



# LAND AT 143 PARK ROAD, NEWHALL SOUTH DERBYSHIRE



## Completion Report

Consolidation of Potential Abandoned Coal Mine  
Workings and Entries by Drilling and Grouting

Works have been undertaken with permission of Coal Authority

Van Elle  
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Kirkby in Ashfield  
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01773 580580

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## Control Sheet

This report has been prepared for the sole benefit, use and information of Mr Martin Row c/o Songalt Building Contractors Ltd, for the purposes set out in the instructions commissioning it. The liability of Van Elle Ltd in respect of the information contained in the report will not extend to any third party. It is now the client's responsibility to fulfil the Coal Authorities requirements with regards to the Coal Authority Permit.

| <b>SUMMARY TABLE:</b>                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>COMPLETION REPORT FOR THE CONSOLIDATION OF POTENTIAL MINEWORKINGS AND MINE ENTRIES AT LAND ADJACENT 143 PARK ROAD, NEWHALL</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>SITE:</b>                                                                                                                      | Land adjacent to 143 Park Road, Newhall, South Derbyshire, DE11 0TX.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>CLIENT:</b>                                                                                                                    | Mr Martin Row c/o Songalt Building Contractors Limited, Old Police Station, Newhall, South Derbyshire, DE11 8LN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>DATE:</b>                                                                                                                      | 18 July 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>REFERENCE:</b>                                                                                                                 | VE 220539                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>DEVELOPMENT PROPOSAL:</b>                                                                                                      | <p>Mr Row proposes to build a new two-bedroom bungalow within the garden of 143 Park Road, Newhall, South Derbyshire, DE11 0TX. The development will include hardstandings and replacement garden.</p> <p>The site is located within an area designated by The Coal Authority (TCA), as being at Development High Risk on account of potential shallow coal mine workings.</p> <p>Post Code: DE11 0TX<br/>NGR: 427765 320245<br/>Elevation: c. 80m aOD.</p> <p>In addition to the potential shallow coal mine workings, recent intrusive investigations have raised concerns about the possible presence of an abandoned coal mine entry within the proposed development area.</p> |
| <b>COAL MINING GEOLOGY:</b>                                                                                                       | <p>Geological records show superficial soils to be absent over the site. Historical site usage however, means that Made Ground is likely to be present.</p> <p>The site is situated close to the expected boundary between the Pennine Lower and Middle Coal Measures Formations.</p> <p>Significant coal seams are expected at shallow depth in the area, including the Nether Main and Main, which apparently outcrop close by and have been regarded as being of significant economic value.</p> <p>The general strata dip is towards the south-east at a low angle.</p>                                                                                                        |

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>SCOPE OF DRILLING AND GROUTING WORKS:</b></p> | <p>The treatment and investigation of potential abandoned coal mine workings at this site has included the following:</p> <ul style="list-style-type: none"> <li>• consolidation grouting of potential abandoned workings, which incorporated drilling 27 no. grout injection holes on a 3m grid (594 linear metres);</li> <li>• drilling and pressure grouting of 1 no. test hole.</li> </ul> <p>The works have included the incorporation of approximately 19.6tonnes of cementitious grout beneath the site.</p> <p>These were drilled to a depth of 22.0m bgl; which in practice, was at least 1m below the base of a lower identified coal seam or potential workings as evidenced by hard rock strata drilling progress.</p> <p>Grout was batched on site using an agitator mixer powered by an air compressor. Constituent materials were introduced by a loading shovel then pumped out via a 3" electric matt pump down the grout holes under hydrostatic head pressure until the borehole was deemed full. The grout for this project comprised a 10:1 PFA:OPC mix.</p> <p>In addition, 20 no. probe holes have been drilled to look for a suspected abandoned coal mine entry. All were completed to a depth of 7m bgl without finding any evidence of an unrecorded coal mine shaft.</p> |
| <p><b>CONCLUSION:</b></p>                           | <p>Stabilisation grout holes encountered two coal seams, which were between 1.5m and 2.0m thick, usually as soft coal but also, in the upper coal seam , as intact coal. Significant broken ground or voids were not encountered.</p> <p>In production holes, grout takes of between 0.22 tonnes and 2.20 tonnes per injection hole (average 0.73tonnes) were recorded.</p> <p>Following the mine working consolidation programme, it is considered that potential coal mine workings stabilisation works have been undertaken in accordance with client's instructions.</p> <p>A potential, unrecorded coal mine entry that was identified by Van Elle during preliminary rotary drilling investigations, has been proved, to the best of ability, to be not present.</p> <p>Notwithstanding this, it is recommended that vigilance is maintained, particularly during earthworks phases of future work, for possible coal related features including more unrecorded mine entries.</p>                                                                                                                                                                                                                                                                                                             |

