

1. INTRODUCTION.

It is proposed to submit for and seek a planning application to develop an area of land adjacent to 1 Henfaes Road Tonna Neath Port Talbot. SA11 3DX.

A part of this application requires a Coal Mining Risk Assessment [**CMRA**] to be conducted for submission to Neath Port Talbot Council [**NPTC**].

Geo-Testing Services [**GTS**] have been instructed to produce a CMRA for the site along with proposals for any possible further investigations into coal/coal related legacies which may [or may not] be required. This latter purpose being to provide an agreed and acceptable programme of site investigations which has the support of the Coal Authority [**CA**] and when concluded will lead to the removal of any related planning condition.

The site is in an area defined as High Risk by the Coal Authority [**HRA**] However, the key issues with coal/coal legacies are likely to be associated with near surface features as most of the commercial mining was conducted at depth.

The site is small, and it can appear to be only developed for normal residential accommodation comprising individual units of two stories in height.

There are likely to be few issues generated in relation to a requirement for heavy foundation loadings from any of the buildings contemplated.

2.0 OBJECTIVES OF THIS REPORT.

The objectives of this work are as follows:

A] To produce a Coal Mining Risk Assessment of the site.

B] To obtain from A above some conclusions as to the likelihood of there being a coal/coal legacy issue on the land.

C] To reach by way A and B a conclusion as to what is required by way of further work in such a form as will allow the Coal Authority to conclude that the site presents no issues in relation to coal/coal legacies as defined under its Statutory Obligations. The form and quantum of this would need to be acceptable to them and provide a way of dealing with any issues this CMRA may see as arising from it.

The above will be derived from the following:

A Groundsure GeoINSIGHT report based on the site under consideration with appropriate buffers. [As attached accompanying report document]

A CON 29 report from the CA of the site area.

References to related published works dealing with the history of coal/coal legacies in the area.

GTS archives over a period of 50 years. Previous work in the area.

In addition to C above [and other related investigative work on the site] it should lead to some preliminary conclusions as to how the proposed development may be undertaken in relation to normal geological issues whilst dealing with the coal issues, if any.

3.0 DESCRIPTION OF SITE.

The site comprises a small rectangular area of land adjacent to number 1 Henfaes Road, Tonna, Neath Port Talbot South Wales at a general post code of SW11 3DX. The site lies on an approximate Northeast to Southwest axis adjacent to the River Neath.

The site has also been the subject of a Phase 1 Contaminated Land Desktop Study [**DS**] which incorporates an initial Walk Over Study [**WOS**].

The site is in a residential area adjacent to Henfaes Road, Tonna.

The surrounding residential properties comprise houses which have been in existence for some time with some more modern dwellings.

External inspections of those adjacent to this site show no apparent detrimental effects from any form of settlement related to coal mining legacies. A detailed structural survey of the existing “Georgian Country House” indicates that it is beyond repair and suitable for demolition.

The Walk Over Study associated with nearby properties also took note of and considered this building. Whilst it is, given its present condition difficult to make a judgements on which [if any] of its structural defects relate to coal/coal legacy issues.

However, it is considered that given its age and condition none of these deficiencies relate to or would have been caused by coal/coal legacies. All the documentary evidence inspected concludes that any “surface movement from deep mining would have ceased.”

4.0 GENERAL GEOLOGY & GEOTECHNICAL ISSUES.

MAIN GEOLOGY.

The geology is not dealt with in depth here other than in relation to coal/coal legacies.

All the reports examined for this site conclude that the likely bedrock/geological succession will be that it is underlain by rocks of the BRITHIDER MEMBER. These comprising siltstone/sandstone sedimentary rocks of the PRE CAMBRIAN-PERIOD and laid down some 300 million years ago.

These rocks comprise sandstones, mudstones and siltstones and extend extensively across the South Wales Coalfield.

Workable coal would be found at depth across the area in relation its commercial extraction. The depths at which this took place are too great to have any impact on the site.

SUPERFICIAL DEPOSITS.

These are shown as being under/on this site. They are being Glacial Sheet Materials comprising sands and gravels laid down some 10/12 million years ago in the QUANTERNEY PERIOD. It is likely that there will also be such deposits on or adjacent to the site laid down by the action of the nearby river systems. associated with the historic course of the River Neath. These are likely to be of the order of 200m thick in the area.

In terms of Bedrock Faults and other non-coal geological features are dealt with in the Desk Top Study. The GeolInsight Report indicates that there are on the site Inferred coal seams and some general faulting.

