 air impact. 08/06/2016 smoke resulting in Category 3 air impact. 04/06/2001 dust resulting Category 3 for Water, land and air impact. *Full details are included within the appended Groundsure report
Discharge consents	1	-	-	Final/treated effluent from site into Swansea Bay effective from 26/03/2021

Data type	Entries on-site	Entries <250m from site	Entries >250m from site of relevance	Details
Registered radioactive substances	1	-	-	Active from 01/06/1998, this was last up-dated 01/01/2015- superseded by variation
Landfill and waste				
Active landfills	-	-	2	The nearest is located 263m south.
Historical / closed landfills	2	0	0	Refuse tip noted 16m west on 1974 mapping and 76m north on 1952 mapping.
Other waste management licences	0	1	1	Waste transfer station noted 223m south
Potentially in-filled land (pit, quarry, pond, marsh, river, stream, dock etc)	-	-	-	
Hazardous substances/ industrial land uses				
Control of Major Accident Hazards (COMAH) sites	2	1	-	COMAH upper tier operator in site
Explosives sites, Notification of Installations Handling Hazardous Substances (NIHHS), Planning hazardous substance consents/ enforcements	1	-	-	Historical NIHHS site
Contaminated land Part 2A register entries and notices	-	-	-	
Fuel station entries	-	-	-	
Note: Entries have only been included within the table where they are located within a 250m radius of the site or, where they fall outside of this radius but are considered to comprise a significant entry.				

3.2.1 Site services

Obtaining a full set of service plans was outside the scope of this report.

Buried utility services and their backfill can represent a constraint to development and act as preferential migration pathways for gas, vapour or groundwater towards a receptor.

3.3 Summary of previous reports

A summary of pertinent information from previous reports pertaining to the site is included below in Table 8.

Relevant information relating to the identified ground and groundwater conditions has not been included within the table below but has been incorporated into the relevant parts of Sections 3.4 - geology and 3.5 – mining and quarrying.

Table 8 Summary of previous reports

Report Details	**Project Cronus** **315075 R03 (01)Phase 2 Geoenvironmental Ground Investigation Report (March 2022)**
Site coverage	Previous works under Project Cronus involved the south sections of this site and extended further south beyond this proposed development.
Summary scope of works	Boreholes, trail pits with geotechnical and contamination testing
Does the client have reliance upon the report?	Yes
Key factual findings	The proposed development area had been sub-divided into 2 separate areas. Area 1 includes the active works, yards and open spaces located with the steelworks itself. Area 2 includes the unoccupied fields in the south of the site. Area 1 is summarised below in more detail as it overlaps with this investigation. Made Ground was encountered up to 6.00m, predominantly containing gravel and occasional cobbles size fragments of slag with some brick and clinker. Asbestos and hydrocarbon impacted soils were noted, most notably across the area of the former Grange Coke Ovens. The Tidal Flat Deposits were encountered beneath the Made Ground with thicknesses (where proven) between 15.80 and 30.80m. The Tidal Flat Deposits comprised silt, clay and peat. The upper horizons were locally noted to have olfactory evidence of hydrocarbon impact. South Wales Coal Measures were proven at a depth of between 15.90 and 20.60m typically as a weak mudstone, typically becoming less weathered with depth. Intact coal was present in BH10 at 20.50m, the base of which was not proven. Groundwater was encountered at shallow depth during the fieldworks and also within the deeper stata.

Report Details	**Project Cronus** **315075 R04 (00) Supplementary Phase 2 Geoenvironmental Ground Investigation Report (October 2022)**
Site coverage	Previous works under Project Cronus involved the south sections of this site and extended further south beyond this proposed development.
Summary scope of works	Boreholes, trial pits with geotechnical and contamination testing
Does the client have reliance upon the report?	Yes
Key factual findings	Supplementary work focuses on the Regen Yard and surround areas to delineate contamination identified during the previous works. The ground conditions were in line with the previous works. Visual and olfactory evidence of hydrocarbon impacted soils were noted at a number of locations in the Made Ground and Tidal Flat Deposits . A sandy layer at the base of the Made Ground often had visual and/or olfactory evidence of contamination present. There was no olfactory or visual evidence of any gross contamination impact beyond the Tidal Flat Deposits.

3.4 Site geology

3.4.1 Anticipated geological sequence

Published online records (British Geological Survey) for the area and available historical borehole logs indicate the geology of the site to be characterised by the succession recorded in **Table 9**. There are 7 publicly available BGS historical boreholes located on or within 250 m of the site, which appear to confirm the published geology. .

Table 9 Site geology

Strata	Description	Estimated thickness	Permeability
Anticipated Made Ground	Clay, silt, sand and gravel with low to high cobble content. Made up of reworked natural and anthropogenic material such as slag, brick, and concrete with metal and other anthropogenic materials.	Variable. Up to 6m.	Variable. Possibly medium to high where predominantly gravel material is present.
Tidal Flat Deposits	Tidal Flat Deposits, including mud flat and sand flat deposits, are deposited on extensive nearly horizontal marshy land in the intertidal zone that is alternately covered and uncovered by the rise and fall of the tide. They consist of unconsolidated sediment, mainly mud and/or sand. They may form the top surface of a deltaic deposit. Normally a consolidated soft silty clay, with layers of sand, gravel and peat.	Approx. 15m	Very low to moderate
Glacial Deposits (Boulder Clay)	Gravelly clay with cobbles	Approximately 13m.	Low
Undifferentiated South Wales Coal Measures Formation	Coal-bearing mudstones/siltstones, and sandstones.	Up to 300m	Low
Relevant information sources: BGS Geoindex ☒ BGS borehole logs ☐ Previous SI reports ☒			

With reference to the historical data there have clearly been several phases of significant construction and demolition on the site and therefore the presence of Made Ground should be expected.

3.4.2 Radon

The environmental database report indicates that the site is located within an area where less than 1% of homes are above the Action Level (termed an 'Affected Area') and indicates that radon protection measures are not required.

3.5 Mining and quarrying

Evidence has been sought to identify any mining, quarrying, landfilling and land reclamation operations, past and present, which have taken place within 500m of the site.

3.5.1 Coal mining area

The site is located over Coal Measures bedrock and may therefore have been affected by coal mining activities. In these areas the assessment of mining legacy issues should be carried out in accordance with the guidance provided by the Coal Authority, who adopt a risk-based approach for the advice that they offer on proposed development sites. The Coal Authority are a statutory consultee to Local Planning Authorities in respect of building development within the defined coal mining areas of England, Wales and Scotland where a planning application is required.

An initial site appraisal has been carried out based on the information provided on the Coal Authority Interactive Viewer of the UK Coalfield areas.

This indicates the site lies within the Coal Authority Consultation Area and includes Development High Risk Areas. It is a requirement for development within a High Risk Areas to prepare a desk-based Coal Mining Risk Assessment (CMRA) report to support planning applications for new building developments.

A CMRA needs to consider a number of sources of information to determine coal mining issues relevant to a site, it then needs to identify and assess the site-specific coal mining risks and propose an appropriate mitigation strategy relevant for the proposed site end-use. A technical note on the coal mining risk is presented within **Appendix D**.

3.6 Hydrogeology

A summary of the hydrogeological setting of the site, with respect to the anticipated geological sequence set out in Section 3.4 is presented below in Table 10.

Table 10 Summary of hydrogeological setting

Condition	Description
Aquifer characteristics	The site is underlain by a secondary aquifer relating to the South Wales Lower Coal Measures. The superficial Tidal Flat Deposits across the majority of the site are classified as Secondary (undifferentiated). The north-eastern corner of the site is classified as Secondary A aquifer relating to the 'blown sand' deposits. The presence of low permeability clay at relatively shallow depths beneath the site, while restricting downwards migration, may increase the potential for lateral migration of shallow groundwater (and therefore mobile contamination, if present).

Condition	Description
	Groundwater quality beneath the site may be affected by saline intrusion.
Depth to groundwater and flow	Groundwater in the site area is anticipated to flow in a northerly direction, i.e. towards and in the direction of flow of the Bristol Channel. It is also likely that shallow water may be present in any Made Ground deposits present on-site.
Rising groundwater levels	The site is located in a former coal mining area and may be associated with rebounding groundwater levels following the end of mining and associated dewatering (see Section 3.5).
Groundwater recharge/ attenuation	Large areas of the site are currently covered with buildings and hardstanding and therefore this will limit infiltration to ground and groundwater recharge, except where SUDS are present (details of which are unknown)
Historical implications for hydrogeology	A partially culverted stream known as the Lower Mother Ditch runs approximately north to south along the eastern edge of the site.
Licensed groundwater abstractions	The environmental database report indicates that there are 2 current licensed groundwater abstractions of within a 1km radius of the site.
Source protection zones	Information available in the Groundsure report indicates that the site does not lie within a currently designated groundwater Source Protection Zone (SPZ).

3.7 Hydrology

A summary of the hydrology within the site area is summarised in Table 11.

Table 11 Summary of hydrology in site area

Condition	Description
Surface watercourses/features	A number of surface water features are present across the wider site. Most notably is the tidal zone running north-west to southeast approximately 50m from the site. On site there is a man-made body water body located in centre of the site along with number of drainage ditches located along field boundaries to the south of the development area. Lower Mother Ditch runs south to north through the site area via unmapped culverts.
Surface water abstractions	The environmental database report indicates that there is 1 current licensed surface water abstraction within a 1km radius of the site, located on site and utilised for process water.
Site drainage	Surface drainage from the site appears to be discharged into Lower Mother Ditch which runs across the site from south to north although this is not confirmed.
Preliminary flood risk assessment	The indicative floodplain map for the area, shows the risk of flooding each year has been assessed by NRW as moderate –i.e. 1.3% (1 in 75) or less, but greater than 0.5% (1 in 200). A flood risk assessment (FRA) is outside the scope of this report.

3.8 Sensitive land uses

Table 12 provides a summary of any environmentally sensitive areas identified within 250m of the site based on the environmental database report.

Table 12 Environmentally sensitive areas

Feature	Present within 250m of site?	Details	Likely pathways from site?
International designations – Ramsar wetland, Special Area of Conservation (SAC), Special Protection Area (SPA)	No		N/A
National designations – Site of Special Scientific Interest (SSSI), National Nature Reserve (NNR), ancient woodland	Yes	SSSI- Margam Moors	No- up hydraulic gradient bounding the site to the south
Local designations – Local Nature Reserve, Site of Importance for Nature Conservation (SINC)	No		N/A
Nearest high sensitivity development, e.g. residential	n/a		No

4 SITE RECONNAISSANCE FINDINGS

A site reconnaissance survey was completed on 13th to 15th May by RSK. The characteristics of the site observed during the walkover and from current ordnance Survey maps are summarised in Table 13.

A site plan is provided in **Figure 2** with photographic records included in **Appendix E** detailing the main features identified below.

Whilst the walkover summary includes consideration of current operations and housekeeping on the site as potential sources of contamination, it does not constitute a comprehensive environmental audit of the site, as covered under ISO 14001.

Table 13 Site reconnaissance findings

Feature	Description
Physical characteristics	
Access constraints	Due to the nature of a number of hazardous operations being carried out associated with the steel production and processing, a vast majority of internal areas were inaccessible including the BOS Plant and coal yards.
Site topography	The site is essentially level
Surface cover	The surface of the site was a combination of hardstanding (yard areas), rough access tracks (mixture of tarmacked and untarmacked) and rough vegetation. Stockpiles were noted at various locations across the existing steelworks site, it is understood that their placement is temporary as a result of a high turnover of materials as opposed to long term storage.
Site drainage	The developed section of the site and roadways in the north of the proposed development area has numerous drains for both surface and foul water connected to the various building and process facilities.
Surface water	There are a number of streams and ditches present in the south of the site, most notably Lower Mother Ditch. A reservoir is located adjacent to the site in the north, the Bristol Channel is located approximately 450m west from the site boundary.
Trees and hedges	The active part of the site contains no trees, hedges or other substantial vegetation with the exception of the area west of the slab and stock yards where rough shrubs and grass is present.
Invasive species	Based upon the walkover survey obvious evidence of Japanese Knotweed or other invasive species has not been identified on-site. However, it should be noted that a detailed survey of the possible presence or absence of invasive species is outside of the scope of investigation and consideration should be given to commissioning a specialist survey, as necessary.
Existing buildings on-site	The north of the site comprises the HARSCO slag processing yard, BOS Plant as associated auxiliary buildings. The centre to northeast of the site is being used as a scrapyard, majority of it being scrap metal from old appliances, industrial equipment, cars, and other items. The

Feature	Description
	area just north of the scrapyard is used to store and screen different aggregates such as slag and concrete. The north eastern area of the site is mainly being used as steel slab storage yards. South of the slab yards are the HAA stockyards, which store and sort multiple types of aggregate such as slag, concrete, and other types of industrial rubble. To the west of the slab and stock yards is an area of vegetation with bushes and grass, the northern part of it is being used as to store more aggregate, waste wood and other materials. South of this area is being used to store coal and associated infrastructure to supply Morfa Coke Ovens just off site to the west. Directly west of the coal storage area is cylindrical structure used to store gas which is also associated with the neighbouring coke oven.
Retaining walls and adjacent buildings on or close to site boundary	There are no such structures on or close to the site boundary.
Basements on-site	Infilled basements are/may be present beneath the demolished buildings/structures across the active site in the northern section of the development area.
Made Ground, earthworks and quarrying	The site appears to have been levelled off in the past by infilling, assumed to reduce in thickness towards the east (i.e away from the Bristol Channel).
Potentially unstable slopes on or close to site	None observed.
Buried and overhead services present	Numerous man-holes and overhead cables were present throughout the steelworks.
Environmental characteristics	
Underground/ above ground storage tanks and pipework	Numerous tanks are present in areas of operations and associated with the various processes undertaken.
Potentially hazardous materials storage and use	None observed.
Asbestos-containing materials	No obvious asbestos construction materials were observed but a detailed survey of the buildings would be required to confirm the presence or otherwise of asbestos-containing materials.
Waste storage	Numerous skips of segregated by-products were present across the site - as well as a waste metals ‘regeneration’ scarp yard centrally located.
Fly-tipping	None observed.
Electricity sub-stations/ transformers	There is a large existing sub-station located approximately 900m east from the site along Grange Road.

