

Acorn Bioenergy

Minerals Resource Assessment

April 2026

PREPARED FOR
Acorn Bioenergy
Limited

savills

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1. Executive Summary

- 1.1.1 This report has been produced by Savills on behalf of Acorn Bioenergy.
- 1.1.2 The report analyses the underlying mineral resource across a proposed Anaerobic Digestion Plant site on land off Ashton Road, southeast of South Cerney, Ashton Keynes, in Wiltshire.
- 1.1.3 The Site is within a Wiltshire Council Mineral Resource Zone and Mineral Safeguarded Area.
- 1.1.4 The Site spans approximately 6.95 hectares (17.16 acres) of agricultural land underlain by a geology made up of silt and clay with some sand. We have been provided with records of boreholes and trial pits taken across the Site which show varied superficial deposit thickness levels but each demonstrate significant levels of silt and clay within what sand is present, which suggests there is no mineral of any worth. Borehole records show that gravel appears not to be present across the Site.
- 1.1.5 Given the apparent quality of the reserve, mineral extraction is unlikely to be economically viable.

2. Introduction

2.1 Scope of Works

- 2.1.1 Savills UK Limited have been commissioned by Acorn Bioenergy Limited (herein referred to as the **Client**) to produce a Minerals Resource Assessment (**MRA**) to accompany a planning application for an Anaerobic Digestion Plant site on land off Ashton Road, southeast of South Cerney, Ashton Keynes, in Wiltshire. The boundary for the proposed development is outlined red in Figure 1 below and is herein referred to as the **Application Site**.
- 2.1.2 The MRA utilises available geological and site setting information to evaluate the constraint that mineral resources are likely to present on the proposed development given local mineral planning policy. The MRA provides a resource assessment that defines the viability of (extractable) mineral resources present at the Application Site, principally in relation to a Minerals Safeguarding Area and Mineral Resource Zone defined by the Minerals Planning Authority (**MPA**) of Wiltshire Council (**WC**).
- 2.1.3 The geological setting for the Site has been determined from a review of publicly available data held by the British Geological Survey (BGS) and Magic.gov.uk. In addition to material published by BGS, the following mineral planning documentation produced by the MPA and relevant local planning policies at WC have been reviewed. This includes:
- Wiltshire and Swindon Minerals Core Strategy, adopted June 2009
 - The Wiltshire and Swindon Minerals Development Control Policies, adopted September 2009
 - The Wiltshire and Swindon Aggregate Minerals Site Allocations Local Plan, adopted May 2013
- 2.1.4 This MRA has been prepared in accordance with the 'Mineral Safeguarding Practice Guidance' (April 2019) produced by the Mineral Products Association and the Planning Officers' Society. The guidance sets out that developers should provide sufficient information to enable the Mineral Planning Authority (MPA) and Local Planning Authority (LPA) to consider the potential effect of non-exempt development in Mineral Safeguarding Areas/Mineral Consultation Areas (MSAs/MCAs) on mineral safeguarding, and the viability of prior extraction of mineral ahead, or in conjunction with, the non-mineral development. This information should be in the form of an MRA and Annex 1 to the guidance sets out matters to be addressed.
- 2.1.5 In producing this MRA we have not undertaken, nor been instructed to undertake any intrusive geological investigations ourselves to determine economic viability of the underlying mineral resource across the Site but have relied upon information contained in a Ground Investigation Report (document reference: 404.11923.00004.0027) undertaken by SLR Consulting in May 2023 and submitted as part of the planning application for the Anaerobic Digestion Plant.

3. Site Background

3.1 Location and Situation

3.1.1 The Application Site covers approximately 6.95 hectares (17.16 acres) of undeveloped greenfield land and is located approximately 5.75km to the south of the centre of Cirencester and 16.25km to the north-west of Swindon.

3.1.2 The property is situated at the edge of the Cotswold Water Park, an area which has been subject to intensive mineral extraction historically, with a number of formerly worked quarries restored to lakes in the close proximity, and operational quarries such as Shorncote Quarry to the north, and Cerney Wick Quarry to the east. These have been worked for their sand and gravel content.

The primary uses of the land now are reservoirs and lakes, along with holiday parks along with Holcim's cement plant 'North End Works' to the south east of the subject.

