

Site Condition Report

Report Ref: ITM - EP001 – 003A

Submitted to:

Environment Agency

In Support of Permit Application Ref:

EPR/HP3640QD/A001 & EPR/AP3225SE/P001

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Date: 7th August 2023

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1. Introduction

1.1 Background

The following Site Condition Report (SCR) has been developed for ITM Power (Trading) Limited, located in Unit 3 Bessemer Park, Shepcote Lane, Sheffield. S9 1DZ. The National Grid Reference for the site is SK 39842 90409. The report is based on the Environment Agency’s ‘H5 Site condition report- guidance and templates’ guidance.

The site is applying for an Environmental Permit, pre-application reference number EPR/HP3640QD/A001 & EPR/AP3225SE/P001 details of the environmental permit application can be found within the report reference ‘ITM-EP002-007 Installation Information’ and other supporting documents referenced therein.

1.2 SCR Scope

This report covers the area of the site that is being included within the Installation Boundary, as shown by the ‘Installation Boundary Plan’ within report ITM-EP002-004.

1.3 Sources of Information

The following sections detail the sources of desk study information searched for in order to describe the environmental setting and, in particular, to determine the potential for substances to be present in, on or under the land associated with present and past uses of the site and its surrounding areas.

DEFRA and Environment Agency sources along with internet-based sources were used to provide the following data:

- Groundwater Source Protection Zones
- Flood Risk and surface water features

The following reports were also used to provide background environmental data (made ground conditions, geology, site history, site contamination status and conceptual model):

Table 1.1 – Sources of information			
Report reference	Report Reference	Report Date	Report Author
Ground Investigation Report (GIR) Volume 2 Interpretative Report and Preliminary Geotechnical Design Report Phase 1 Peel Logistics Sheffield	18012J-03	September 2018	Discovery CE
Phase 2 Area, site investigation, risk assessment and remediation statement, Revision A.	L19-3070	20 May 2019	Nova Consulting
Phase 2 Area, Controlled Water Remediation Methodology	L19-3070	10 Jun 2019	Nova Consulting
Phase 2 Area Groundwater Remediation Validation Report	L19-3070	11 Sep 2020	Nova Ambiente

1.4 Report Format

This report has been set out as follows:

- Site Details
- Site Description
- Environmental Setting
- Land Pollution History
- Relevant Hazardous Substances (RHS) information

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2 Site Details

2.1 Site Details

Site details	
Name of the applicant	ITM Power (Trading) Limited
Activity address	Unit 3 Bessemer Park, Shepcote Lane, Sheffield. S9 1DZ
National grid reference	SK 39842 90409
Document reference and dates for Site Condition Report at permit application and surrender	ITM - EP002 - 003 Site Condition Report
Document references for site plans (including location and boundaries)	ITM - EP002 - 004 Site Drawings & Drainage Plan

2.2 Condition of the Land at Permit Issue

Condition of the land at permit issue	
Environmental setting including: <ul style="list-style-type: none"> • geology • hydrogeology • surface waters 	The environmental setting of the site is detailed in Section 4 of this report.
Pollution history including: <ul style="list-style-type: none"> • pollution incidents that may have affected land • historical land-uses and associated contaminants • any visual/olfactory evidence of existing contamination • evidence of damage to pollution prevention measures 	The pollution history assessment for the site area has been detailed in Section 5 of this report.
Evidence of historic contamination, for example, historical site investigation,	The pollution history assessment for the site area has been detailed in Section 5 of this report.

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assessment, remediation and verification reports (where available)	
Baseline soil and groundwater reference data	Provided in Appendices 1-4
Supporting information	The source information used to produce the Site Condition Report has been listed in Section 1.3.

2.3 Permitted Activities

Permitted Activities	
Permitted activities	<p>Environmental Permitting (England and Wales) Regulations SI 2016/1154.</p> <p>Section 4.2 Inorganic Chemicals Part A(1)(b) Unless falling within any other Section, any manufacturing activity which is likely to result in the release into the air of any hydrogen halide (other than the manufacture of glass or the coating, plating or surface treatment of metal) or which is likely to result in the release into the air or water of any halogen or any of the compounds mentioned in paragraph (a)(vi) (other than the treatment of water).</p> <p>Section 4.2 Inorganic Chemicals Part A(1) (c) Unless falling within any other Section, any manufacturing activity (other than the application of a glaze or vitreous enamel) involving the use of, or the use or recovery of, any compound of any of the following elements—</p> <ul style="list-style-type: none"> (i)antimony, (ii)arsenic, (iii)beryllium, (iv)gallium,

