MINERAL RESOURCE ASSESSMENT
LAND WEST OF WESTFIELD AVENUE
EARL SHILTON
AVANT HOMES
MRA-22416G-25-16
JANUARY 2025

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Document Issue Record

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Prepared by		Approved by
Keith Paramor	BSc MSc	Lisa Horsley

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TABLE OF CONTENTS

SECTION 1 INTRODUCTION

1.1 Avant Homes has applied to develop 18 dwellings with associated landscaping access roads and parking under planning reference 24/01066/FUL. The application area lies to the south of their existing Heath Lane/Westfield Farm development. The site is within a designated Mineral Safeguarding Area for sand and gravel resources and, as part of the planning consultation, Leicestershire County Council's Mineral Planning Authority (MPA) has requested assessment of mineral resources which, if present, would no longer be accessible for exploitation ('sterilised') as a result of the proposed development.

1.2 The MPA consultation response is included here as Appendix 1. Under Leicestershire Mineral and Waste Local Plan adopted in 2019, Policy M11 requires mineral resources to be safeguarded by other (non-mineral) development but states the conditions under which planning permission for development can be granted and also states *'Planning applications for non-mineral development within a Mineral Safeguarding Area should be accompanied by a Mineral Assessment of the effect of the proposed development on the mineral resource beneath or adjacent to it.*'

Policy M11: Safeguarding of Mineral Resources

Sand and gravel, limestone, igneous rock, surface coal, fireclay, brickclay and gypsum resources within the Minerals Safeguarding Areas shown on the figures contained within the Mineral and Waste Safeguarding documents, will be protected from permanent sterilisation by other development.

Planning permission will be granted for development that is incompatible with safeguarding mineral within a Mineral Safeguarding Area if:

(i) the applicant can demonstrate that the mineral concerned is no longer of any value or potential value; or

(ii) the mineral can be extracted satisfactorily prior to the incompatible development taking place; or

(iii) the incompatible 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

(iv) there is an overriding need for the incompatible development; or

(v) the development comprises one of the types of development listed in Table 4.

Planning applications for non-mineral development within a Mineral Safeguarding Area should be accompanied by a Mineral Assessment of the effect of the proposed development on the mineral resource beneath or adjacent to it.

Planning permission for mineral extraction that is in advance of approved surface development will be granted where the reserves would otherwise be permanently sterilised provided that operations are only for a temporary period. Where planning permission is granted, conditions will be imposed to ensure that the site can be adequately restored to a satisfactory after-use should the main development be delayed or not implemented.

1.3 IDOM Merebrook Limited (IDOM) has been commissioned by Avant Homes to undertake a Mineral Assessment to assess the development proposals in the context of Policy M11 of the Leicestershire Mineral and Waste Local Plan. In accordance with the MPA's comments this will

i. Estimate the quantity and quality of any potential sand and gravel resources at the site;

ii. Consider the feasibility of extracting mineral resources prior to development in the context of site constraints.

1.4 A Phase 1 Geoenvironmental Assessment (Desk Study) and Phase 2 Intrusive Geoenvironmental Assessment have previously been prepared by IDOM for Avant Homes to support the planning application. These were reported in the documents referenced as follows:

i. DS-22416g-23-348RevA, dated September 2023

ii. GEA-22416g-23-393RevA, dated November 2023

1.5 The wider Avant Homes Westfield Farm development has also been the subject of intrusive investigation by MEC reported in their document - *Phase 2 Ground Investigation*, ref. 20851/10-17/5105 Rev C, dated June 2018. Two trial pits, one soakage test pit and one windowless sampler borehole from that investigation, were completed within the subject area.

1.6 Relevant information from the above reports has been used to inform this assessment with the key information set out in the following sections, as they pertain to ground conditions, geological evidence of mineral resources and history of local resource exploitation.

1.7 This report has been prepared for Avant Homes for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult Avant Homes and IDOM as to the extent to which the findings may be appropriate for their use.

SECTION 2 THE SITE

2.1 SITE LOCATION AND SETTING

2.1.1 The site is a rectangular area of land occupying approximately 0.69 ha to the west of Westfield Avenue – a highway constructed recently to serve the wider Avant Homes development to the north. The nearest postcode is LE9 7PB with the site centred on Ordnance Survey National Grid Ref. 446004 297819. A health centre/surgery with parking is located to the east, allotment gardens immediately to the west, recently developed dwellings are located immediately adjacent to the northern and southern boundaries.

2.2 The proposed development arrangement plan is provided in Appendix 2. The development is to include 18 dwellings with gardens, access roads, parking and open space allocation.

2.1.1 A recent aerial view of the site is presented in Figure 1 below.

Figure 1. Recent aerial view of site and immediate surrounds.

2.1.2 From desk study investigation, the site has remained historically undeveloped grassland. It has most recently been used for building materials storage, serving the Avant Homes Westfield Farm development to the north but containers and most materials have since been moved and the site is currently vacant.

SECTION 3 PROPOSED DEVELOPMENT AND MINERAL PLANNING POLICY

3.1 The site is not within any of the seven allocated sites for minerals extraction as designated within the Mineral and Waste Local Plan. Based on the 10-year average aggregates demand a shortfall of 9.53 MT has been identified within Leicestershire which cannot be supplied from existing and permitted sand and gravel extraction sites. The planning authority has adopted a strategy of maintaining a landbank for potential future extraction to provide seven years supply. Under Policy M1 the County Council will seek to ensure steady supply of aggregates with extension to existing permitted extraction sites being the primary option.

