Report No	Date
[redacted]	**August 2025**
Project	
DAYS NEATH – PHASE 1 DESK STUDY	
Client	
Days	

Spectrum Geo Services
Foxglove Cottage,
Cwm Risca Lane,
Tondu,
BRIDGEND
CF32 0EH

© Spectrum Geo Services

Report No:	Date:
25035/R1	**August 2025**

Project:
DAYS NEATH – PHASE 1 DESK STUDY

Issue Number	Status	Description of Amendments

Report prepared by:	
Signed [redacted]	August 2025

This report is provided for the benefit only of the party to whom it is addressed. Spectrum Geo Services do not extend responsibility to any third party for the whole or any part of the contents. Spectrum Geo Services owes no duty of care in relation to this report to any third party. The investigation and reportage has been undertaken with all reasonable skill, care and due diligence. Spectrum Geo Services disclaims any responsibility to the client or others in respect of any matter(s) outside this agreed scope of the above works.

CONTENTS

1.0 INTRODUCTION 5
1.1 Introduction 5
1.2 Scope of Works 5
1.3 Proposed Development 5
1.4 Limitations 5

2.0 SOURCES OF INFORMATION 6

3.0 EXISTING SITE INFORMATION 7
3.1 Site Location 7
3.2 Published Geology 9
3.3 Hydrology 12
3.4 Hydrogeology 12

4.0 DESK STUDY 13
4.1 Introduction 13
4.2 Spectrum Geo Services Desk Study 14
Hazard 15
Remarks 15
4.3 Radon Report 15
4.4 Coal Measures Ground Gas 15
4.5 Enviro Insight Report 16
4.6 Site Walkover 17
4.7 Made Ground 17
4.8 Landfill and Waste 17

5.0 ENVIRONMENTAL SETTING 18
5.1 Designated Environmentally Sensitive Sites 18
5.2 Environmental Permits, Incidents and Registers Map 18
5.3 Current Land Uses 19

6.0 INITIAL GEOENVIRONMENTAL CONCEPTUAL SITE MODEL 20
6.1 General 20
6.2 Potential Sources of Contamination 20
6.3 Potential Migration Pathways 22
6.4 Potential Receptors 22
6.5 Summary 23

7.0 PRELIMINARY RISK ASSESSMENT 26
7.1 Assessment of Environmental Risks Methodology 26

8.0 PRELIMINARY CONCEPTUAL MODEL AND QUALITATIVE RISK ASSESSMENT .. 28

9.0 PHASE1 CONCLUSIONS AND RECOMMENDATIONS 36
9.1 Conclusions 36
9.2 Recommendations 37

APPENDIX A 38
Drawings 38

APPENDIX B 39
Phase 1 Data 39

1.0 INTRODUCTION

1.1 Introduction

Spectrum Geo Services (SGS) were commissioned by Days to complete a Phase 1 Desk Study in support of Preapplication Q2025/0149 at a site at Neath Abbey, SA10 7DF.

1.2 Scope of Works

The objectives of this assessment are to undertake a Phase 1 Desk Study of the site. SGS purchased and assessed Phase 1 data for the redline boundary of the target site, which is employed in the Risk Assessments.

The assessment is undertaken in accordance with the requirements of the Land Contamination Risk Assessment (LCRM) Guidance.

1.3 Proposed Development

It is understood that the purpose of this desk study is to inform of site conditions for the proposed change of use from a vehicle dealership to a Class B8 with ancillary trade counter use and associated development.

At the time of writing, no details were available.

1.4 Limitations

Subsoils are inherently variable and by their very nature are hidden from view such that no investigation can be exhaustive to the extent that all soil conditions are revealed. Conditions may therefore be present beneath the site that were not apparent from the data available for review.

This site has planning conditions attached in respect of contaminated land assessment.

2.0 SOURCES OF INFORMATION

The following sources of information have been used in preparation of this report:

- *Enviro and Geo Insight report GS-2B1-OXI-3ST-5BA.*
- *Large Scale Historic Maps*
- *Small Scale Historic Maps*
- *CON29M Coal Authority Report*

3.0 EXISTING SITE INFORMATION

3.1 Site Location

The site lies to the west of Neath, at Grid Reference 274304 197526, and is approximately 0.59ha.

The site is currently occupied by industrial buildings and hardstanding. A walkover Survey was undertaken and is discussed later.

The site is bounded by the A474 to the north, industrial buildings to the east and road and rail infrastructure to the south.

