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LAND OFF HIGHER ROAD, LONGRIDGE

Mineral Resource Assessment

Prepared for:

NR Holdings Limited

Report Ref: BEK-24038-2

May 2024

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Project Quality Assurance Information Sheet

Site	Land off Higher Road, Longridge
Report Title	Mineral Resource Assessment
Report Status	Final
Report No	BEK-24038-2
Date	May 2024
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REVISION STATUS / HISTORY

Rev	Date	Issue / Comment	Prepared	Checked

GENERAL REPORT LIMITATIONS

BEK Enviro Limited (BEK) has prepared this report for the sole use of the client, showing reasonable skill and care, for the intended purposes as stated in the agreement under which this work was completed. The report may not be relied upon by any other party without the express agreement of the client and BEK. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by BEK for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

No part of this report may be copied or duplicated without the express permission of BEK and the party for whom it was prepared. 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.

Unless explicitly agreed otherwise, in writing, this report has been prepared under BEK's limited standard Terms and Conditions as included within our proposal to the Client.

The report needs to be considered in the light of the BEK proposal and associated limitations of scope. The report needs to be read in full and isolated sections cannot be used without full reference to other elements of the report and any previous works referenced within the report.

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Appointment

1.1.1 BEK Enviro (BEK) has been commissioned by NR Holdings Ltd to carry out a Mineral Resource Assessment for an area of land located off Higher Road, Longridge, Lancashire (hereafter referred to as 'the site').

1.1.2 It is understood as part of the planning application validation the local planning authority has requested a Mineral Assessment to identify any potential minerals that may have future economic importance and may require safeguarding. In light of the established principal of mineral safeguarding within the National Planning Policy, it is necessary to determine the extent and quality of any mineral resources and the likelihood of these being suitable for extraction in an environmentally friendly way.

1.2 Objective & Scope of Work

1.2.1 The report provides the details of the works undertaken by BEK to assess the likely presence of mineral resources lying within and immediately adjacent to the site. Having assessed the presence of suitable minerals, the report is to present a basic assessment of the importance and viability of these minerals being extracted. This information is then to be collated into an overall assessment of the impact of the development if this site upon the mineral resources within this area.

1.2.2 To achieve the objective BEK will undertake a review of the following:

- Site Specific GroundSure Reports
- All available old Ordnance Survey maps
- British Geological Society (BGS) Mineral Resources Map for Lancashire
- BGS Mineral Resources Information in support of National, Regional and Local Planning: Lancashire (comprising Lancashire and Boroughs of Blackpool and Blackburn with Darwen) Report No. CR/05/144N
- Lancashire Minerals and Waste Local Plan – Site Allocation and Development Management Policies – Part One (September 2013)
- Lancashire Minerals and Waste Local Plan – Site Allocation and Development Management Policies – Part Two (September 2013)
- Lancashire Minerals & Waste Local Plan – Guidance Note on Policy M2 – Safeguarding Minerals (Minerals Safeguarding Areas) (December 2014)
- Lancashire Minerals & Waste Local Plan – Monitoring Report (July 2023)
- Lancashire Local Aggregate Assessment (October 2023)

1.3 Limitations

1.3.1 The conclusions and recommendations presented in this report are the result of our professional interpretation of the information currently available. BEK reserve the right to amend the conclusions and recommendations if further information becomes available.

1.3.2 However, it should be noted that much of the information has been derived from reports written by others and BEK takes no responsibility for the accuracy of that information. Notwithstanding the above, the reports reviewed have all been written by professional environmental consultants with a duty of care to provide relevant and accurate information.

1.3.3 The comments given in this report and the opinions expressed are based on review of reports provided to BEK, ground conditions encountered during site works 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 investigations and therefore could not be taken into account.

2. SITE DESCRIPTION

2.1 Site Location

2.1.1 The site occupies a parcel of land located to the south of Higher Road, Longridge. The site is approximately 3.9 km north-east of Longridge and some 4.5 km north-west of Hurst Green.

2.1.2 The National Grid Reference for the centre of the site is 364160, 439027.

2.2 Site Layout & Description

2.2.1 The site occupies an irregular shaped plot of land approximately 2.28 hectares which is undeveloped and generally occupies agricultural grass land with a number stonewalls intersecting the site and some semi-mature trees and stone walls around the peripheries.

