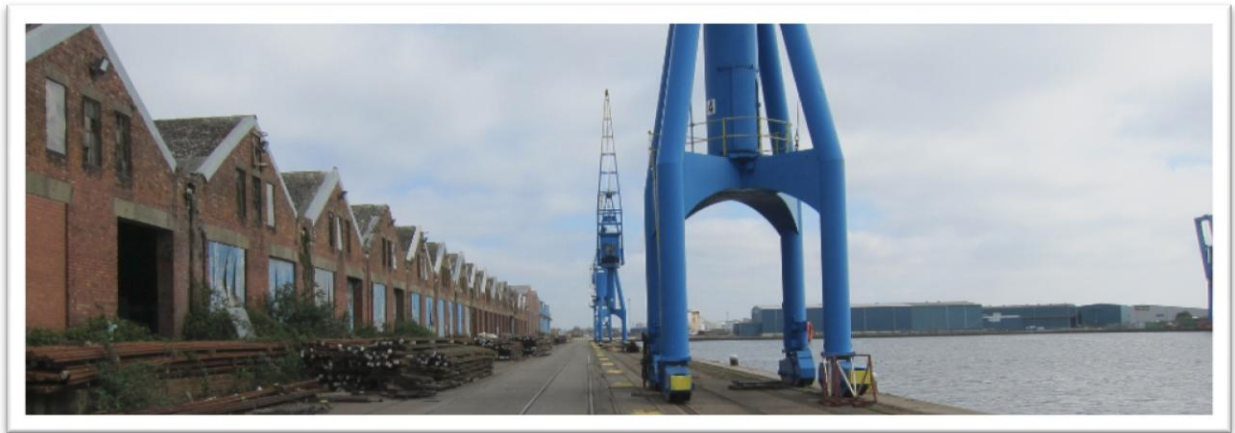




Site Condition Report

**Cargo Services (UK) Limited, Port of Cardiff,
Cardiff, CF10 4LA, Wales**

Permit No. EPR/QP3035WK

On behalf of:
Cargo Services Limited

Project Reference:
015-1347

Revision:
REV 00

Date:
May 2015

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Annex A: Figures

Abbreviations

ABP	Associated British Ports
BAT	Best Available Technique
BGS	British Geological Survey
COMAH	Control of Major Accident Hazards
DEFRA	Department for Environment Food and Rural Affairs
EA	Environment Agency
EAF	Electric Arc Furnace
EPR	Environmental Permit
EU	European Union
EWC	European Waste Catalogue
FRA	Flood Risk Assessment
HGV	Heavy Goods Vehicle
HSE	Health and Safety Executive
IED	Industrial Emissions Directive
IMO	International Maritime Organisation
IPPC	Integrated Pollution Prevention and Control
ISPS	International Ship and Port Security
IWS	International Waste Shipment
MAGIC	Multi-Agency Geographic Information for the Countryside
NGR	National Grid Reference
NRW	Natural Resources Wales
SAC	Special Areas of Conservation
SCR	Site Condition Report

Cargo Services (UK) Limited

SOP	Standard Operating Procedure
SPA	Special Protection Area
SPZ	Source Protection Zone
SSSI	Site of Special Scientific Interest
UN	United Nations
VOC	Volatile Organic Compounds

1 Introduction

1.1 Background

This document has been prepared by Cargo Services (UK) Limited (Cargo Services) and its environmental consultant Earth and Marine Environmental Consultants Limited (EAME) in support of a Part A1 Environmental Permit application as required under Regulation 20 of the *Environmental Permitting (England and Wales) Regulations 2010* (as amended).

This application is to apply for a bespoke environmental permit in relation to activities undertaken at Cargo Services Terminal, Cargo Road, Port of Cardiff, Cardiff, Wales, CF10 4LA. The Authorised company contact is Mr. Lloyd Davey (Cargo Services).

An Environmental Permit (EPR) is required where an operator carries out certain prescribed activities, namely installations that undertake Schedule 1 activities, a waste operation or a mobile plant (carrying out either one of the Schedule 1 activity or a waste operation). Cargo Services undertakes Schedule 1, Section 5.6, Part A(1)(a) permitted activity (*i.e.* 'temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections 5.1, 5.2, 5.3 and paragraph (b) of this Section, except— (i) temporary storage, pending collection, on the site where the waste is generated, or (ii) activities falling within Section 5.2.').

The operator proposes to store up to 3,500 tonnes of Electric Arc Furnace (EAF) waste (EWC Ref. 100207*) within a dock side warehouse (leased from Associated British Ports (ABP)) prior to loading and transportation to Italy for recovery.

EAME was commissioned by Cargo Services to undertake the production of the Site Condition Report (SCR) in accordance with the EA's Guidance Document H5 Site Condition Reports Guidance and Templates (Version 3.0, May 2013) *i.e.* provision of Sections 1 to 3 as outlined in the SCR Template.

The remainder of this document outlines the requirements requested by the NRW in order to progress the permit application.

2 Site Details

The site details are outlined below.

Name of Applicant	Cargo Services (UK) Limited
Activity Address	Cargo Services Terminal, Cargo Road, Port of Cardiff, Cardiff, Wales, CF10 4LA
National Grid Reference	ST 19683 73984
Document reference and dates for Site Condition Report at permit application and surrender	Application (015-1347): Cargo Services Terminal, Cargo Road, Port of Cardiff, Cardiff, Wales, CF10 4LA, Site Condition Report (SCR), 015-1347 REV00
Document references for site plans (including location and boundaries)	Annex A – Site Plans Figure A1: Site Location (Ordnance Survey 1:25,000) Figure A2: Site Location (within Cardiff Docks) Figure A3: Installation Boundary

3 Condition of Land at Permit Issue

3.1 Environmental Setting

Desk-based research of the local geology, hydrogeology, hydrology and ecology was carried out in order to establish the potential for migration of contamination onto or away from the site, and to assess the surface water and groundwater sensitivity of the surrounding area. Information was obtained from a number of sources, namely:

- inspection of the British Geological Survey (BGS) Geology of Britain Viewer;
- the BGS Lexicon of Named Rock Units;
- review of BGS held investigation borehole logs for the area;
- examination of the EA/NRW's on-line aquifer classification;
- a review of online web-based information searches (magic.gov.uk); and
- a review of publicly available information.

3.1.1 Geology

According to the BGS Geology of Britain Viewer and Sheet 263 (Cardiff), the site is underlain by the following:

- **Superficial deposits (Tidal Flat Deposits):** Clay, silt and sand. Superficial deposits formed up to 2 million years ago in the Quaternary Period. BGS lexicon describes the lithology as normally a consolidated soft silty clay, with layers of sand, gravel and peat. Characteristically low relief; from the tidal zone (*Figure 3.1*).
- **Bedrock geology (Mercia Mudstone Group):** Mudstone. Sedimentary bedrock formed approximately 200 to 251 million years ago in the Triassic Period. The BGS lexicon describes the lithology as dominantly red, less commonly green-grey, mudstones and subordinate siltstones with thick halite-bearing units in some basinal areas. Thin beds of gypsum/anhydrite widespread; sandstones are also present (*Figure 3.2*).

