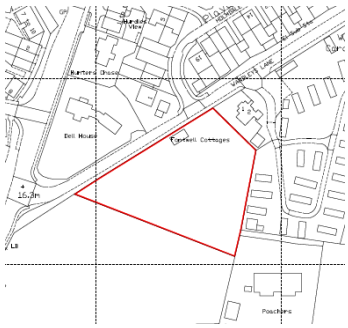
LandQuest

Land Acquisition >> Development Specialists



Land South of Wandleys Lane Eastergate West Sussex PO20 3SE

Mineral Assessment Update Note

Application Ref: BN/46/25/PL

July 2025

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1.0 INTRODUCTION

1.1 Background

This Mineral Assessment Update Note has been written in response to a statutory consultation response provided by Edward Anderson of WSCC County Planning – Minerals & Waste Planning Authority dated 7th May 2025 in response to the previously submitted Mineral Resource Assessment (MRA) as part of the submitted Planning Statement as submitted under planning application reference: BN/46/25/PL.

This update note seeks to provide additional clarity on several points raised in the above-mentioned consultation response, namely, to provide additional information relating to the quality and quantity of the underlying mineral resource on this site and to provide additional information setting out how the mineral resource associated with this site could potentially be extracted and re-used as part of the development proposals for this site.

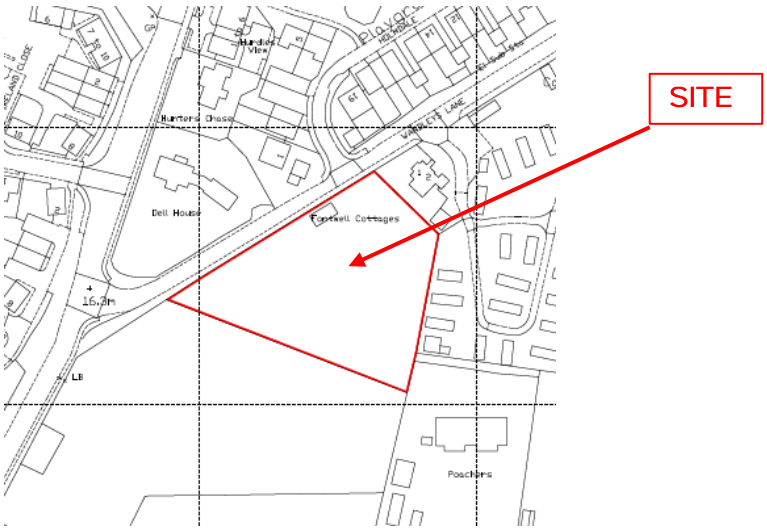
LandQuest have not undertaken any invasive geological site works themselves. Any reference to soil analysis and any other geotechnical or environmental works has been taken from the previously submitted Phase II Site Investigation Report commissioned on behalf of LandQuest by Ground & Water Geotechnical and Environmental Consultants v3.01 dated February 2025. This document forms part of the additional documentation submitted as part of the current planning application reference: BN/46/25/PL.

2.0 THE SITE

2.1 Site Location and Description

The site is located on the southern side of Wandleys Lane within the village of Eastergate and is centred on Grid Reference SU 9485 0624 with the nearest postcode of PO20 3SE. The site location is shown in the Figure 1 below.

Figure 1 – Site Location Plan



The site covers and area of approximately 0.43ha and is occupied by some dilapidated stables and associated farm type structures, with the rest of the site laid to grass and currently being used as grazing land for sheep and a pony. An aerial photograph of the site is shown in the Figure 2 below.

Figure 2 – Aerial Photograph of Site

2.2 Surrounding Land Use

The site is bounded to the north, on the opposite side of Wandleys Lane by dense residential development, which includes the modern residential development of Holmdale which was constructed in the early 2000's.

To the east of the site lies additional two storey residential properties and the Wandleys Lane Caravan Park which also takes its access from Wandleys Lane.

The recently constructed large residential developments on land east and west of Fontwell Avenue (A29) lie further afield to the north and west of the site.

The site lies at a height of approximately 17m above Ordnance Datum.

2.3 Proposed Development

The development proposals for this site consist of 10 residential dwellings, 3 car-ports and 1 single garage. The proposed development layout can be shown in Fig 3 below.