|          |     |                                                         |              |
|----------|-----|---------------------------------------------------------|--------------|
| Author:  |     | Phil Shelton BSc PhD CEng MIMMM FGS<br><i>Associate</i> |              |
| Version: | 1.0 | Date                                                    | 18 July 2022 |

## 1.0 Introduction

Mr Martin Row, c/o Songalt Building Contractors Limited (Client), proposes to build a new two-bedroom bungalow within the garden of No.143 Park Road, Newhall, South Derbyshire, DE11 0TX. The development will include hardstandings and a replacement garden.

Site Location and layout Plans (**Figures 1 and 2**) are included in **Appendix A**.

Reference to the Coal Authority (CA) Interactive Map Viewer, shows that the site lies within a Development High Risk Area and that there is potential for there being unrecorded mine workings at shallow depth.

A previous investigation undertaken by Van Elle, December 2021, has identified, potential risk from abandoned coal mine workings at shallow depth and a possible unrecorded coal mine entry.

This report relates to a programme of pre-construction consolidation treatment of potential abandoned shallow coal mine workings and recorded and unrecorded coal mine entries.

## 2.0 Treatment References

- Site Plans – **Appendix A**;
- CIRIA Pub 32 1984 – 2002 Construction over abandoned mine workings;
- The Coal Authority "Guidance on managing the risk of hazardous gases when drilling or piling near coal" – Version 2 April 2019;
- CIRIA RP940/C758 - November 2019 Abandoned Mine Workings Manual.

## 3.0 Site Location and Description

The site is roughly triangular in shape – See **Figure 2** in **Appendix A**, occupying an area of approximately 170m<sup>2</sup> and is located on the southern side of Park Road, Newhall.

The approximate national grid reference of the centre of the site is 427765 320245, the closest post code is DE11 0TX. The ground surface is mainly flat at an elevation of about 80m aOD.

Historically recorded site usage has been general open space. However, it is known that this region has a long history of coal extraction from coal seams at relatively shallow depth, many of which were not formally recorded. Site location and layout plans are included within **Appendix A**.

A site walkover was undertaken of the area for development prior to undertaking the works.

## 4.0 Ground Conditions & Geology<sup>1</sup>

Local geological information has been obtained from BGS published mapping and historic borehole records:

- 1:50,000 scale Sheet 141 Loughborough;
- On-line digital mapping (GeoIndex).

BGS sources indicate that superficial deposits are not present over the site.

Made Ground is not indicated to be present on geological maps, but is expected in the form of residual soils from historical usage.

Reference to the 1:50,000 scale Sheet 141 Loughborough shows is situated close to the expected boundary between the Pennine Lower and Middle Coal Measures Formations. These generally comprise cyclical units of sandstone, siltstone and mudstone with thin coal seams and ironstones bands.

The Nether Main and Main coal seams, which apparently outcrop to the north-west of the site and dip towards the south-east and therefore beneath the proposed development have been regarded as being of significant economic value.

Desk-based studies have not shown any recorded coal mine entries close to the site. However, during December 2021, 3 no. boreholes designated BH1, BH2 and BH3 were drilled by Van Elle, each to a depth of 33m bgl in order to look for potential shallow coal mine workings beneath the site. Borehole records, see below, indicated a possible unrecorded mine entry at Borehole BH1, where the drill rods were 'pushed' from ground level to 19m bgl. Other boreholes appear to confirm the possibility of abandoned mine workings being present at depths of c. 5m to 6m bgl and 18m to 20m bgl.

The subsequent stabilisation plan has taken into consideration the findings from these investigations.

Stabilisation treatment of the identified shafts and suspected shafts identified during the stabilisation works has been a large part of the overall works summarised herein – See **Figure 3** in **Appendix A**, Section 9 and **Appendix D**.