3.2 The site is located within a Minerals Safeguarding Area for sand and gravel. An extract from Figure HK1 within LCC Mineral and Waste Safeguarding document S4/2015 for Hinckley and Bosworth is reproduced in Figure 2 below. These areas would appear to correlate to general areas of Quaternary superficial deposits, including all glacially and fluvially deposited materials which overlie the bedrock

geology. This broad allocation is consistent with the following extract from para. 3.11 of the Mineral and Waste Local Plan, '*Glaciofluvial deposits occur in a complex series of isolated deposits in areas to the south and west of Leicester. The full extent of this resource is unknown due to the extensive boulder clay and other drift deposits concealing potential resources.'* The uncertainty giving rise to the extent of the designated safeguarding areas is discussed in relation to the published geology and known ground conditions in Section 4.

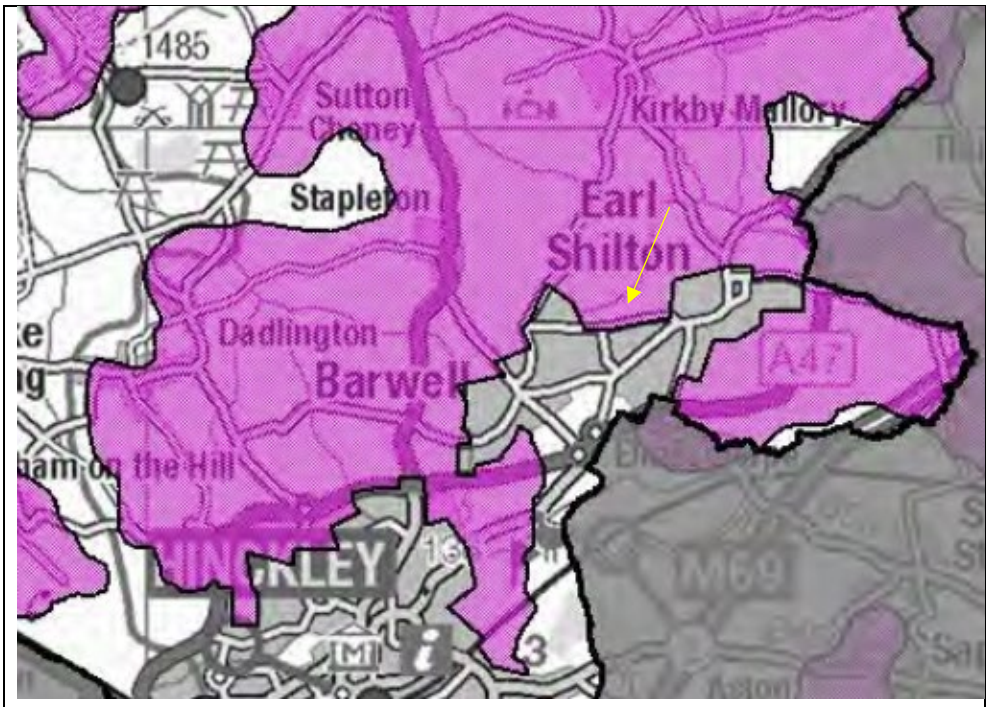

Figure 2. Extract from HK1 Mineral Safeguarding Areas map. Approximate site location denoted by arrow.

SECTION 4 GEOLOGY AND IDENTIFIED GROUND CONDITIONS

4.1 PUBLISHED GEOLOGY

4.1.1 The published geology for the area shows the site to be at the northern edge of the outcrop of glaciofluvial sand and gravel of the Wigston Member. This is shown to cover only the southernmost part of the site, approximately 15 m wide in the west narrowing to 10 m wide in the east. The majority (around 90% of the site) is shown as having no superficial cover with bedrock of the Gunthorpe Formation outcropping at the surface. It is noted however that geological boundaries as shown on published mapping can be conjectured.