	<p>(v)indium, (vi)lead, (vii)palladium, (viii)platinum, (ix)selenium, (x)tellurium, (xi)thallium,</p> <p>where the activity may result in the release into the air of any of those elements or compounds or the release into water of any substance listed in paragraph 7(1) of Part 1 of this Schedule.</p>
Non-permitted activities undertaken	None within this application Installation Boundary
Document references for: <ul style="list-style-type: none"> • plan showing activity layout; and • environmental risk assessment. 	The site layout is detailed in the drawings contained with report referenced ITM – EP002 – 004. Environmental risk has been assessed within the report ITM – EP002 – 005.

3 Site Description

3.1 Site Description

3.1.1 Topography

The operational areas to be included within the installation boundary are relatively flat and covered by hardstanding connected to sealed drainage systems.

3.1.2 Drainage Description

The drainage system on site comprises roof, surface, trade effluent and foul.

The roof and surface drain to a public surface water sewer on Shepcote Lane managed by water undertaker Yorkshire Water.

The trade effluent and foul water drain to a public foul sewer on Shepcote Lane managed by water undertaker Yorkshire Water.

Further details on site drainage area provide within permit application report ref: ITM – EP002 – 004.

3.1.3 Operational Areas and Bunds

All operational areas to be included within the Permit Boundary are provided with an impermeable surface. Secondary containment systems are provided on-site for all bulk hazardous liquid materials stored externally.

3.1.5 Surface Water Features

There are no surface water features within the installation boundary.

3.2 Potential Contamination Sources from Proposed Use

The potential contamination sources from the use of the site, based on external storage in bulk, are (See also ‘ITM-EP002-007 Installation Information’):

- Waste Sulphuric Acid (2no. IBC’s, 1000 litres, stored in secondary containment cabinet)
- Wastewater effluent storage (2no. IBC’s, 1000 litres, stored in secondary containment cabinet)
- Hydrochloric Acid (2no. IBC’s, 1000 litres, provided with secondary containment)

It should be noted that the environmental risk associated with the storage and handling of these materials has been assessed as being low/medium (see report Environmental Risk Assessment ITM-EP002-005).

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4 Environmental Setting

4.1 Geology and hydrology

Published geological information and a review of historical records of the Site indicates the following:

Table 4.1 – Site Geology	
Made Ground	
First Bedrock beneath the site	The Site is underlain by the Pennine Middle Coal Measures Formation. This formation is described as a “ <i>cyclic sequence of siltstone, mudstone and sandstone including thin seams of poor quality coal</i> ”.
Mining	<p>The Site is within an area, which is in the likely zone of influence from workings in five seams of coal at 140m to 610m depth and last worked in 1942, any ground movement associated with these seams should have ceased. The Site is not in the likely zone of influence of any present or future underground coal mining, however, reserves of coal exist in the local area that could be worked at some time in the future.</p> <p>The Site is not within the boundary of any past, current or future opencast site from which coal would be removed by opencast methods.</p> <p>There are no known coal mine entries within, or within 20m of the Site boundary.</p>

4.2 Hydrology

Table 4.2 – Area Hydrology	
Bedrock Aquifer Designation*	The Pennine Middle Coal Measures Formation underlying the Site is classified as a Secondary A Aquifer – permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.
Depth to groundwater beneath Site	Groundwater depth has been monitored in eight boreholes across the Site on six occasions between July and October 2018. The depth to groundwater at the Site was noted to vary between 0.93m bgl to and 4.23m bgl, with an average depth of around 3m bgl.
Regional groundwater flow direction	Towards the western Site boundary.
Source Protection Zone	The Site is not identified as being located within a Source Protection Zone (SPZ).
Groundwater abstraction	There are no potable groundwater abstraction licences reported within 250m of the Site.

4.2.1 Area Hydrology

The nearest surface water feature identified is the Sheffield and Tinsley Canal located between 50m and 300m west of the Site. This joins the River Don 400m north of the Site. The River Don is also located approximately 700m to the west of the Site.