Figure 3 – Proposed Development Plan

3.0 DESK STUDY INFORMATION REVIEW

3.1 General

The following sections of this update note includes information contained within the following additional information sources:

- *Ground and Water Geotechnical and Environmental report – Phase I Desk Study – GWPR5571/DS/October 2023 v1.01*
- *Ground and Water Geotechnical and Environmental report – Phase II Site Investigation Report – GWPR5571/GIR/February 2025 v3.01*
- *Thames Valley Archaeological Desk Based Assessment – WLE 25/39 March 2025*
- *British Geological Survey online records*

No pits/quarrying or mining features were identified on-site. However, several sand and grave pits were noted within the site's close environs from historical mapping. These were located to the north, south and east of the site.

3.2 Geology

The British Geological Survey Solid and Drift Geology Map for the Fontwell area (Chichester Sheet No. 317) revealed that the site was underlain by superficial Head Deposits (Valley Gravel) and bedrock deposits of the Lambeth Group. London Clay Formation may be encountered in the extreme south-east corner. An area of Worked Ground was noted ~222m to the south-east.

Superficial deposits (Drift) are the youngest geological deposits formed during the most recent period and geological time. They rest on older deposits of rock referred to as bedrock (solid), which are the main mass forming the Earth. Bedrock is present everywhere, whether exposed at the surface in the outcrops or concealed beneath superficial deposits or water.

Head Deposits (Valley Gravel)

The head deposits (Valley Gravel) consists of local tracts of gravel at low level in the bottom valleys, usually along the line of a former or existing water course. The soils generally comprise poorly sorted sand and gravel.

London Clay Formation

The London Clay Formation comprises stiff grey fissured clay, weathering to brown near surface. Congregations of argillaceous limestone in nodular form (Claystones) occur throughout the formation. Crystals of Gypsum (Selenite) are often found within the weathered part of the London Clay Formation, and precautions against sulphate attached to concrete are sometimes required. The lowest part of the formation is a sandy bed with black rounded gravel and occasional layers of sandstone and is known as the Basement Bed.

3.0 DESK STUDY INFORMATION REVIEW

Lambeth Group

The Lambeth Group (formerly known as the Woolwich and Reading Beds) is a sedimentary complex comprising a basal bed (the Upor Formation also known as the Bottom Bed) composed of glauconitic sand, sandy clay and gravel (well-rounded flint pebbles, with laterally variable sand and clay above. In the eastern part of the area of the basel bed is mostly overlain by a shelly grey sandy clay or silty sand and laminated beds (Woolwich Formation) . At the top of the sedimentary complex is a Reading Formation, which is made up of multi-coloured mottled clays and silty clays.

Lignite, or brown coal, a carbonaceous rock composed of plant remains which has not been subject to the same intensity of heat and pressure as has ordinary coal, is occasionally found within the Lambeth Group, as are individual logs and groups of logs indicating the position of a former log jam, which was covered by sand and clay at the time of the deposition.

3.3 Radon Potential

A review of the freely available Public Health England radon database, UK Radon, indicated that the site was located within a 1km grid square, where a maximum radon potential of 3 – 5% was recorded. Basic radon protection measures are required in areas where more than 3% of houses are at or above the Action Level.

A BGS Radon Risk Assessment was commissioned for the site which indicated that no radon protection measures are required to be installed in new buildings.

3.4 Borehole Results

A Phase II Site Investigation Report was undertaken by Ground and Water Geotechnical and Environmental Consulting, part of which comprised the drilling of 5no Windowless Sampler Borehole (WS1 – WS5) to a depth of between 1.00 – 3.00m bgl where the density of the soils prevented further progress of each of the boreholes. A 'Super Heavy' Dynamic Probe (DP1 – DP5) was undertaken adjacent to each of the boreholes to a depth of between 1.00 – 5.00m bgl where the density of the soils again prevented further penetration.

These test where undertaken on 26th September 2023 and the full results can be found in the supporting document, Ground and Water Geotechnical and Environmental report – Phase II Site Investigation Report – GWPR5571/GIR/February 2025 v3.01

3.0 DESK STUDY INFORMATION REVIEW

3.5 Soil Conditions

Trial holes were logged in accordance with BS EN 14688 'Geotechnical Investigation and Testing – Identification and Classification of Soil'.

The ground conditions encountered within the trial holes constructed on site did generally conform to that anticipated from the examination of the geology map. A capping tool was noted to overlie the superficial Head Deposits. The bedrock deposits of the Lambeth Goup and the London Clay Formation were not encountered in the trial holes.