5.0 COAL RELATED ISSUES/COAL MINING RISKS.

The CON 29 Report and the Geo Insight report raise the following issues in relation to coal and coal legacies.

CON 29 REPORT.:

1. Past Underground coal mining. **IDENTIFIED.**
2. Present Underground Coal Mining. **THE SITE IS NOT IN AN IDENTIFIED SURFACE AREA WHICH COULD BE AFFECTED BY THIS ACTIVITY.**
3. Future Underground Coal Mining. **NOT IN AN AREA LIKELY TO BE AFFECTED BY FUTURE ACTIVITY BUT WHERE COAL RESERVES ARE LIKELY TO BE AT DEPTH.**
4. Mine Entries. **NONE RECORDED WITHIN THE DESIGNATED BUFFERS.**
5. Coal Mining Geology. **THE CA RECORD THIS NOT TO BE AN ISSUE.**
6. Past Open Cast Coal Mining. **THE SITE IS NOT WITHIN SUCH AND AREA UNDER CONSIDERATION.**
7. Present Open Cast Coal Mining. **THE SITE IS NOT WITHIN THE 200 m. BOUNDARY FOR SUCH OPERATIONS OR HAVE ANY APPLICATIONS BEEN RECEIVED BY THEM FOR SUCH ACTIVITIES.**
8. Future Open Cast Mining. **NO PERMISSION EXISTS FOR THIS.**

9. Coal Mining Subsidence. **NO CLAIMS OR NOTICES RELATING TO THIS HAVE BEEN RECEIVED BY THE CA SINCE 1994 IN THIS RESPECT.**

10. Mine Gas. **THE CA ARE NOT AWARE OF ANY NOTIFICATION/RECORDS OF MINE GAS EMISSIONS WHICH MIGHT REQUIRE ACTION BY THEM.**

11 to 14. Other Issues. **THESE HAVE NO ADVERSE IMPACT ON THE SITE.**

Coal Mining Subsidence & Hazard's.

Possible High Level Crop Workings. IDENTIFIED.

The various documents examined during this work suggest that there may be a zone of "high level unrecorded coal" relating to a geological feature/outcrop running across the "southern section" of the site.

IT IS CONSIDERED THAT GIVEN THE THICKNESS OF THE LIKLEY SUPERFICIAL DEPOSITS THAT MAY LIE UNDER THE SITE THEY WOULD NOT EXIST AT A NEAR SURFACE DEPTH FOR IT TO BE POSSIBLE TO BE THE SUBJECT OF LOCALISED EXTRACTION. THESE DEPOSITS ARE INDICATED IN BGS BOREHOLES ALONG THE EAST WEST AXIS OF THE SITE.

THEY HOWEVER RELATE ALMOST EXCLUSIVELY TO WORK CARRIED OUT TO THE NORTH OF THE RIVER NEATH. THERE ARE NONE SHOWN WITHIN THE SITE OR ITS ENVIRONS.

SOME OF THESE BOREHOLES INDICATE SOME CONSIDERABLE THICKNESS OF SUPERFICIAL DEPSOITS [SEE ATTACHED] AND IF REPRODUCED ON THIS SITE WOULD HAVE NOT FACILITATED OR RESULTED IN ANY CROP EXTRACTION RECORDED OR OTHERWISE.

GROUNDSURE GEOINSIGHT REPORT.

The GroundSure report in general terms follows conclusions of the CON 29 M.

They are dealt with under item 6.0 B. GroundSure Report.

6.0 CMRA & GROUNDSURE EVALUATION.

The various issues raised by the Groundsure GeoINSIGHT, the CON 29 and our own work suggest that these can be dealt with as follows.

A. CON 29 M. EVALUATION.

1. ISSUE 1 Past Underground Coal Mining.

Any issues relating to possible recorded/unrecorded seams depth can be dealt with by the drilling of proving holes along the axis of any such features. The site is likely to be underlain by superficial deposits of varying depths and of variable thickness and comprising sand gravels and clays. If these deposits exist it would not have been possible to work along crop/fault lines in the 16th to 18th Centuries.

A normal Phase 2 intrusive investigation such as will be required here will establish if the superficial deposits are of such a thickness as to make localised crop working possible.

Should it be deemed by the CA that this be proven then normal proving holes will be required. These holes should prove a thickness of 10m of superficial material and a further 10m of a solid rock formation once found. They should be constructed using air/mist rotary open hole drilling.

The possibilities for a resolution of this issue are dealt with under item 5 page 9.