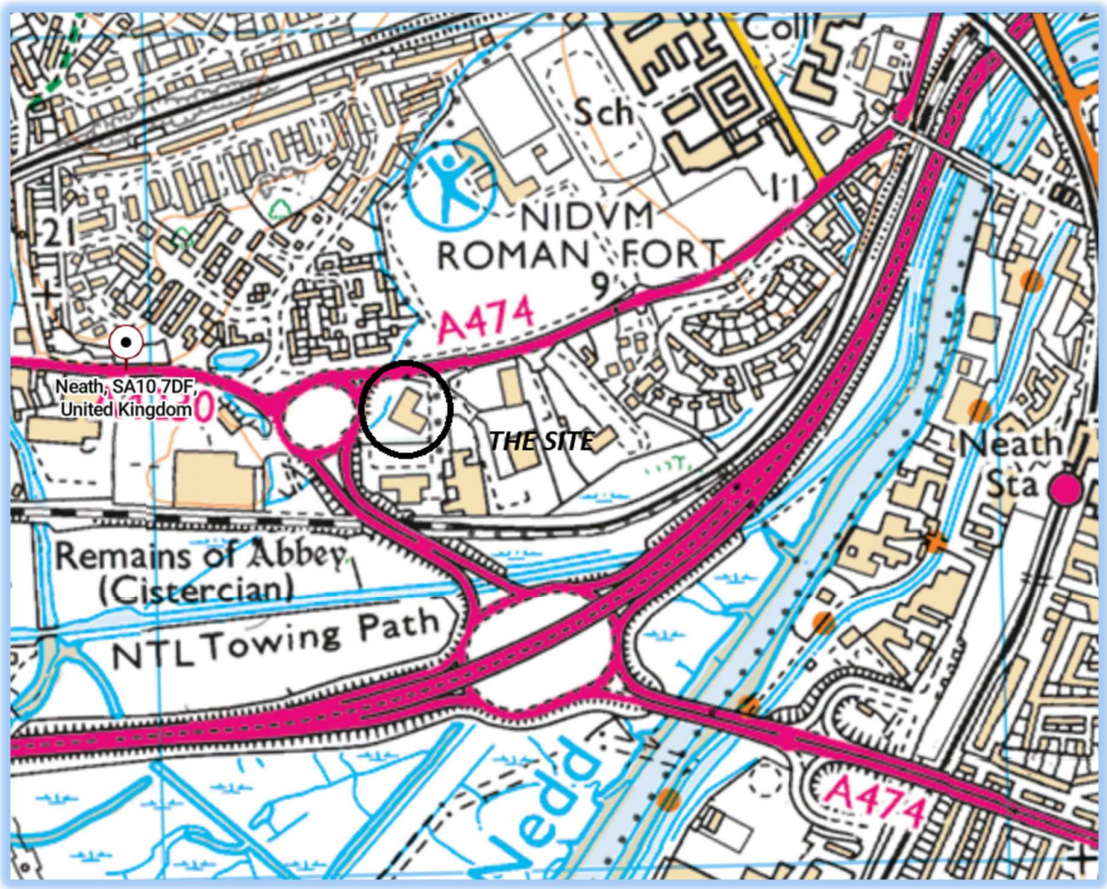

Figure 01. Site Location Plan

The planning red line is shown in Figure 2.

Figure 2: Planning Red Line Boundary.

3.2 Published Geology

Information published by the British Geological Survey (BGS) suggests the site to be underlain by a sequence comprising;

Glaciofluvial Sheet Deposits, Devensian - Sand and gravel. Sedimentary superficial deposit formed between 116 and 11.8 thousand years ago during the Quaternary period.

Bedrock Geology

Swansea Member - Sandstone. Sedimentary bedrock formed between 309.5 and 308 million years ago during the Carboniferous period.