Feature	Description
Evidence of possible land contamination on-site	Numerous processes including Made Ground at surface (depth unknown), the processing of scrap metal and historical and current fuel tanks. Asbestos may be present as a result of current and historical buildings. The BOS plant is located in the centre of the site.
Potential off-site sources of ground contamination	Additional industrial processes associated with the steelworks to the north.

Potentially significant land contamination or geotechnical issues arising from the survey are summarised below:

Land contamination

- metals- from known and historical industrial processes.
- polyaromatic hydrocarbons- possibly present due to proximity of Coke ovens and areas of from known and historical fuel tanks and industrial processes.
- phenols- from known and historical industrial processes.
- asbestos- possibly present due to lagging and insulation used in both current and historical buildings.
- total petroleum hydrocarbons- from known and historical fuel tanks and industrial processes.

Geotechnical

- evidence of Made Ground to an unknown depth.
- soft and unconsolidated superficial deposits.
- in-ground obstructions in areas of previous structures.

5 PRELIMINARY GEOTECHNICAL CONSTRAINTS

5.1 Design class

BS EN 1997-1 defines three different Geotechnical Categories that structures may fall into, which are summarised as follows:

- Category 1: Small and relatively simple structures for which it is possible to ensure that the fundamental requirements will be satisfied on the basis of experience and qualitative geotechnical investigations; with negligible risk
- Category 2: Conventional types of structure and foundation with no exceptional risk or difficult ground or loading conditions
- Category 3: Structures or part of structures, which fall outside limits of Geotechnical Categories 1 and 2. Examples include very large or unusual structures; structures involving abnormal risks, or unusual or exceptionally difficult ground or loading conditions; structures in highly seismic areas; structures in areas of probable site instability or persistent ground movements that require separate investigation or special measures.

Based on the information provided above on the proposed development and in view of the anticipated ground conditions, a Geotechnical Category of Category 3 has been assumed for the purposes of designing the geotechnical investigation. This should be reviewed at all stages of the investigation and revised where necessary.

5.2 Preliminary geotechnical hazards assessment

A summary of commonly occurring geotechnical hazards associated with the anticipated geology outlined in Section 3.4 above is given in Table 14 together with an assessment of whether the site may be affected by each of the stated hazards.

Table 14 Summary of preliminary geotechnical risks that may affect site

Hazard category	Hazard status based on desk study findings and proposed development		Engineering considerations if hazard affects site
	Could be present and/or affect site	Unlikely to be present and/or affect site	
Sudden lateral changes in ground conditions	☒	☐	Likely to affect ground engineering and foundation design and construction
Shrinkable clay soils[1)]	☒	☐	Design to NHBC Standards Chapter 4 or similar

Hazard category	Hazard status based on desk study findings and proposed development		Engineering considerations if hazard affects site
	Could be present and/or affect site	Unlikely to be present and/or affect site	
Highly compressible and low bearing capacity soils, (including peat and soft clay)	☒	☐	Likely to affect ground engineering and foundation design and construction
Silt-rich soils susceptible to rapid loss of strength in wet conditions[1)]	☒	☐	Likely to affect ground engineering and foundation design and construction
Running sand at and below water table	☒	☐	Likely to affect ground engineering and foundation design and construction
Karstic dissolution features (including 'swallow holes' in Chalk terrain) [1)]	☐	☒	.
Evaporite dissolution features and/or subsidence [1)]	☐	☒	
Ground subject to or at risk from landslides[1)]	☐	☒	
Ground subject to peri-glacial valley cambering with gulls possibly present	☐	☒	
Ground subject to or at risk from coastal or river erosion[1)]	☒	☐	Likely to require special protection/stabilisation measures
High groundwater table (including waterlogged ground) [1)]	☒	☐	May affect temporary and permanent works
Rising groundwater table due to diminishing abstraction in urban areas [1)]	☐	☒	
Geological faults, fissures and break lines	☐	☒	
Underground mining including shafts and adits (e.g. coal, mineral)	☒	☐	Likely to require further assessment including potentially special stabilisation measures
Effects of extreme temperature (e.g. cold stores or brick kilns/furnaces)	☒	☐	Potential around BOS plant and former coke ovens.

Hazard category	Hazard status based on desk study findings and proposed development		Engineering considerations if hazard affects site
	Could be present and/or affect site	Unlikely to be present and/or affect site	
Existing sub-structures (e.g. tunnels, foundations, basements, and adjacent sub-structures)	☒	☐	Likely to affect ground engineering and foundation design and construction
Filled and made ground (including embankments, infilled ponds and quarries)	☒	☐	Likely to affect ground engineering and foundation design and construction
Adverse ground chemistry (including expansive slags and weathering of sulphides to sulphates)	☒	☐	May affect ground engineering and foundation design and construction
Site topography, including presence of steep slopes	☐	☒	
Note: Seismicity is not included in the above table as this is not normally a design consideration in the UK. [1)] The potential for these geohazards to impact the site may be exacerbated by climate change related fluctuations in temperature and precipitation.			

5.2.1 Clay shrink-swell

One of the likely geotechnical implications resulting from climate change impacts is that longer hotter summers will increase the zone of seasonal moisture variation in the upper soil horizon, leading to additional shrinkage. Furthermore, warmer wetter winters can cause rebound of soil moisture levels, leading to swelling. These changes will likely give rise to increases in subsidence and heave issues and hence insurance claims for existing buildings. The effects can also be exacerbated where building near trees resulting in desiccation (NHBC Standards Chapter , 2024). This and other potential climate change-related impacts are considered in NHBC report NF93 – Foundation solutions: future proofing against climate change (NHBC, 2023a).

The BGS GeoClimate UKCP18 study (BGS, 2023) considers the potential influence of climate change on the probability of subsidence. These BGS GeoClimate shrink–swell national datasets were developed by combining long-term UKCP scenarios for rainfall and temperature changes with the geotechnical properties of the ground, so as to identify areas projected to experience the largest increases in susceptibility to shrink-swell subsidence. The GeoClimate UKCP18 Open data is provided for two time periods, the 2030s and the 2070s with one projection provided for each time period, based on the average outcome for the UKCP18 higher emissions scenario and the most susceptible value (i.e. worst case) within the GeoSure grid cell.

This data is available on BGS Geoindex and the 2070 layer has been consulted for the proposed development at this site. This indicates that it is improbable that foundations will

be affected by increased clay shrink-swell due to climate change' based on GeoClimateUKCP18.

The NHBC NF93 report (NHBC Foundation, 2023a) identified that foundations for new domestic structures should be designed to accommodate climate change resilience for the entire lifetime of a building.

6 INITIAL CONCEPTUAL SITE MODEL

In the UK land contamination is assessed using a risk-based approach taking account of the magnitude (severity of the hazard) and likelihood (probability) of occurrence. A 'receptor' is something that could be adversely affected by contamination (e.g. people, an ecological system, property or a water body). A 'pathway' is a route or means by which a receptor is or could be exposed to or affected by a contaminant. A 'contaminant source' is a hazard but it can only pose a risk to a receptor where a pathway is present.

The relationship between sources, pathways and receptors are referred to as a conceptual site model. A risk can only be realised where a contaminant source, pathway and receptor are all in place, referred to as a 'contaminant linkage'.

In line with LCRM (Environment Agency, 2021a) and BS 10175: 2011 + A2 2017 (BSI, 2017), RSK has used information in the preceding sections to identify hazards (sources of contaminants), receptors that may be impacted and plausible linking pathways. Where all three are present this is termed a potentially complete contaminant linkage and a qualitative risk estimation is made.

The conceptual site model has been considered in context of the proposed development as understood at the time of writing this report. Should the site development proposals change, the CSM and the associated contaminant linkages identified may need to be revised.

6.1 Potential soil, soil vapour and groundwater linkages

6.1.1 Potential sources of contamination

Potential sources of soil and groundwater contamination identified from current activities and the history of the site and surrounding area are presented in Table 15.

Table 15 Potential sources of soil and groundwater contamination

Potential sources	Contaminants of concern
On-site	
S1 Made Ground (i.e. fill material)	Unknown fill material but potentially including brick, ash and clinker and containing toxic and phytotoxic metals, inorganics, polycyclic aromatic hydrocarbons (PAHs), asbestos
S2 Areas of former Coke Ovens, BOS plant and coal yards.	Unknown material but potentially including ash and clinker and containing toxic and phytotoxic metals, inorganics, polycyclic aromatic hydrocarbons (PAHs), hydrocarbons, BTEX and asbestos.
S3 Storage of oils/chemicals on-site	Lube oil, diesel, kerosene,
S4 Warehouse/ engineering works	Petroleum hydrocarbons, toxic and phytotoxic metals, asbestos

Potential sources	Contaminants of concern
S5 Underground/ above ground storage tank and associated pipework	Petroleum hydrocarbons (petrol/diesel)
S6 Scrap Yard	Unknown material but potentially including ash and clinker and containing toxic and phytotoxic metals, inorganics, polycyclic aromatic hydrocarbons (PAHs), hydrocarbon, BTEX and asbestos
S7- Railway lines/sidings	Petroleum hydrocarbons, toxic, phytotoxic metals, inorganics, polycyclic aromatic hydrocarbons (PAHs) and asbestos
Off-site	
S8- Railway bounds the site to the east	Petroleum hydrocarbons, toxic, phytotoxic metals, inorganics, PAHS and asbestos
S9 Industrial process associated within the wider steelwork to the north and Morfa Coke Ovens to the west	Unknown material but potentially including ash and clinker and containing toxic and phytotoxic metals, inorganics, polycyclic aromatic hydrocarbons (PAHs), hydrocarbon, BTEX

The stockpiled material has not been included on account of its understood short term storage on site. Furthermore, it will likely be removed prior to any development as part of the enabling works and any contaminants within likely to be relatively immobile.

6.1.2 Sensitive receptors and linking exposure/ migration pathways

Sensitive receptors identified at or in the vicinity of the site that could be affected by the potential sources identified above comprise:

- **R1** future site users – industrial workers [oral, dermal and inhalation exposure with impacted soil, soil vapour and dust/fibres]
- **R2** adjacent site users – industrial workers [migration of contamination via dust/fibre deposition, vapour or groundwater migration combined with inhalation]
- **R3** future buildings and services [direct contact with contaminated soils or groundwater and chemical attack]
- **R4** Surface water in the Bristol Channel [groundwater in secondary aquifer within superficial deposits and Lower Mother Ditch]

Potential linking pathways are show in brackets for each item above.

Groundwater has been considered as a pathway as opposed to a receptor on account of the historical and current industrial uses across the wider area. A degree of impact on the groundwater as a result of this regional land use is to be expected and hence the primary sensitive receptor is considered to be the surface water. Similarly, the Lower Mother Ditch which runs along the boundary of the site is understood to receive storm water from the site in addition to the condition of the culvert through the Made Ground being unknown. Based on this the Lower Mother Ditch has been considered a pathway as opposed to a receptor.

Please note that construction workers and future maintenance workers have not been identified in the conceptual model as receptors because risks are considered to be managed through health and safety procedures according to the CDM Regulations.