Figure 1: *Site Layout*

2.2.2 A short gravel hardstanding track provides access onto the site from the northern site boundary. The majority of the site boundaries consisted of wooden posts and metal fencing separating the site to the adjacent land to the south and east.

2.2.3 There is a steep drop-off beyond the western site boundary to a small ravine below the site. A number of semi-mature and mature trees re located along the northern site boundary, beyond which Higher Road is located.

2.3 Surrounding Land Use

2.3.1 Higher Road is located immediately north of the site, beyond which Cowley Brook Farm is located. Cowley Brook is located some 20 m west of the site. Cuckoo Hall is located some 240 m west of the site.

2.4 Proposed Development

2.4.1 This report has been prepared to support a planning application for the construction of a residential dwelling with access, parking and a private garden.

3. GEOLOGY

3.1 Superficial Deposits

3.1.1 The British Geological Survey map for the area indicates that the superficial geology for the north-west of the site comprises Devensian Till (Diamicton). This strata typically comprises 'sandy and silty, stony clay with non-persistent sand beds' and is relatively impermeable. There is no recorded superficial strata for the rest of the site.

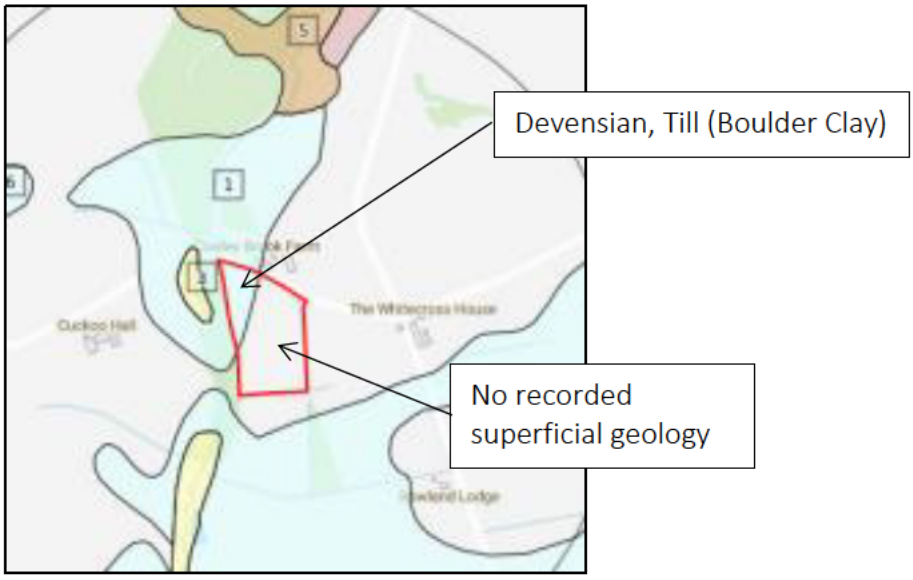

Figure 2: *Superficial Geology*

3.2 Solid Geology

3.2.1 The solid geology underlying the superficial deposits comprises the Pendle Grit Member which is dominated by sandstone. This bedrock strata typically has moderate to high permeability.