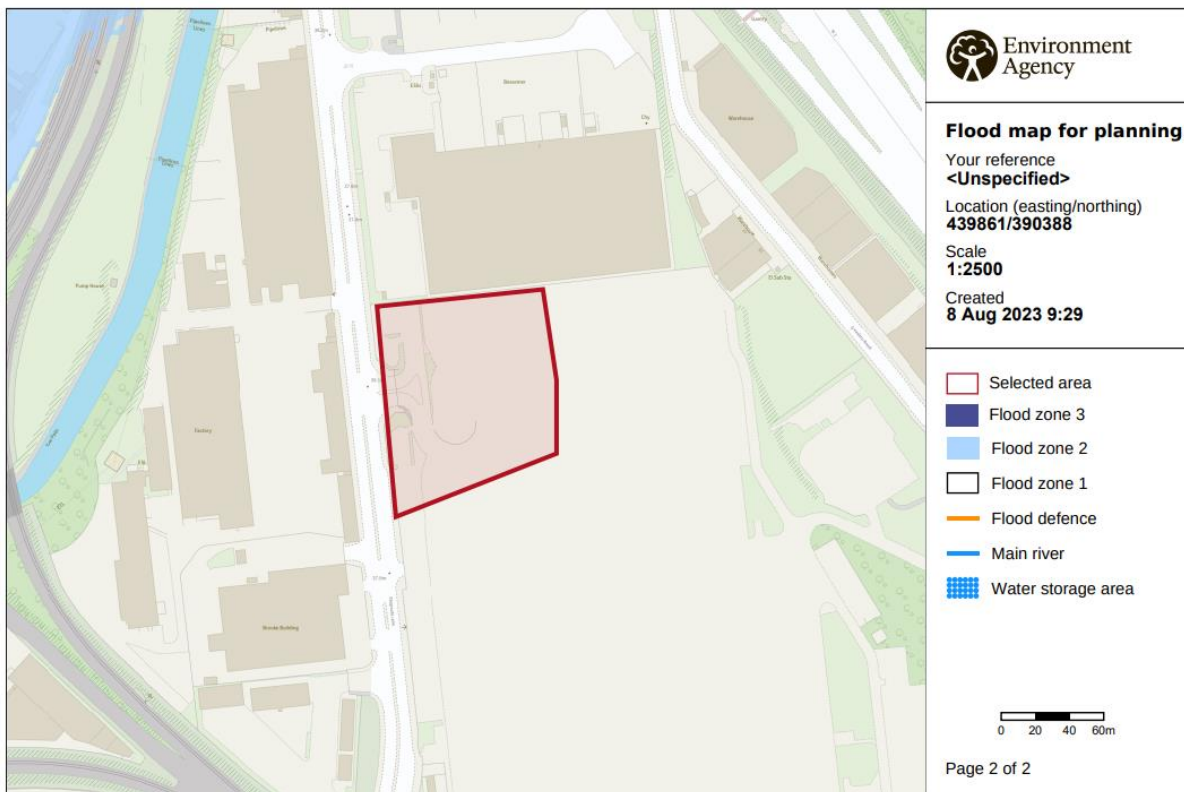
4.3 Natural Impacts

4.3.1 Radon Potential

The property is in Radon Affected Area (1-3% of the homes are estimated to be at or above the Action Level).