The 1988 BGS map (1:50,000, Sheet 263) shows the site as made ground (*Figure 3.3*).



Figure 3.1: Superficial Deposits¹



Figure 3.2: Bedrock Deposits¹

¹ <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

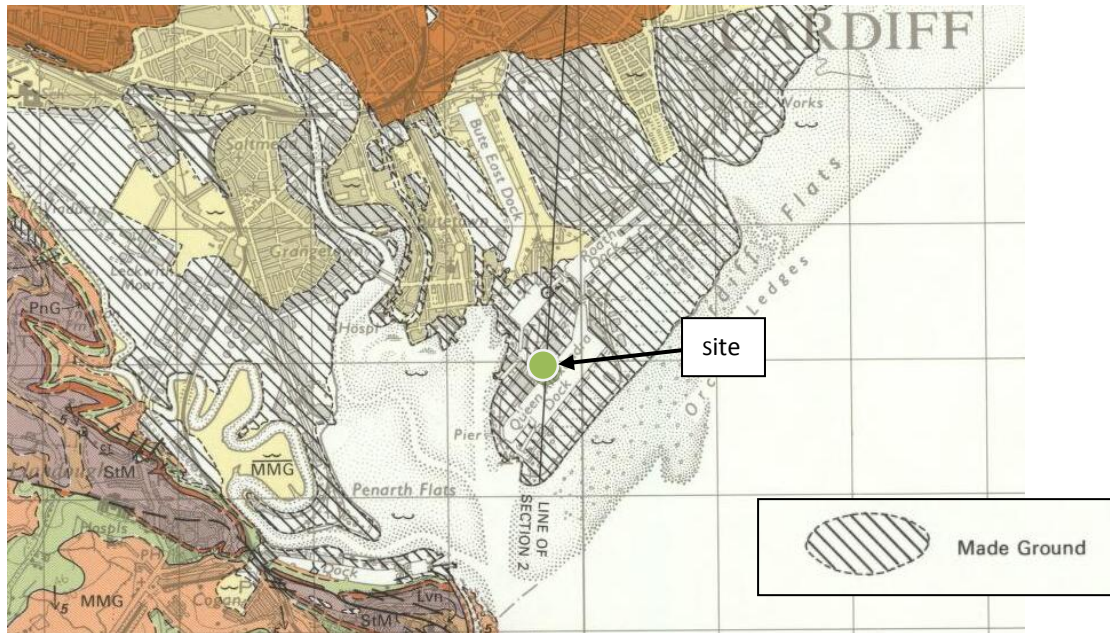


Figure 3.3: BGS Map Sheet 263 (1:50,000)²

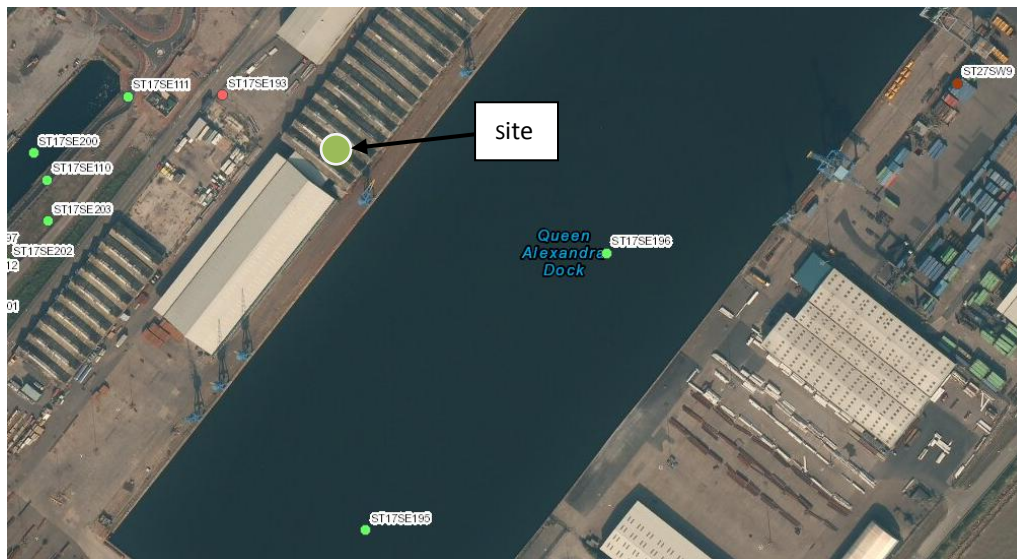


Figure 3.4: BGS boreholes¹

With reference to the on-line BGS Borehole Record Viewer, there is a single borehole located close to the site (ST17SE193 — GWR. BUTE DOCKS (Q.A.D.) TRENCH 319600,174000, depth: 30.48m). The log from the trench is outlined in *Figure 3.5*.