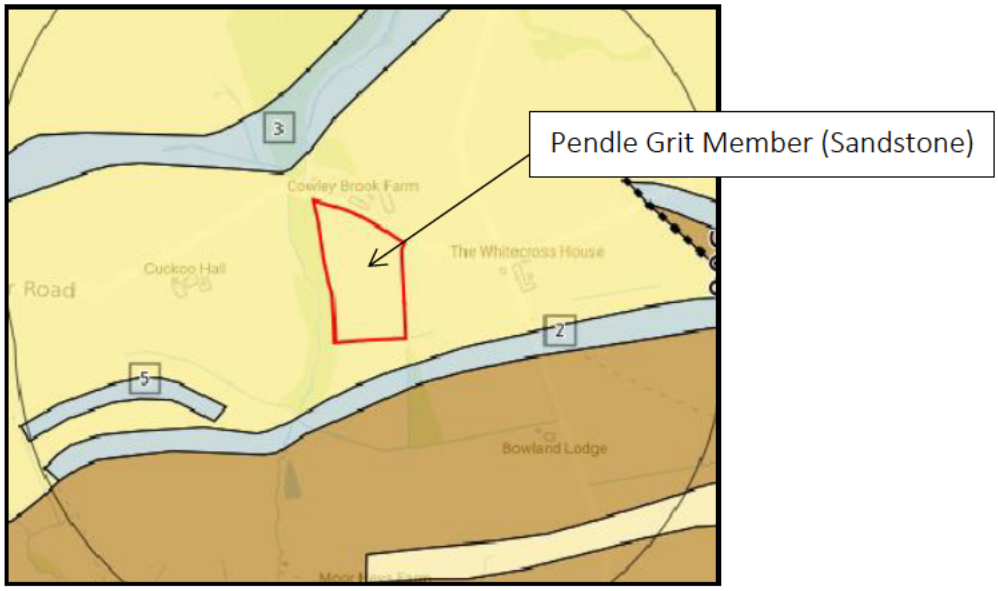

Figure 3: *Bedrock Geology*

3.2.2 The Pendle Grit Sandstone is widely used as a building stone in Lancashire and was widely used in all manner of civic, ecclesiastical, commercial, industrial, domestic and agricultural buildings over a wide area of Lancashire, especially in towns and villages close to the outcrop.

3.2.3 The Pendle Grit Sandstone is identified on the Lancashire Mineral Resource Map as a 'Safeguarded Mineral' which may be of current or potential economic interest.

3.3 BGS Borehole Logs

3.3.1 A British Geological Society Borehole is located some 194 m east of the site with the following strata identified:

Distance/direction from site	Depth (m)	Strata
194m east	0 – 0.4	Made Ground (Limestone Fill)
	0.4 – 1.3	Made Ground (Soft Brown Clay Fill)
	1.3 – 1.5	Brown Sand and Gravel
	1.5 -2	Soft to firm brown silty CLAY with some grey veins
	2 – 2.3	Brown Sand and Gravel
	2.3 – 12.7	Stiff brown slightly sandy Clay with a little fine Gravels

Table 1*: Summary of Borehole 194 m east of the Site.*

3.3 Ground Workings

3.3.1 The Enviro+GeoInsight Report identifies a sandstone quarry within 500 m of the site. The quarry is identified as Cowley Brook Farm and is located some 310 m north-east of the site. The quarry has ceased extraction and was a surface mineral working.

3.3.2 The Enviro+GeoInsight Report indicates there may have been historical non-coal mining activities on site, associated with vein mineral mining, however 'localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered.' An extract of the Mining and Ground Workings Map from the Enviro+GeoInsight Report is shown below:

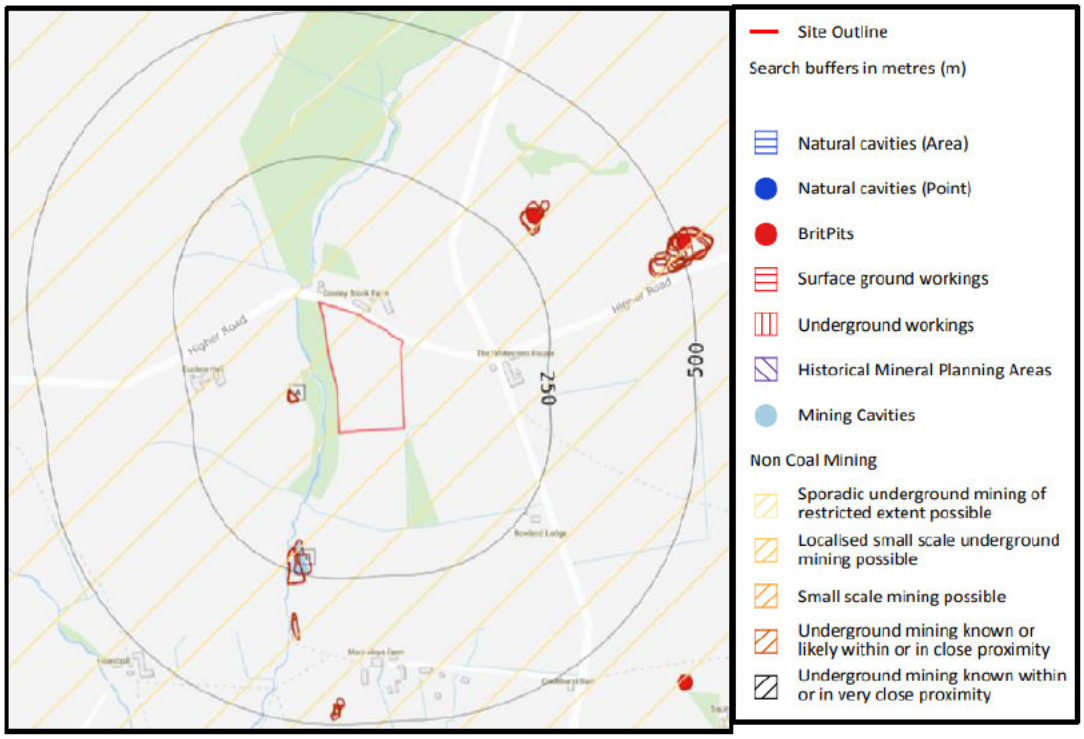

Figure 3: *Mining, ground workings and natural cavities*

3.4 Coal Mining

3.4.1 Information in the Enviro+GeoInsight Report indicates that the site is not in an area that may have been affected by coal mining. Furthermore, the Coal Authority website does not indicate that the site is located within a coal mining development high risk area.

3.4.2 The Mineral Resources Map also indicates that there are no coal deposits below the site.

3.5 Hydrogeology

3.5.1 The superficial deposits (Boulder Clay) underlying the north-west of the site are classified as a 'Secondary Aquifer (Undifferentiated)'. These formations are 'assigned where it is not possible to attribute either Category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.'

3.5.2 The underlying bedrock is classified as 'Secondary A Aquifer'. These formations represent 'permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important base flow to rivers'.

3.5.3 The Enviro+GeoInsight Report indicates that the site is not located within a groundwater Source Protection Zone.

4. MINERAL PLANNING

4.1 Safeguarding

4.1.1 The safeguarding of non-renewable resources such as minerals for the benefit of future generations is considered to be an aspect of sustainable development. The National Planning Policy Framework requires mineral planning authorities to define mineral safeguarding areas when preparing local plans in order that known locations of specific mineral resources of local or national importance are not needlessly sterilised by non-mineral development, albeit that these carry no presumption that the resource will be worked. Where it is deemed necessary for non-mineral development to take place prior extraction is to be encouraged where practical and environmentally feasible.

4.1.2 It is important to note that the purpose of designating Mineral Safeguarding Area (MSA) is not to restrict the rights of the landowner but to ensure that due consideration is given to the potential sterilisation of the mineral resource if an application for alternative development is brought forward. Furthermore, a MSA does not imply any presumption that mineral working will ever be permitted.

4.1.3 The Joint Lancashire Minerals and Waste Core Strategy (2009) and the site allocations and development management polices (2013) are pertinent in respect of minerals relating to the application process.

4.1.4 The Lancashire Minerals and Waste Location Plan requires minerals that have economic environmental or heritage value and potential for extraction now or in the future to be identified and shown as mineral safeguarding areas on the policies map. The policies map is based on the BGS Mineral Resources Plan for Lancashire.

4.1.5 Policy M1 of the Joint Lancashire Minerals and waste Local Plan – Site Allocation and Development Management Policies - Part One states that 'Development will not be supported for any new extraction of sand and gravel, limestone, gritstone or brickshale.'

4.1.6 The Core Strategy CS3 states that no additional land will be made available for the extraction of gritstone for aggregate use before 2021, unless it is of special quality not available from elsewhere. Proposals for the extraction of locally sourced building stone for building and architectural purposes will be supported.

4.1.7 The extract of locally sourced building stone is not managed by a land bank and proposals for extraction are supported by Policy CS3 of the Core Strategy.

4.1.8 Policy M2 of the Joint Lancashire Minerals and Waste Local Plan – Site Allocation and Development Management Policies – Part One states that 'Within the plan area, Mineral Safeguarding Areas have been delineated on the Policies Map around all deposits of:

- Limestone
- Sand and Gravel
- Gritstone (Sandstone)
- Shallow Coal
- Brickshales
- Salt

Within these mineral safeguarding areas identified, planning permission will not be supported for any form of development that is incompatible by reason of scale, proximity and permanence with working the minerals, unless the applicant can demonstrate to the satisfaction of the local planning authority that:

- The mineral concerned is no longer of any value or has been fully extracted.
- The full extent of the mineral can be extracted satisfactorily prior to the incompatible development taking place.
- The incompatible development is of a temporary nature and can be completed and the site returned to its original condition prior to the minerals being worked.
- There is an overarching need for the incompatible development that outweighs the need to avoid the sterilisation of the mineral resource.
- That prior extraction of minerals is not feasible due to the depth of the deposit.
- Extraction would lead to land stability problems.