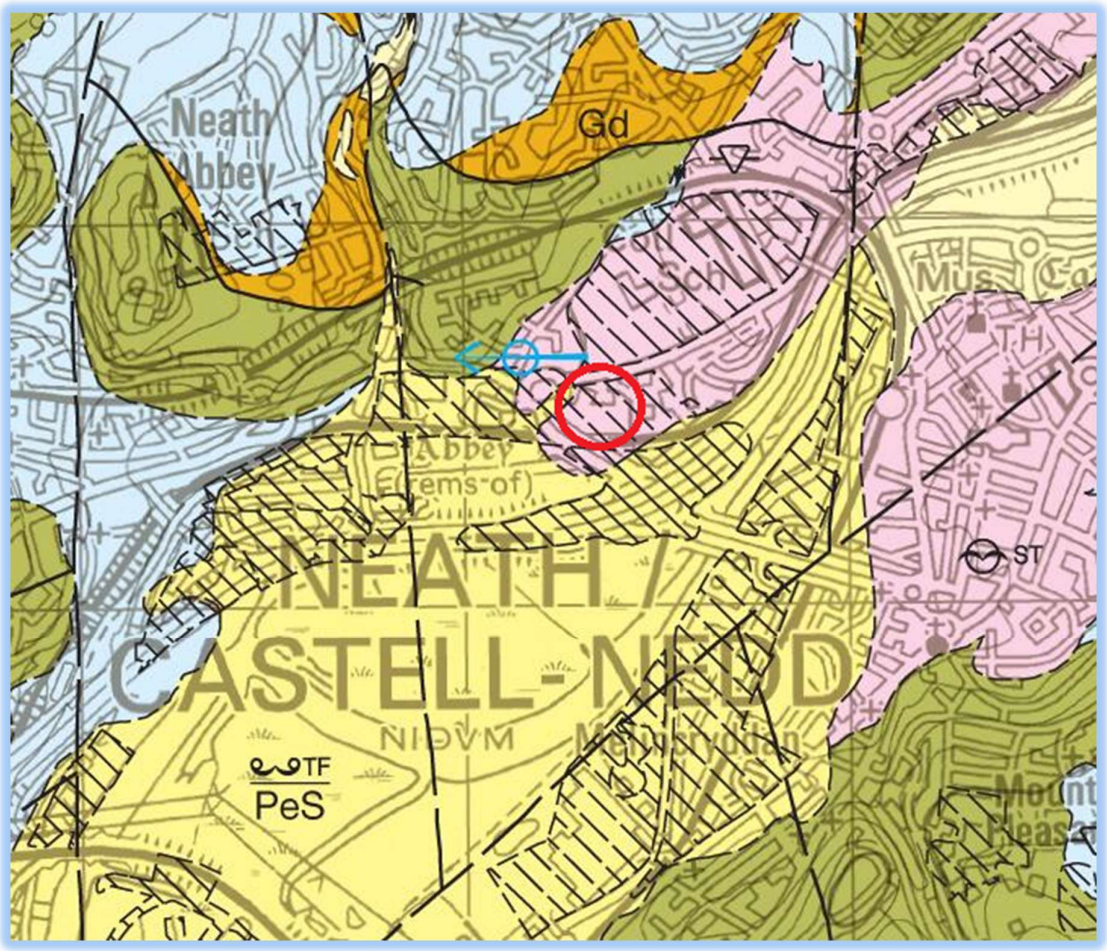

Figure 03a: Superficial Geological Setting

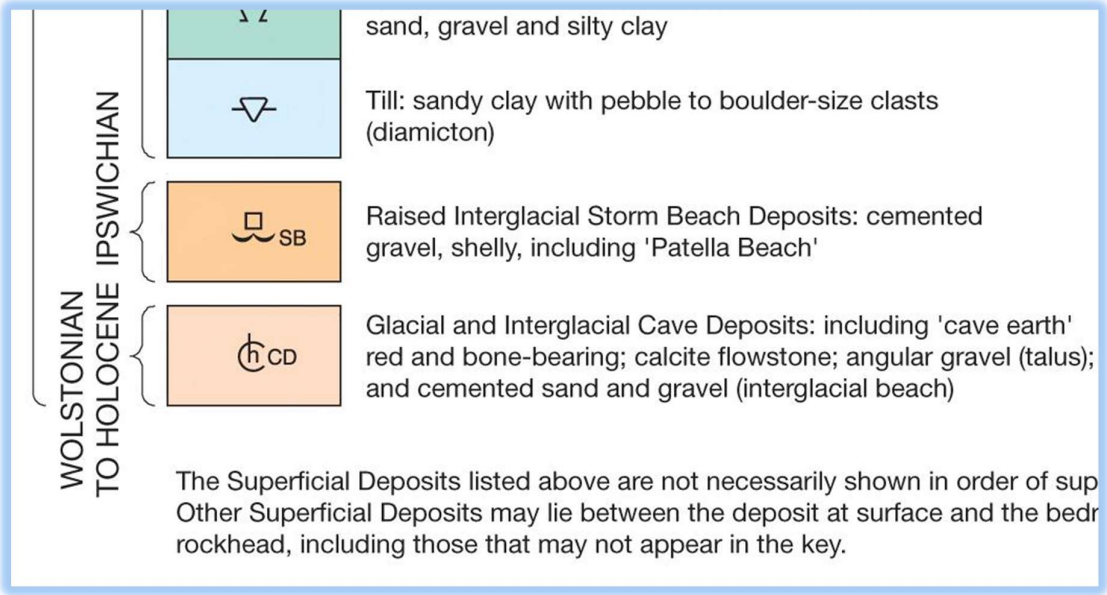

Figure 3b: Superficial Geological Column

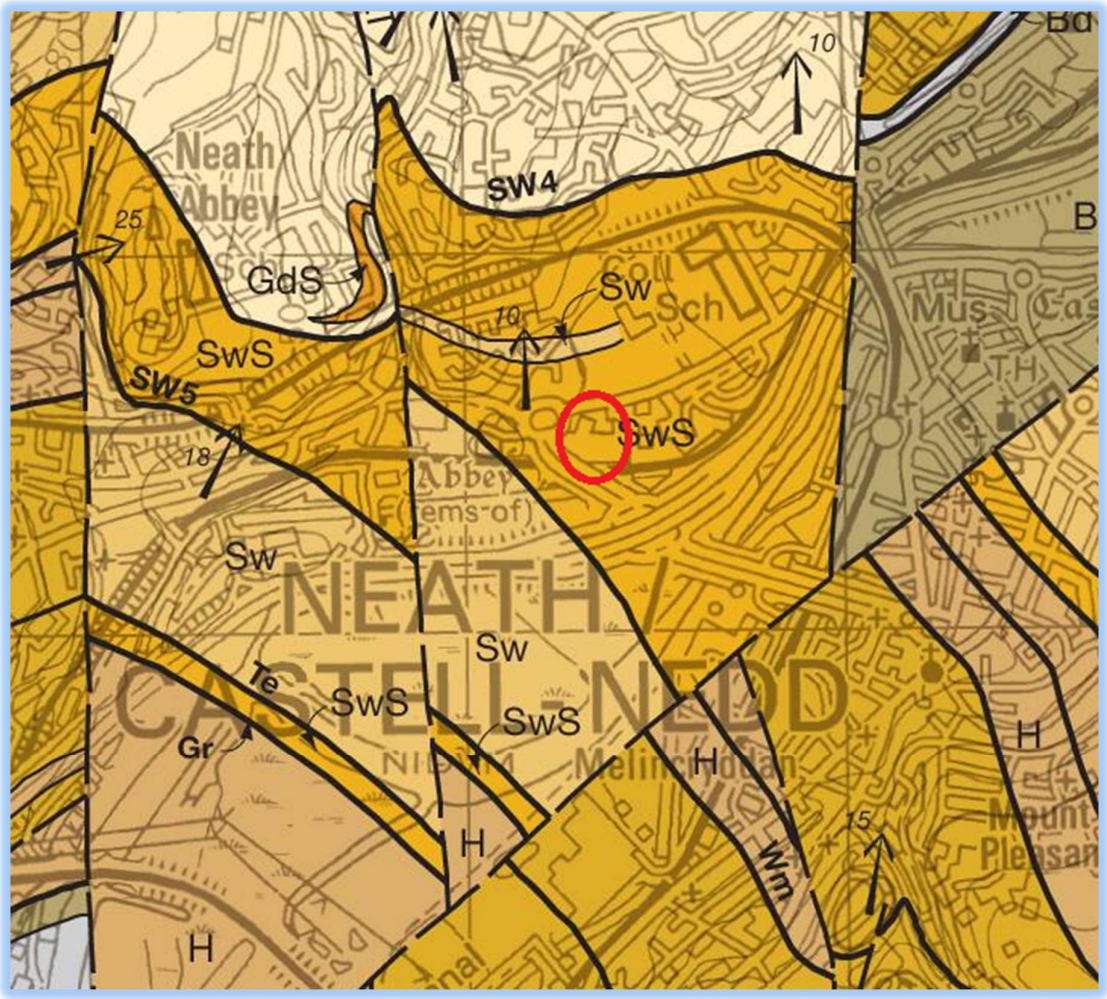

Figure 4a: Solid Geological Setting

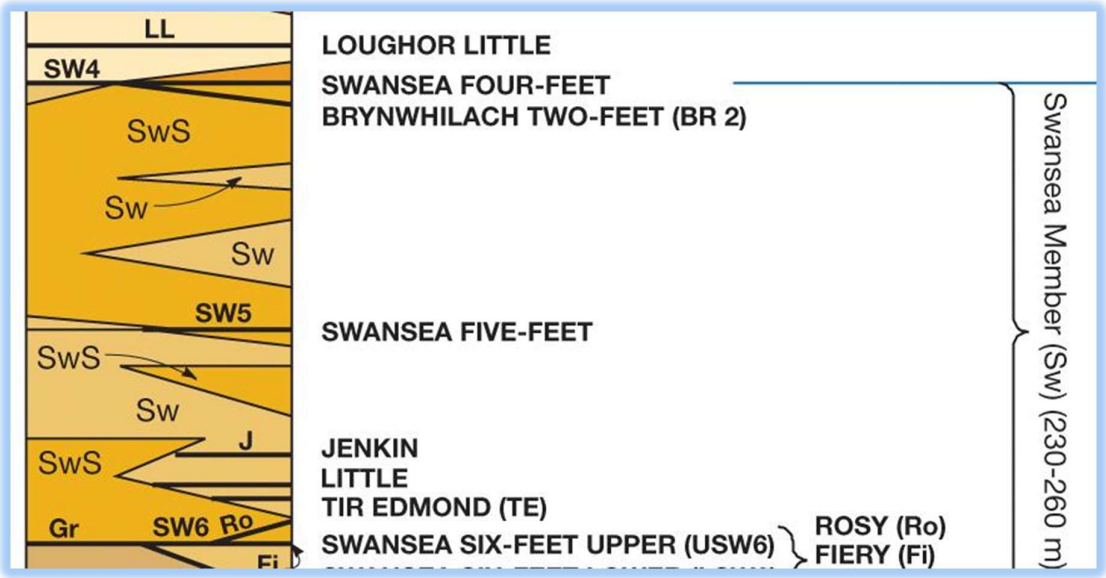

Figure 4b: Solid Geological Column

The solid geology is that of Coal Measures Cyclothems, dipping approximately 10degrees north. The Swansea 4ft seam outcrops to the north off the site, with what is likely to be the Loughor Little outcropping to the south, beneath the site area.

3.3 Hydrology

The site lies to the north of the River Neath, upon its former flood plain.

Thus, it is anticipated that the predominant groundwater flow is in a southerly direction.

3.4 Hydrogeology

The superficial hydrogeology is as a secondary aquifer, the solid geology being secondary (a).

No abstraction points are local to the site.

4.0 DESK STUDY

4.1 Introduction

This desk study has been prepared in accordance with British Standards BS 5930:2015+A1 (2020) and BS 10175:2011+A2 (2017) and all normative references, including the Environment Agency (2020) online guidance *Land contamination: risk management (LCRM)*.

The Desk Study which incorporates the records of a Field Reconnaissance (Site Walkover) presents and discusses the available data obtained for the site and surrounding area regarding its physical, historical and environmental setting. It identifies the potential issues at the site, develops an initial conceptual site model (CSM) for geoenvironmental considerations and provides an assessment of geotechnical aspects and other pertinent ground hazards that could affect the development.

The principal objective of this investigation and the context of the CSM developed within this report is to provide an assessment of potential significant risks in order to:

- *Assess the potential requirements for further mitigation or investigation of land contamination risks to ensure that the proposed development will be 'suitable for use'.*
- *Give an account of the anticipated ground conditions at the site based upon published geological and hydrogeological information.*
- *Provide an account of any past/historic mining activities on or near the site which may pose a geotechnical risk to the proposed works.*
- *Provide information for detailed scoping of intrusive investigations.*

4.2 Spectrum Geo Services Desk Study

A Groundsure EnviroInsight report (*GS-2B1-OXI-3ST-5BA*) was purchased for the redline boundary, together with historic maps and a CON29M Mining Report. A summary of the historic map data is presented in Table 4.2.

Date and Scale	On Site	Nearby
Ordnance Survey (1876-1879) Scales: 1:2,500 and 1:10,560	Undeveloped site.	What is now the A474 ran west-east at the northern site boundary. There was a Lodge gatehouse to Court Herbert across the A474. The Swansea railway line ran to the south of the site. To the west, in Neath Abbey was the Neath Abbey Colliery.
Ordnance Survey (1889 Scale: 1:2,500	As above.	As above
Ordnance Survey (1918 - 19) Scale: 1:2,500	As above	As above