A brief description of the soils encountered in the trial holes are shown in the table below.

Summary of Strata Encountered			
Strata	**Top Depth (m bgl)**	**Base Depth (m bgl)**	**Thickness (m)**
TOPSOIL: Dark brown slightly gravelly SAND. The sand was fine, and the gravel was fine, sub-angular flint	GL	0.25 – 0.60	0.25 – 0.60
HEAD DEPOSITS: Dark brown to pale brown slightly clayey sandy GRAVEL. The sand was fine to medium, and the gravel was fine to medium sub-angular to sub-rounded flint.	0.25 – 0.60	>0.80 - >3.00	>0.75 - >2.40

For details of the specific composition of the soils encountered at particular points, reference must be made to individual trial hole logs shown within appendix D of the accompanying Ground and Water Geotechnical and Environmental report – Phase II Site Investigation Report – GWPR5571/GIR/February 2025 v3.01. A trial hole location plan can also be viewed within Figure 3 of the same report.

4.0 SITE HISTORY

4.1 Historical Map Review

The historical development of the site and its environs has been determined by reference to historical plans made available from the County Series and Ordnance Survey Maps dating back from the mid to late 19th Century to the present day.

Historical aerial photography indicates that the site appeared to be an open undeveloped field with a small rectangular structure on the north-western boundary around circa 1999. The surrounding land-uses largely comprise a large works on the northern side of Wandleys Lane ~10m to the north with residential properties beyond. A caravan park was located to the immediate east and greenhouses associated with a nursery were located to the south-east. Fields were shown to the south and west.

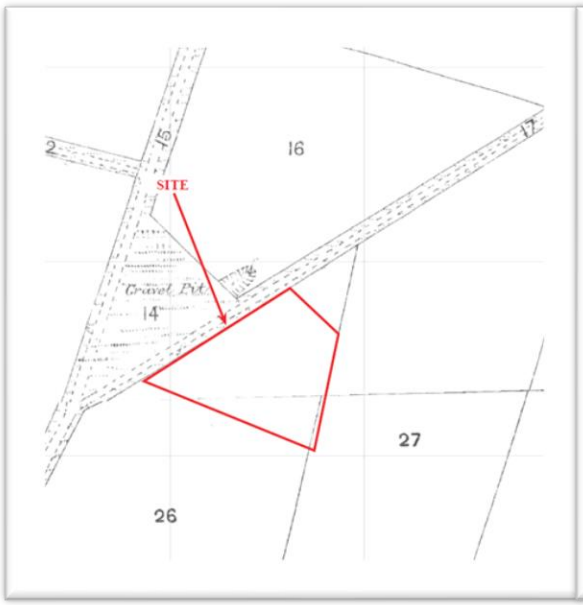
The 2012 aerial photography indicated no changes to the site. The works ~10m to the north had been replaced with residential properties and an access road.

No significant changes were noted on the subsequent 2013, 2018 and 2021 aerial photography.

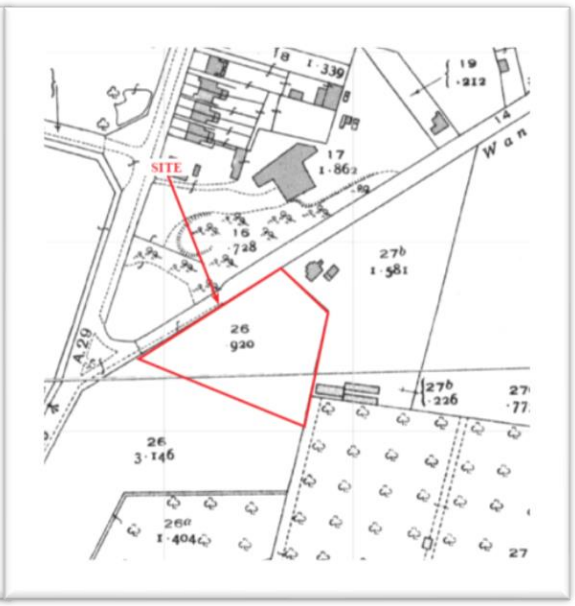
Several sand and gravel pits were noted within the site's environs from the historical mapping. These were located to the north, south and east.

Figure 4 – Historical Maps of Site

1876



1937-1939



5.0 MINERAL RESOURCE ASSESSMENT

5.1 Types of Minerals

As set out with the West Sussex County Council Joint Minerals Local Plan (2021) there are many sources of minerals which have an important part to play in the prosperity of the nation and the quality of life of residents.