² <http://www.largeimages.bgs.ac.uk/iip/mapsportal.html?id=1001757>

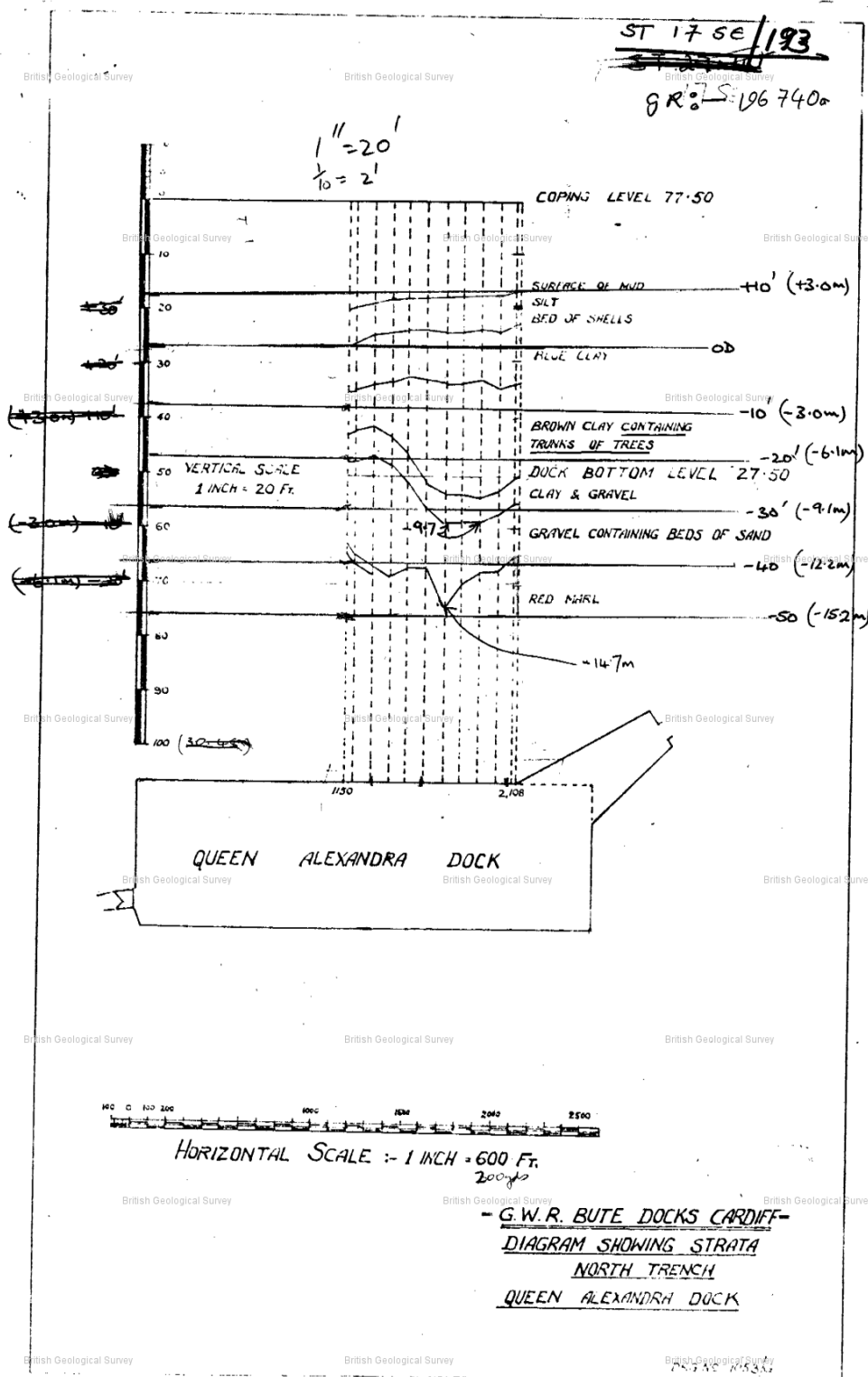


Figure 3.5: BGS borehole ST17SE1931

3.1.2 Hydrogeology

The aquifer classification system was updated on 1st April 2010 which provided new aquifer designations to replace the old system of aquifer classifications, such as Major, Minor and Non-Aquifer. This new system is in line with the EA's Groundwater Protection Policy (GP3) and the Water Framework Directive (WFD) and is based on BGS mapping. From a review of the EA/NRW on-line maps, the underlying deposits are classified as:

- **Superficial deposits (Secondary – Undifferentiated Aquifer)** *i.e.* it has not been possible to attribute either Secondary A or Secondary B to this rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type (*Figure 3.6*).
- **Bedrock deposits (Secondary B Aquifer)** *i.e.* predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers (*Figure 3.7*).

The site is located in a Minor Aquifer Low groundwater vulnerability zone (*Figure 3.8*).

The EA/NRW have defined Groundwater Source Protection Zones (SPZs) for 2,000 groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones are designated to protect the location from the risk of contamination from any activities that might cause pollution in the area, *i.e.* the closer the activity, the greater the risk. The EA website indicates that the site is not located within an SPZ (*Figure 3.9*).

The European WFD came into force in December 2000 and became UK law in December 2003. The EA/NRW has a duty to analyse the characteristics of the 11 River Basin Districts in England and Wales and assess the impact of human activity on the water bodies (including groundwater) within these districts. In addition the EA/NRW are required to monitor the status of water bodies against the objectives set for them and prepare, review and keep an up to date a register of protected areas for each River Basin District whilst preparing and consulting on River Basin Management Plans.