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<sup>1</sup> Details of ground conditions are not definitive representations, they are intended as a summary only  
Page **7** of **15**

## 5.0 Methodology

The mine workings consolidation covered by this report were undertaken during 23<sup>rd</sup> to 27<sup>th</sup> June 2022. The works were undertaken in general accordance with the Code of Practice for Site Investigations BS5930: 2015 and CIRIA guidances on the treatment of shallow mine workings.

The identification of a possible unrecorded shallow mine workings and an unrecorded shaft was addressed in the form of the Coal Authority Permit, reference 25150, dated 1 June 2022. A copy of the permit is included in **Appendix B**.

The treatment works included the systematic drilling and grouting to stabilise potential abandoned workings in a shallow coal seam (presumed to be the Nether Main and Main) and the identification and potential treatment of an unrecorded coal mine entry. These operations are described below.

### Treatment of Shallow Coal Mine Workings

The mine workings consolidation treatment incorporated the following:

The advancing of 27 no. grout injection boreholes to 22m bgl (594 linear metres) at a 6m x 6m spacing.).

Stabilisation of the abandoned workings was completed by the injection of a total of approximately 19.6tonnes of grout.

The rotary injection borehole details and grout takes are tabulated and represented spatially in **Appendix C**.

## 6.0 Drilling

The drill and grout works were designed to consolidate voids and disturbed ground resulting from the long-term collapse of potential abandoned mine workings at shallow depth beneath the proposed development.

The treatment has also been designed in consideration of the existing site layout, the development proposal and health and safety issues. Drilling was undertaken by open hole methods using a Casagrande C6 XP2 track-mounted rig. On completion of each grout injection hole, a sacrificial plastic casing was installed to rockhead. This was to a depth of between 3.0m and 4.0m bgl. All boreholes were drilled with water flush, as required by the terms of the drilling permit.

The drilling pattern was purposely set out on a 6m x 6m grid. East to west boreholes were designated A to G inclusive. South to north rows of boreholes were designated 1 to 5 inclusive - see **Appendix C**. In this way, each grout hole was given a unique reference.

All boreholes were drilled vertically.

Unconsolidated 'soil' deposits, presumed to be Made Ground with some completely weathered Coal Measures strata, were encountered to depths of between 3.5m and 4.5m (average 12.05m) bgl.

Coal was encountered at two levels. An upper coal was encountered, approximately 1.50m thick, between about 4.50m and 6.00m bgl, and a lower coal, about 2.00m thick, between about 18.50m and 20.5m bgl. The upper coal seam was recovered as partly 'intact coal' and partly 'soft coal', while the lower coal was encountered consistently as 'soft coal'.

There was no positive indication of mine workings in any of the injection holes. There is no recognisable dip to the coal intercepts, but detailed assessment of geological conditions is beyond the scope of this report.

Throughout the works monitoring for the presence of harmful gases was maintained at the drill rig. Gases included: carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>) hydrogen sulphide (H<sub>2</sub>S) and methane (CH<sub>4</sub>) along with levels of airborne oxygen (O<sub>2</sub>). The drilling crew also carried personal gas alarms, which activate visible and audible alarms should concentrations of any of these gases reach pre-determined trigger levels. No harmful levels of gases were recorded during the works.

A summary of grout hole drilling records is included in **Appendix C**.

## 7.0 Grouting

Each borehole was filled with a cementitious grout with a composition of 10:1 PFA: Ordinary Portland Cement (OPC) under hydrostatic pressure. Flow tests and bleed tests were undertaken during the grouting period to ensure consistency of grout mixing.

A total of approximately 19.6tonnes of grout mixture was injected beneath the area, average 0.73 tonnes per injection hole.

A set of 4 no. cubes were taken during the grouting period. Cube testing was scheduled for 7day, 14day and 28day compressive strength. The 4<sup>th</sup> cube was taken as a spare.

Acceptable bleed and flow thresholds are usually taken as:

- flow: between 300mm and 600mm;
- bleed: less than 2% (>980/1000) after 3 hours;

Cube test results are included in **Appendix E**. Results show that the grout mix achieved satisfactory cube strengths.

Grout was batched on site using an agitator mixer powered by an air compressor. Constituent materials were introduced by a loading shovel, and pumped to each treatment borehole using a sand pump. All plant was certified safe and maintained properly throughout the operation.