Ordnance Survey (1935-40) Scale 1:2,500	As above	As above
Ordnance Survey (1950-51) Scale 1:2,500	In the very southern portion of the site, a clothing factory had been constructed.	To the south east, a printing works had been constructed. The clothing factory extends to the south,
Ordnance Survey (1964-65) Scale 1:1,250	As above	The printing works have changed to a Window Factory. Further east is an Omnibus Depot.
Ordnance Survey (1968) Scale 1:1,250	As above	A pond has been constructed to the west of the western boundary.
Ordnance Survey (1970) Scale 1:1,250	As above	As above

Ordnance Survey (1987-2003) Scale 1:1,250	A garage has been built at site	A warehouse has been built to the east

Table 4.2: Summary of Historic Map Data

A summary of the potential hydrological and hydrogeological hazards is presented in Table 4.2.1.

Hazard	Remarks
Surface Water Features / River Network	The River Dulais is located approximately 300 m northwest of the site. This runs is a northeast southwest direction and flows in a south-westerly direction. An unnamed watercourse is located approximately 100 m to the southwest of the site. This runs in a northeast southwest direction and flows in a south-westerly direction.
Surface Water Flood Risk	Medium Risk within 50m.
Fluvial Flood Risk	Medium Risk within 50m.
Flood Defences / Groundwater Flooding / Susceptibility and Confidence Areas	The site is at moderate risk of groundwater flooding.

Table 4.2.1: Summary of Hydrological and Hydrogeological Hazards

4.3 Radon Report

According to the Geo Insight report the estimated proportion of homes near the site that are above the radon action level is between 10 and 30%.

4.4 Coal Measures Ground Gas

Coal measures are known to underlie the site, the principal ground gasses associated with the Coal Measures are methane (CH_4) hydrogen sulphide (H_2S) and carbon dioxide (CO_2). All of these gases are considered detrimental to human health. Methane is potentially explosive in particular concentrations while H_2S and CO_2 are considered to be asphyxiants. CON29M states that there are no recorded incidents within the boundary. There are potential workings between 50 and 180m depth.

4.5 Enviro Insight Report

The Enviro Insight report assesses the recorded likelihood of occurrence of various environmental risks at the site, which are shown in Table 4.6.

Hazard	Risk Category	Remarks
Ground Workings – on-site and offsite	Low	On-site: none Offsite: • 233m W, Neath Abbey Colliery • 266m NW, Court Herbert Quarry • 302m W, Court Herbert Colliery, • 57m N, Unspecified Ground Workings • 115m W, Refuse Heap.
Shrink Swell Clay	Very Low	-
Landslides	Very Low	-
Ground Dissolution of Soluble Rocks	Negligible	-
Compressible Deposits	Negligible	-
Collapsible Deposits	Very Low	-
Running Sands	Negligible	-
Mining, Extraction and Natural Cavities – on-site and offsite	No	Potential to be investigated. 50m plus
Artificial Ground	Yes	Artificial ground is likely to be present given the previous use of the site and the close proximity to development.