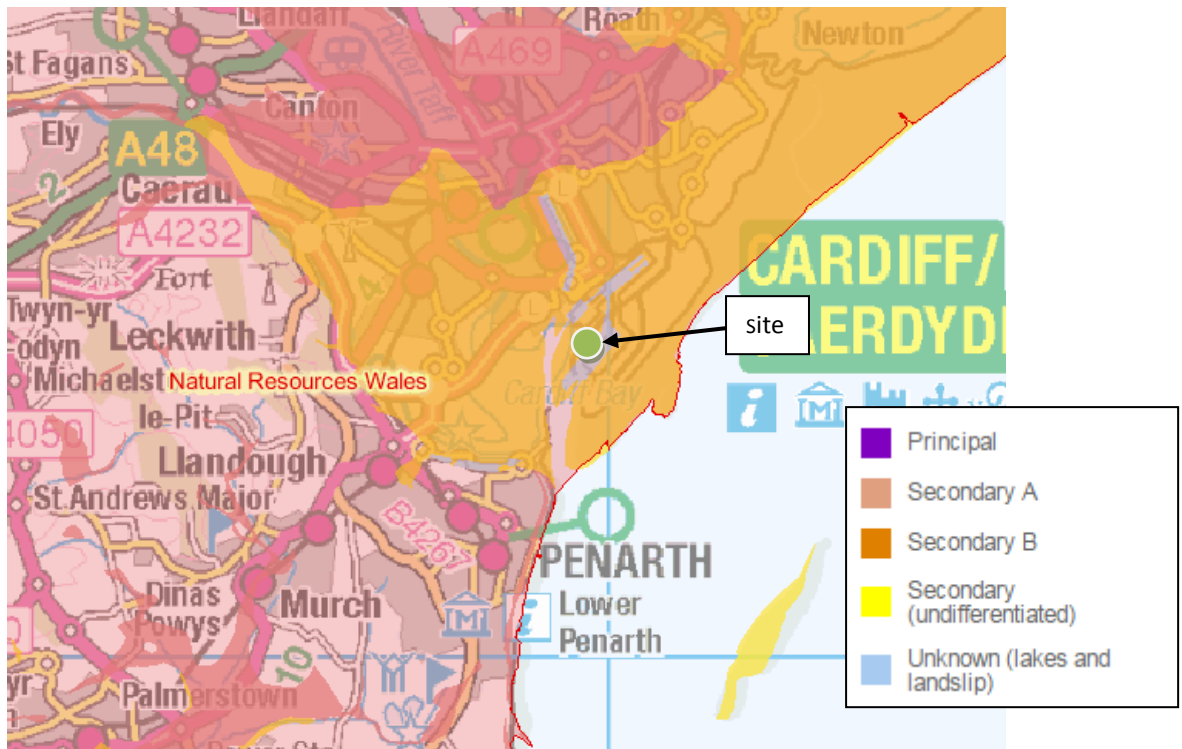


Figure 3.6: Aquifer Maps – Superficial Deposits Designation

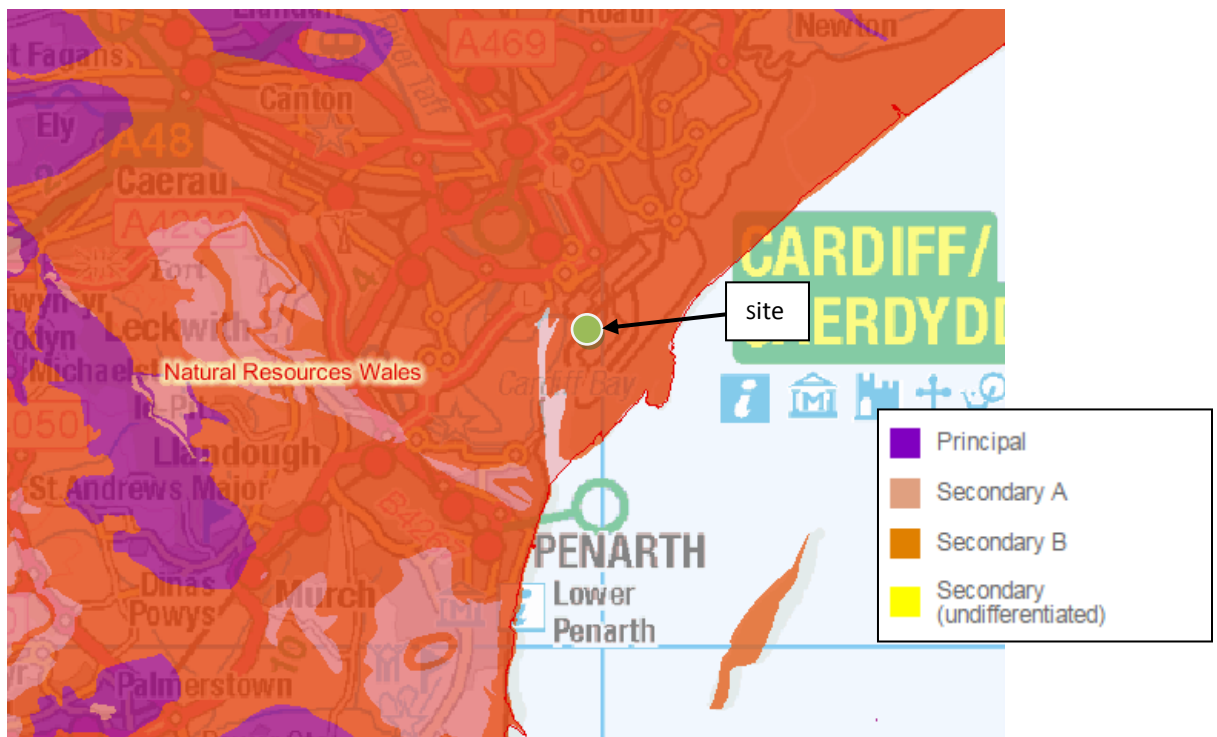


Figure 3.7: Aquifer Maps – Bedrock Designation

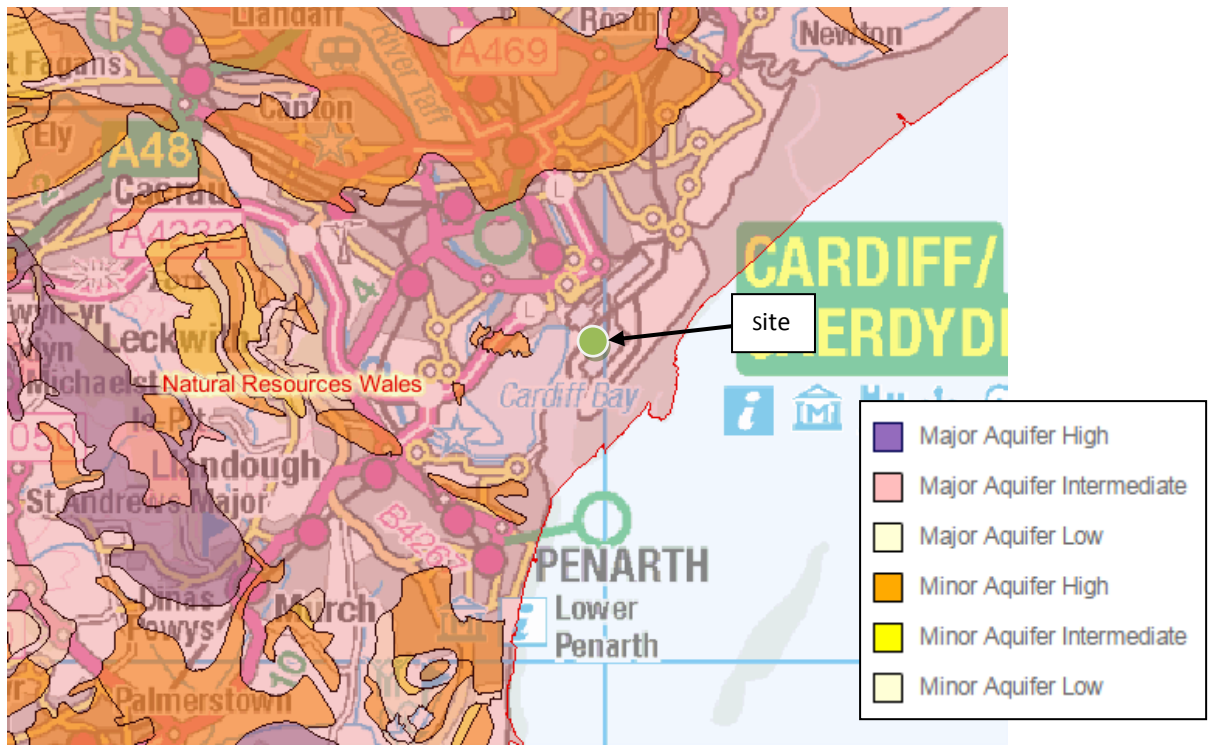


Figure 3.8: Groundwater Vulnerability Zones

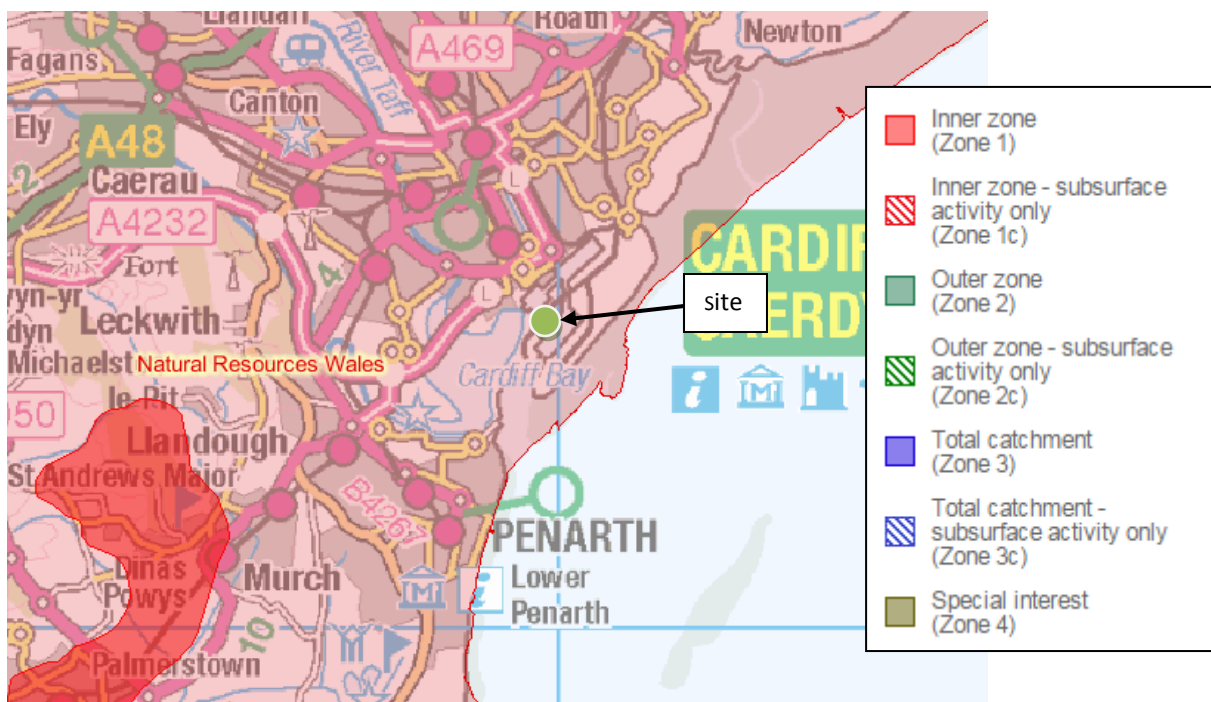


Figure 3.9: Groundwater source protection zones

3.1.3 Surface Waters

The Cardiff Barrage impounds the Rivers Taff and the Ely to create a large 500 acre fresh-water lake. The site is located 290 metres west of Cardiff Bay classified by the NRW as a lake environment due to the presence of the Cardiff Barrage (*Figure 3.10*). The water body is classified as having moderate ecological quality. Chemical quality does not require assessment.

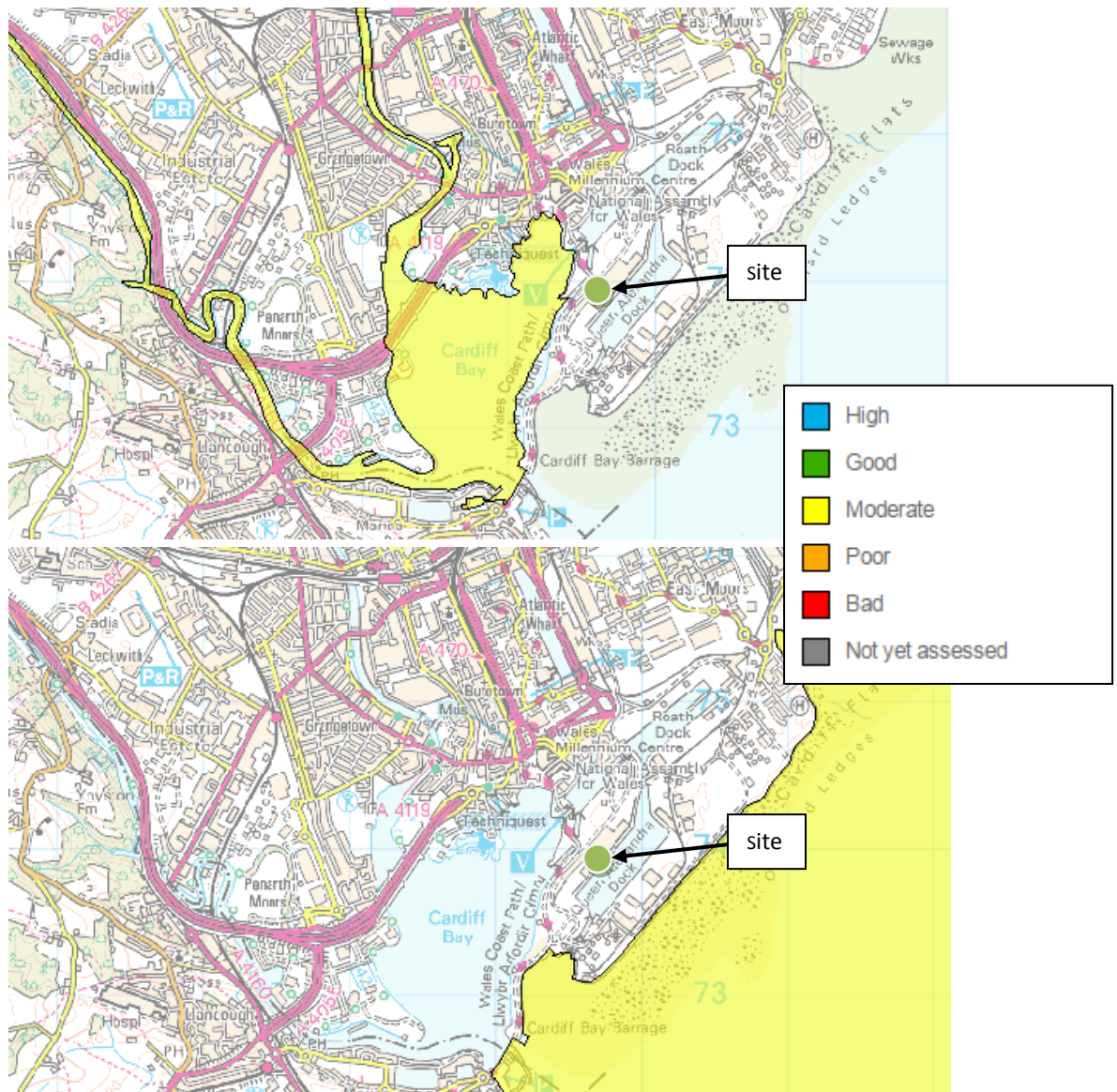


Figure 3.10: Cardiff Bay & Severn Estuary - Current ecological quality³

³ <http://maps.environment-agency.gov.uk/>

The site is approximately 510 metres NNE of the Severn Estuary (estuarine environment). The water body is classified as having moderate ecological quality and good chemical quality (*Figure 3.10*).

3.1.4 Risk of Flooding

According to the EA/NRW the site is not at risk of flooding from Rivers or the Sea (*Figure 3.11*).



Figure 3.11: Risk of flooding due to Rivers and Sea⁴

3.1.5 Ecology

According to the Magic database the adjacent Severn estuary is classified as a:

- Special Areas of Conservation (Wales) – Ref. UK0013030
- Special Protection Areas (Wales) – Ref. UK9015022
- Ramsar Sites (Wales) – Ref. UK11081
- Sites of Special Scientific Interest (Wales) – SSSI Code: 33WGX

The features are outlined in *Figure 3.12*.