A summary of grouting records is included in **Appendix C**.

## 8.0 Test Boreholes

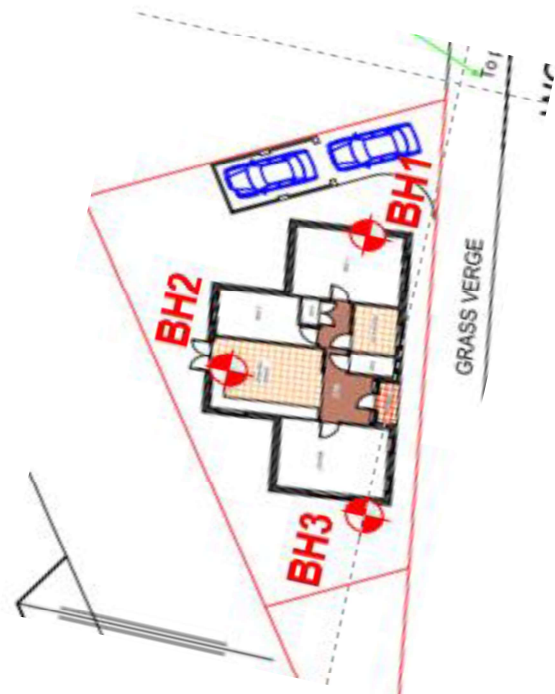
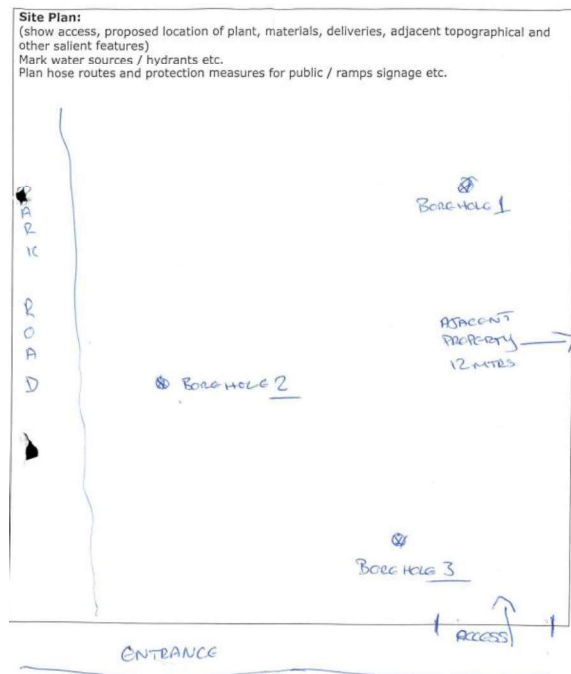
One non-production test grout borehole was drilled at the position shown in **Appendix C**.

The position of the test hole was agreed with the client's representative.

The test hole was subsequently subjected to sustained pressure grouting. The results confirmed that when a grout pressure of 2 bars was sustained for 3 minutes, only minimal grout takes were recorded. A summary of test grout hole details is included in **Appendix C**.

## 9.0 Investigation of Possible Unrecorded Mine Entry

During December 2021, 3 no. boreholes designated BH1, BH2 and BH3 were drilled by Van Elle, each to a depth of 33m bgl in order to look for potential shallow coal mine workings beneath the site.



Borehole records, see below, indicated a possible unrecorded mine entry at Borehole BH1, where the drill rods were 'pushed' from ground level to 19m bgl. Other boreholes appear

to confirm the possibility of abandoned mine workings being present at depths of c. 5m to 6m bgl and 18m to 20m bgl.



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Website: www.van-elle.co.uk E-mail: info@van-elle.co.uk