Ecological receptors are only considered within the conceptual model in the context of statutory protected sites.

6.2 Potential ground gas linkages

6.2.1 Ground gas generation potential

Potential ground gas sources identified for the site and surrounding are shown in Table 16.

Table 3 Potential ground gas sources (excludes mine gas)

Potential sources	Indicative ground gas generation potential (CIEH, 2008)	Additional information
On-site		
S10 Natural soil strata with a low degradable organic content, e.g. alluvium, peat	Very low	
S11 Made Ground with low degradable organic content (e.g. up to 5% organic material and no easily degradable waste).	Very low	

Potential sources of ground gas generation have been identified therefore this potential issue has been taken forward.

The offsite landfill is considered sufficient distance away so as not to pose an unacceptable risk.

6.2.2 Potential coal mine gas sources

The potentially significant sources of mine gas associated with the area of the site are as follows:

- desorption of gas from coal and rocks – predominantly methane
- oxidation of coal – carbon dioxide and oxygen depletion, also methane and ethane and carbon monoxide at higher temperatures

6.2.3 Radon

The site is in an area where the estimated percentage of homes exceeding the action level of 200 Bq m^3 is <1% /as indicated on available radon potential mapping (UKHSA & BGS, 2022).

In accordance with BRE 211 guidance (2023) and associated building regulations/standards no protection measures are considered to be required in new developments.

6.2.4 Preferential pathways for ground gas migration

Credible preferential pathways potentially connecting the source and receptor through vertical and lateral migration are:

- faults/ fissures/ fractures in the underlying geology
- building foundations, piled foundations and vibro-stone columns
- construction joints and cracks within building structure
- utility routes and service penetrations into buildings

6.3 Preliminary risk assessment

The preliminary risk assessment findings and potentially complete contaminant linkages are shown in Table 17.

The risk classification is based on the combination of hazard consequence and probability using a risk matrix from CIRIA C552 (Rudland et al., 2001). The requirement for a preliminary qualitative risk assessment is in accordance with LCRM (Environment Agency, 2021a). A summary of the risk assessment process is in **Appendix F**.

Table 4 Risk estimation for potentially complete contaminant linkages

Potential source	Potential receptor	Possible pathway	Likelihood	Severity	Potential risk	Justification
Sources on site						
S1 Made Ground **S2** Area of former Coke Ovens, BOS plant and coal yards. **S5** Underground/ above ground storage tank and associated pipework	**R1** Future site users	**P1** Dermal contact, soil ingestion, dust and fibre inhalation, including vapour inhalation	Low	Medium	Moderate/low	Contaminants may be present in the Made Ground and shallow soils associated with past and current development and industrial uses. It is understood that the proposed development is likely to comprise of hardstanding and as such direct contact and dust generation will be limited. Furthermore the associated new drainage will limit infiltration and throughflow.
	R2 Future adjacent site users – industrial workers	**P2** Migration of contamination via dust/fibre deposition, vapour or groundwater migration combined with inhalation.	Unlikely	Mild	Very low	
	R3 Future buildings and services	**P3** Direct contact with contaminated soils or groundwater and chemical attack	Likely	Medium	Moderate	
	R4 Surface water in the Bristol Channel	**P4** Groundwater in the secondary aquifer and Lower Mother Ditch	Low	Medium	Moderate/low	
S3 Storage of oils/chemicals on-site **S4** Warehouse/ engineering works	**R1** Future site users	**P1** Dermal contact, soil ingestion, dust and fibre inhalation, including vapour inhalation	Unlikely	Medium	Low	Contaminants may be present albeit the impact is likely to be localised and relatively minimal with

Potential source	Potential receptor	Possible pathway	Likelihood	Severity	Potential risk	Justification
	R2 Future adjacent site users – industrial workers	**P2** Migration of contamination via dust/fibre deposition, vapour or groundwater migration combined with inhalation.	Unlikely	Mild	Very low	respect to the proposed redevelopment.
	R3 Future buildings and services	**P3** Direct contact with contaminated soils or groundwater and chemical attack	Unlikely	Medium	Low	
	R4 Surface water in the Bristol Channel	**P4** Groundwater in the secondary aquifer and Lower Mother Ditch	Unlikely	Medium	Low	
S6 Scrap Yard **S7** Railway line	**R1** Future site users	**P1** Dermal contact, soil ingestion, dust and fibre inhalation, including vapour inhalation	Low	Medium	Moderate/low	Contaminants may be present as a result of the historical and ongoing land uses associated with the sources. It is understood that the proposed development is likely to comprise of hardstanding and as such direct contact and dust generation will be limited. Furthermore the associated new drainage will limit infiltration and throughflow.
	R2 Future adjacent site users – industrial workers	**P2** Migration of contamination via dust/fibre deposition, vapour or groundwater migration combined with inhalation.	Unlikely	Medium	Low	
	R3 Future buildings and services	**P3** Direct contact with contaminated soils or groundwater and chemical attack	Low	Medium	Moderate/low	

Potential source	Potential receptor	Possible pathway	Likelihood	Severity	Potential risk	Justification
	R4 Surface water in the Bristol Channel	**P4** Groundwater in the secondary aquifer and Lower Mother Ditch	Low	Medium	Moderate/low	
S10 Natural soil strata with a low degradable organic content, e.g. alluvium, peat. **S11** Made Ground.	**R1** Future site users **R3** Future buildings and services	Migration, accumulation and inhalation	Low	Medium	Moderate/low	Natural strata is unlikely to give rise to significant flows of ground gas, development history suggests a very low potential for the presence of Made Ground to be present with the potential to give rise to ground gas. RSK consider the actual risk rating to be low based on the evidence available. However, the nature of the Made Ground is unknown and may have the potential to generate low level of ground gases.
	R2 Future adjacent site users – industrial workers		Unlikely	Medium	Low	

Potential source	Potential receptor	Possible pathway	Likelihood	Severity	Potential risk	Justification
Sources off site						
S8 Railway bounds the site to the east. **S9** Industrial process associated within the wider steelwork to the north and Morfa Coke Oven to the west.	**R1** Future site users	**P2** Migration of contamination via dust/fibre deposition, vapour or groundwater migration combined with inhalation.	Unlikely	Medium	Low	The redevelopment is within a wider area of industrial activity which is regulated and controlled under best practice, environmental permits and the like. Uncontrolled emissions and production of hazardous substances are therefore unlikely. With the exception of large scale bulk earthworks, the risk of dust and fibre inhalation is unlikely. Contact with groundwater is unlikely as it vapour migration.

Risk matrix		Consequences			
		Severe	Medium	Mild	Minor
Probability	Highly likely	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very low	Very low
	Very Unlikely	Low	Very Low	Negligible	Negligible

Potentially complete contaminant linkages with a potential risk of moderate to low or higher comprise:

- **R1** future site users – industrial workers [oral, dermal and inhalation exposure with impacted soil, soil vapour and dust/fibres]
- **R3** future buildings and services [direct contact with contaminated soils or groundwater and chemical attack]
- **R4** Surface water in the Bristol Channel [groundwater in secondary aquifer within superficial deposits]

In line with LCRM, these potentially complete contaminant linkages need to be assessed further through an appropriate scope of site investigation and/or mitigation incorporated into the development as may be appropriate.

6.4 Data gaps and uncertainties

Key data gaps and uncertainties identified in the CSM at desk study stage include:

- access not available to the operational (internal) parts of site
- status of former and or existing underground tanks/lines not known

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 Geo-environmental assessment

Geotechnical assessment

The key findings of the geotechnical assessment are as follows:

- Made Ground is likely to be present across much of the site- the composition and thickness of which is unknown.
- the superficial deposits beneath the site are likely to be poor in terms of density and in places may have a high organic content.
- the location of any mine shafts, adits or coal workings beneath the site should be fully assessed for any further construction.
- groundwater maybe shallow beneath the site.
- in-ground obstructions associated with former buildings and structures.

Geo-environmental assessment

- a number of current and historical industrial activities have been identified from the review of historical maps and site reconnaissance which may have an impacted on the proposed develop and future end users. The recommendations in order to carry out further assessment are outlined below.

7.2 Recommendations

The following recommendations are made for further assessment of the site to address the risks identified above:

It is recommended to carry out an intrusive investigation comprising both targeted positions and non-targeted to give general coverage and fill any potential data gaps. Machine excavated trail pits should be carried out to assess the near surface geology and to allow for environmental sampling and testing.

It is recommended that boreholes are carried out for the purpose of installing gas/ groundwater monitoring well in order to assess the natural and any environmental impact which may have occurred to the groundwater beneath the site.

A scheme of gas and groundwater should be carried out to assess the depth and state of ground water beneath the site in both the Made Ground (where encountered) and the natural strata.

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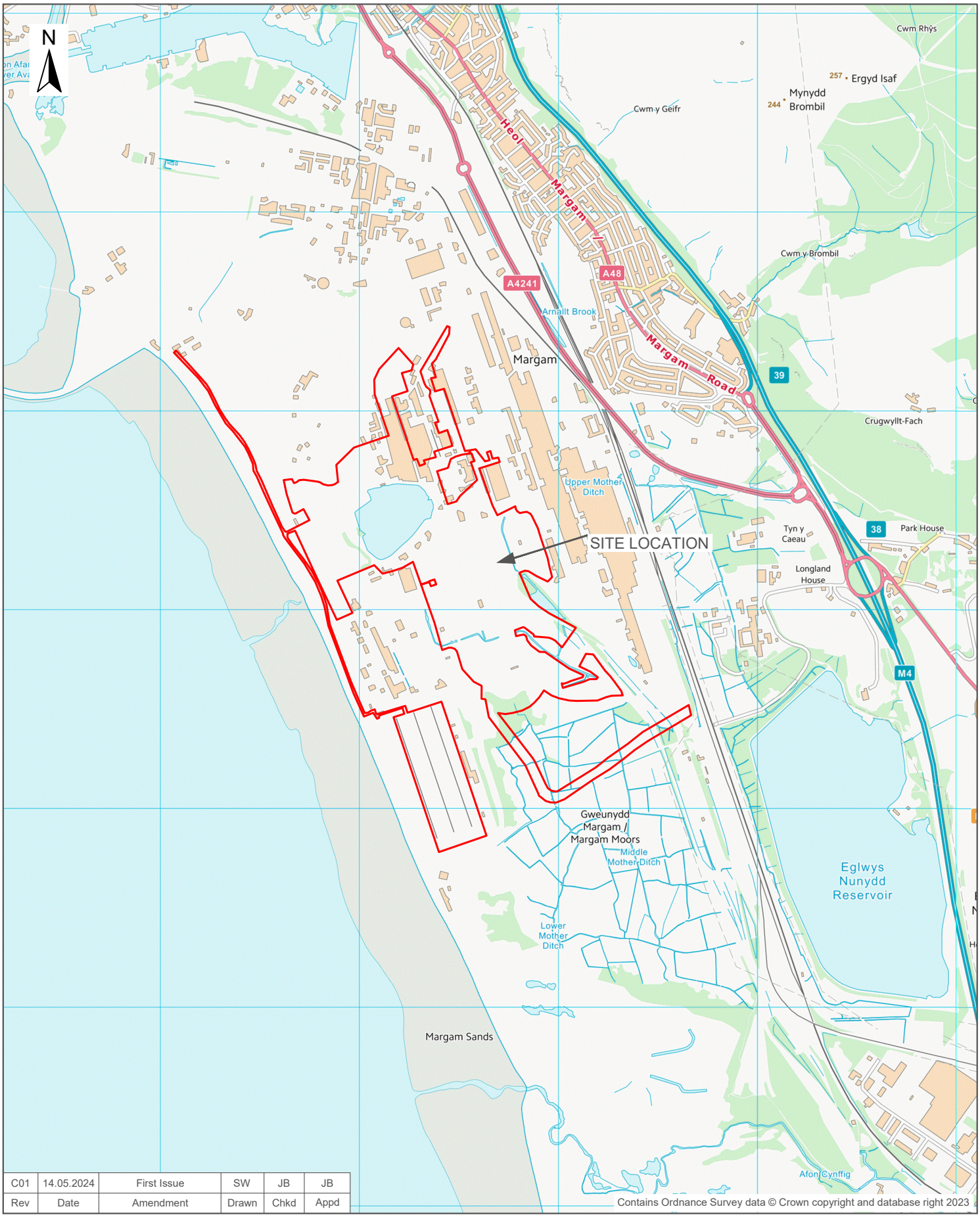
FIGURES

Figure 1 SITE LOCATION PLAN



Rev	Date	Amendment	Drawn	Chkd	Appd
C01	14.05.2024	First Issue	SW	JB	JB

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RSK GEOSCIENCES
The Old School
Stillhouse Lane
Bristol
BS3 4EB
Tel: +44(0)1414 180471
Email: info@rsk.co.uk
Web: www.rsk.co.uk