⁴ <http://maps.environment-agency.gov.uk/>

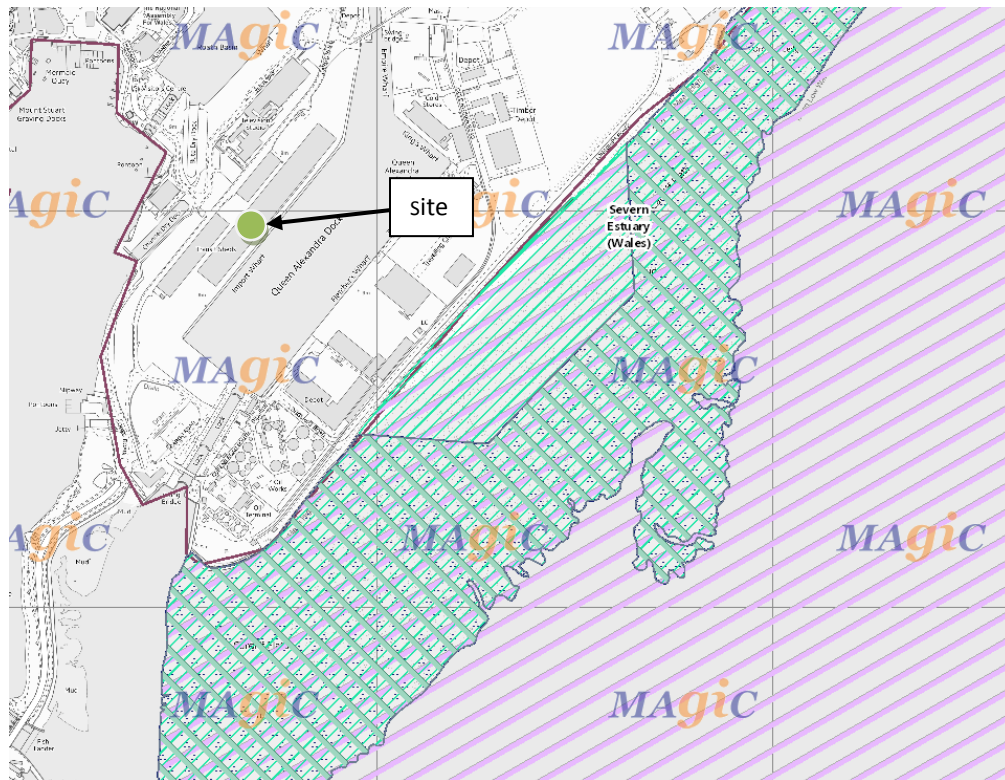


Figure 3.12: Statutory ecological and habitat classifications⁵

According to the Joint Nature Conservation Committee (JNCC) the Severn Estuary is a large estuary with extensive intertidal mud-flats and sand-flats, rocky platforms and islands. Saltmarsh fringes the coast backed by grazing marsh with freshwater ditches and occasional brackish ditches. The seabed is rock and gravel with sub-tidal sandbanks. The tidal regime results in plant and animal communities typical of the extreme physical conditions of liquid mud and tide- swept sand and rock. The species-poor invertebrate community includes high densities of ragworms, lugworms and other invertebrates forming an important food source for passage and wintering waders. A further consequence of the large tidal range is an extensive intertidal zone, one of the largest in the UK. The site is of importance during the spring and autumn migration periods for waders moving up the west coast of Britain, as well as in winter for large numbers of waterbirds, especially swans, ducks and waders.

The proposed activity is undertaken approximately 510 metres NNE from the edge of the statutory defined area.

⁵ <http://magic.defra.gov.uk/MagicMap.aspx>

3.1.6 Human Receptors

In 1987 the Cardiff Bay Development Corporation was created as part of the British Governments 'Urban Development Programme' to regenerate deprived areas of British Inner cities. They received funding from the British Government and Europe and commenced the upgrading of roads and open spaces, the building of 3,000 houses and the construction of the Cardiff Bay Barrage.

There are principally three third-party activities within 300 metres of the installation centre, namely Doctor Who exhibition (250 metres), BBC Cymru studios (200 metres) and the Glowworks business centre (300 metres) apart from the other dock related activities and operators (*Figure 3.13*). The closest residential receptors are 590 metres north beyond the aforementioned landuses.

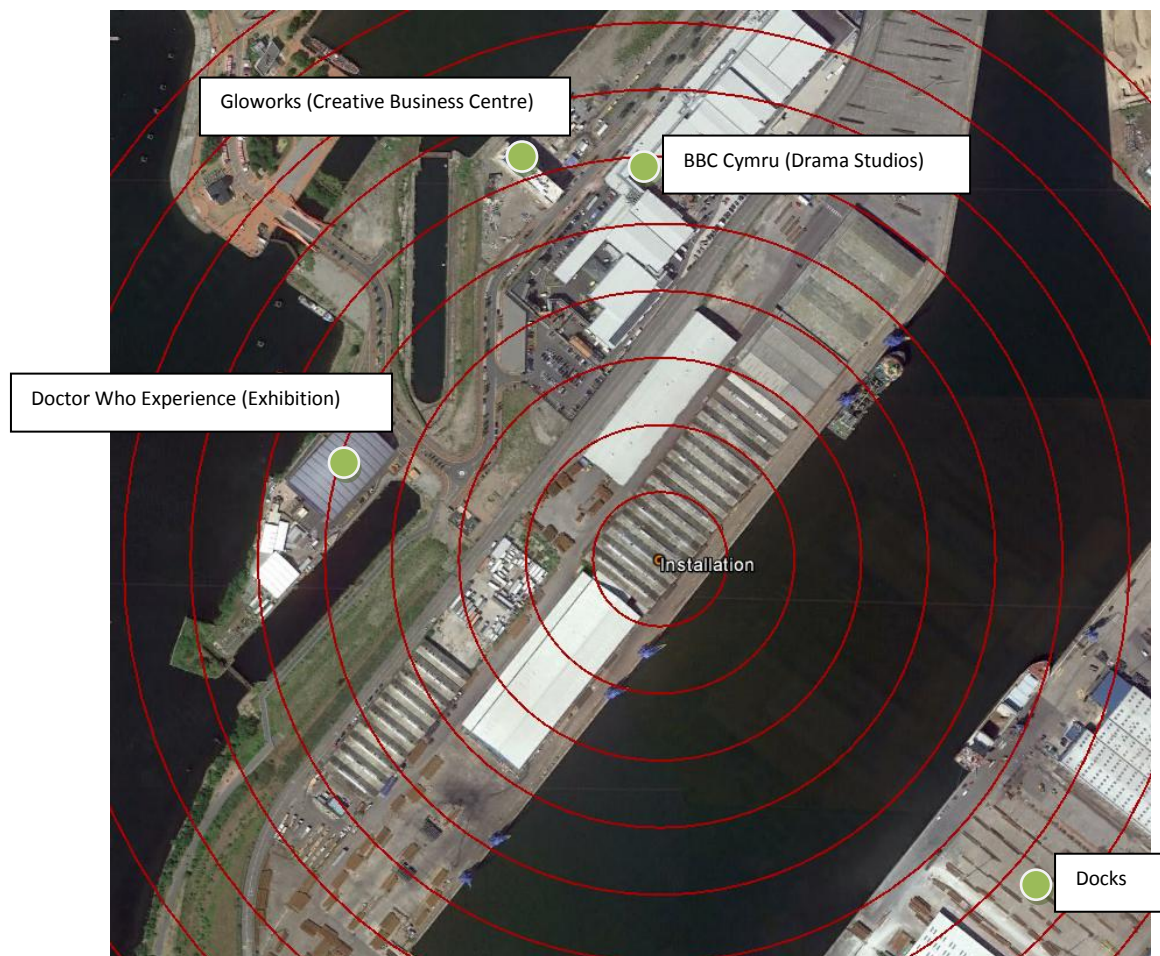


Figure 3.13: Surrounding activities (50 metre rings)

Google Earth Imaging with the permission of Google – Licensed to Earth and Marine Environmental Consultants Ltd

3.2 Pollution History

3.2.1 Pollution incidents that may have affected land

There have been no reported pollution incidents (that Cargo Services is aware of) that may have affected the land.