4.3.2 Flood Risk

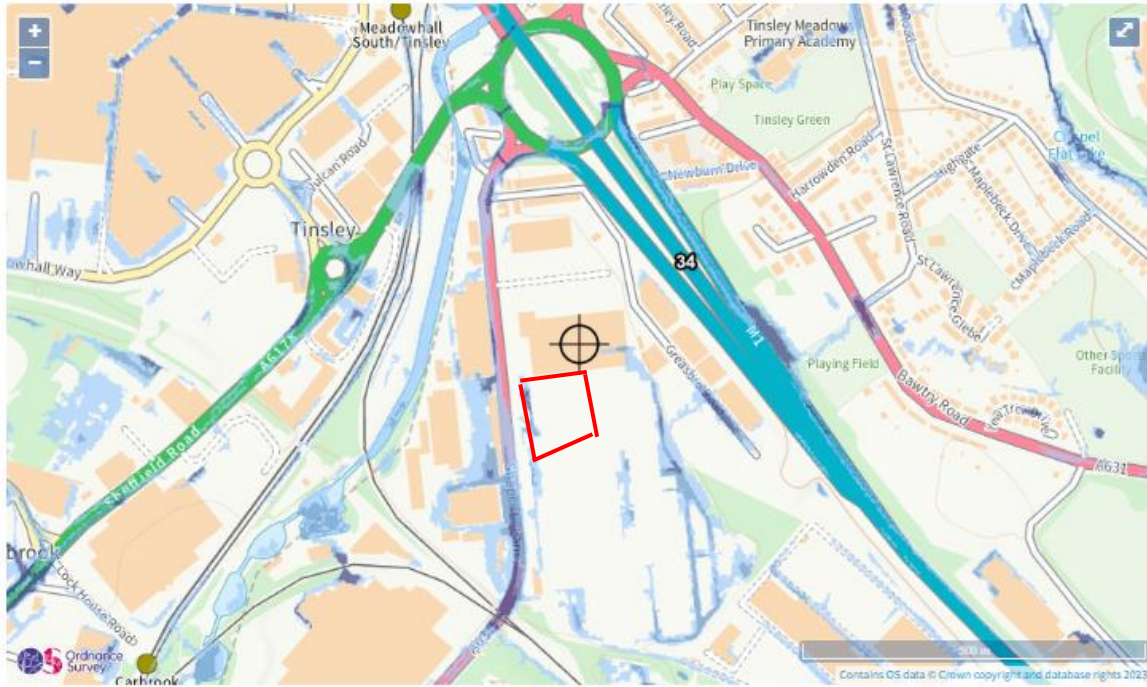
All of the installation is located in a flood zone 1: - Land having a less than 1 in 1,000 annual probability of river or sea flooding.



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All of the installation is located in an area that is very low risk from surface water flooding.



Extent of flooding from surface water

● High ● Medium ● Low ○ Very low ⊕ Location you selected

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5 Land Pollution History

5.1 Historical Development of the site and Adjacent Land

Bessemer Park Unit 2 was constructed in 2019, site investigations were performed pre and post construction.

The site investigations consisted of groundwater and soil sampling and determination of any existing pollution to the installation site from previous occupants of the site.

Table 5.1 provides the site investigation work carried out pre-construction.

The historical development of the site and the adjacent land is detailed in the following reports:

Table 5.1 – Historical Development			
Report reference	Report Reference	Report Date	Report Author
Ground Investigation Report (GIR) Volume 2 Interpretative Report and Preliminary Geotechnical Design Report Phase 1 Peel Logistics Sheffield	18012J-03	September 2018	Discovery CE
Phase 2 Area, site investigation, risk assessment and remediation statement, Revision A.	L19-3070	May 20 2019	Nova Consulting

The site investigation determined that groundwater remediation for free-phase hydrocarbons was necessary and full details of the remediation can be found in the reports listed in Table 5.3.

Table 5.3 – Historical Development			
Report reference	Report Reference	Report Date	Report Author
Phase 2 Area, Controlled Water Remediation Methodology	L19-3070	June 10, 2019	Nova Consulting
Phase 2 Area Groundwater Remediation Validation Report	L19-3070	11 Sep 2020	Nova Ambiente

5.2 Potential Contamination Sources from Historical Land Use

There are no potential contaminants associated with historical land use that could be consistent with Relevant Hazardous Substances (RHS) associated with the existing installation activities included in the Installation Boundary.

Appendix 1: Discovery CE Ground investigations

Please see attached report reference 18012J-03, dated September 2018.

Appendix 2: Phase 2 Area, site investigation, risk assessment and remediation statement, Revision A.

Please see attached report reference L19-3070, dated 20th May 2019.

Appendix 3: Phase 2 Area, controlled Water Remediation Methodology.

Please see attached report reference L19-3070, dated 10th June 2019.

Appendix 4: Phase 2 Area Groundwater Remediation Validation Report

Please see attached report reference L19-3070, dated 11th Sep 2020.

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Appendix 5: Relevant Hazardous Substances

The relevant hazardous substances for the Installation are considered to be:

- Waste sulphuric acid
- Wastewater effluent contaminated with Iridium and Platinum ink
- Hydrochloric Acid

These are the only materials present in significant quantities which, if released to the environment, may have hazardous properties that could potentially cause an impact (see report reference ‘ITM-EP002-007 Installation Information’).

The risk assessments contained within report ITM-EP002-005 have demonstrated the risk of these materials impacting underlying ground and ground water as low/medium, due to the following controls:

- Stored within dedicated containers
- Storage vessels provided with secondary containment
- All materials, storage and manual handling located on hardstanding
- EMS controls
- Spill kits
- No further additional site condition assessment is required, and the Site Condition Report can be taken as being representative of the whole site.

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