3.1.3 There are number of designations either on or in the near vicinity of the Application Site which include:

- The Application Site is located within a Minerals Safeguarding Area and Minerals Resource Zone
- The Cotswold Water Park is a SSSI (Site of Specific Scientific Interest)
- There are a number of Nature Reserves in the vicinity, these including Freeth Mere, Pikes Corner and Upper Waterhay.

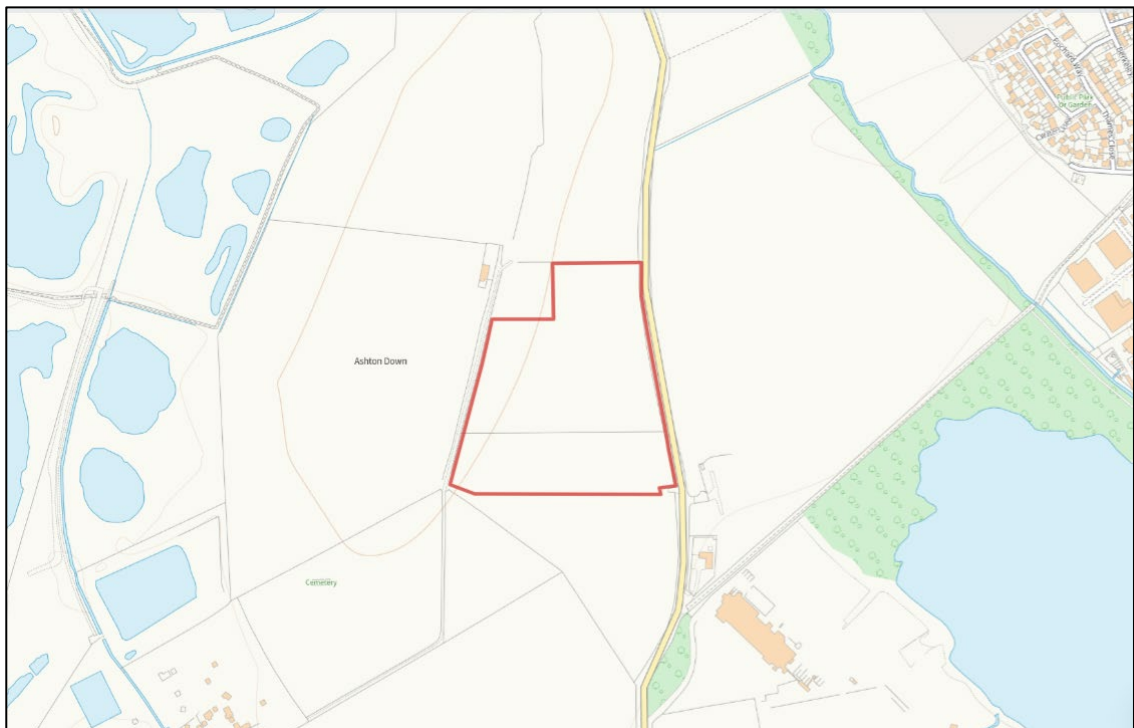


Figure 1 – Site Boundary

3.2 General Site Setting

- 3.2.1 The Site is shown in Figure 1 and covers an area of approximately 6.95 hectares. The Site is currently in agricultural use, comprising one complete field and a portion of a second immediately to the south, which are bound to the east by Ashton Road. Both fields are in arable use, and the fields are divided by an intermittent hedge and low trees. A shallow drainage ditch lies on the northern side of the divide. The Site is typically bound by hedges on all sides except the southern boundary which bisects the southern field. Further shallow drainage ditches are present outside the north and eastern boundaries. An unsurfaced access track passes along the outside of the western boundary.
- 3.2.2 The Site is bounded immediately to the east by Ashton Road, and agricultural land on the north, south and western boundary. Ashton Road adjoins Spine Road to the south, which in turn adjoins the A419 to the east. This provides strong access to Swindon and the M4 to the south, and Cheltenham and the M5 to the north.