Table 4.6: Potential Environmental Risks

4.6 Site Walkover

A walkover was undertaken as part of the Phase 1, and is appended to this report, together with site photographs. In general, the site was noted to be completely tarmaced, with a large industrial building at its centre.

The stream to the west of the site is heavily iron oxide stained.

4.7 Made Ground

According to the Geo and Enviro Insight report, the site and surrounding land does not contain made ground, however given the surrounding development, it is likely that some thickness of made ground may be present.

4.8 Landfill and Waste

The Geo and Enviro Insight report indicates that there are no current or historical landfills on site. There is 1 record of an historic landfill, 176m to the south, the other side of the River Neath. site. The landfill was for inert, industrial, commercial, household and SEPR.

A historic waste site is shown 113m west of the site. 61m to the east is a licenced waste facility for vehicle depollution, at Abbey Salvage.

5.0 ENVIRONMENTAL SETTING

5.1 Designated Environmentally Sensitive Sites

In the context of this report sensitive land usage covered by the Enviro Insight report includes the following:

- *Sites of Special Scientific Interest (SSSI) and Ramsar.*
- *Local and National Nature Reserves (LNR, NNR,).*
- *Special Protection Areas (SPA) and Special Areas of Conservation (SAC).*
- *World Heritage Sites and Ancient Woodlands.*
- *Areas of Outstanding Natural Beauty (AONB) and Environmentally Sensitive Areas (ESA).*
- *Forest and National Parks.*
- *Nitrate Sensitive Areas and Nitrate Vulnerable Zones (NSA, NVZ).*

The proposed development site does not lie within or close to any sensitive land uses as defined by the Enviro Insight report with the exception of Designated Ancient Woodland. The Geo and EnviroInsight report records several ancient woodlands, the closest being 985m to the west of the site.

5.2 Environmental Permits, Incidents and Registers Map

5.2.1 Industrial Sites Holding Licences and/or Authorisations

According to the EnviroInsight report, there is a licensed discharge to controlled waters approximately 61 m E of the site. A current permit (2013 to present) is in place at this location.

5.2.2 Dangerous and Hazardous Sites

According to the information provided in the EnviroInsight report there are no Dangerous or Hazardous sites or substances within 2 km of the site.

5.2.3 Environment Agency Recorded Pollution Incidents

According to the EnviroInsight report, there is 1 records of substantiated pollution incidents within 2500 m of the site. This was atmospheric pollutants Category 4.

5.2.4 Sites Determined as Contaminated Land Under Part 2a EPA 1990

The Enviro Insight report does not list any Environmental Permits, Incidents or Registers within 500 m of the site.

5.3 Current Land Uses

The Enviro Insight report covers other potential contamination sources close to the site including:

- *Days vehicles and other garages*
- *Textiles*
- *Petrol Station*
- *Gas and Electrical Features*

6.0 INITIAL GEOENVIRONMENTAL CONCEPTUAL SITE MODEL

6.1 General

In line with existing legislation and the current regime for the management of contaminated land, assessments are undertaken using a risk based approach. It is necessary to define a Conceptual Site Model (CSM) for the site which identifies the potential sources of contamination, the receptors and the pathways that can connect them. In order for there to be a risk from contamination, one or more relevant pollutant linkages must exist, connecting a contamination source, a receptor (an entity which might be affected by the contamination) and a pathway (or mechanism) by which the receptor can be exposed to the contaminant.

A discussion of potential sources, pathways and receptors and a tabulated summary of the CSM indicating potential pollutant linkages follows. The criteria used for assessing the relevance of identified potential pollutant linkages are based on the objectives stated above.

It is assumed that the development will be for commercial use.

There are no known environmental receptors associated with this development.

6.2 Potential Sources of Contamination

Potential sources of contamination are usually associated with current and former industrial activities, where the processing, storage, use, transportation and disposal of raw materials, products and wastes often leads to the contamination of underlying ground and groundwater. In addition, natural processes can also give rise to contamination such as hazardous gases.

Based on the information presented above, potential sources of contamination from current and historical site uses and from potentially significant off site sources have been assessed. Potential sources of contamination and contaminants at and within the site boundary are summarised in the tables below. These are based in the desk study data obtained and published guidance.

SITE USE ACTIVITY AND AREA	SOURCES	CONTAMINANTS
Vehicles sales and storage	Spills	Hydrocarbons, asbestos
General factory use	Degradation of macadam material leaching into the soils. Possible old services leaks, demolition rubble.	Unknown; possible hydrocarbons, metals, inorganic and organic contamination and asbestos

Table 6.2.1: Current on-site

SITE USE ACTIVITY AND AREA	SOURCES	CONTAMINANTS
Factory unit	Unknown.	Unknown possible hydrocarbons, heavy metals, inorganic and organic contamination.

Table 6.2.2: Historic on-site

SITE USE ACTIVITY AND AREA	SOURCES	CONTAMINANTS
Colliery	Minerals storage. Plant.	Organic and non-organics. Possible hydrocarbons

Table 6.2.3: Current off-site

SITE USE ACTIVITY AND AREA	SOURCES	CONTAMINANTS
Railway,	Spills and tipped material associated with the rail use and transport.	Unknown possible hydrocarbons, heavy metals, inorganic and organic contamination and asbestos

Table 6.2.4: Historic off-site

6.3 Potential Migration Pathways

The following potential pathways have been identified as potential migration pathways:

- *Direct soil, soil dust and/or water ingestion.*
- *Inhalation of soil dust, soil vapour and/or water vapour.*
- *Dermal contact with contaminated soil, soil dust and/or water.*
- *Lateral and vertical migration of gases and/or vapours through permeable strata.*
- *Permeable ground conditions/rainfall infiltration.*
- *Downward migration of soil pore water and shallow groundwater.*
- *Lateral groundwater flow.*
- *Preferential pathways including existing and proposed services trenches and foundations.*
- *Surface water runoff into drains.*

6.4 Potential Receptors

Potential receptors have been identified and categorised as follows:

6.4.1 Human Health

- *Construction workers (during construction phase)*
- *Future site users*
  o Adult staff
- *Neighbouring site occupants (light commercial properties within close proximity to site).*
- *Maintenance workers*

6.4.2 Controlled Waters

- *Bedrock is a Secondary A Aquifer.*
- *River Neath is located approximately 100 m northwest*

6.4.3 Environmental Receptors

There are no known environmental receptors.