Important minerals include crushed rock and sand and gravel which are collectively known as aggregates. There are 3 main sources of aggregates in the UK:

Land-won aggregates: (also known as primary aggregates) – includes crushed rock and sand and gravel extracted directly from the land at quarries or pits. Land won aggregates are used for the construction of buildings, roads, and other developments. Soft sand is a particular type of sand used in building mortar.

Marine-dredged aggregates: comprise sand and gravel which is dredged from the sea floor and landed at dedicated mineral wharves. Marine-dredged sand and gravel is largely used in the same way as land-won sand and gravel in the South east. It is not used as mortar sand due to its physical properties not meeting standards for mortar use; a percentage is also used for coastal management such as beach replenishment.

Recycled/secondary aggregates: generally, these come from various sources including the demolition of buildings and structures, or from civil engineering works. High quality recycled aggregates can be deployed in other markets and can include, for example, incinerator bottom ash or shredded tyres.

Other minerals which the Joint Minerals Local Plan addresses include clay, chalk, the potential for silica sand, and oil and gas.

5.2 Minerals in West Sussex

The Plan area of West Sussex lies largely within the 'Wealden District' described by the British Geological Survey. Beds of deposited material have been pushed into a dome or 'anticline' that has then been eroded. In simple terms, this has led to a sequence of broad zones from the south to the north-east of the Plan area:

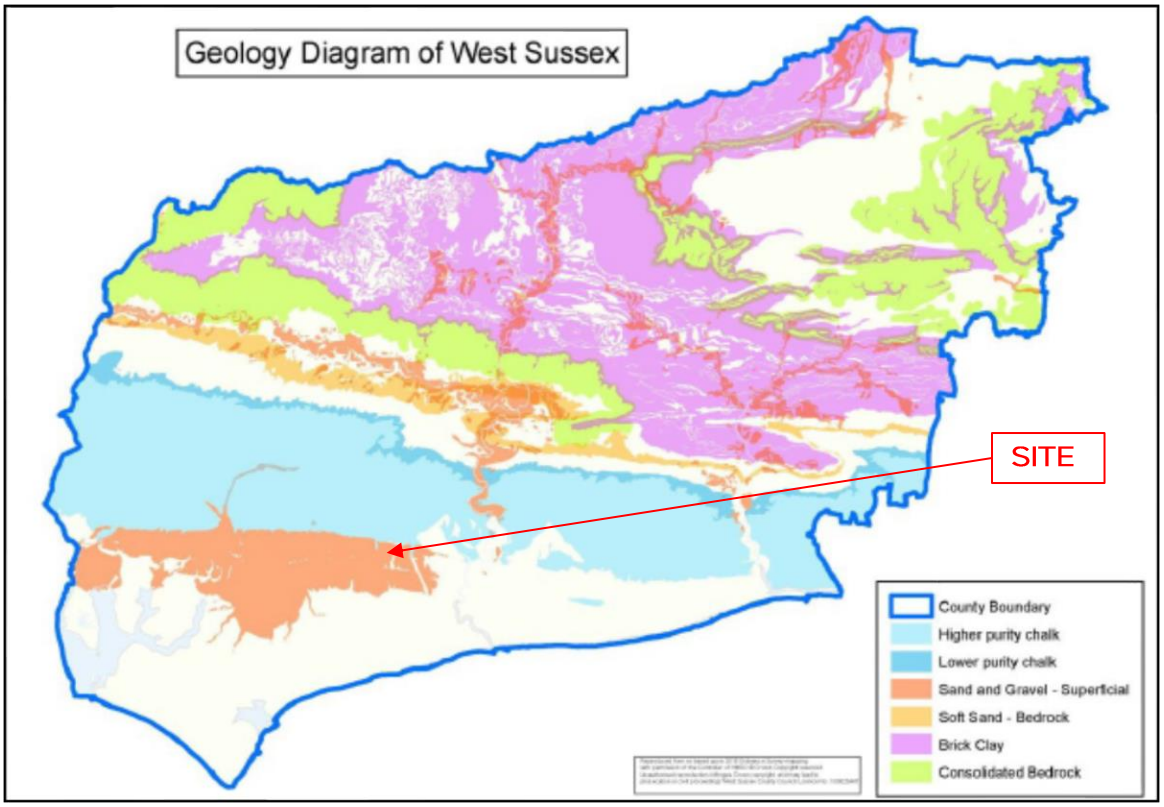
- Brickearth, London Clay, and gravels along the coastal plain;
- The chalks of the South Downs;
- Various beds forming the Upper Greensand, Gault Clay, and Lower Greensand to the north of the chalk downs
- A mixed area of sandstones and clays forming part of the High Weald in a triangle between Horsham, East Grinstead, and Burgess Hill.