3.3 Proposed Development Details

- 3.3.1 Our Client submitted planning application reference PL/2023/03359 to WC on 09 May 2023 for the construction and operation of an anaerobic digestion facility, ancillary infrastructure and the construction of a new access from Ashton Road. Figure 2 below shows the proposed layout of the development. The development would process in the order of 91,000 tonnes per annum of agricultural feedstock to generate biomethane gas for injection into the national gas grid at an off-site location. The feedstock will arise from local farms.
- 3.3.2 The proposed development is for a temporary period with an anticipated operational life of 25 years, after which the facility will be removed and the land restored to agricultural use.
- 3.3.3 The proposals involve earthworks (cut and fill) to create a suitable platform for the proposed infrastructure to sit on, and to minimise landscape and visual impacts through reducing ground levels. Earthwork assessments have been undertaken by the Applicant which confirm that 96% of the stripped topsoil will remain on Site for re-use, and would be stored within the proposed screening bunds. In addition, the bulk of the cut and fill materials will also be retained on-site (81%). Retention of this material on-site will allow for its re-instatement and restoration back to agricultural use after 25 years when the plant ceases to operate.



Figure 2 – Proposed Layout

4. Review of Mineral Planning Policy

4.1 National Mineral Planning Context

- 4.1.1 For England, the key national planning policies for minerals are set out paragraph 222 – 230 of the National Planning Policy Framework (NPPF), published December 2024 and amended February 2025.
- 4.1.2 The NPPF recognises that a sufficient supply of minerals are essential to provide the infrastructure, buildings, energy and goods that the country needs but also acknowledges the requirement that permitted mineral operations do not have unacceptable adverse impacts on the natural and historical environment or human health.
- 4.1.3 The NPPF also recognises that since minerals are finite in nature, and can only be worked where they are found, planning policies should safeguard resources through the use of designated MSAs and MCAs, to prevent sterilisation by other developments, and encourage prior extraction where feasible.
- 4.1.4 The NPPF outlines a requirement for MPAs to ensure a steady and adequate supply of aggregates via the maintenance of a 7-year land bank for sand and gravel and 10 years for crushed rock.

4.2 Local Planning Context

- 4.2.1 In the context of local planning, the Site is situated within the WC Local Authority Area. The principal document and policies relating to strategic mineral planning within WC are as follows:
 - The Wiltshire and Swindon Minerals Core Strategy, adopted June 2009 (WSMCS)
 - The Wiltshire and Swindon Minerals Development Control Policies, adopted September 2009 (WSMDCP)
 - The Wiltshire and Swindon Aggregate Minerals Site Allocations Local Plan, adopted May 2013 (WSAMSALP)
- 4.2.2 The WSMCS was adopted in June 2009 and covers the period up to 2026 and therefore presents the relevant mineral policies in relation to mineral resources and mineral safeguarding on the Application Site. The role of the WSMCS is to ensure a steady and adequate supply of mineral resources to facilitate development over the Plan period and beyond.
- 4.2.3 The Proposed Development is located within the Upper Thames Mineral Resource Zone (Policy MCS1) and a Mineral Safeguarding Area (MCS 6).
- 4.2.4 Policy MCS 1 and Policy MCS 1 (A) aim to meet the demand for sand and gravel through the identification of a series of strategically important Mineral Resource Zones, and Policy MCS 6 provides for their safeguarding through defined Mineral Safeguarding Areas (MSAs). The WSMCS recognises that not all land within MSAs will necessarily be acceptable or suitable for minerals development, and the Councils' recognise that in these circumstances applications for non-mineral development should not be prevented on the grounds of mineral sterilisation. The Councils' approach to this matter is set out in a more detailed policy in the Minerals Development Control Policies Development Plan Document.
- 4.2.5 The WSMDCP sets out the Councils' land use policy framework for determining planning applications for minerals development. It includes Policy MDC4 relating to safeguarding mineral

resources and states that development proposals within MSAs that may prevent or adversely affect current or possible future mineral extraction will be opposed unless:

- An appropriate quantity of mineral can be reasonably extracted prior to or in phase with the proposed non-mineral development such that the extraction does not unreasonably prevent or hinder the non-minerals development; or
- It can be proven that the mineral deposit is unlikely to be worked due to its quality or quantity; or
- The development is of a temporary nature and can be completed and the site restored to a condition that does not inhibit extraction within the timescale that the mineral is likely to be needed; or
- There is an overriding need for the proposed non-minerals development to commence without delay.