Client: Tata Steel

Project Name: EAF Project

Description: Site Location Plan

Dimension	Size	Scale	Geolocation	Project ID	Drawing no.	Rev	File name
m	A4	1:25,000	278154,186921	315531	11101	C01	315531-BL-111-XX-D-G-11101-C01

Figure 2 SITE LAYOUT PLAN

LEGEND

Site boundary

Notes:

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Rev	Date	Amendment	Drawn	Chkd	Appd
C01	14.05.2024	First Issue	SW	JB	JB

RSK GEOSCIENCES

The Old School
Stillhouse Lane
Bristol
BS3 4EB

Tel: +44(0)1414 180471
Email: info@rsk.co.uk
Web: www.rsk.co.uk

Client
Tata Steel

Project Name
EAF Project

Description
Site Layout Plan

Project ID	Drawing no.	Revision
315531	11201	C01

File name
315531-BL-112-XX-D-G-11201-C01

Dimensions	Scale	Size
m	1:5000	A1

0 100 200 300 400 500m

Figure 3 SITE LAYOUT PLAN WITH DEPARTMENTS

LEGEND

- Site boundary
- Harsco yard
- BOS plant
- HRP slab yards
- Scrap/regen yard
- Projects
- Projects

Notes:

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Rev	Date	Amendment	Drawn	Chkd	Appd
P01	17.06.24	First Issue	LS	##	##

RSK GEOSCIENCES

The Old School
Stillhouse Lane
Bristol
BS3 4EB

Tel: +44(0)1414 180471
Email: info@rsk.co.uk
Web: www.rsk.co.uk

Client
Tata Steel

Project Name
EAF Project

Description
Plan Showing On-site Departments

Project ID	Drawing no.	Revision
315531	22202	P01

File name
315531-BL-222-XX-D-G-22202-P01

Dimensions	Scale	Size
m	1:5000	A1

0 100 200 300 400 500m

APPENDICES

APPENDIX A
SERVICE CONSTRAINTS

1. Service Constraints for all Reports

1.1. This Report (the “Report”) and any study, inspection, investigation, sampling, testing and or interpretation carried out in connection with the Report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) trading as Carbon Zero Consulting, Leap Environmental or RSK Geosciences, for the Client named in the first paragraph of the Report (the "Client") in accordance with the terms of an RSK Fee Proposal including RSK Environment Standard Terms and Conditions (the “Appointment”) between RSK and the Client, unless otherwise stated in the first paragraph of the Report. The Services were performed by RSK with the reasonable skill and care ordinarily exercised by a geo-environmental consultant at the time the Services were performed. Nothing in this Report shall be construed as imposing any fitness for purpose obligation. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the Client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the Client.

1.2 Other than that, expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services. RSK shall not be liable in respect of any action or proceedings arising out of or in connection with this Report whether in contract, in tort, for breach of statutory duty or otherwise after the expiry of six (6) years from either (i) the date of the Report or (ii) such earlier date as prescribed by law, unless varied in the terms of the Appointment.

1.3 Unless otherwise agreed in writing, the Services were performed by RSK exclusively for the purposes of the Client. RSK is not aware of any interest of or reliance by any party other than the Client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent, or condone any party, other than the Client relying upon the Services. Should this Report or any part of this Report, or details of the Services or any part of the Services, be made known to any such party, and such party relies thereon, that party does so wholly at its own and sole risk, and RSK disclaims any liability to such parties. Any such party would be well advised to seek independent advice from a competent geo-environmental consultant and/or lawyer.

1.4 The Client shall not, without the prior written consent of RSK, assign, transfer, charge, mortgage, subcontract, or deal in any other manner with all or any of the benefits provided in this Report. Unless specified in the Appointment, RSK shall not be obliged to assign the benefit of the Report whether by collateral warranty, third party rights pursuant to the Contracts (Rights of Third Parties) Act 1999, letter of reliance or otherwise. If RSK agrees to any assignment of the benefit of this Report, in whatever form, benefits to third parties through collateral warranties, third party rights or letters of reliance shall not be provided unless a fee for each right, warranty or letter is agreed. The form of wording used in the warranty or letter shall be provided by RSK for agreement by the Client. Any reasonable changes to the form of wording will be implemented by mutual agreement, however the terms in the warranty or letter cannot offer the third party any greater benefit than the Appointment offered to the Client.

1.5 It is the understanding of RSK that this Report is to be used for the purpose described in the introduction to the Report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the Report is used, or the proposed use of the site change, this Report may no longer be valid and any further use of or reliance upon the Report in those circumstances by the Client without the review and advice of RSK shall be at the Client's sole and own risk. RSK shall not be liable for any use of this Report for any purpose other than that for which it was provided.

1.6 The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the Report inaccurate or unreliable. The information and conclusions contained in this Report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the Report in the future shall be at the Client's own and sole risk.

1.7 The observations and conclusions described in this Report are based solely upon the Services which were provided pursuant to the agreement between the Client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out, or required by the Appointment between the Client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this Report, RSK did not seek to evaluate the presence on or off site of asbestos, invasive plants, electromagnetic fields, lead paint, heavy metals, radon gas, fuel storage, persistent bio-accumulative or toxic chemicals (including PFAS and related compounds) or other radioactive or hazardous materials, unless specifically identified in the Services.

1.8 The Services are based upon RSK's observations of existing physical conditions at the Site gained from a visual inspection of the site together with RSK's interpretation of desk based publicly available information, including documentation, obtained from third parties and from the Client on the history and usage of the site, unless specifically identified in the Services and the limitations below:

a. The Services were based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely.

b. The Services were limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the visual inspection.

c. The Services did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the Client or third parties, including laboratories and information services, during the performance of the Services.

d. The Client has identified in writing to RSK, the information, reports, findings, surveys and preliminary works RSK may not rely upon when providing the Services.

RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK, and including the doing of any independent investigation of the information provided to RSK, save as otherwise provided in the terms of the Appointment between the Client and RSK.

1.9 Any site drawing(s) provided in this Report is (are) not meant to be an accurate base plan for scale measurement but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for accurate setting out and should be considered indicative only.

1.10 Should RSK be requested to review the Report after the date of issue of this Report, RSK shall be entitled to additional payment at the existing rates, or such other terms as agreed between RSK and the Client.

2. Service Constraints where the Report provides an intrusive assessment of ground conditions:

2.1 The intrusive environmental ground investigation aspects of the Services are a limited sampling of soil from the site, at pre-determined locations based on the known historic / operational configuration of the site. The conclusions given in this Report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the properties of the materials adjacent and local conditions, together

with the position of any current structures and underground utilities and facilities, and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters (as stipulated in the scope agreed between the Client and RSK, based on an understanding of the available operational and historical information) and it should not be inferred that other chemical species (not tested) are not present.

2.2 The comments given in this Report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. The extent of the exploratory holes, laboratory testing and monitoring undertaken may have been restricted due to a number of factors including accessibility, the presence of buried or overhead services, current development, site usage, timescales or the Client's specification. The exploratory holes only assess a small proportion of the site area with respect to the site as a whole, and as such may only provide an indicative assessment of ground conditions on site. There may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows, may vary from those reported due to seasonal, or other, effects and the limitations stated in the data should be recognised. The presence of hotspots of undisclosed contamination or exceptional and unforeseen ground conditions cannot be discounted.

2.3 Where the Services include Investigation of an exploratory nature or relating to physical ground works, any costings and prices provided in the Report are estimated and provided for guidance purposes only. The actual cost and time quantities shall be remeasured and shall be dependent upon the ground or other conditions, constraints present, and number and depth of the investigation locations, which shall influence the number of samples and tests required, and the quantities of soil being classified.

2.4 Asbestos is often observed to be present in soils in discrete areas. Whilst asbestos-containing materials may have been locally encountered during the fieldworks or supporting laboratory analysis, the history of brownfield and demolition sites indicates that asbestos fibres may be present more widely in soils and aggregates, which could be encountered during more extensive ground works. However, this Report does not constitute an asbestos survey. On this basis, the presence of asbestos on site cannot be discounted and a full asbestos survey should be undertaken.

2.5 Unless stated otherwise, only preliminary geotechnical recommendations are presented in this Report and these should be verified in a Geotechnical Design Report, once proposed construction and structural design proposals are confirmed. Eurocode 7 gives guidance on the type of sampling, sample quality, number and spacing of intrusive investigations, and number of laboratory tests required. It is intended that the Geotechnical Information section of this Report will fulfil the general requirements of the Ground Investigation Report as set out in section 6 of Eurocode7, although this is subject to the restrictions imposed on the investigation, as listed above. For geotechnical design, Eurocode 7 requires the Geotechnical Design Report to address both the geotechnical and structural aspects of the geotechnical design for both the limit and serviceability states. The Geotechnical Appraisal section of this Report will not meet the requirements of a Geotechnical Design Report (GDR) and should therefore be used for preliminary guidance only.

3. Service Constraints where the Report relates to Surface Water Management:

3.1 The Surface Water Management Inspection (SWMI) Report, documents provided, observations, actions, and recommendations, with respect to the management of potential pollution issues to surface waters, made during the site Inspection visit, are those present at the time of the visit, and may not represent those recorded by others on the same day.

3.2 The comments given in this Report and the opinions expressed are based on the weather, ground and ground water conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not

been disclosed by the inspection and therefore could not be taken into account. In addition, groundwater levels and flows, may vary from those Reported due to seasonal, or other, effects and the limitations stated in the data should be recognised.

3.3 RSK places a degree of dependence upon oral information provided by site representatives, which is not readily verifiable through visual inspection, or supported by any available written documentation. RSK shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by facility or site representatives at the time this Report was prepared.

3.4 This Report is a live document, to be continually reviewed and updated as the development progresses or other changes occur on site. RSK can only maintain the currency of this Report through the Client requesting support with supplementary site visits or attendance at meetings ahead of key stages of the development in relation to surface water management. Our risk rating assesses a number of risk factors in line with the source-pathway- receptor model and is therefore subject to constant change.

3.5 Standard design drawings are indicative. Material types, dimensions and construction details will need to be adjusted by the Client to suit the specific conditions / flows on Site.

3.6 The full responsibly for implementing the site-specific protection and maintenance measures to protect the surface water system as stated in this Report, remains with the Client and their site management team. Additional control measures may be required to achieve the objectives set out in the Surface Water Management Plan to be implemented and financed by the Client.

4. Service Constraints where the Report relates to Waste Management:

4.1 In accordance with the definition provided in the Waste Framework Directive (WFD), materials are only considered waste if 'they are discarded, intended to be discarded or required to be discarded, by the holder'. Naturally occurring soils are not considered waste if re-used on the site of origin for the purposes of development. Soils such as made ground that are not of clean and natural origin (irrespective of whether they are contaminated or not) and other materials such as recycled aggregate, do not necessarily become waste until the criteria above are met. Excavation arisings from the development may therefore be classified as waste if surplus to requirements and/or unsuitable for re-use.

4.2 It is the duty of the waste producer, to ensure that all waste is accurately classified prior to waste disposal. Technical Guidance WM3 (EA, 2018) sets out in its Appendix D requirements for waste sampling. It is a legal requirement to correctly assess and classify waste. The level of sampling should be proportionate to the volume of waste and its heterogeneity. Unless otherwise stated, the waste assessment presented in this Report should be considered as preliminary and further testing and assessment of the waste under the provisions of a Waste Sampling Plan may be required to obtain the necessary level of data required for basic characterisation of the waste in support of disposal.

4.3 Unless stated otherwise in the Report, information relating to historical operations at the site was not reviewed as part of the assessment by RSK. In addition, unless otherwise stated in the Services, RSK was not present during the collection of the samples nor had any input on the chemical testing suite. Therefore, the waste assessment and classification detailed in this Report are based solely on any information that were provided to RSK (e.g., laboratory chemical data, exploratory hole records) and were completed without prejudice for our Client.

4.4 RSK's assumes that any ground investigation data, chemical testing results etc., that were provided by the Client to inform the waste assessment and supporting review were carried out in accordance with current best practice and relevant guidance/ standards, where applicable. Thus, the comments given in this Report and the opinions expressed are based solely on the information provided by the Client. However, it is noted that there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account as part of the RSK assessment.

5. Service Constraints for Construction Environmental Management Plan Reports:

5.1 This Report should be considered in the light of any changes in legislation, statutory requirement or industry practices that may have occurred subsequent to the date of issue.

5.2 The measures and comments outlined in this Report and any opinions expressed are based on the plans provided at the time and discussions with relevant parties. However, there may be conditions pertaining to the site that have not been disclosed by investigations and therefore could not be taken into account.