## Open Hole Drillers Log

| Site: <u>Park Road</u>                                           |        |                     | Sheet: <u>1</u> of <u>1</u>        |       |                    |                        |       |      |         |
|------------------------------------------------------------------|--------|---------------------|------------------------------------|-------|--------------------|------------------------|-------|------|---------|
| Rig: <u>SM14 1173</u>                                            |        |                     | Crew: <u>L. TAYLOR / R. TAYLOR</u> |       |                    |                        |       |      |         |
| Date: <u>22/12/21</u>                                            |        |                     | Travelling Time:                   |       |                    |                        |       |      |         |
| Hours on Site:                                                   |        |                     | Travelling Time:                   |       |                    |                        |       |      |         |
| BH                                                               | Depth  | Strata Description  | BH                                 | Depth | Strata Description |                        |       |      |         |
| BH1                                                              | 0-19   | VSOF POSSIBLE SHARP |                                    |       |                    |                        |       |      |         |
|                                                                  | 19-33  | SOLID               |                                    |       |                    |                        |       |      |         |
| BH2                                                              | 0-4.5  | OVERBURDEN          |                                    |       |                    |                        |       |      |         |
|                                                                  | 4.5-5  | MUDSTONE            |                                    |       |                    |                        |       |      |         |
|                                                                  | 5-6    | COAL                |                                    |       |                    |                        |       |      |         |
|                                                                  | 6-18   | MUDSTONE            |                                    |       |                    |                        |       |      |         |
|                                                                  | 18-20  | SOFT (NO RETURNS)   |                                    |       |                    |                        |       |      |         |
|                                                                  | 20-33  | SOLID               |                                    |       |                    |                        |       |      |         |
| BH3                                                              | 0-4.5  | OVERBURDEN          |                                    |       |                    |                        |       |      |         |
|                                                                  | 4.5-5  | MUDSTONE            |                                    |       |                    |                        |       |      |         |
|                                                                  | 5-6    | COAL                |                                    |       |                    |                        |       |      |         |
|                                                                  | 6-18   | MUDSTONE            |                                    |       |                    |                        |       |      |         |
|                                                                  | 18-20  | SOFT (NO RETURNS)   |                                    |       |                    |                        |       |      |         |
|                                                                  | 20-33  | SOLID               |                                    |       |                    |                        |       |      |         |
| Casing/Water Level Details                                       |        |                     |                                    |       |                    |                        |       |      |         |
| BH                                                               | Casing | Water               |                                    |       | Totals             | BH                     | Drill | Case | Install |
|                                                                  | Dia    | Depth               | Strike                             | Rise  | Sealed             | Today                  | 3     | 96   |         |
|                                                                  |        |                     |                                    |       |                    | Previous               | 0     | 0    |         |
|                                                                  |        |                     |                                    |       |                    | To Date                | 3     | 96   |         |
| I confirm this is a true record.<br>Van Elle operative name..... |        |                     |                                    |       |                    | Client's Name.....     |       |      |         |
| Drill hole No.....                                               |        |                     |                                    |       |                    | Client's position..... |       |      |         |
| Hole Depth c.....                                                |        |                     |                                    |       |                    | Signature.....         |       |      |         |
| SIGNED.....                                                      |        |                     |                                    |       |                    | Dated.....             |       |      |         |
| Dated.....                                                       |        |                     |                                    |       |                    |                        |       |      |         |

The subsequent stabilisation plan has taken into consideration the findings from these investigations.

The stabilisation plan, as detailed in the CA drilling permit ref: 25159, dated 1 June 2022 (**Appendix B**), was set out as follows: "Treatment of shallow mine workings by drilling and grouting to 21m bgl: probe drilling to locate a coal mine entry – and treatment if found".

In the event, when Van Elle returned to the site on 24<sup>th</sup> June 2022, the same drilling rig, a Casagrande C6 XP with the same drilling crew as found the potential unrecorded mine

entry in December 2021, set up in the same position as close as practically possible. Despite drilling on a 1m x 1m grid and then drilling infill holes, no mine entry was found.

Records of the probe drilling are included in **Appendix D**.

Van Elle is confident that the suspected area of the possible mine entry has been fully investigated and found not to be present. It is concluded that the most practical explanation is that BH1, December 2021 was located directly over a former, historic borehole.

## 10.0 Ground Stability Assessment

This Ground Stability Assessment provides a limited interpretation of drilling and grouting data and how this may impact the proposed development following drill and grouting works.

### Risk Assessment

Intact coal and soft coal were encountered during drilling.

Voids were not encountered.