4.2.6 The WSAMSALP was created subsequent to the adoption of the WSMCS and WSMDCP to meet the need for sand and gravel within the plan area through the identification and allocation of seven sites to be allocated for future minerals extraction, including “Land at Cotswold Community”, which the Site is adjacent to but not included within. Any extraction within the allocated area would not be impacted by the proposed development of the Site. The relative position of the Site to the “Land at Cotswold Community” allocated area is shown on Figure 3 below. The subject Site is outlined in blue in this instance:

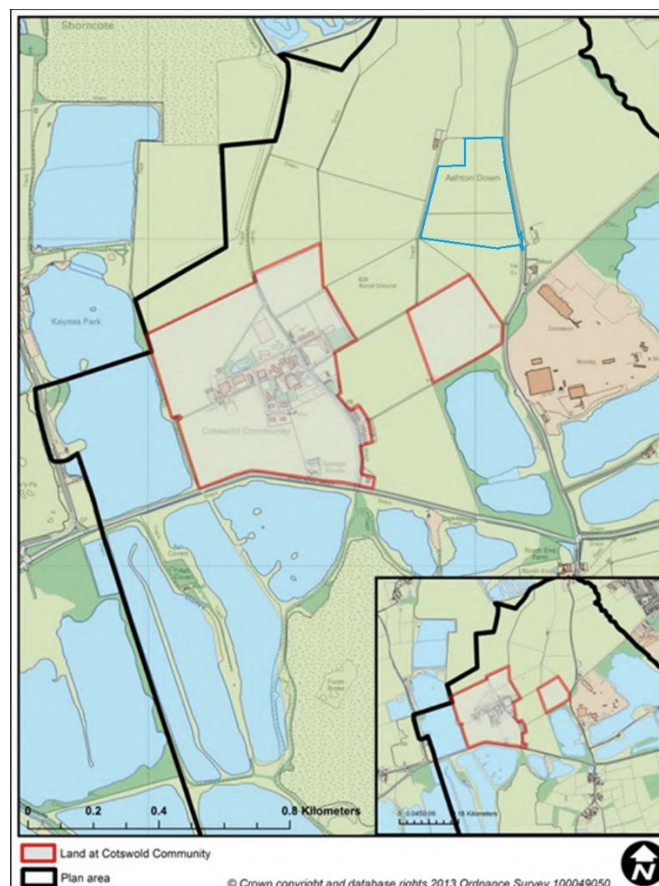


Figure 3: Land at Cotswold Community

4.3 The Wiltshire and Swindon Local Aggregate Assessment 2022

4.3.1 The Wiltshire and Swindon Local Aggregate Assessment 2022 was published December 2023 and summarises the most recent data available for the Wiltshire mineral landbank.

4.3.2 The report states that the Thames Valley produces mainly sharp sand and gravel which is primarily used in the production of concrete. However, soft building Sand is also produced in Wiltshire, primarily in the south of the County. Both of these types of aggregate have been grouped into one as Sand and Gravel for Wiltshire.

Statistics show that in 2022 there were 460,038 tonnes of sand and gravel sold which was a 33% decrease from 2021.

4.3.3 The total permitted reserve (as of end December 2022) of sand and gravel in Wiltshire was 1,426,000 tonnes. This provides a landbank of just 2.73 years, less than the 7-year minimum. Therefore, WC will consider safeguarding sand and gravel resources as a priority.

5. Geological Overview

5.1 Overview

- 5.1.1 The following section is based on publicly available mineral resource mapping and borehole data made available by the British Geological Survey (BGS).

5.2 Geological Setting

- 5.2.1 The regional geological setting for the Application Site, as determined from publicly available data sources held by BGS is summarised in Table 1 and shown in Figures 4 & 5.

Table 1. Regional Geological Succession

Strata	Description
Superficial	
N/A	No superficial deposit underlain the subject property
Bedrock	
Kellaways Clay Member Mudstone	Silicate mudstone, grey, commonly smooth in basal part but more generally silici-silty or silici-sandy, locally with thin beds of siltstone and sandstone, and nodules of argillaceous limestone.

- 5.2.2 Whilst the local area is almost entirely dominated by superficial deposits of Northmoor Sand and Gravel and Alluvium-Clay, silt, sand and gravel, the subject area is not underlain by any superficial deposit. This can be seen on the below plan.