4.1.2 An extract of the published geology is included as Figure 3 below.

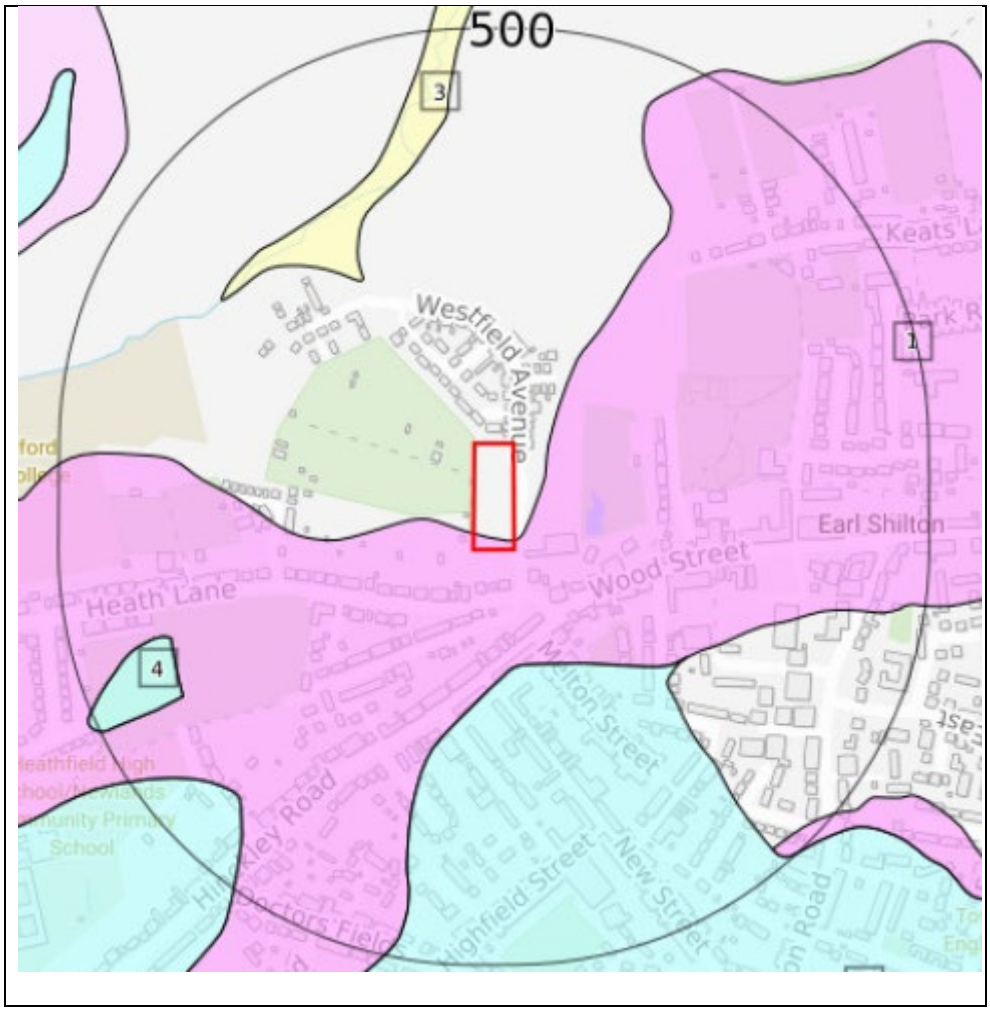

Figure 3. BGS mapping extract of superficial geological formations. Wigston Member Sand and Gravel shown in pink, Oadby Formation (glacial Till) shown in blue. Sand and gravel indicated to be absent north of the site.

4.1.3 The extent of the mapped glacio-fluvial sand and gravel deposits is clearly significantly less than the sand and gravel resource safeguarding area, which includes much of the rural area to the north of Earl Shilton. The absence of other superficial units in the pre-Anglian and Anglian sequence such as Wolston Formation or glacial Till units, would therefore exclude the possibility of concealed glacio-fluvial or alluvial sand and gravel resources existing further north than the mapped Wigston Member outcrop.

4.1.4 From Ordnance Survey historical mapping, features which suggest evidence of sand and gravel extraction include an irregular area of gravel pit, around 150 m across, located 225 m south-west of the site. This is shown on the 1950 1:10 000 map edition and was no longer present by the 1967 edition. An area of workings is shown 100 m east of the site from 1962, now present as a pond with surrounding woodland east of Heath Surgery, however map symbols or notes do not identify the type of excavation or workings. A 19th century pit is shown further east however this as

shown on maps to be a clay pit. Historical exploitation of sand and gravel in the vicinity is therefore indicated to be of relatively small scale and short-lived.

4.2 GROUND CONDITIONS FROM SITE INVESTIGATION

4.2.1 Strata identified in borehole and trial pit investigations undertaken within the application site and in the wider Westfield Farm area to the north, broadly confirmed the published geology. Granular deposits which can be ascribed to the Wigston Member were confirmed in the south of the site and in the eastern area of residential development in Westfield Farm. Beyond the northern margin of the mapped sand and gravel outcrop, exploratory holes found only thin sand layers or their absence. The underlying Gunthorpe Member was identified as highly weathered comprising firm through to very stiff red clay/silt with relic mudstone fabric remaining.