4.2 Leeming Quarry

4.2.1 Leeming Quarry is located some 4.2 km north-west of the development site. The Quarry is a small scale sandstone extraction operation which produces dimension stone for heritage conservation and local build projects. It is understood planning permission for the extension of the quarry was granted in 2011 (Ribble Valley Planning Application: 3/2011/0688).

5. POSSIBILITY OF FUTURE ECONOMIC MINERAL RESERVES

5.1 Designation

5.1.1 Reference to the BGS information confirms that the site is underlain by Sandstone (Pendle Grit Member) which represent areas of mineral resource viability.

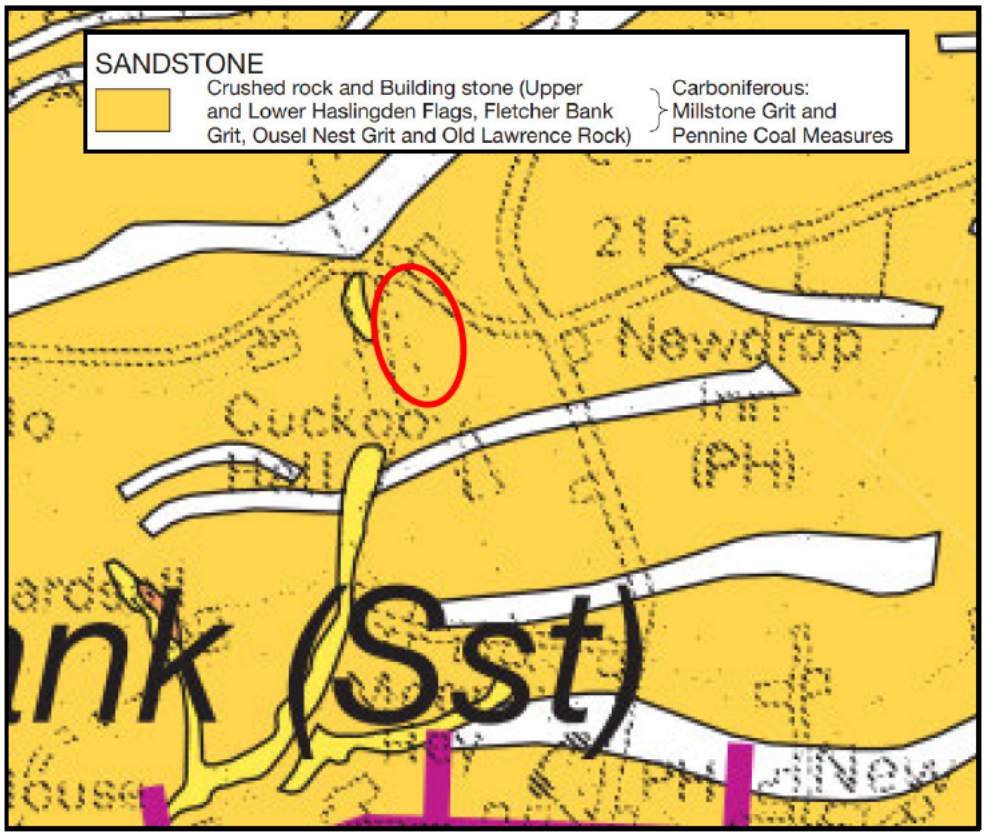

Figure 5: *Mineral Safeguarding Areas*

5.2 Assessment of the Merit of Extractions

5.2.1 The Core Strategy CS3 states that no additional land will be made available for the extraction of gritstone for aggregate use before 2021, unless it is of special quality not available from elsewhere. Proposals for the extraction of locally sourced building stone for building and architectural purposes will be supported.

5.2.2 The Lancashire Minerals and Waste Local Plan Monitoring Report July 2023 states that with regards to Policy CS3 – Provision will be made for the extraction of 38.1 million tonnes of gritstone in the Joint Plan Area between 2001-2021.