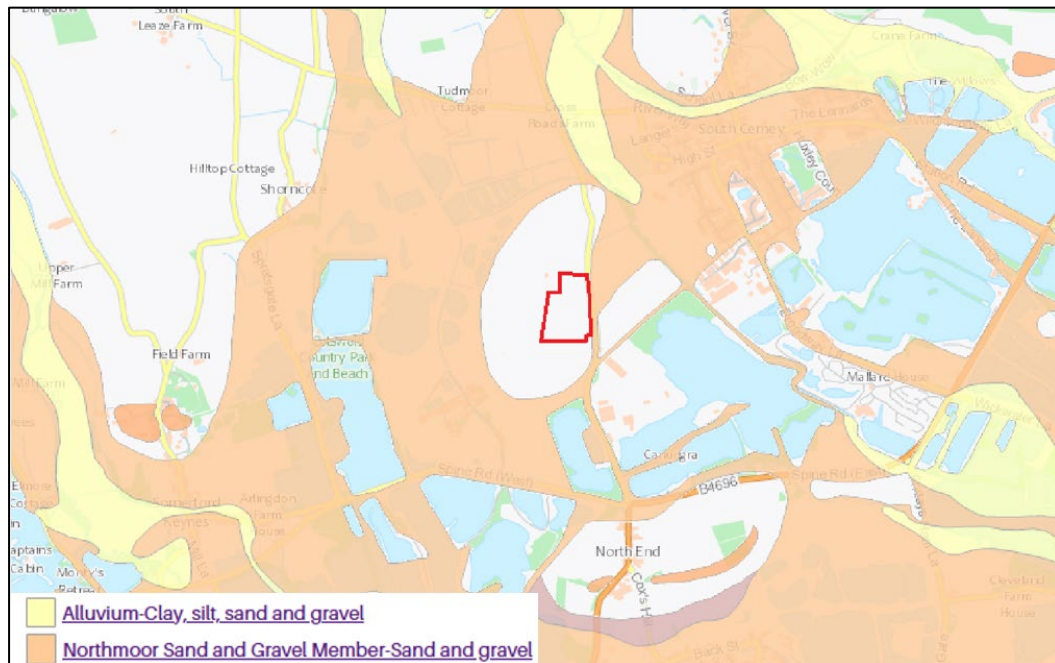


Figure 4. Superficial deposits across the Site (Source BGS Geology Viewer)