4.2.2 Figure 4 shows the locations of IDOM 2023 and MEC 2018 exploratory holes in the subject site.

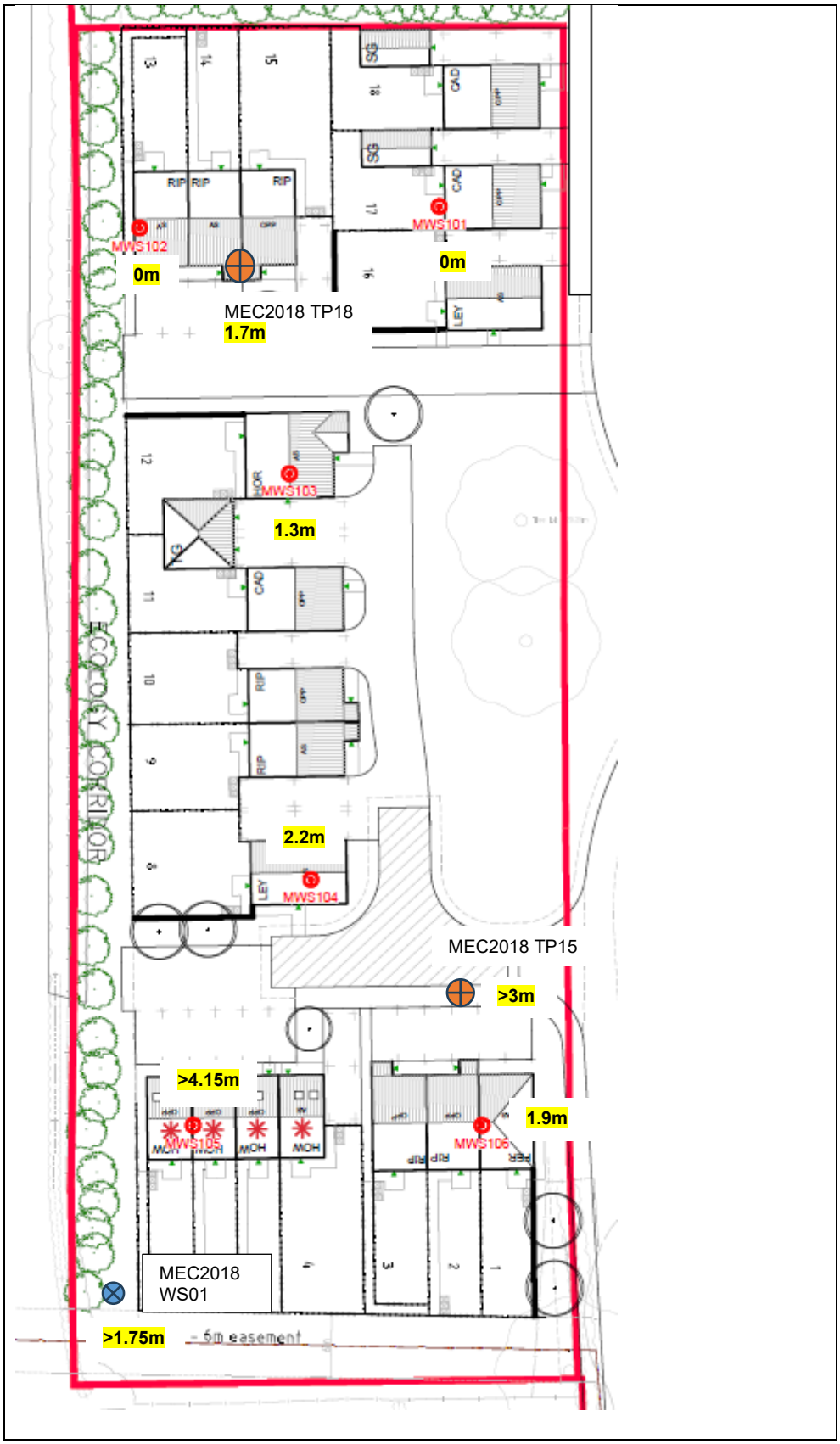

Figure 4. Approximate site investigation locations with thickness of sand shown highlighted in yellow.

4.2.3 Exploratory hole logs from investigations within the application area are included in Appendix 3. The site is currently surfaced with up to 0.8 m recently placed made ground. It was underlain by superficial deposits inferred as belonging to the Wigston Member comprising either a sandy clay or light grey and red-brown sand with silt and clay content. Visually the fines content of the sand layers ranged from low to high with decayed fibrous plant fragments observed. Shallow water was indicated from very wet/saturated sand recovered in soil cores. The underlying Gunthorpe Formation clays was found underlying the Wigston Member in six of the nine investigation locations. The identified thickness of the sand layers in each investigation location are stated on Figure 4 above. In three locations (MECWS01, MECTP15 and MWS105) the base of the sand layer was not proven. However, given the location on the northern margin of the mapped Wigston Member outcrop, where the deposits should be thinning and the proven base of the sand in nearby locations MWS106 and MWS104, it is considered that the base of the sand would not be significantly deeper than the base of the three holes where it was not reached.

4.3 PLANNING HISTORY

4.3.1 The following relevant planning information is presented below.

i. The application site itself had previously been granted permission for employment use, allied to the wider Westfield Farm development. The previous Outline Planning Application (14/01279) which included 0.6ha for business starter units did not require the submission of a Minerals Resource Assessment.

ii. The erection of two detached dwellings and one five-bed detached dwelling with garage were granted permission on 10 June 2021 (planning references 21/00243/FUL and 21/00015/FUL, respectively). These properties are located immediately adjacent to the site's southern boundary within the Mineral Safeguarding Area and have since been built. Neither of the planning permissions for the residential development adjacent to the southern boundary included conditions required to submit a Minerals Resource Assessment.

SECTION 5 OPTIONS APPRAISAL

5.1 MODIFYING THE DEVELOPMENT TO AVOID STERILISATION

5.1.1 From discussion with Avant, the previous permitted scheme for business/commercial units did not proceed due to lack of market interest. Avant has advised that reducing the proposed accommodation schedule for the alternative residential application would render it commercially unviable and could also result in the loss of the proposed affordable units if the proposal dropped below the affordable housing provision of 10 homes or over 0.5 ha.

5.2 COMMERCIAL EXTRACTION

5.2.1 Excluding the tree protection area on the eastern boundary and east-west aligned sewer easement inside the southern boundary, the developable site area is approximately 0.50 ha. Sand was absent in the northern 20% of the site and the average estimated thickness over the remaining 0.40 ha is 2.3 m, giving a volume of 9200 m^3. As a standoff would be required to maintain a safe batter at site boundaries and the along sewer easement, this volume would be significantly reduced.