5.0 MINERAL RESOURCE ASSESSMENT

The main minerals worked, or with the potential for working, in West Sussex are:

- Construction aggregates, including sharp sand and gravel and soft sand
- Natural building sand
- Brick clay
- Industrial sands including silica
- Oil and gas resources

Figure 5 – Geology Map of West Sussex



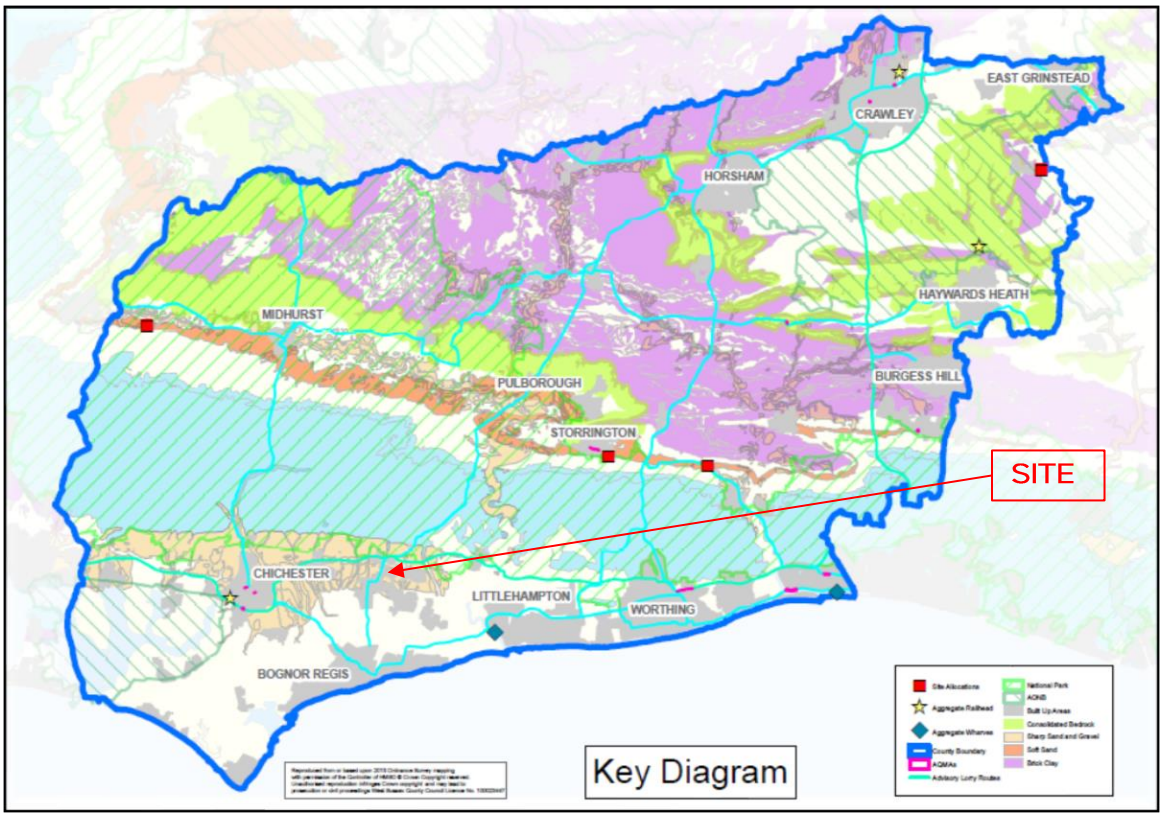
5.0 MINERAL RESOURCE ASSESSMENT

5.3 Aggregate Minerals on Site

As indicated on the plan highlighted shown above at Figure 5, the site is in an area of recorded sand and gravel (superficial deposits).