2. ISSUE 2 Present Underground Coal Mining.

Any work conducted in respect to 1 above will also deal with this issue.

3. ISSUE 4 Future Underground Coal Mining.

Whilst this is not considered to be an issue the work carried out in 1 above will establish [or otherwise] that commercial the coal extraction of coal is not possible or likely.

4. ISSUES 5 -14 & OTHER ISSUES.

The findings of the Con 29 M report do not indicate that any of these items will require further investigation or attention.

5. ISSUE RELATING TO POSSIBLE OUTCROP/GEOLOGICAL FEATURES.

The issue relating to conjectured/ crop deposits and any potential working of it can be dealt with by inspections conducted the during the groundworks/excavations for the foundations [and any other trenches that may be undertaken]. Confirmation of the resolution of this issue can be dealt with by way of inspections of those trenches and a Verification Report provided. Any obvious issues if they arise at that stage can be dealt with by further investigations at the time.

B. GROUNDSURE INFORMATION EVALUATION.

In general terms the GroundSure data follows that of the Con 29 M. It is set out as follows.

1. There are numerous coal related entries in the Groundsure documents. These relate to “heaps, collieries, pits, and other features. There are none which are within a distance from the site to cause any concern to the proposed development.
2. There are no surface ground workings identified within the site area.
3. There are no underground workings or mining extents that will have any influence on the development of the site.
4. There are no BritPits within the site area.
5. All deep mining in the buffer zone of the site is classified as being “ceased.”
6. There are no surface ground workings within the site area. Those within the buffer zone relate to the canal.

7. There are 113 records of “underground coal/coal related legacies” all of which are classed as ceased and will have no impact on the development of the site.
8. There are no items shown as being within the site from 18.4 to 18.11.
9. Item 18.12 shows one entry for the site area. This is dealt with in the CON29M report.
10. There is no indication of any artificial and made ground on the development site under item 14.2.
11. There is in the area of the development thought to be extensive superficial deposits of sands, gravels and clays related to the historic course of the river.
12. There is one recorded landslip some 403m from the site of an unknown nature.
13. There is some evidence in the LPA’s response to the pre-app in relation to a possible fault/geological feature across the site. This is dealt with later in this report.

7.0 GENERAL CONCLUSIONS/RECOMMENDATIONS

Based upon the information provided and our assessment it is possible to conclude the following.

- 1. This CMRA indicates that the site has few serious issues related to coal or cola legacies. It is, whilst in an area of considerable historic coal extraction unlikely to have issues related to the deep mining of coal in the past. The main seams in the area are located many meters below ground level and are such that the CA considers all surface movement relating to them has dissipated and not of concern.**

2. The subsidiary issues raised by both the CON 9 M and the GroundSure data are also of low or very low significance. Whilst there are many known and defined entries in the general area most of these are confined to the north of the site and are away from the site boundaries.
3. There are no issues in relation to open cast mining in the historic sense or of a current or future possibility.

The CA will require assurances in relation to some of the issues identified above. However, these relate to localised high-level coal/possible coal legacies.

The following sets out recommendations for such investigations as will be needed to allow the CA to conclude that the issues have been dealt with.

A. Deep Mining:

It is not considered that historic deep mining at some considerable depth has had or will have any impact on the modest development contemplated on the site.

NO INVESTIGATION IS NEEDED IN THIS RESPECT.

B. Mine Entries.

The work to date concludes that there are no mine entries set out in any of the reports which if found to be in their designated locations will have any impact on the proposed development.

THERE ARE NONE SHOWN AS BEING CLOSE TO THE SITE OR REQUIRE FURTHER INVESTIGATION.

C. Coal Authority High Risk Area. CAHRA.

The site is in part within the CAHRA. However, given the small size of the site and the available documentation from the CA it is recommended that the entire site be treated as being within the CAHRA boundaries and that any ongoing investigative work should make allowance for this.

IT IS RECOMMENDED THAT THE SITE BE INVESTIGATED BY WAY OF A NORMAL PHASE 2 INTRUSIVE SURVEY COVERING THE ENTIRE SITE. THIS COULD [SUBJECT TO A CA PERMIT IF NEEDED] BE CARRIED OUT BY A SMALL TRENCHING EXERCISE AS A PART OF THE PHASE 2 WORK.

NOTE - THE SITE INVESTIGATION WORKS WERE UNDERTAKEN SUBSEQUENT TO THIS REPORT AND INCLUDED WITH COMPILATION REPORT DOCUMENT ATTACHED TO SUBMISSION OF INFORMATION FOR PLANNING