5.3 This CEMP is a live document and is subject to change throughout the project, as and when necessary, to ensure management of environmental aspects remains relevant, and to ensure continued compliance with legislation and commitments as they may change. RSK understands that this CEMP will be reviewed by the Client every six months and updated as and when necessary.

5.4 It is the full responsibility of the Principal Contractor/ Client to ensure that their works do not contravene legal requirements, and adherence to this CEMP alone cannot be a full defence regarding legal action against the Principal Contractor.

6. Service Constraints where the Report relates to Ground Gas Membrane Verification:

6.1 This Report is limited to the verification of the gas resistant membrane/vapour membrane/ radon barrier after installation and no inspections were undertaken of the substrate (i.e. prepared ground). The Report therefore does not constitute as a full verification of ground gas protection system.

6.2 The comments given in this Report and the opinions expressed, are based on the condition of the ground gas membrane as encountered at the time of inspection by suitably qualified personnel. RSK cannot accept liability for any subsequent change to the status of the gas membrane by follow-on trades or other construction activity.

6.3 Where not designed by RSK, the verification of protection measures is carried out with reference to the gas protection design provided by the Client. RSK assume the scope of gas protection measures as determined by third parties to be correct and to have achieved any required approval from authorities.

6.4 The Ground Gas Design Report/Remediation Strategy and Verification Plan contains details of the procedures to be adopted for inspection and validation of the works. However, it should be noted that responsibility for the correct implementation of the strategy lies with the appointed contractor. RSK cannot be held responsible for any remedial works that are carried out without the agreed procedures involving either direct supervision by RSK, or inspection and validation of the works by a representative from RSK.

7. Service Constraints for Environmental Due Diligence (EDD)Reports:

7.1 The comments given in this Report and the opinions expressed are based on the information obtained and reviewed as part of the desk-based assessment. However, there may be conditions pertaining to the Site that have not been disclosed by the assessment and therefore could not be taken into account. Furthermore, no intrusive investigations, monitoring or sampling have been undertaken to confirm the environmental status of the site, therefore any comments relating to ground conditions and subsurface contamination are based solely on a review of desk-based information.

7.2 This Report describes the results of the EDD exercise. The scope of this EDD Report, where appropriate, covers legal or regulatory compliance with respect to UK or international regulations associated with environmental matters.

7.3 As with any EDD exercise, there is a certain degree of dependence upon information provided by the target company. The EDD does not include a site walkover / visit or liaison with site representatives unless identified in the Services. Therefore, the assessment is based on the available desk study information. Also, there is a certain degree of dependence upon oral information provided

by site representatives, which is not readily verifiable through visual inspection, or supported by any available written documentation. RSK shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by facility or site representatives at the time this EDD exercise was performed.

7.4 This Report, including all supporting data and notes (collectively referred to hereinafter as "information"), was prepared or collected by RSK for the benefit of its Client.

7.5 The comments given in this Report and the opinions expressed are based on the information obtained and reviewed as part of the desk-based assessment and the site inspection visit. However, there may be conditions pertaining to the Site that have not been disclosed by the assessment and therefore could not be taken into account. Furthermore, no intrusive investigations, monitoring or sampling have been undertaken to confirm the environmental status of the Site therefore any comments relating to ground conditions and subsurface contamination are based solely on a review of desk-based information and observations collected during the site inspection visit.

8. Service Constraints for Ground source heat energy Reports:

8.1 It is understood that this is a desktop survey only and that there are no requirements for a site walkover, service utility survey, or provision of service plans. These services can be provided upon request if required.

8.2 At a later stage, it is possible that a thermal response test (TRT) will need to be completed, for which a test borehole will have to be drilled, and these would be costed at the time. RSK can provide all aspects of subsequent site work for a GSHP system if required.

9. Service Constraints for Water Abstraction Borehole Reports:

9.1 The Report aims principally to only identify and assess the suitability of the site for a water abstraction borehole. This Report should be considered in the light of any changes in legislation, statutory requirements, and industry practices, that have occurred subsequent to the date of the Report.

9.2 Unless stated in the Report, the opinions expressed in this Report including all comments and recommendations provided are on the basis of the information obtained from a desk-based assessment.

Appendix B
DEVELOPMENT DRAWINGS

Construction Design and Management Regulations

Design risk assessments are carried out throughout the design stage of this project in accordance with company procedures and manuals. Where reasonably possible all areas of risk applicable to design and end use of the construction have been identified and then eliminated, mitigated or recorded as a residual risk. Note that general risks of which a competent designer or contractor should be aware are not included. This drawing is to be read in conjunction with the Construction Information and all related documents prepared in accordance with the current Construction Design and Management Regulations 2015 and all applicable Health and Safety legislation as currently amended.

LEGEND - Proposed:

- Proposed Planning Boundary
- Proposed Outline Application
- Wider Planning Boundary
- Existing Buildings
- Existing Roads
- Proposed New Buildings / Structures
- Proposed New Roads
- Proposed Widened Existing Roads
- Proposed Car Parking Areas
- Area of infill to existing lagoon
- Proposed 'Lay-down' areas
- Proposed Gantry
- Proposed Pipe Route
- Proposed Indicative Electrical Infrastructure
- Proposed Indicative Scrap Metal Handling Facility & Yards

TATA No.	No.	Building Name
01	01	Canopy Hood
03	02	Consteel Conveyor
04	03	Fume Treatment Plant (FTP)
05	04	Shredded Scrap Yard
07	05	Hot Briquetted Iron (HBI) Dolo & Lime Bunker
08	06	Ferro Alloys Bunker
09	07	Fire Water Pump House
10	08	Primary Pump House
11	09	Secondary Pump House
16	10	Melt Shop Power Distribution Building
18	11	Melt Shop WTP Electrical Building
19	12	Melt Shop FTP Electrical Building
24	13	Compressor House
31	14	Car Parking Area
32	15	Changing & Office Block Building
33	16	Emergency Tank
34	17	Lagoon Water Pump House
36	18	Green Walkway Extension
38	19	Active Carbon Injection Silos
39	20	Powder Silos

TATA No.	No.	Building Name
13	21	Canopy Hood
14	22	Consteel Conveyor
15	23	Fume Treatment Plant (FTP)
17	24	Shredded Scrap Yard
25	25	Hot Briquetted Iron (HBI) Dolo & Lime Bunker
26	26	Ferro Alloys Bunker
27	27	Fire Water Pump House
29	28	Primary Pump House
30	29	Railway Weigh Bridge
37	30	HBI & Pig Iron Storage Area

REV	DESCRIPTION	DRAWN BY	CHECKED BY	APPROVED BY	DATE
P00	Initial Issue				11/06/2024

RIBA PLAN OF WORK WORKSTAGE	LEVEL OF MODEL DEFINITION (LoD)
Stage 3 - Spatial Coordination	LoD 3 - Approximate Model

PURPOSE OF ISSUE - SUITABLE FOR ...	STATUS or SUITABILITY
Information	Status S2 - Delivery Team Information

lawray architects

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LONDON 0207 138 3560
WREXHAM 01978 357 887
www.lawray.co.uk

CLIENT
Tata Steel UK Ltd.

PROJECT TITLE
EAF PROJECT, PORT TALBOT

DRAWING TITLE
Proposed Site Plan - Full and Outline Application Areas

PROJECT No 20007
SCALE @ A0 As indicated

DRAWING No 1100 Project Originator Volume Level Type Role Number
0001 Project Originator Functional Spatial Form Discipline Number
Breakdown Breakdown
AC 20 RIB 00 EAF-LAW-X-X-DR-A-900009
REVISION P00

DO NOT SCALE
Any discrepancy or query concerning this drawing should be referred to the Architect
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Print Date: 12/06/2024 11:24:59

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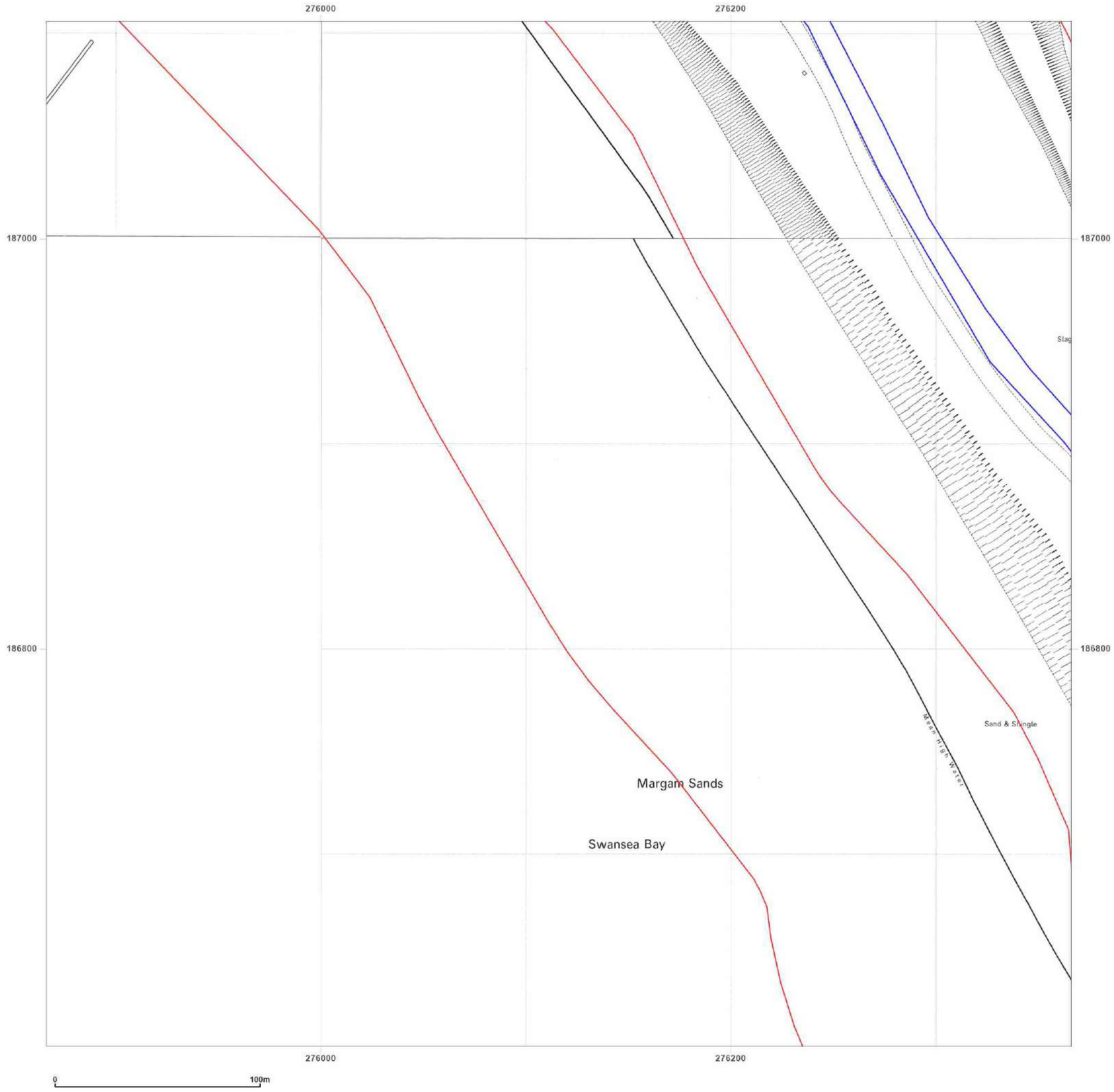
Appendix C
ENVIRONMENTAL DATABASE REPORT



Groundsure INSIGHTS

Site Details:

Port Talbot - TCE

Client Ref: EAF Meltshop Project
Report Ref: GSIP-2024-14959-18673_1250_1_5
Grid Ref: 276116, 186856

Map Name: National Grid

Map date: **1978-1983**

Scale: 1:1,250

Printed at: 1:2,000

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

Surveyed 1978
Revised 1978
Edition N/A
Copyright 1978
Levelled 1962

Surveyed 1982
Revised 1982
Edition N/A
Copyright 1983
Levelled 1964

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Production date: 09 May 2024