6.4.4 Property, Buildings, Structures and Services

Any on or near-site, property, buildings, structures or services, within a location which is unduly effected by pollution and suffers damage or increased deterioration as a consequence, these features are likely to include:

- *On-site underground infrastructure associated with the proposed development.*
- *On-site infrastructure associated with the existing development.*
- *On-site foundations for buildings, both for permanent structures and temporary buildings.*
- *On-site damage to services which form part of the larger local and national infrastructure.*
- *Offsite damage to the foundations of nearby properties and roads.*
- *Offsite damage to any neighbouring services.*

6.5 Summary

The relevant pollutant linkages based on the potential sources, pathways and receptors outlined above are tabulated below:

SOURCE	PATHWAY	RECEPTOR
Current onsite: - Previous Building remains and demolition rubble - Potential Coal Seam Beneath Site Contaminants: - Hydrocarbons - Possible metals - Inorganic and organic contaminants - Asbestos - Ground gases	Ingestion, direct contact, inhalation of dust and vapours. Migration via permeable strata into groundwater. Direct contact with contaminated soils and waters. Lateral Groundwater Migration. Ground gas generation.	Workers at time of site development. Future maintenance workers for upkeep of site. Future site users. Aquifers underlying the site.
Historic onsite: - Past building on site - Coal mining (underground) Contaminants: - Hydrocarbons, - Metals,	Ingestion, direct contact, inhalation of dust and vapours. Migration via permeable strata into groundwater. Direct contact with	Workers at time of site development. Future maintenance workers for upkeep of site. Future site users.

- Inorganic and organic contamination - Ground gases - Asbestos - Unknown in places	contaminated soils and waters. Lateral Groundwater Migration. Ground gas generation.	Aquifers underlying the site.
Current offsite: - Rail line Contaminants: - Possible Hydrocarbons, asbestos, metals	Lateral Groundwater Migration. Ground gas generation.	Workers at time of site development. Future maintenance workers for upkeep of site. Future site users. Aquifers underlying the site.
Historical offsite: - Mining processes, - Railway, Contaminants: - Hydrocarbons - Metals - inorganic and organic contamination - Asbestos	Dust migration to site. Lateral Groundwater Migration. Given the proximity to the site of these sources there is also potential for contaminated material to have been moved during the previous site developments.	Workers at time of site development. Future maintenance workers for upkeep of site. Future site users. Aquifers underlying the site.

Table 6.5: Initial Conceptual Site Model

There are currently a series of uncertainties and assumptions in the CSM presented above as this is based on desk study information only:

- *Ground conditions have been conceptualised based on BGS geological maps and other primarily desk based information.*
- *The presence and extent of any suspected contamination is unknown in the absence of site investigation data.*
- *The presence and depth of any groundwater bodies at the site is currently unknown.*
- *The ground gas regime within the site has not been characterised.*