Policy – CS3 - Provision will be made for the extraction of 38.1 million tonnes of gritstone in the Joint Plan Area between 2001-2021

	Million Tonnes
Core Strategy estimate of annual demand	1.81
Core Strategy Apportionment 2001-2021	38.1
Production and sales 2001-2021	22.84
Permitted reserves at end of 2021	74
Therefore, additional to be released by 2021 (apportionment minus production minus reserves)	0 (58.74mt surplus)

Figure 6: *Extract from Lancashire Minerals & Waste Local Plan – Monitoring Report June 2023*

5.2.3 The Lancashire Minerals & Waste Local Plan – Monitoring Report July 2023 states that 'Based on the 10 year average of production and sales contained in the latest Local Aggregate Assessment this permitted reserve represents a **73 year landbank**; well above the land bank of at least 10 years described in National Policy.'

5.2.4 Therefore due to the 73 year landbank of gritstone (sandstone), the extraction of gritstone which underlies the site would not be supported by current policy and therefore is not considered a viable extractable mineral resource.

Policy CS3 – Building stone, brick shale. Limestone for Cement Manufacture

5.2.5 Existing data relating to capacity and sales is not available. National planning guidance published since the adoption of the Core Strategy only requires that landbanks for industrial minerals should be calculated when a new planning application is submitted.

5.2.6 A review of Lancashire Mineral Resource Map show the presence of Leeming Quarry some 4.2 km north-east of the site. The Quarry is a small scale sandstone extraction operation which produces dimension stone for heritage conservation and local build projects. It is understood planning permission for the extension of the quarry was granted in 2011 (Ribble Valley Planning Application: 3/2011/0688). As such, it is considered that an extension of the existing Leeming Quarry would be more likely to be economically viable than development of a new quarry at the proposed development site.

5.2.7 Furthermore, existing residential development is located immediately north of the site and the relatively small site would suggest that the site would be uneconomic to quarry as the safe slopes would reduce the base formation footprint to an unworkable width, likely making the project unsustainable.

5.2.8 The close proximity of the surrounding residential and agricultural buildings would bring engineering concerns regarding the excavation effect on the respective structure's stability as well the more general concerns over environmental and traffic nuisance issues.

5.2.9 As such it is considered that extracting the sandstone in this location would have an adverse impact on the existing residents and the existing residential dwellings poses a constraint to any mineral extraction works.

6. CONCLUSIONS

6.1 Factors Limiting the Merit of the Resource

6.1.1 This report provides an assessment of the likely presence of mineral resources, the importance of mineral resources and viability of the mineral resources to be extracted at the proposed residential site at Higher Road, Longridge.

6.1.2 BEK has assessed publicly available documents, maps and other resources and the following conclusions have been drawn:

- Mineral resources of sandstone (Pendle Grit) are considered to underlie the site and are classified as a mineral resource.
- Current policy of Lancashire County Council identifies that development will not be supported for any new extraction of sandstone for aggregate use however proposals for the extraction of locally sourced building stone for building and architectural purposes will be supported.
- There is no published landbank for building stone however there are extensive deposits of sandstone in the Lancashire area with numerous existing quarries including Leeming Quarry located some 4.2 km north-east of the site. The quarry was granted planning permission to extend in 2011 and it is considered much more economically and environmentally acceptable to extend existing quarries such as Leeming Quarry rather than develop a new quarry.
- The site is approximately 2.28 hectares in size and therefore the quantity of mineral that could economically extracted is relatively small compared to the overall resources available within Lancashire and as such would not adversely impact the overall reserves within the county.
- The resources lie in an area of current agricultural and residential development which would be negatively impacted by subsequent extraction activities.

6.2 Overall Probability of Extraction

6.2.1 The new extraction of sandstone for aggregate use would not be supported by Lancashire County Council therefore this would preclude the potential for extraction as such it is considered highly improbable that the Sandstone would be extracted for aggregate use from the site.

6.2.2 It is considered that the site does have the potential to sterilise a relatively small quantity of building stone however it Is not considered economically viable to extract relatively small quantities of building stone and quarry operators are unlikely to take on such a small operation.

6.2.3 Furthermore, the closest BGS borehole to site shows that bedrock was not encountered at depths of 12.7 m below ground level therefore extraction of any sandstone is likley to be relatively deep further reducing the economically viability of extraction at the site and increasing the potential for structural issues associated with the existing residential dwellings to the north of the site.