Map legend available at:
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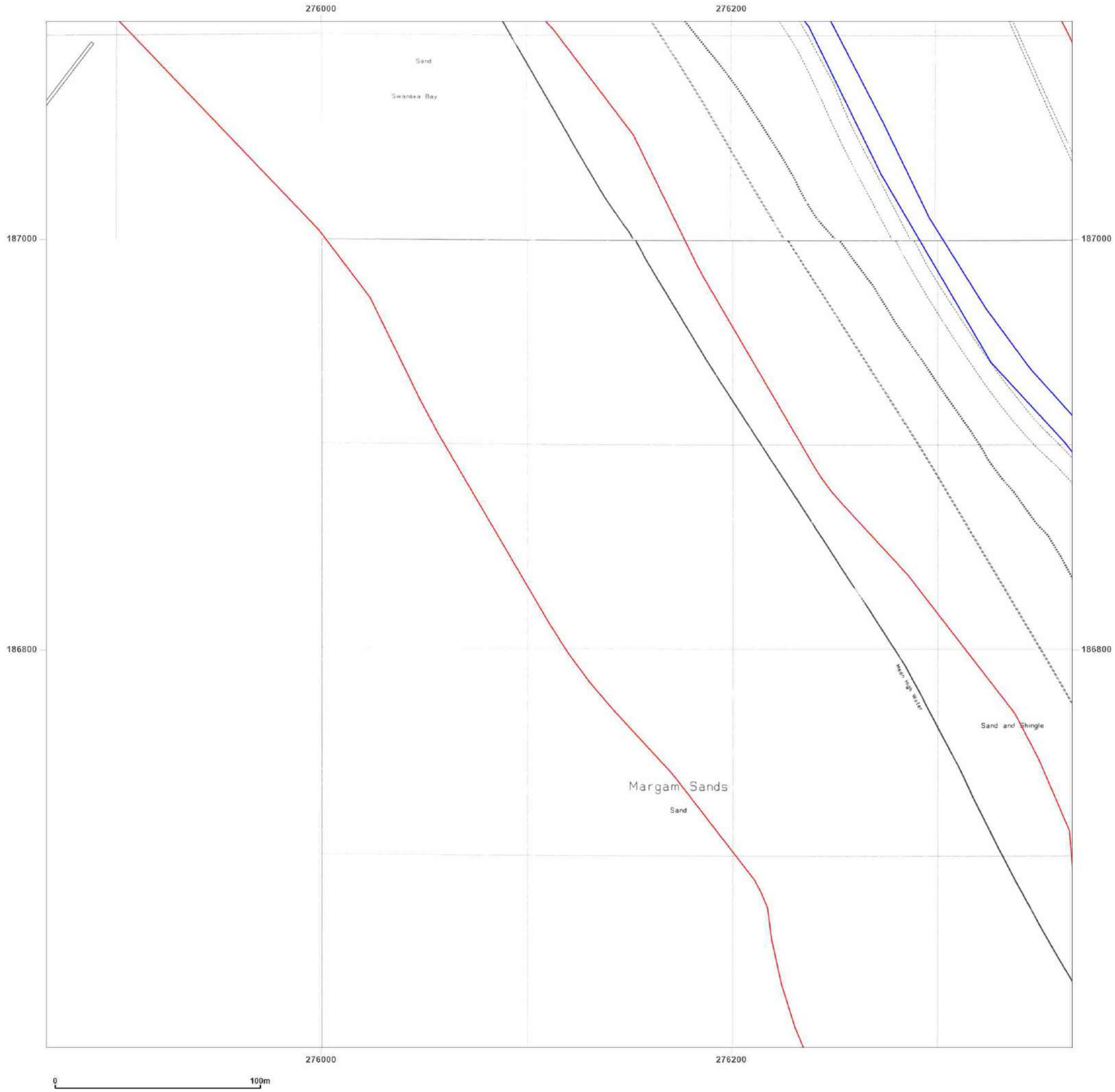

Groundsure INSIGHTS

Site Details:

Port Talbot - TCE

Client Ref: EAF Meltshop Project
Report Ref: GSIP-2024-14959-18673_1250_1_5
Grid Ref: 276116, 186856

Map Name: National Grid

Map date: **1993**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1993
Revised N/A
Edition N/A
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Map legend available at:
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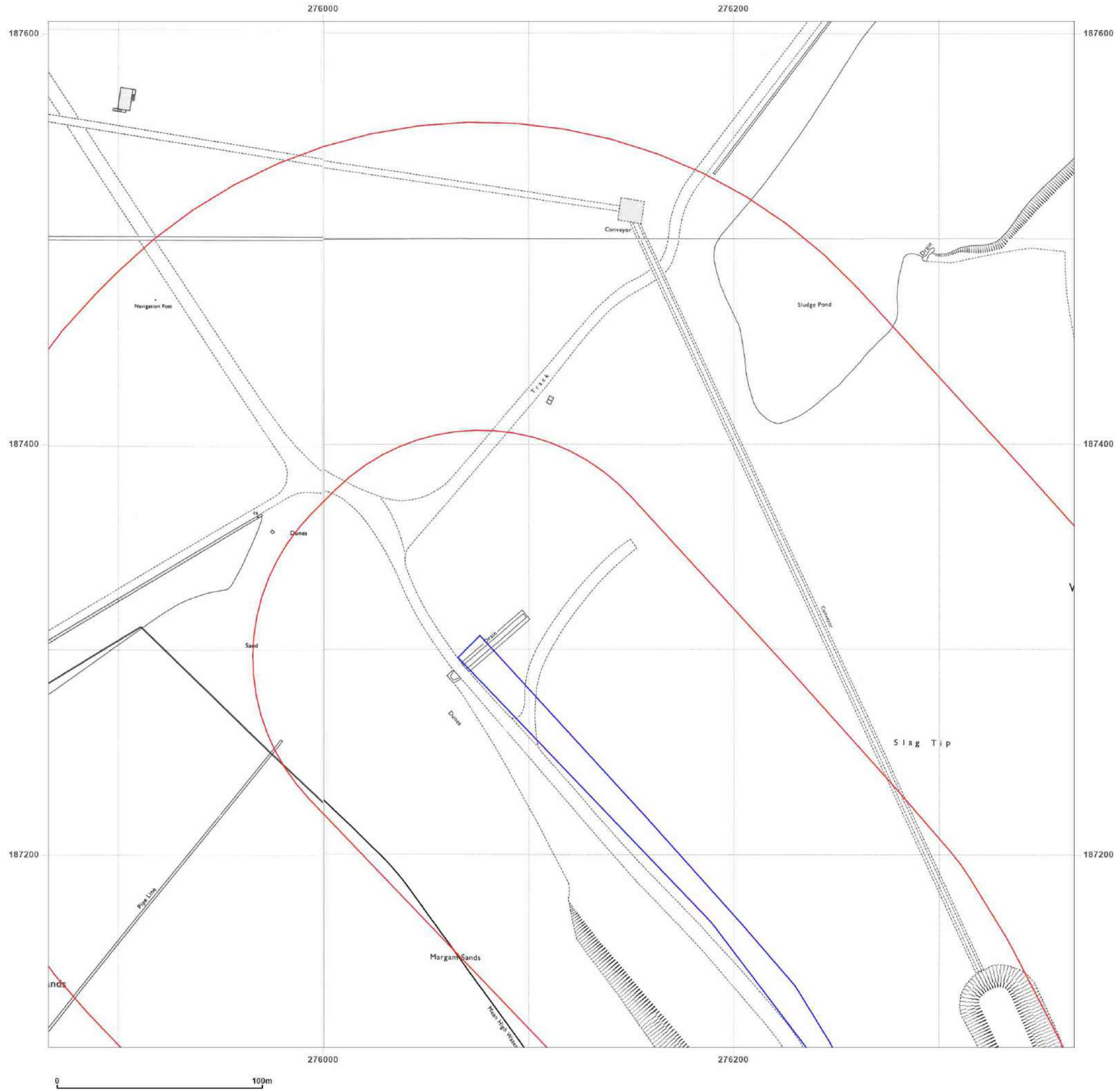

Groundsure INSIGHTS

Site Details:

Port Talbot - TCE

Client Ref: EAF Meltshop Project
Report Ref: GSIP-2024-14959-18673_1250_1_6
Grid Ref: 276116, 187356

Map Name: National Grid

Map date: **1978-1979**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A
Revised N/A
Edition N/A
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Surveyed 1978
Revised 1978
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Revised N/A
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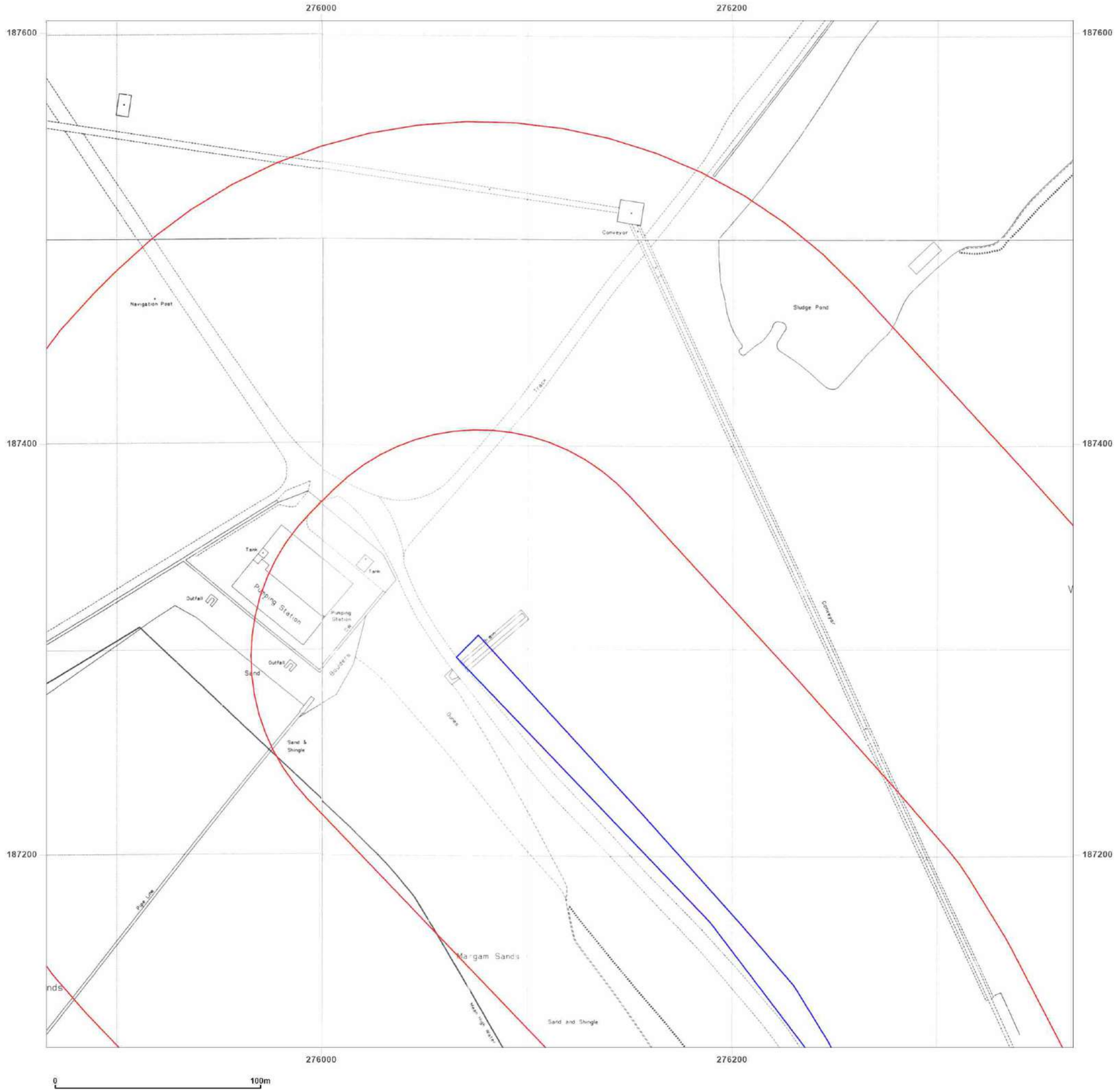

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Site Details:

Port Talbot - TCE

Client Ref: EAF Meltshop Project
Report Ref: GSIP-2024-14959-18673_1250_1_6
Grid Ref: 276116, 187356