The West Sussex County Council Joint Minerals Local Plan (2021) indicates that **gravel** of varying quality and some **sharp sand** is found to the south of the Downs in the south-west of the County In superficial or 'drift' deposits. Coarser, silty gravel lies over the chalk to the north of a line approximating to the route of the A27 and have been exploited in dry workings. Overlaying the clay to the south, cleaner, better-sorted gravels have been exploited through wet working as evidenced by lakes around the eastern and southern fringes of Chichester. Gravel sites are located clustered around Chichester and the south of the Downs.

Figure 6 – Areas of Mineral Sources/Workings in West Sussex



6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Potential Mineral Resources On Site

Based on the information provided above, there are no historical features or records of significance on the site. However, it is suggested that historically the site lies within ~10m distance to a gravel pit located to the north and dating back to 1876.

Later historical mapping dated 1896 – 1897 shows that the gravel pit ~10m to the north was no longer shown and a smaller gravel pit was located ~20m to the north-west. Old gravel pits were shown ~20m to the north-east and ~250m to the south-west.

Historical mapping dated 2010 – 2023 shows that the works ~10m to the north had been replaced with residential properties and an access road.

The site is not allocated as a Strategic Mineral Site Allocation, but is located within a Mineral Safeguarding Area for Sharp sand and Gravel, as shown at appendix E of the West Sussex County Council Joint Minerals Local Plan (2021)

The site is underlain by superficial Head Deposits (Valley Gravel) overlying bedrock deposits of the Lambeth Group, with potential London Clay formation encountered in the extreme south-east corner.

A table showing the strata encountered bgl on site is shown above under section 3.5. Findings indicate a topsoil of dark brown slightly gravelly sand at a depth of 0.25m – 0.60m BGL. Additional on-site testing shows Head Deposits of dark brown to pale brown slightly clayey sandy gravel at depths of >0.80m – >3.00m bgl.

Information contained within the West Sussex County Council Joint Minerals Local Plan (2021) shows that the site is located within a wider are of 'sharp sand and gravel' often used as aggregates.

6.2 Quantity of Potential Mineral Resource on site

Data contained within the accompanying Ground and Water Geotechnical and Environmental report – Phase II Site Investigation Report – GWPR5571/GIR/February 2025 v3.01 has been used to calculate the potential mineral extraction from this site. The above reports indicates that standard strip foundation designs would be acceptable based on trial logs taken from on site samples, with standard foundation design widths of 600mm for cavity walls and 450mm for single skin (internal & garage walls).

Working on the assumption that the total foundation depth required will be 1m, with the initial 300mm being top layer cover/topsoil, it is suggested that a total quantum of 266.5 m^3 of mineral resource would be extracted from the application site.

6.0 CONCLUSIONS AND RECOMMENDATIONS

This comprises 79.95 m^3 of top layer cover at a depth of 300mm bgl of dark brown slightly gravelly sand. With the gravel being fine sub angular flint and the sand being fine. A lower level taken between 300mm bgl and 1.m bgl of 186.55m^3 of dark brown lightly clayey sandy gravel. The sand was fine to medium, and the gravel was fine to medium sub-angular to sub-rounded flint.

6.3 Suitability of Future Use of Potential Mineral Resource on site

As highlighted above, the superficial deposits vary across the site. Where these are identified as predominantly gravelly sand (topsoil) and clayey sandy gravel (Head Deposits), these could be identified as a potential mineral resource depending upon the overall volume of clay encountered within these deposits, as this will influence the suitability of any fine material to be extracted as a mineral resource.

There are also likely to be several negative impacts associated with any extraction of mineral resource on site within the current surrounding community. Whilst not limited to, these would include:

- Increased noise, air and light pollution
- Visual impact on the local and wider landscape
- Financial Viability of On-Site Extraction
- An increase in traffic
- Land stability effects on surrounding infrastructure

It is suggested that given the minimal amount of overall mineral resource which may be encountered on site during excavation works associated with the construction of 10 residential dwellings, it would be impractical and financially unviable to extract and re-use them as part of the development process. Additionally, should any extraction be considered on this site, various permissions and licenses will need to be obtained from the Local Authority. In view of the above, it is suggested that extraction operations would not be granted.

6.4 Impact of Proposed Development on Site to Mineral Resource

The proposed redevelopment of this site would only have an impact if the superficial deposits are considered a viable mineral resource by the Local Authority. The limited amount of potential resource available, combined with the potential cohesive nature of the superficial deposits on this site, would indicate that superficial deposits are not considered a viable mineral resource at this specific location.