5.2.2 It is considered that the costs required for establishment of plant, welfare, processing and extraction would render the small area and volume of sand unviable for a standalone commercial extraction. Further consideration of environmental impacts, emissions, nuisance, siting of processing and transport in such a scenario is therefore not considered necessary.

5.3 EXTRACTION FOR USE BY THE DEVELOPER

5.3.1 The intention of the Mineral Policy of requiring extraction for use by the developer on site as a replacement for commercially supplied aggregate resource, would presumably necessitate its use in mortars, screeds, concrete mixes and the like. In view of the descriptions of the sand having variable clay content and organic matter, it is unlikely its use in these applications would meet gradings, quality and performance criteria required for construction without processing or further investigation and rigorous analysis. Hence it is normal practice for new developments of such scale to import commercially batched mortar and concrete. Limited use as blinding layers or bedding or clean cover subsoil in landscaped areas could be considered for sand incidentally recovered from construction excavations.

5.3.2 The recommended foundation solution for the development is to either pile or undertake ground improvement to permit use of shallow strip foundations. Therefore, only those excavations required for foundations, service trenches and surface water storage are proposed. Extraction of the sand deposits would require additional and substantial reduced level dig over much of the site. To reinstate suitable levels for the development would then require importation of fill materials. As a deliberate excavation activity, it is considered that restoration would require an Environmental Permit for permanent disposal with surplus soils or require importation of non-waste materials such as virgin quarried stone or aggregate, defeating the purpose of the Mineral Policy. The benefits of the materials gained from extraction would likely be outweighed by the costs of importation of fill, engineer controlled placement and allied costs of permitting, design and validation.

5.3.3 Bulk excavation to extract the resource would also be at risk of generating emissions (dust, noise), without significant mitigation. In view of the adjacent dwellings and health centre this would be undesirable in terms of nuisance and potential health impacts. In addition, the shallow groundwater table identified from the borehole investigation would also need to be managed with discharge of substantial water

volumes. With no nearby watercourses or disposal to ground option, discharge via mains sewerage would be required.

SECTION 6 CONCLUSIONS

6.1 Limited glaciofluvial deposits (sand of the Wigston Member) have been identified mainly in the south of the site. Their quality as clean sand for use as building material is questionable based on borehole and trial pit observations.

6.2 The volume is considered insufficient for extraction as a standalone commercial operation.

6.3 Loss of developable area to avoid sterilisation of the underlying sand would likely render the development commercially unviable.

6.4 Its extraction for use by the developer would entail significant costs in excavation, processing and site restoration and likely exceed the benefits of its use. Restoration of site levels would necessitate use of surplus materials from other sites as general fill and may well require permitting under waste legislation or use of virgin non-waste materials.

6.5 The proximity to sensitive land uses is considered to impose significant constraints upon large scale excavation for extraction and movement.

6.6 It is noted that adjacent housing development permitted in 2021 within the Mineral Safeguarding Area, has not had imposition of a condition to assess these sites under Policy M1.

APPENDIX 1 ▪ LCC Minerals Planning Consultation

Leicestershire County Council

Matt Jedruch
Hinckley and Bosworth Borough Council

Date: 13 December 2024
My Ref: 24/01066/FUL
Contact: Lucie Hoelmer
Phone: 0116 305 3414
Email: planningcontrol@leics.gov.uk

APPLICATION DETAILS:

Planning Application Number: 24/01066/FUL
LCC Reference Number: 24/01066/FUL
Applicant:

Description of Application:
Erection of 18 dwellings with associated access, car parking, landscaping and drainage

Location of Application:
Land West Of Westfield Avenue Earl Shilton Leicestershire

Thank you for your consultation in respect of the above planning application. The County Council has considered the application, having regard to the Development Plan, National Planning Policy Guidance and other relevant material considerations. In this particular instance, the County Council, as Minerals and Waste Planning Authority, comments as follows;

The application site is located largely within a Mineral Safeguarding Area for (sand & gravel) as identified on Map of the Leicestershire Minerals and Waste Local Plan (2019-31) (MWLP) and Policy M11 outlines that mineral, including sand & gravel, will be protected from permanent sterilisation by other development. Planning applications for non-mineral development within a Mineral Safeguarding Area should be accompanied by a Mineral Assessment of the effect of the proposed development on the mineral resource beneath or adjacent to it.

Whilst it is noted that the application is supported by a range of documentation, there appears to be no consideration to potential mineral sterilisation within such. Therefore, after carefully considering the matter, the Mineral Planning Authority requests further information in the form of a Minerals Assessment to understand the proposed development and its impacts upon the Mineral Safeguarding Area. In general, the following matters are recommended for inclusion in Mineral Assessments:

- An estimate of the quality and quantity of mineral reserve impacted by the proposed development (preferably verified by evidence from borehole investigations);

- Assessment of whether the proposal can be modified to avoid sterilisation;

- Assessment of the potential for the use of the mineral in the proposed development and whether it is feasible and viable to extract the mineral resources ahead of the development;

- Assessment of the commercial and practical considerations of prior extraction – such as environmental impacts, the location of processing facilities, method of transport and the interest from local mineral operators;

- Where prior working is proposed, an explanation of how this will be carried out as part of the overall development;

- The effect of prior extraction on the deliverability and/or viability of the proposed development.