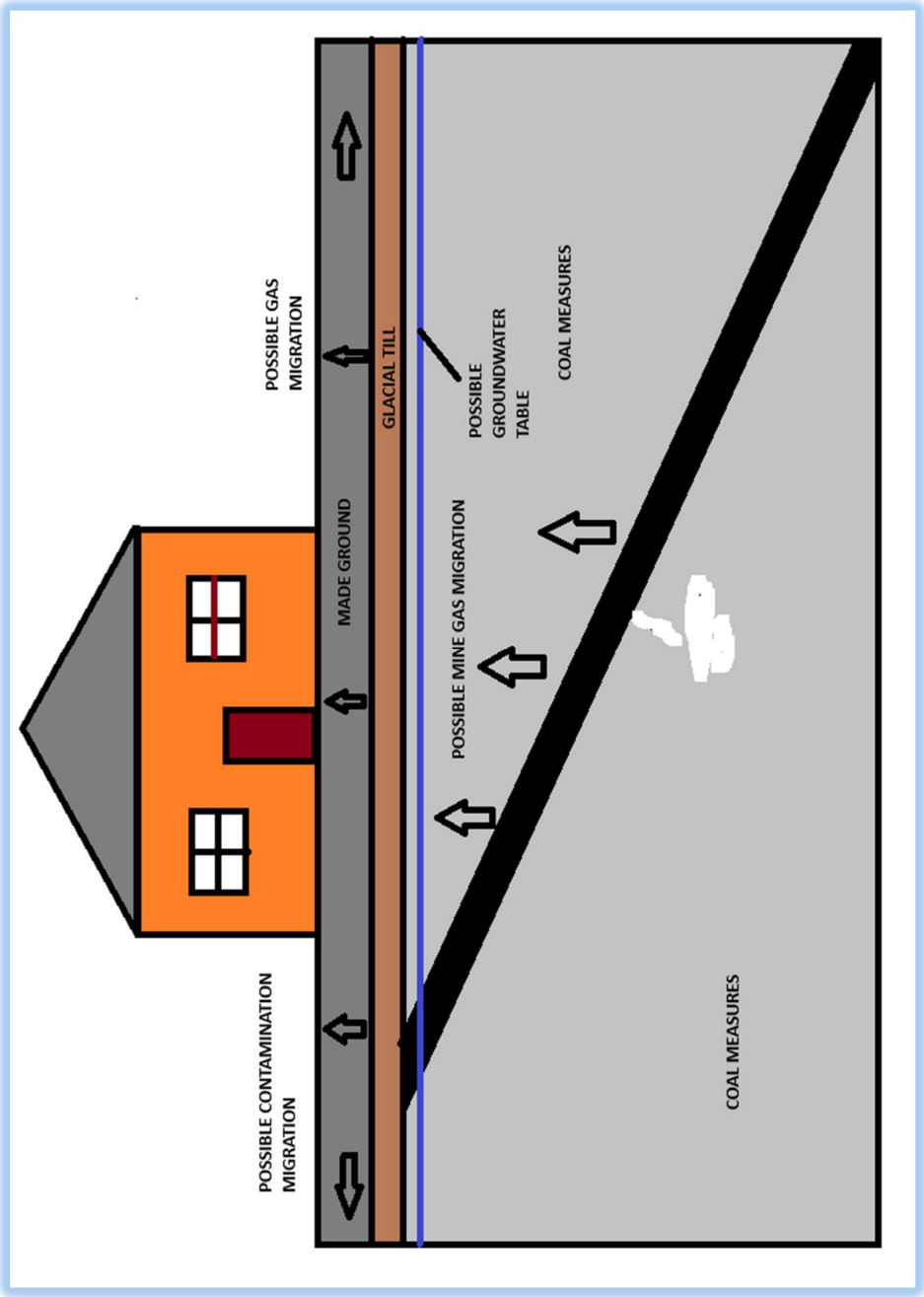

Figure 6.5: Pictorial Conceptual Site Model

7.0 PRELIMINARY RISK ASSESSMENT

7.1 Assessment of Environmental Risks Methodology

The identification of potential pollutant linkages is a key aspect of the evaluation of potentially contaminated land. An approach based on CIRIA report C552 has been adopted. For each of the pollutant linkages, an estimate is made of:

- The potential severity of the risk; and
- The likelihood of the risk occurring.

Table 6.1 below presents the classification of the severity of the risk:

RISK FACTOR	TYPICAL EXAMPLES
Severe	Acute risks to human health; Major pollution of controlled waters (<<the water environment>>).
Medium	Chronic (long-term) risk to human health; Pollution of controlled waters (<<the water environment>>).
Minor	Damage to non-sensitive species or ecosystems, buildings or services.

Table 7.1 Severity of Risk

The probability of the risk occurring is classified according to the criteria provided in Table 7.2 below:

PROBABILITY RATING	DESCRIPTION
High Likelihood	Pollutant linkage may be present, and risk is almost certain to occur in the long term, or there is evidence of harm to the receptor.
Likely	Pollutant linkage may be present, and it is probable that the risk will occur over the long term.
Low Likelihood	Pollutant linkage may be present and there is a possibility of the risk occurring, although there is no certainty that it will do so.
Unlikely	Pollutant linkage may be present but the circumstances under which harm would occur are improbable

Table 7.2: Probability of Risk

An overall qualitative evaluation of the level of risk is gained from a comparison of the severity and probability as presented in Table 7.3 below:

		SEVERITY		
		SEVERE	MEDIUM	MINOR
PROBABILITY	HIGH LIKELIHOOD	Very high risk	High Risk	Moderate / low risk
	LIKELY	High risk	Moderate risk	Low risk
	LOW LIKELIHOOD	Moderate risk	Moderate/ low risk	Very low risk
	UNLIKELY	Moderate / low risk	Low risk	Very low risk

Table 7.3 Risk Rating Evaluation

8.0 PRELIMINARY CONCEPTUAL MODEL AND QUALITATIVE RISK ASSESSMENT

Source Characterisation

All potential **on-site** and **off-site** sources of contamination identified are detailed in Table 8.1.1 below. The table also details any which have been discounted.

Table 8.1. 1: Identified Potential Sources of Contamination

Source		Distance (m)	Compass Direction	Identified by:	Comments
Probable Made Ground	On-Site	0		Historic Data	Suite of contamination testing required to negate source.
Mine workings/ Mine Ground Gas	On-Site	0		Consultants Coal Mining Report	MGRA and Gas Monitoring

It is not possible to discount all of the potential sources of contamination. Potential sources of contamination which cannot be discounted are carried forward to a preliminary qualitative risk assessment. The Contaminants of Concern (CoC) for the remaining potential sources of contamination are listed in Table 8.1.2.

Table 8.1. 2: Contaminants of Concern

CONTAMINANTS OF CONCERN									
Source	**Metals**	**Cadmium**	**PAH/ TPH**	**Soil Organic Matter**	**SO_4, SO_3**	**pH**	**Asbestos**	**Chromium IV**	**CO2, CH4, H2S**
ON-SITE									
Made Ground	X	X	X	X	X	X	X	X	
Ground/ Mine Gas									x

Testing in broad accordance with DOE Industrial Profile for Road Vehicle Fuelling (Garages and Workshops)

Pathway Characterisation

The potential pathways by which receptors might be exposed to contaminants (sources) at the site can vary depending on the proposed or current land use (e.g. residential properties, public open space, retail).
For humans, the three possible routes of exposure to contaminants are:

- Inhalation of dusts or vapours
- Ingestion of dusts or soil either by hand-to-mouth activity or by eating plants grown in contaminated soils
- Dermal (skin) contact with contaminated soils and waters and transfer of contaminants through the skin into the body

Buildings and service conduits can also be affected by contaminants in the following ways:

- Soil gas or vapour pooling in voids within or beneath structures
- By direct contact of building fabric with contaminated soils
- Service trenches acting as preferential migration pathways
- Ingress of contaminants into conduits, contaminating drinking water supplies

Finally, for the local water environment the following pathways may be present:

- Run-off from the site surface entering surface water courses near the site
- Leaching of contaminants from the soil to on-site groundwater
- Migration of contaminated on-site groundwater to off-site groundwater and/or surface water bodies

Receptor Characterisation

The receptors are the elements in the pollutant linkage that can potentially be harmed by the contaminants. These are as follows:

- Humans: site workers and residential users
- Buildings: building fabric and services; and
- The local water environment (surface water and groundwater)

Pollutant Linkages

The significance of potential pollutant linkages at the site is now qualitatively assessed by considering the magnitude of the hazard and the possibility of the linkages occurring based on the observations made, in Table 7.1.3 below.

Preliminary Qualitative Risk Assessment

The preliminary conceptual model outlined above has been used to undertake an initial qualitative risk assessment for the site to determine the possibility of significant risks that may exist following development of the site. The qualitative risk assessment will also investigate the risks to the wider environment as a result of contamination from on site sources.

Risk categories are presented in accordance with R&D66:2008 Volume 1.