Map Name: National Grid

Map date: **1993**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1993
Revised N/A
Edition N/A
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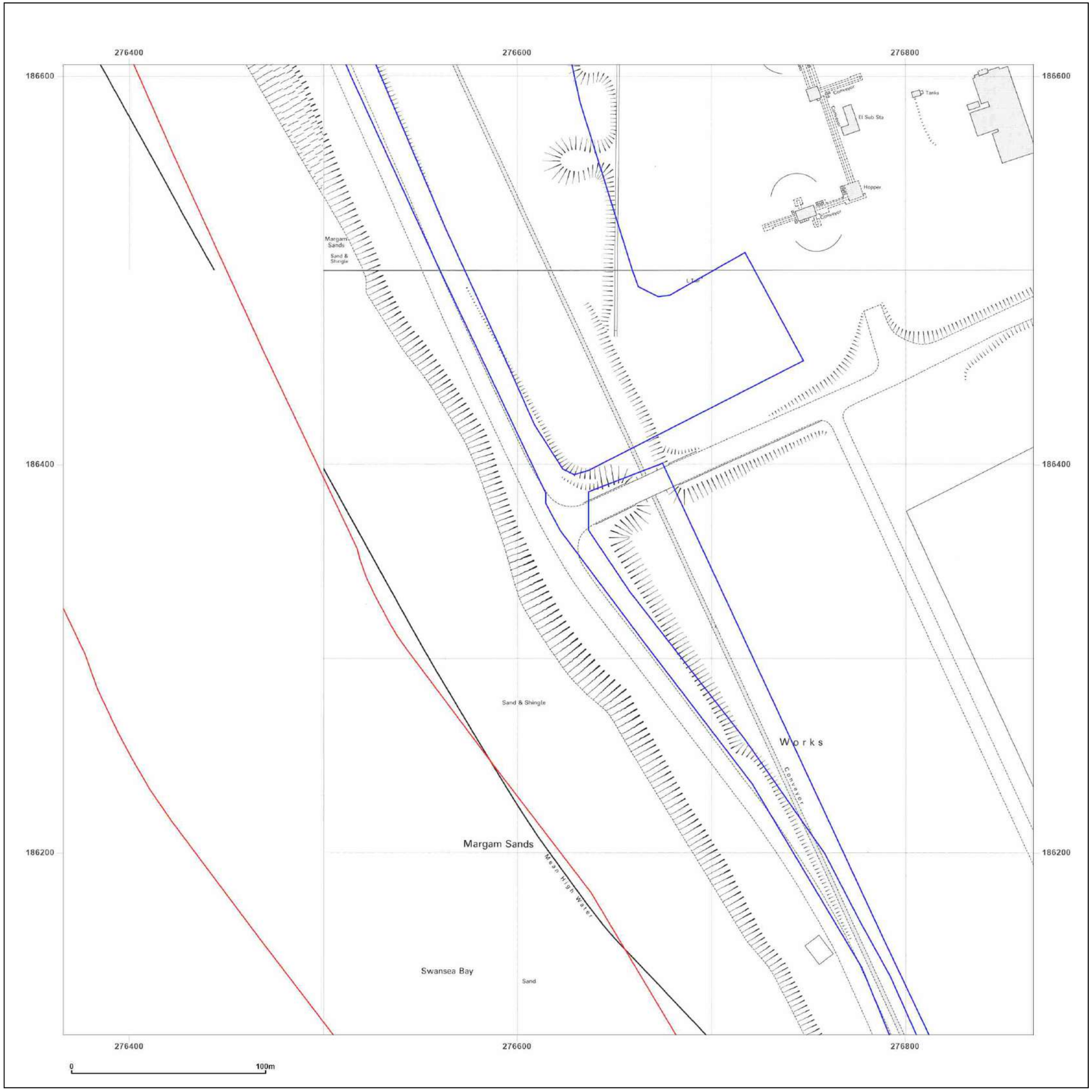

Groundsure INSIGHTS

Site Details:

Port Talbot - TCE

Client Ref: EAF Meltshop Project
Report Ref: GSIP-2024-14959-18673_1250_2_4
Grid Ref: 276616, 186356

Map Name: National Grid

Map date: **1983**

Scale: 1:1,250

Printed at: 1:2,000

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Edition N/A
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Revised 1982
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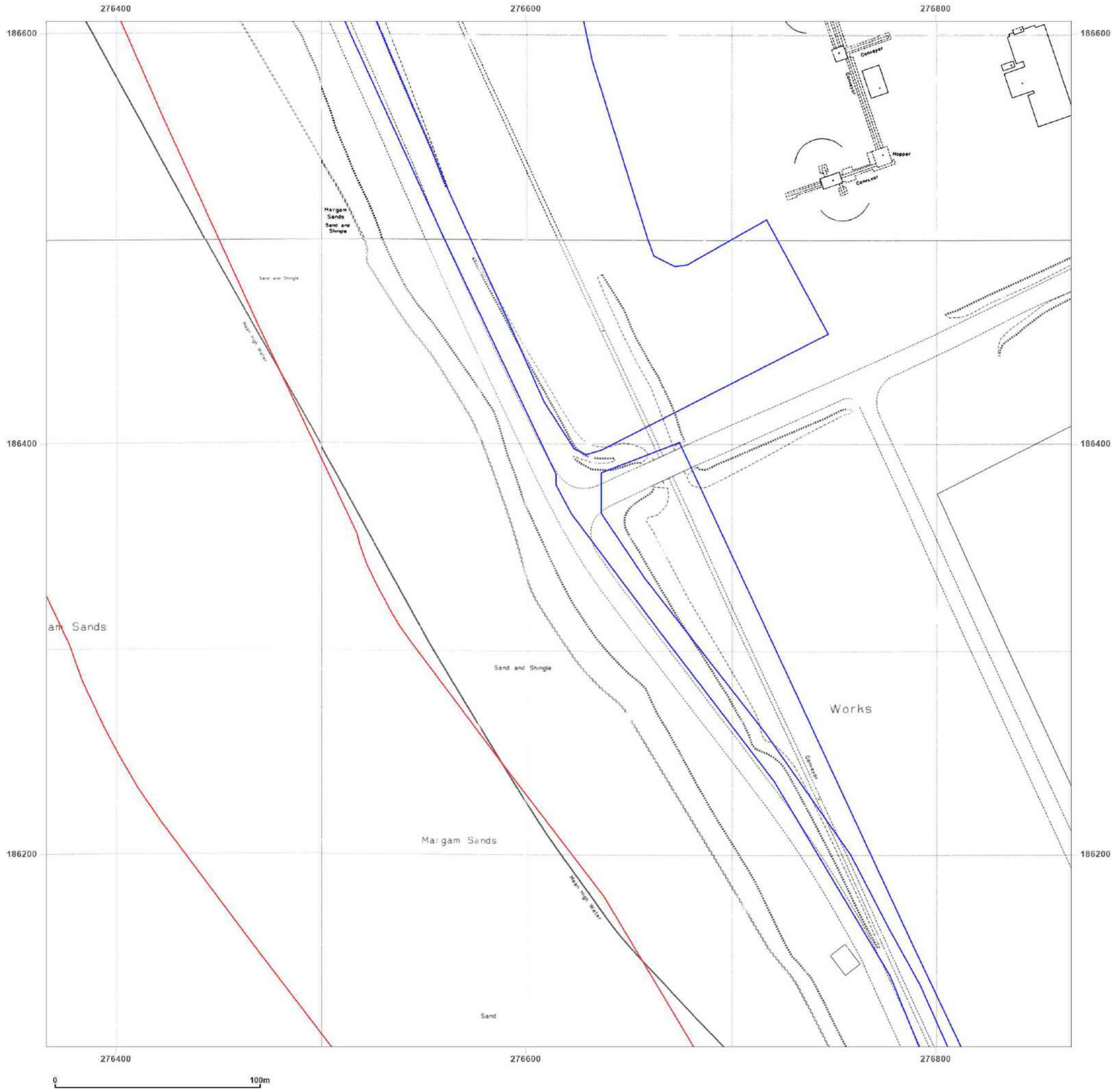

Groundsure INSIGHTS

Site Details:

Port Talbot - TCE

Client Ref: EAF Meltshop Project
Report Ref: GSIP-2024-14959-18673_1250_2_4
Grid Ref: 276616, 186356

Map Name: National Grid

Map date: **1993**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1993
Revised N/A
Edition N/A
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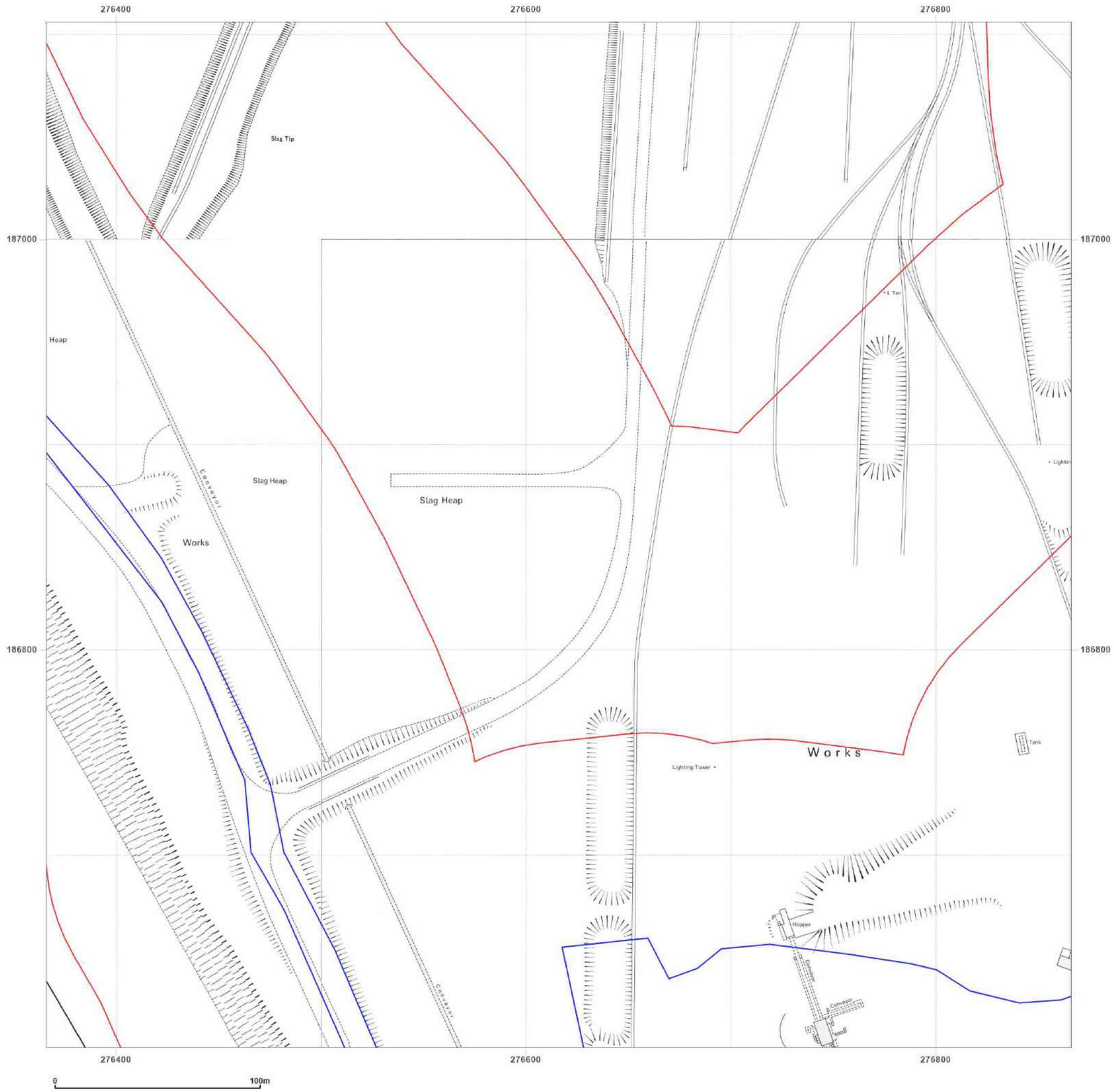

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Site Details:

Port Talbot - TCE

Client Ref: EAF Meltshop Project
Report Ref: GSIP-2024-14959-18673_1250_2_5
Grid Ref: 276616, 186856