The full text to Policy M11 can be found on Page 38 of the Leicestershire Minerals and Waste Local Plan (2019-31) on the following link:

https://www.leicestershire.gov.uk/sites/default/files/field/pdf/2019/10/3/Leicestershire-Minerals-and-Waste-Local-Plan-Up-to-2031-Adopted-2019.pdf

To be included where relevant, otherwise delete- Furthermore, the proposed development is in proximity to existing permitted mineral/waste operations (delete as appropriate) and associated infrastructure at insert site/location here.

The future use of the mineral/waste site and associated infrastructure could be constrained if sensitive developments such as this proposal are permitted nearby as it may prejudice the sites' ability to comply with its permitted planning controls, for example with set noise, dust, odour or blasting limits (add/remove relevant issues).

Having regard to the particular characteristics of the existing mineral/waste operation the LPA should be satisfied that it can be demonstrated that there would be no impacts to the amenity of development in this location or that the proposed development would prejudice continued operations at the mineral/waste facility

Yours Sincerely,

Lucie Hoelmer
Planning Officer

APPENDIX 2 ▪ Proposed Development Layout

Accommodation Schedule			
Affordable 20%			
House Type	**Arrangement**	**Accomodation**	**Total Units**
Howarth	Semi/End	2 BED	4
Total			**4**
Open Market			
House Type	**Arrangement**	**Accomodation**	**Total Units**
Ripley	Semi/End	2 BED	7
Ferndale	Semi/End	2 BED	1
Cadeby	Detached	3 BED	3
Leyburn	Detached	3 BED	2
Horbury	Detached	4 BED	1
Total			**14**
Grand Total			**18**

KEY

- Existing trees retained
- Indicative landscaping
- Existing trees to be removed
- Indicates block paviors
- Application boundary
- Indicates affordable housing
- Other land within applicants control
- Indicates bin storage area
- Shared bin collection point

Notes

© Radford Architectural Services Ltd. Do not scale from this drawing. Refer to figured dimensions only. Contractors must check all dimensions on site.

N

Revision	Date	Amendment	Initials
A	17.10.24	Boundary line amended, plots 3 & 4 fenceline altered, bin collectoin points shown.	DS

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Client: AVANT homes

Project: WESTFIELD AVENUE, EARL SHILTON

Title: PLANNING LAYOUT

Dwg No.: 3187-200

Revision: A

Scale @A2: 1:500

Drawn: DS

Date: DEC 2023

APPENDIX 3 ▪ Ground Investigation – Stratigraphic Logs

IDOM

Windowless Sample Log

Borehole No. **MWS01**

Sheet 1 of 1

Project Name:	Earl Shilton	Project No. 22416g	Co-ords: 446011E - 297863N
Location:	Westfield Avenue, Leicestershire		Level (m):
Equipment:	Dart 130 Rig		Dates: 28/09/2023

Scale 1:25 | Logged By SN | Checked By KRP

Well	Wtr Strk	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20 - 0.40	D,J,V					MADE GROUND: Orange-brown sandy gravelly CLAY fill material. Gravel is fine to medium angular to rounded. Sand is coarse.
					0.90			
		1.00	D					Very soft brown wet very sandy slightly gravelly CLAY.
		1.00	SPT()	N=6 (1,1/1,1,2,2)				*Water encountered although unlikely to be groundwater*
								Black wood fragments
		2.00	SPT()	N=6 (1,0/1,2,1,2)				
		2.70 - 3.00	D		2.70			Medium reddy brown silty sandy CLAY with weathered silty mudstone fragments. [Weathered Mudstone-Gunthorpe Member]
		3.00	SPT()	N=11 (2,2/2,2,3,4)				*Sample not recovered*
		3.70	SPT()	N=48 (10,13/10,12,13,13)	3.70			End of Borehole at 3.70m

1 2 3 4 5

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample

SPT(C) = Standard Penetration Test (Cone)
SPT(S) = Standard Penetration Test (Split Spoon)
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The designer is responsible for verifying all site and setting out dimensions.

IDOM

Windowless Sample Log

Borehole No. **MWS02**

Sheet 1 of 1

Project Name:	Earl Shilton	Project No. 22416g	Co-ords: 445983E - 297861N
Location:	Westfield Avenue, Leicestershire		Level (m):
Equipment:	Dart 130 Rig		Dates: 28/09/2023

Scale 1:25

Logged By SN

Checked By KRP

Well	Wtr Strk	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20 - 0.40	D,J,V					TOPSOIL: Grass over brown sandy CLAY with rootlets.
					0.40			Soft going to very soft grey brown mottled very sandy CLAY.
								Sample not recovered
		1.00 1.00	D SPT()	N=6 (1,2/1,2,1,2)				
					1.80			Brown-grey mottled sandy gravelly CLAY.
		2.00	SPT()	N=13 (2,2/2,3,4,4)	2.00			Very soft red-brown sandy CLAY.
					2.50			Stiff red-grey mottled sandy, slightly gravelly CLAY. Gravel is fine to medium, angular. [Weathered Mudstone- Gunthorpe Member]
		2.90 - 3.00	D		2.90			Very stiff grey mottled brown silty sandy CLAY. [Weathered Mudstone- Gunthorpe Member].
		3.00	SPT()	50 (10,10/50 for 190mm)	3.00			End of Borehole at 3.00m

1 2 3 4 5

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample

SPT(C) = Standard Penetration Test (Cone)
SPT(S) = Standard Penetration Test (Split Spoon)
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The designer is responsible for verifying all site and setting out dimensions.