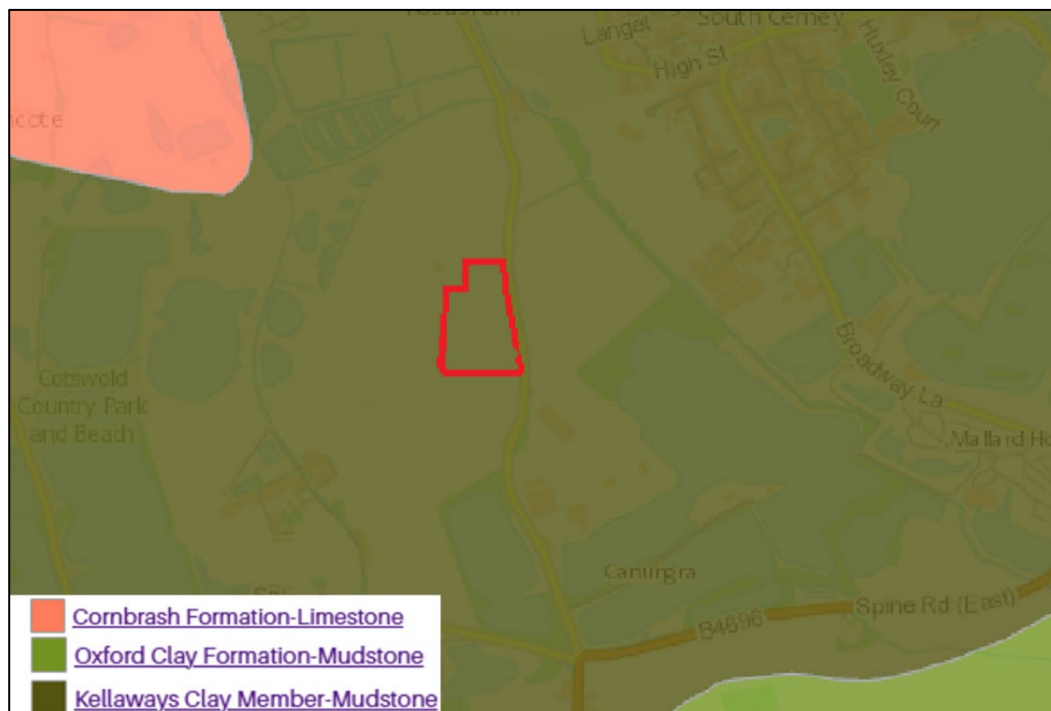


Figure 5. Bedrock deposits across the Site (Source BGS Geology Viewer)

5.2.3 Whether this geological formation constitutes an economically viable mineral resource will depend on a variety of factors, including:

- Possible presence of unwanted interbedded material, including clays and silt
- Proportion of oversized material and presence of deleterious rocks.
- Thickness of deposit to overburden ratio
- Position of water table
- Location to relative demand.

5.3 Site Specific Geology

5.3.1 We have been provided with the results of a site investigation conducted by SLR Consulting within their Ground Investigation Report (document reference: 404.11923.00004.0027) dated May 2023 which formed part of the planning application. A plan highlighting the location of each borehole/trial pit and a table of data is included below:

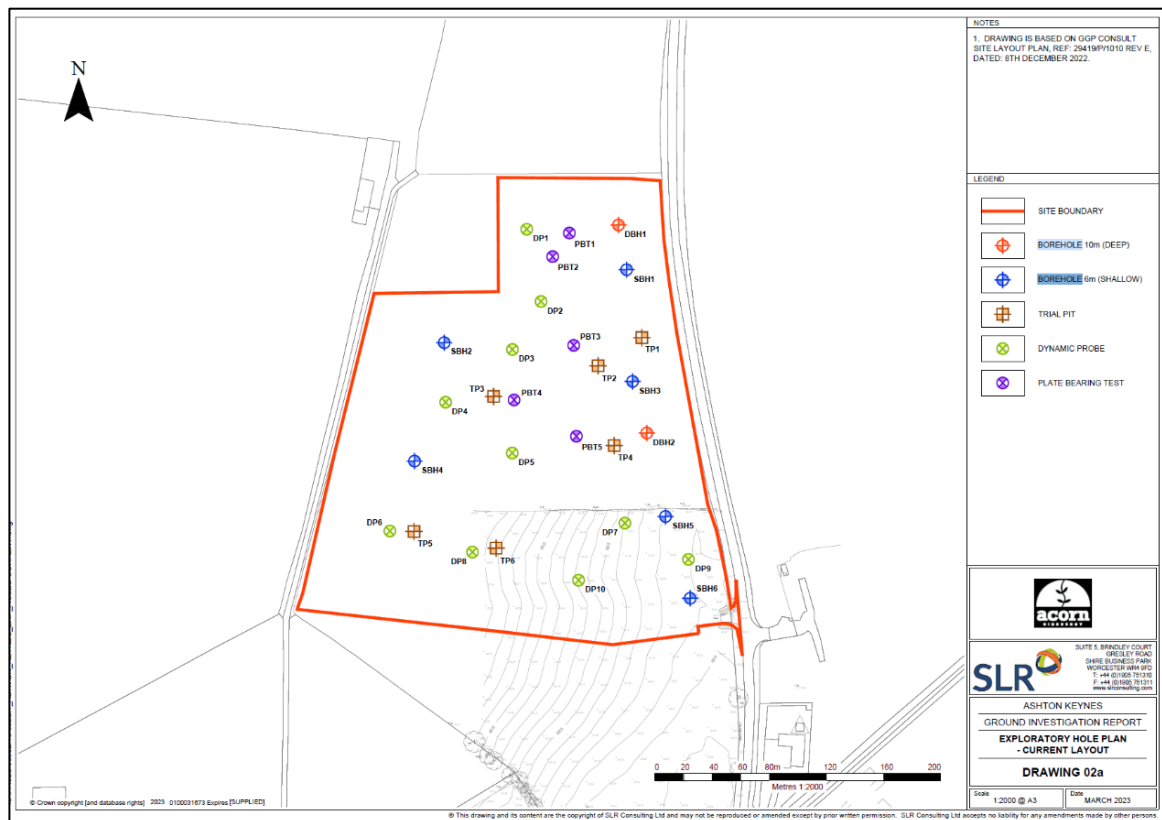


Figure 6. Borehole Locations across the Application Boundary (Source SLR Consulting Ground Investigation)