3.2.2 Historical land-uses and associated contaminants

According to publically available information⁶ the building of the Glamorganshire Canal in 1794, brought iron and coal down from the valleys. As this industry expanded it became obvious that a more efficient form of transport was required and in 1840 the Taff Vale Railway opened. This rapidly increasing iron and coal trade was also the catalyst for the construction of a number of docks during the 1830's. These included the Bute West Dock, which was the first dock to be opened by the 2nd Marquis of Bute in 1839 and its seaward entrance known as the Oval Basin, the Bute East Dock in 1855, Roath Basin in 1874, Roath Dock in 1887 and the Queen Alexandra Dock in 1907.

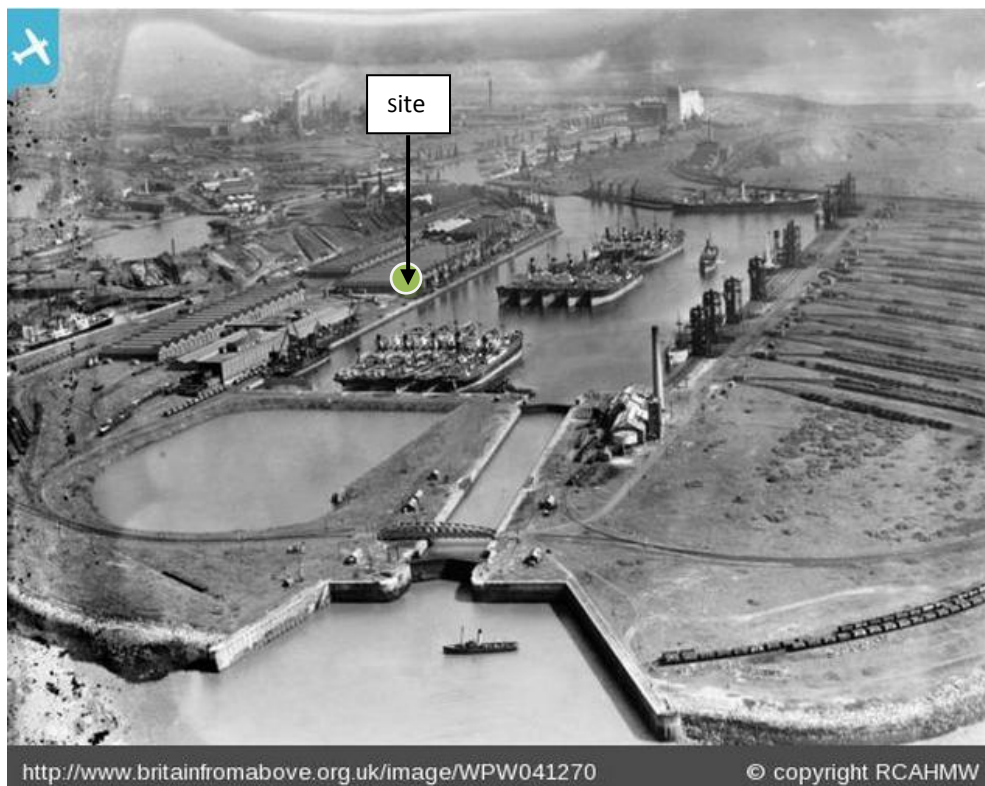


Figure 3.14: View of Cardiff Docks - Queen Alexandra Dock, oblique aerial view (1933)⁷

⁶ <http://www.cardiffbay.co.uk/index.php/history>

⁷ <http://www.britainfromabove.org.uk/image/wpw041270>

By the 1880's, Cardiff had transformed from one of the smallest towns in Wales to the largest and its port was handling more coal than any other port in the world. On the eve of the First World War in 1913, coal exports reached their peak at over 13 million tonnes.

The storage and use of historic materials within A-Shed (Queen Alexandra Dock) has not been confirmed. But as the EAF is solid material, located in well sealed bags and located on good quality hardstanding, the potential to impact the ground is deemed a very low risk.

3.2.3 Any visual/olfactory evidence of existing contamination

No visual and/or olfactory evidence of contamination was noted in the area during the site inspection conducted on April 14th 2015.

3.2.4 Evidence of damage to pollution prevention measures

All pollution prevention measures (*i.e.* tertiary containment surfaces) meet current BAT standards as defined within the EA Technical Guidance Note for the Recovery and Disposal of Hazardous and Non Hazardous Waste (EPR 5.06).

3.2.5 Evidence of historic contamination, for example historical site investigation, assessment, remediation and verification reports (where available)

No ground condition information has been previously collected.

3.2.6 Baseline soil and groundwater reference data

No ground condition information and/or monitoring has been undertaken. Given the very low likelihood that the stored EAF materials could impact the ground, baseline soil and groundwater samples will not be collected.

4 Permitted Activities

The permitted activities are outlined below.

4.1 Schedule 1 activities

The stationary technical unit is:

- Schedule 1, Section 5.6, Part A(1)(a) permitted activity *i.e.* 'temporary storage of hazardous waste (**EAF WASTE**) with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections 5.1, 5.2, 5.3 and paragraph (b) of this Section, except— (i) temporary storage, pending collection, on the site where the waste is generated, or (ii) activities falling within Section 5.2.'

The directly associated activities, as listed in the environmental permit, are:

- the unloading of road vehicles within A-Shed; and
- the movement of sealed big bags to the dockside.

4.2 Non-permitted activities undertaken

There are no non-permitted activities undertaken at the site. The portion of A-Shed used by Cargo Services is only used for the storage of EAF waste.

4.3 Other requirements

Plans showing activity location and layout are provided in *Annex A*.

An environmental risk assessment (ERA) is provided within the main application document.