IDOM

Windowless Sample Log

Borehole No. **MWS03**

Sheet 1 of 1

Project Name:	Earl Shilton	Project No. 22416g	Co-ords: 445997E - 297838N
Location:	Westfield Avenue, Leicestershire		Level (m):
Equipment:	Dart 130 Rig		Dates: 28/09/2023

Scale 1:25

Logged By SN

Checked By KRP

Well	Wtr Strk	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.30	D,J,V					MADE GROUND: Grey sandy gravelly CLAY. Gravel is angular including brick fragments.
					0.40			MADE GROUND: Firm red sandy gravelly CLAY. Gravel is fine to medium angular. Black wood fragments.
					0.80			Medium blue-grey slightly silty, sandy, gravelly CLAY. Gravel is fine to medium rounded.
		1.00 1.00	D SPT()	N=15 (3,4/4,4,4,3)	1.00			Blue-grey clayey silty SAND. [Wigston Member]
					1.40			Soft red clayey SAND. [Wigston Member]
		2.00	SPT()	N=13 (1,2/2,3,4,4)				
					2.10			Stiff red-blue mottled sandy, silty CLAY. Blue mudstone fragments are silty. [Weathered Mudstone-Gunthorpe Member]
		2.40 - 2.60	D					
		3.00	SPT()	N=50 (3,3/50 for 295mm)	3.00			End of Borehole at 3.00m

1 2 3 4 5

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample

SPT(C) = Standard Penetration Test (Cone)
SPT(S) = Standard Penetration Test (Split Spoon)
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The designer is responsible for verifying all site and setting out dimensions.

IDOM

Windowless Sample Log

Borehole No. **MWS04**

Sheet 1 of 1

Project Name:	Earl Shilton	Project No. 22416g	Co-ords: 445999E - 297800N
Location:	Westfield Avenue, Leicestershire		Level (m):
Equipment:	Dart 130 Rig		Dates: 28/09/2023

Scale 1:25

Logged By SN

Checked By KRP

Well	Wtr Strk	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30 - 0.40	D,J,V		0.40			MADE GROUND: Moss over brown sandy, very gravelly CLAY. Gravel is fine to medium angular.
					0.50			MADE GROUND: Grey sandy clayey GRAVEL. Gravel is fine to medium rounded and angular.
					0.80			MADE GROUND: Firm grey sandy gravelly CLAY. Gravel is angular including brick fragments.
		1.00	SPT()	N=8 (2,2/2,2,2,2)				Very soft, going to medium around 0.8 orange-brown slightly clayey SAND with inclusions of black wood fragments. [Wigston Member]
		2.00	SPT()	N=7 (1,1/2,2,2,1)				
		3.00	SPT()	N=22 (2,3/3,5,7,7)	3.00			Very soft red sandy CLAY. [Wigston Member]
		3.70 - 4.00	D		3.70			Medium red-grey mottled sandy silty, slightly gravelly, CLAY. Gravel is fine and rounded. [Wigston Member}
		4.00	SPT()	N=21 (3,3/3,4,5,9)				*Sample not recovered*
		4.50	SPT()	50 (25 for 90mm/50 for 225mm)	4.50			End of Borehole at 4.50m

1 2 3 4 5

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample

SPT(C) = Standard Penetration Test (Cone)
SPT(S) = Standard Penetration Test (Split Spoon)
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The designer is responsible for verifying all site and setting out dimensions.

Windowless Sample Log

IDOM			Borehole No. MWS05 Sheet 1 of 1
Project Name: Earl Shilton	Project No. 22416g	Co-ords: 445985E - 297777N	Scale 1:25
Location: Westfield Avenue, Leicestershire		Level (m):	Logged By SN
Equipment: Dart 130 Rig		Dates: 28/09/2023	Checked By KRP

Well	Wtr Strk	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.00 - 0.30	D,J,V					MADE GROUND: Brown sandy slightly clayey GRAVEL. Gravel is fine to medium sub-angular to angular with inclusions of brick, plastic and mixed lithologies.
					0.45			Medium grey blue/cream mottled silty SAND with inclusions of wood fragments. [Wigston Member]
		1.00 1.00	D SPT()	N=15 (3,5/4,4,4,3)				
					1.30			Loose red medium grained wet SAND. [Wigston Member]
		2.00	SPT()	N=6 (1,2/1,2,2,1)	2.00			Grey blue/cream mottled medium silty SAND. [Wigston Member]
					2.20			Loose wet red medium grained SAND with black banding. [Wigston Member]
		3.00	SPT()	N=1 (1,0/1,0,0,0)				*Not recovered as sand too wet and hole collapsing in*
		3.50	SPT()	N=16 (1,4/5,4,3,4)				
		4.00	SPT()	N=15 (4,4/3,3,4,5)				
		4.50	SPT()	N=50 (6,6/50 for 295mm)	4.50			End of Borehole at 4.50m

1 2 3 4 5

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample

SPT(C) = Standard Penetration Test (Cone)
SPT(S) = Standard Penetration Test (Split Spoon)
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The designer is responsible for verifying all site and setting out dimensions.