Map Name: National Grid

Map date: **1978-1983**

Scale: 1:1,250

Printed at: 1:2,000

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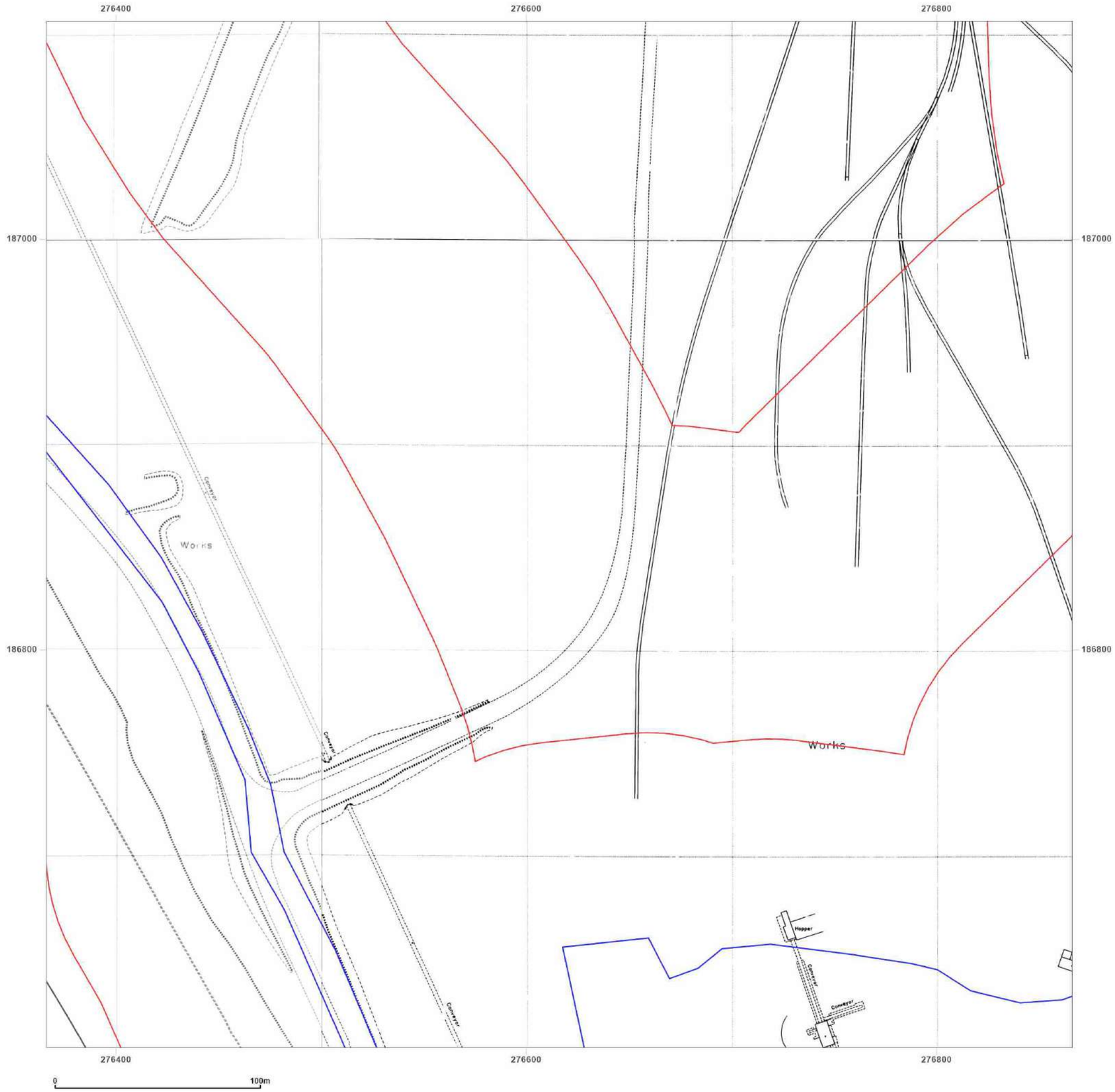

Groundsure INSIGHTS

Site Details:

Port Talbot - TCE

Client Ref: EAF Meltshop Project
Report Ref: GSIP-2024-14959-18673_1250_2_5
Grid Ref: 276616, 186856

Map Name: National Grid

Map date: **1993**

Scale: 1:1,250

Printed at: 1:2,000

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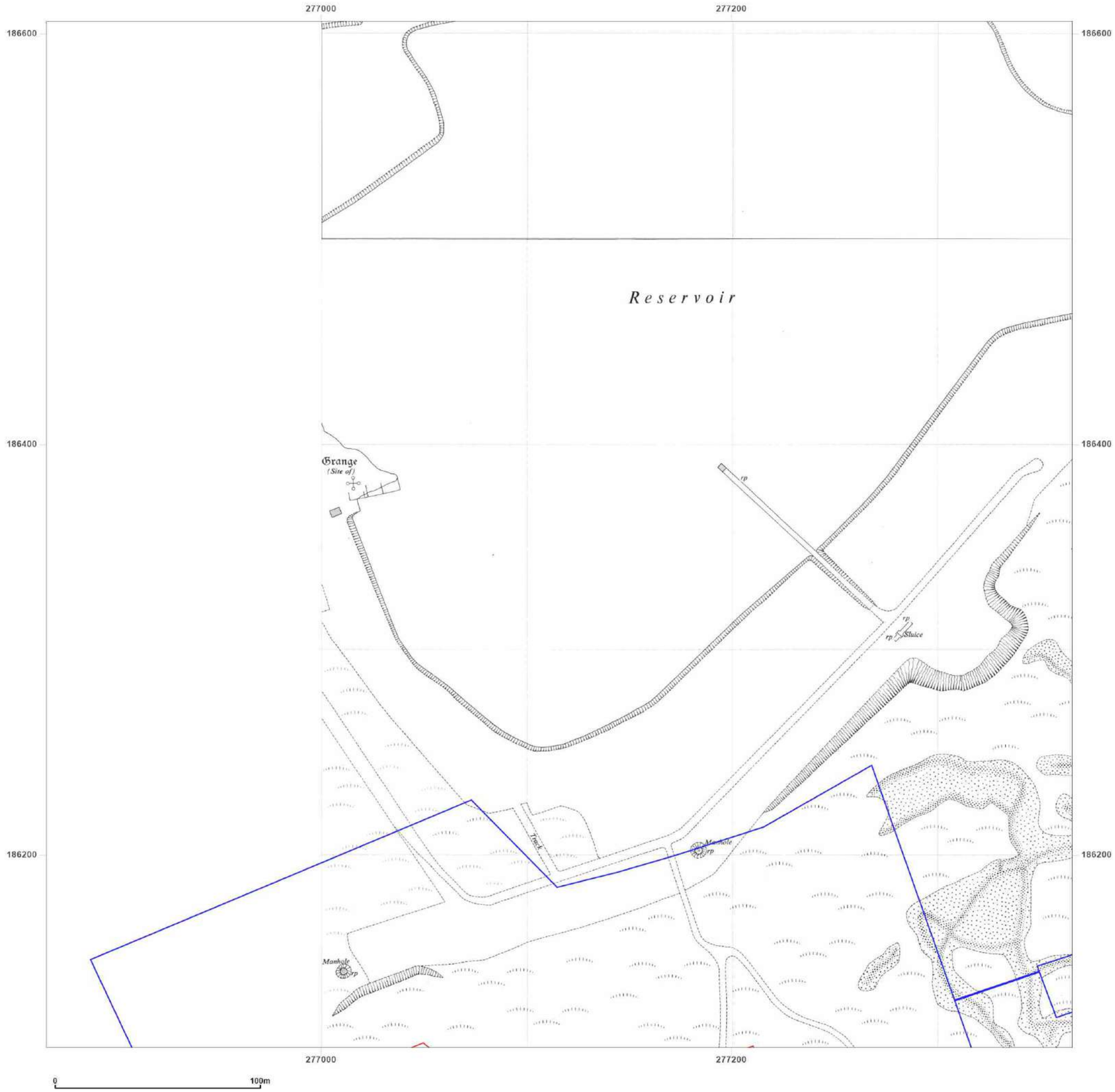

Groundsure INSIGHTS

Site Details:

Port Talbot - TCE

Client Ref: EAF Meltshop Project
Report Ref: GSIP-2024-14959-18673_1250_3_4
Grid Ref: 277116, 186356

Map Name: National Grid

Map date: **1952**

Scale: 1:1,250

Printed at: 1:2,000

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Site Details:

Port Talbot - TCE

Client Ref: EAF Meltshop Project
Report Ref: GSIP-2024-14959-18673_1250_3_4
Grid Ref: 277116, 186356

Map Name: National Grid

Map date: **1962**

Scale: 1:1,250

Printed at: 1:2,000

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Site Details:

Port Talbot - TCE

Client Ref: EAF Meltshop Project
Report Ref: GSIP-2024-14959-18673_1250_3_4
Grid Ref: 277116, 186356

Map Name: National Grid

Map date: **1974**

Scale: 1:1,250

Printed at: 1:2,000

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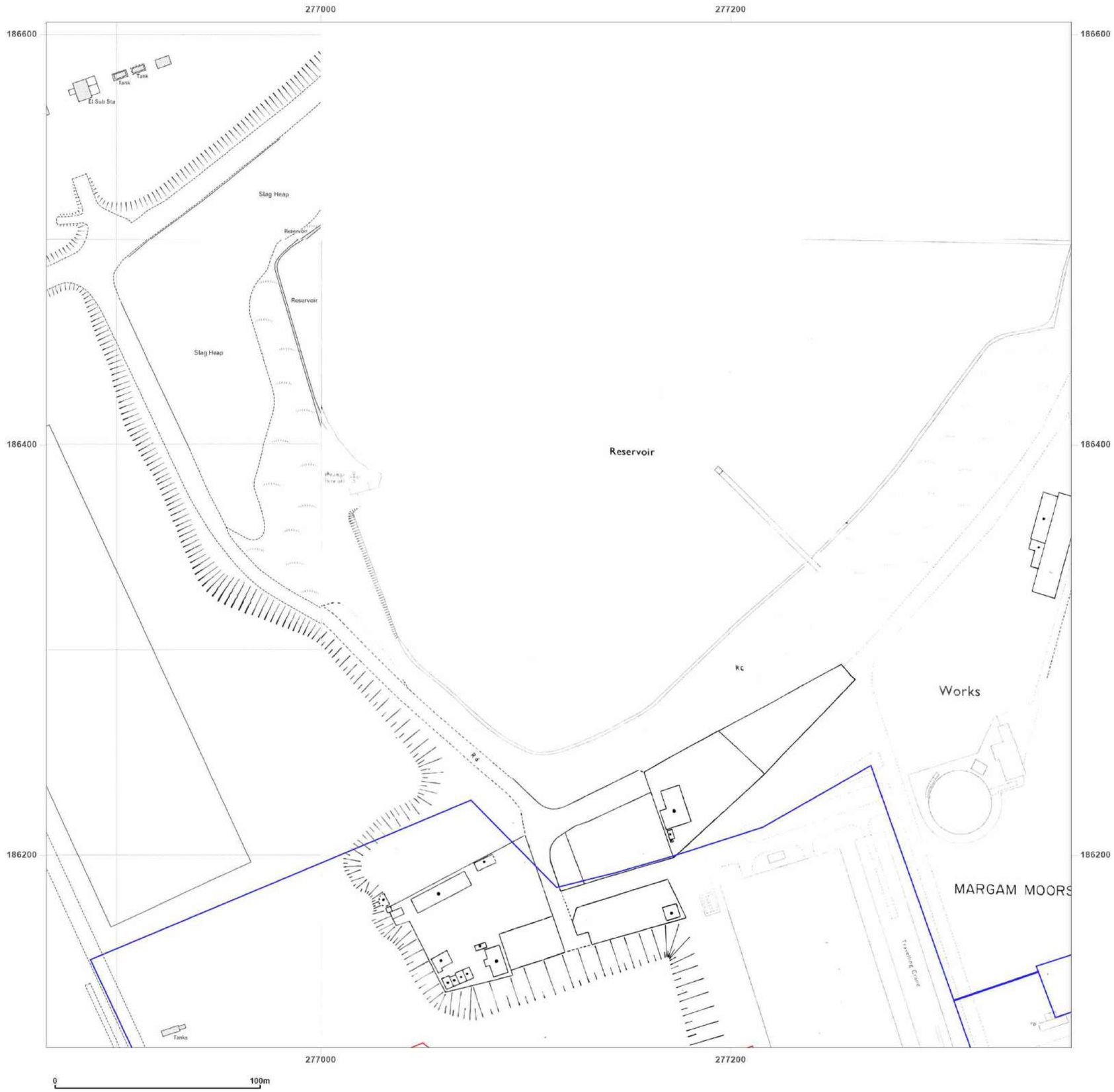

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Site Details:

Port Talbot - TCE

Client Ref: EAF Meltshop Project
Report Ref: GSIP-2024-14959-18673_1250_3_4
Grid Ref: 277116, 186356

Map Name: National Grid

Map date: **1983-1988**

Scale: 1:1,250

Printed at: 1:2,000

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Site Details:

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Client Ref: EAF Meltshop Project
Report Ref: GSIP-2024-14959-18673_1250_3_4
Grid Ref: 277116, 186356

Map Name: National Grid

Map date: **1991-1993**

Scale: 1:1,250

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Site Details:

Port Talbot - TCE

Client Ref: EAF Meltshop Project
Report Ref: GSIP-2024-14959-18673_1250_3_4
Grid Ref: 277116, 186356

Map Name: National Grid

Map date: **1993**

Scale: 1:1,250

Printed at: 1:2,000

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