Table 2. Summary of borehole information adjacent to the Application Site

Borehole / Trial Pit Ref.	Thickness of Alluvium (m)	Depth Encountered (m bgl)
DBH1	0.90	0.30 – 1.20
DBH2	1.10	0.20 – 1.30
SBH1	1.00	0.20 – 1.20
SBH2	1.00	0.25 – 1.25
SBH3	0.90	0.30 – 1.20
SBH4	1.29	0.21 – 1.50
SBH5	1.17	0.23 – 1.40
SBH6	1.20	0.20 – 1.40
TP101	0.87	0.30 – 1.17
TP102	0.88	0.36 – 1.24
TP103	0.77	0.34 – 1.11
TP104	0.68	0.10 – 0.78
TP105	1.50	0.20 – 1.70
TP106	0.85	0.95 – 1.80

Table 3. Summary of Strata Encountered

Ground Type	Strata	Description	Depth Range (metres below ground)
Topsoil	topsoil	Very soft to soft dark brown sandy silty clay	0.0 – 0.30
Superficial	Alluvium – Northmoor Sand and Gravel Member	Very soft to soft yellowish brown sandy clay	0.80 – 2.50
Bedrock	Kellaways Clay Member – Mudstone	Soft mottled orange, brown and grey sandy silty clay and stiff blueish grey clay	0.76 - 10
Bedrock	Cornbrash Limestone Formation	Not encountered	

- 5.3.2 Of the explorations across the Site , most show a silty sandy clay for the first 0.2-0.3m, with soft yellowish brown silty sandy clay below to approximately 1.2-1.4m. Underlying this is approximately a further 2.8m of sandy silty clay in the Kellaways Clay Member formation.
- 5.3.3 As previously discussed, there has been intensive mineral working in the surrounding area, exploiting the superficial deposits of sand and sand and gravel. However, these superficial deposits do not occur at the subject Site. There is significant silt content and clay content in the relatively thin layer of sand present, with no gravel identified, therefore the material is unlikely to be commercially viable.

6. Suitability for Extraction

6.1 Quality of Mineral

- 6.1.1 The Application Site is situated on a plot not underlain by the superficial sand and gravel deposits which have been worked significantly elsewhere through the region. There is minimal evidence of the bedrock being worked at other units across the region, although we cannot comment on the quality of this due to the limited depth of the borehole investigations. We would comment that the reserves present demonstrate large clay and silt content which would render excavation and processing more costly, without yielding sufficient marketable volumes of sand, whilst there is no evidence of any gravel being present at all.

7. Conclusions

- 7.1.1 To conclude, the Application Site is located within a Mineral Resource Zone and Mineral Safeguarding Area. Policies are in place to ensure commercially viable mineral is not needlessly sterilised by surface development to ensure long term supply of minerals, but these Policies do not present a presumption that the all the underlying mineral will be worked or be suitable to be worked.
- 7.1.2 From the site investigation work the sample boreholes and trial pits demonstrate a low quality resource and lack of underlying superficial sand and gravel deposits.
- 7.1.3 Taking into consideration the apparent quality of the geology we do not believe that the underlying minerals present an economically viable extraction opportunity for an operator.
- 7.1.4 Additionally, the proposed development of the Site as an anaerobic digestion facility is on a temporary basis, with land to be restored to current conditions in 25 years or less.
- 7.1.5 Therefore we are of the opinion that the Site fulfils the criteria set out in the Wiltshire and Swindon Minerals Development Control Policies which sets out the following exceptions to presumed opposition of development within a Mineral Safeguarding Area:
- It can be proven that the mineral deposit is unlikely to be worked due to its quality or quantity
 - The development is of a temporary nature and can be completed and the Site restored to a condition that does not inhibit extraction within the timescale that the mineral is likely to be needed;
- 7.1.6 Consequently, we do not believe the Application Site should be affected by minerals safeguarding policies.

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