Windowless Sample Log

IDOM			Borehole No. MWS06 Sheet 1 of 1
Project Name: Earl Shilton	Project No. 22416g	Co-ords: 446015E - 297777N	Scale 1:25
Location: Westfield Avenue, Leicestershire		Level (m):	Logged By SN
Equipment: Dart 130 Rig		Dates: 28/09/2023	Checked By KRP

Well	Wtr Strk	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.35 - 0.60	D,J,V		0.40			MADE GROUND: Grey/brown sandy GRAVEL. Gravel is fine to medium of mixed lithologies including brick and concrete that is angular and rounded.
					0.90			MADE GROUND: Firm grey/cream mottled sandy, slightly gravelly CLAY. Gravel is fine. *Fabric matting layer*
		1.00	SPT()	N=13 (2,3/3,3,4,3)				Loose wet blue-grey/ brown mottled medium grain SAND. Inclusions of black woody fragments. [Wigston Member]
		2.00	SPT()	N=9 (1,0/1,2,2,4)				
		2.80 - 3.00	D		2.80			Firm red-blue mottled sandy, silty gravelly CLAY. Gravel is fine, sub-angular to sub-rounded mudstone fragments. [Weathered Mudstone - Gunthorpe Member} *Sample not recovered*
		3.00	SPT()	N=9 (1,2/1,3,2,3)				
		3.50	SPT()	N=25 (3,4/5,7,7,6)				
		4.00	SPT()	N=33 (7,6/7,8,9,9)				
		4.50	SPT()	N=50 (10,10/50 for 290mm)	4.50			End of Borehole at 4.50m

1 2 3 4 5

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample

SPT(C) = Standard Penetration Test (Cone)
SPT(S) = Standard Penetration Test (Split Spoon)
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The designer is responsible for verifying all site and setting out dimensions.

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Trial Pit Log

Trialpit No
TP15
Sheet 1 of 1

Project Name: Westfield Farm	Project No. 20851	Co-ords: - Level:	Date 08/08/2017
Location: Earl Shilton, Leicestershire		Dimensions (m): 2.2 × 0.6, Depth 3.30	Scale 1:25
Client: JGP PROPERTIES			Logged PN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Grass over, dark, brown slightly clayey, silty, slightly gravelly sand. Gravels are numerous fine to medium, subrounded quartzite. DISTURBED TOPSOIL
							(Loose) Dark, greyish brown, mottled black, very clayey, silty, fine to medium SAND with numerous fibrous plant remains. Slight organic odour. WIGSTON MEMBER
				3.30			End of pit at 3.30 m

1
2
3
4
5

Remarks: Trial pit location scanned for services prior to excavation.
Descriptions based on visual inspection by an experienced Geo - environmental Engineer.
No groundwater encountered. No seepage observed.
No visual or olfactory evidence of hydrocarbon contamination was observed.

Stability: Good - short term

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Trial Pit Log

Trialpit No
TP18
Sheet 1 of 1

Project Name: Westfield Farm	Project No. 20851	Co-ords: - Level:	Date 08/08/2017
Location: Earl Shilton, Leicestershire		Dimensions (m): 2.2 × 0.6, Depth 3.00	Scale 1:25
Client: JGP PROPERTIES			Logged PN

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Grass over, dark, brown slightly clayey, silty, slightly gravelly sand. Gravels are numerous fine to medium, subrounded quartzite. TOPSOIL
							(Loose) Light, orangish, mottled brown, very clayey, silty, fine to medium SAND. WIGSTON MEMBER
			HVP=40 HVP=50 HVP=50	2.00			Firm, light, reddish brown mottled grey, silty, CLAY. GUNTHORPE MEMBER - WEATHERED
				2.50			Very stiff, dark, reddish brown, mottled light cream grey, silty, slightly sandy, gravelly CLAY. Gravels are numerous, fine to coarse, angular lithorelicts of cream grey siltstone. GUNTHORPE MEMBER - WEATHERED
				3.00			End of pit at 3.00 m

1 2 3 4 5

Remarks: Trial pit location scanned for services prior to excavation.
Descriptions based on visual inspection by an experienced Geo - environmental Engineer.
No groundwater encountered. No seepage observed.
No visual or olfactory evidence of hydrocarbon contamination was observed.

Stability: Good - short term

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Borehole Log

Borehole No.
WS01
Sheet 1 of 1

Project Name: Westfield Farm	Project No. 20851	Co-ords: -	Hole Type WS
Location: Earl Shilton, Leicestershire		Level:	Scale 1:50
Client: JGP PROPERTIES		Dates: 07/08/2017 - 07/08/2017	Logged By CC/PN

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.35			Grass over, dark, brown slightly silty, sandy, slightly gravelly clay. Gravels are numerous fine to medium, subrounded quartzite. TOPSOIL
	▼	1.00		N=11 (1,2/2,3,3,3)				Firm, yellowish brown mottled grey, sandy CLAY. WIGSTON MEMBER
					1.25			Loose, clayey, silty SAND. Wet. WIGSTON MEMBER
		2.00		N=5 (1,2/2,1,1,1)				
		3.00		N=8 (1,2/2,2,2,2)	3.00			End of borehole at 3.00 m

1 2 3 4 5 6 7 8 9 10

Remarks
Window sample location scanned for services prior to excavation.
Descriptions based on visual inspection by an experienced Geo - environmental Engineer.
Slight seepage observed at 1.25m begl.
No visual or olfactory evidence of hydrocarbon contamination was observed.

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