Appendix A – Figures

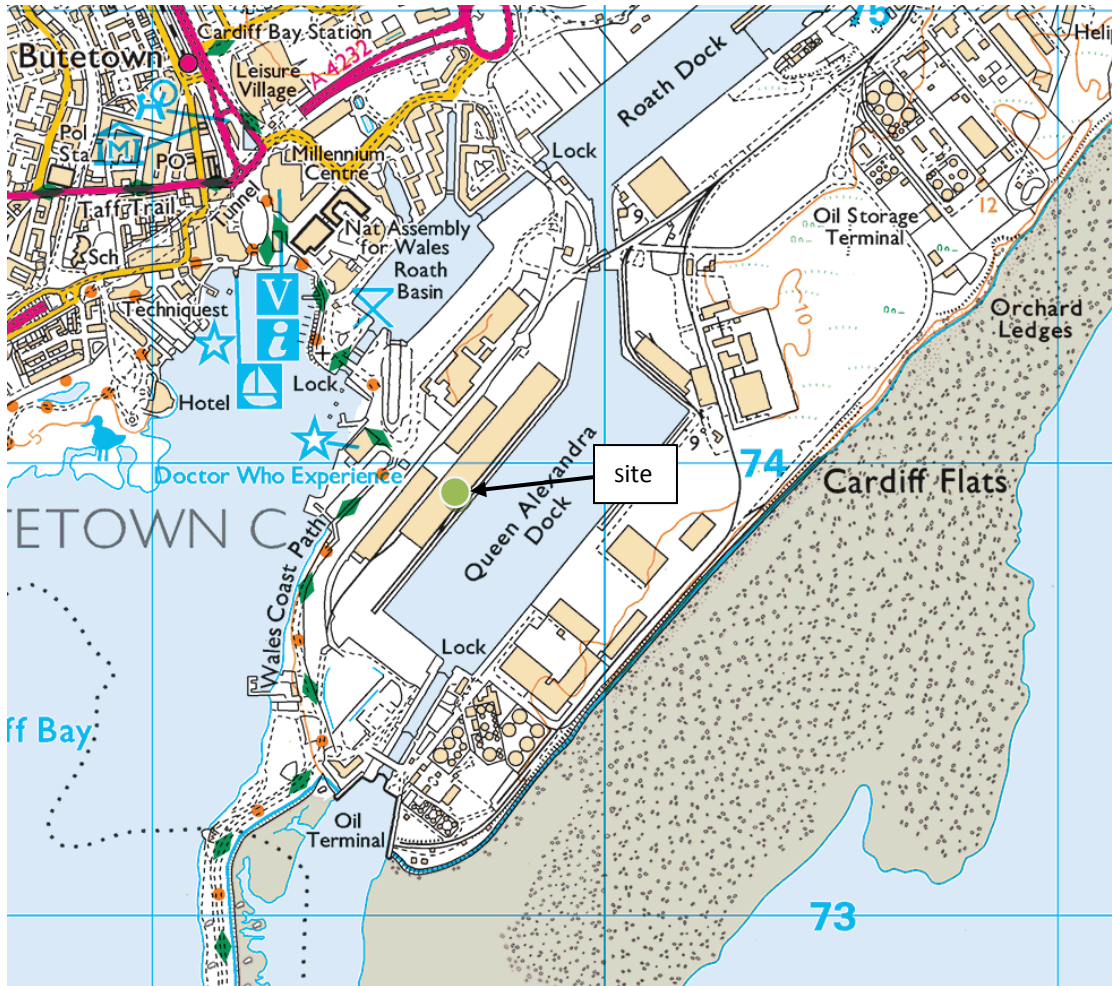


Figure A1: Site location (Ordnance Survey 1:25,000)

Ordnance Survey 1: 25,000 scale map with the permission of The Controller of Her Majesty's Stationery Office, Crown Copyright
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Site Condition Report

Permit Ref: EPR/QP3035WK

NRW Ref: WPCC2572

Cargo Services (UK) Limited

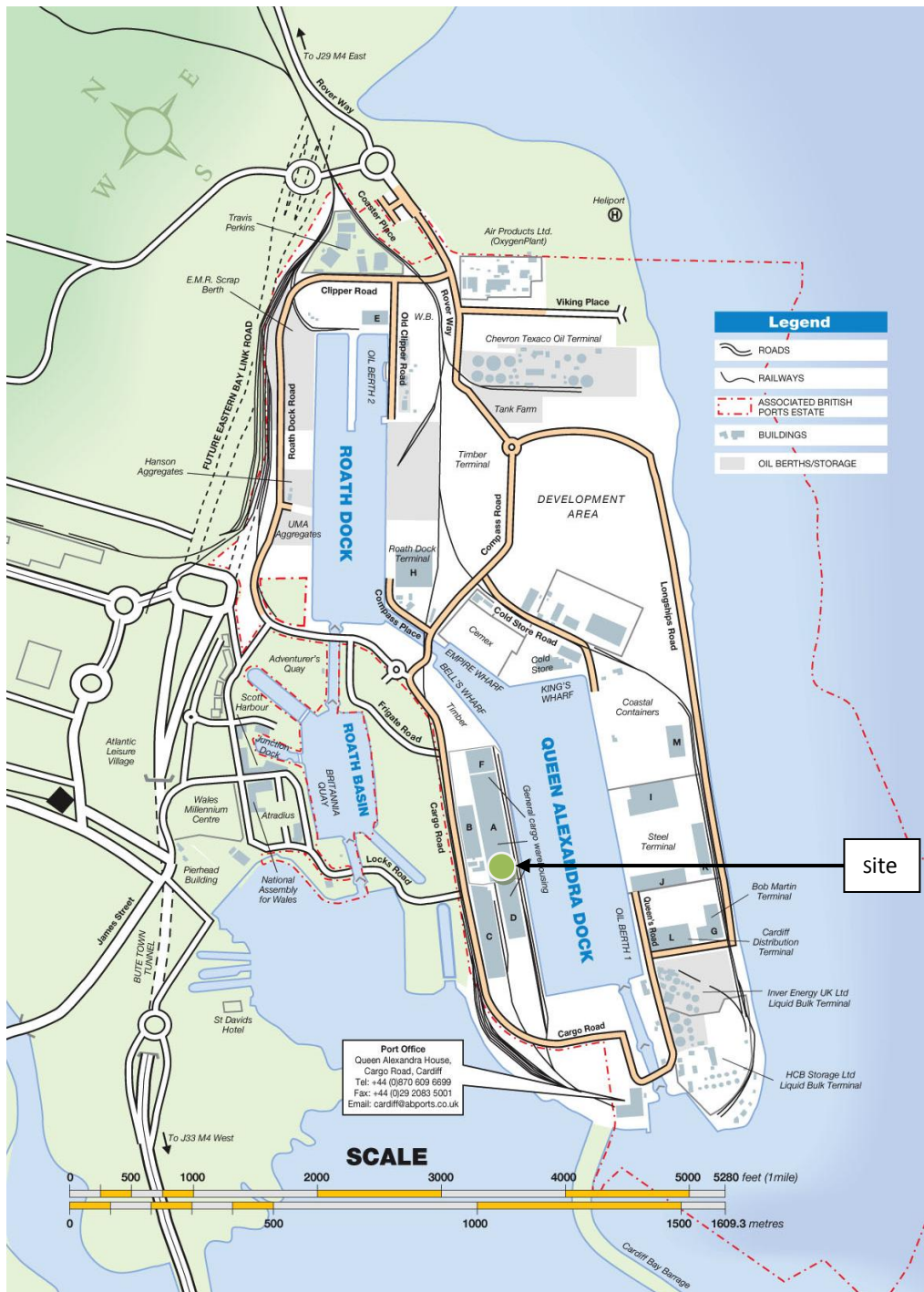
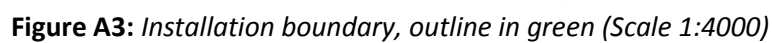


Figure A2: Cardiff docks layout⁸

⁸ http://www.southwalesports.co.uk/Port_Information/Cardiff/Cardiff_Port_Plan/



May 2015