Table 8.1.3: Preliminary Qualitative Environmental Risk Assessment for Identified sources of Contamination

Source	Potential Pathway(s)	Potential receptor(s)	Severity	Probability	Risk Class	Comments	Investigation Required
Onsite: Soils and Waters beneath the development and hardstanding, possible coal seam beneath site and previous building remains Hydrocarbons, Metals, Inorganic and organic contamination, Asbestos	Ingestion, direct contact, inhalation of dust Leaching and downward migration	Construction site workers Future users Maintenance workers	Severe	Likely	High	Local industrial operations are potential contaminative risks. The site use may have impacted the subsoils The soils beneath the site have been in place for a prolonged period so leaching is likely to have occurred though may increase if the new development affects the local groundwater regime.	Yes No

Source	Potential Pathway(s)	Potential receptor(s)	Severity	Probability	Risk Class	Comments	Investigation Required
	Lateral Groundwater Migration	River Neath	Medium	Likely	Moderate Risk	The soils beneath the site have been in place for a prolonged period so leaching is likely to have occurred though may increase if the new development affects the local groundwater regime.	No
	Leaching and downward migration	Groundwater in the River Terrace Deposits	Medium	Low Likelihood	Moderate/ low risk	The soils beneath the site have been in place for a prolonged period so leaching is likely to have occurred though may increase if the new development affects the local groundwater regime.	No

Source	Potential Pathway(s)	Potential receptor(s)	Severity	Probability	Risk Class	Comments	Investigation Required
Ground gases CO_2, H_2S, CO_4	Build-up of dangerous gases within buildings or excavations	Construction site workers Future users	Severe	Likely	High Risk	The presence of potential gas generating seams beneath the site and the potential for thicknesses of Made Ground mean ground gases are likely to be generated beneath the site.	Yes
Offsite: Soils and waters Hydrocarbons, Metals, Inorganic and organic contamination,	Leaching and downward migration	Construction siteworkers Future users Maintenance workers	Medium	Low Likelihood	Moderate/ Low Risk	Adjacent industrial facilities.	No
	Lateral Groundwater Migration	Construction siteworkers Future users Maintenance workers	Medium	Low Likelihood	Moderate/ Low Risk	Adjacent industrial facilities.	No

	Dust transporation of soil particles	Construction siteworkers Future users Maintenance workers	Medium	Low Likelihood	Moderate/ Low Risk	Adjacent industrial facilities.	No

Table 8.1.3 contd: Preliminary Qualitative Environmental Risk Assessment for Identified sources of Contamination

9.0 PHASE1 CONCLUSIONS AND RECOMMENDATIONS

9.1 Conclusions

Geoenvironmental and geotechnical hazards may both be encountered on this site – geotechnical hazards are likely to be low but potentially high if the coal seam beneath the site has been worked, while geoenvironmental hazards may pose moderate risk. A ground investigation should be carried out to confirm the ground conditions, groundwater levels and ground gas at the proposed development to provide information to allow for the assessment of geotechnical parameters to be used for preliminary design of foundations along with an assessment of potential contamination on and beneath the site.

The information available at this stage indicates there are potential current and historical sources of contamination on or beneath the site. The sources of these are the hard standing, past mining and former industrial operations. There are likely to be contaminated soils beneath the site and as the use of soft verges has not been ruled out there is a clear pathway linkage for these to pose a risk to the end users, maintenance workers post development and construction workers during development. The potential for a thicknesses of Made Ground, to be present also means that there is potential for ground gases to also pose a risk.

Further risks are also posed by the railway line further from the site, though the reduced likely pathways mean these pose a lower risk than those present on the site.

A ground investigation should be carried out to confirm the ground conditions and allow assessment of the contamination potentially present at the site. Based on these findings a full geoenvironmental assessment will be required to assess the risks posed to the development and its receptors.

The information at desk study stage indicates the site is underlain by coal bearing strata that has been subject to mining in the area surrounding. The CON29M indicates that there may be workings between 50 and 180m depth beneath the site.

A Coal Mining Risk Assessment and Mine Gas Risk Assessment should be undertaken.

9.2 Recommendations

It should be appreciated that the desk study can only give indications of the likely geotechnical and geoenvironmental conditions and consequently an intrusive investigation is recommended to confirm or otherwise the findings.

- *A Mine Gas Risk Assessment.*
- *Coal Mining Risk Assessment (CMRA)*
- *Trial pits and dynamic windowless sampling on the site to acquire suitable geotechnical and geoenvironmental samples across the site. In accordance with BS10175, a sampling strategy with approximately 25m spacing. Testing of a spread Made Ground and underlying superficial deposits.*
- *Depending on the nature of the proposed structure, dynamic sampling to aid foundation design. The requirement of these will depend on the final development.*
- *Deep (30 m) rotary probe holes to prove sufficient coverage of superficial deposits or competent bedrock and to allow an assessment of the risk posed by any potential past shallow mine workings.(Depending upon the CMRA)*
- *Combined groundwater and ground gas monitoring installations to allow long term monitoring, Monitoring at different barometric pressure over at least six months.*
- *In situ soakaways in trial pits if soakaways form part of the proposed development.*
- *Geoenvironmental testing to include asbestos, metals, hydrocarbons, inorganic and organic compounds.*
- *Geotechnical lab testing and assessment of the soils for foundation design and risk from shallow mining.*
- *Geoenvironmental assessment of the soils beneath the site for human health risk assessment and waste disposal.*

APPENDIX A

Drawings

Planning Application Red Line.

APPENDIX B

Phase 1 Data

Walkover Report and Plates

Historic Maps

EnviroInsight Report

CON29M

25035 Days Motorpark Neath

24.07.2025

The site is completely Macadamed and level with a large industrial building at its centre, formerly used for selling and repairing cars.

The site is currently undergoing interior refurbishment by contractors.

There are many large lights arranged around the perimeter but there is no evidence of electric overhead cables supplying them, therefore underground services must be extensive. Also, the main electrical supply to the building is below ground.

Many surface water drains are found across the site with some slit type drainage located within the building itself (see picture).

At the west side of the building there is a small stream running parallel to it which has a large amount of orange iron oxide within it, possibly drainage from a mine or adit.

There is no evidence of lubricant or fuel spills.

Neath
Superstore
A 474
Swansea
Aberlawe
Merthyr Tydfil
(A 465)
Longford
Neath Abbey
Monachlog-Nedd