Drillers' records generally give a qualitative description of the condition of coal and/or mine workings as encountered using rotary drilling methods. These are based on chipping and water flush returns, and on borehole penetration rates and can be summarised as follows:

|               |   |                                                                                     |
|---------------|---|-------------------------------------------------------------------------------------|
| Coal Absent   | - | Intact, non-coal bearing, strata at the expected seam level.                        |
| Coal          | - | Interpreted as intact coal.                                                         |
| Soft          | - | Interpreted as penetration through possible old mine workings.                      |
| Broken Ground | - | Interpreted as disturbed ground, including small voids caused by old mine workings. |
| Void          | - | Empty space, with drill rods falling with no resistance.                            |

**Appendix C** shows the positions of the grout injection holes along with a visual representation of the conditions encountered at the level of the two recorded coal seams. It has been possible to show these separately.

These results can be summarised as follows:

### Upper Coal Seam

|             |   |                               |                                                                                            |
|-------------|---|-------------------------------|--------------------------------------------------------------------------------------------|
| Coal Absent | - | Not recorded.                 | -                                                                                          |
| Intact Coal | - | Recorded at 44% of boreholes. | Probably unmined areas of coal or remnant coal pillars left behind during historic mining. |

|                         |   |                               |                             |
|-------------------------|---|-------------------------------|-----------------------------|
| Soft Ground             | - | Recorded at 56% of boreholes. | Potential old mine workings |
| Very Soft/Broken Ground | - | Not recorded.                 | Probable old mine workings  |
| Void                    | - | Not recorded.                 | Old mine workings           |

### Lower Coal Seam

|                         |   |                                |                                                                                            |
|-------------------------|---|--------------------------------|--------------------------------------------------------------------------------------------|
| Coal Absent             | - | Not recorded.                  | -                                                                                          |
| Intact Coal             | - | Not recorded.                  | Probably unmined areas of coal or remnant coal pillars left behind during historic mining. |
| Soft Ground             | - | Recorded at 100% of boreholes. | Potential old mine workings                                                                |
| Very Soft/Broken Ground | - | Not recorded.                  | Probable old mine workings                                                                 |
| Void                    | - | Not recorded.                  | Old mine workings                                                                          |

The distribution of coal related features and grout takes may be geologically led. However, further comment on geologically related issues is beyond the scope of this report.

**Appendix C** tabulates the quantities of grout injected into each production borehole.

Overall, mainly low grout takes were recorded, depending on whether intact coal was encountered, which usually resulted in between 0.22 tonnes and 2.20 tonnes (average 0.73 tonnes).

Recorded grout takes are summarised below.

### Upper Coal Seam

|                                    |     |                                                                                                                                                                                 |
|------------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Less than 0.5 tonnes               | 63% | Interpreted as intact ground – filling borehole volume only.                                                                                                                    |
| Between 0.5 tonnes and 2.0 tonnes  | 30% | Interpreted as medium-scale filling of disturbed ground, potential abandoned coal mine workings.                                                                                |
| Between 2.0 tonnes and 10.0 tonnes | 7%  | Interpreted as large-scale filling of disturbed ground, probable abandoned coal mine workings. This includes grout injection holes that were supplemented with 10mm pea gravel. |
| More than 10.0 tonnes              | 0%  | Not recorded.                                                                                                                                                                   |

There is always a risk of encountering unrecorded mine entries within the proposed development area. It is not considered appropriate to make a specific search, but earthworks contractors and ground workers should be informed of the need to be vigilant during site clearance and construction works.

On the basis of the results of the works undertaken and reported above, it is considered that during June 2022, Van Elle has completed consolidation works at the site known as 143 Park Road, Newhall in accordance with Client and Engineer instructions.

**Appendix C** shows the positions of the grout injection holes along with visual representations of the conditions encountered during drilling at the level of the identified coal seams.

The distribution of drilling records, which include: intact coal and soft coal probably do not represent significant shallow abandoned mine workings.

**Appendix C** tabulates the quantities of grout injected into each injection borehole.

**Appendix D** tabulates the details of an investigation for a suspected unrecorded mine entry.

## 11.0 Conclusion

In order to prepare for the proposed built developments at the site known as land off 143 Park Road, Newhall, South Derbyshire, a mine working consolidation programme has been undertaken by drilling and grouting.

Grout take holes were drilled on a grid of 6m x 6m beneath the proposed property footprints– see **Appendix C**.

A total of 27 no. production grout-take holes, and 1 no. test hole were drilled (total 594m + 22m) to stabilise potential abandoned shallow coal mine workings beneath the proposed development area.

Following drilling, the production and test hole took a total of approximately 19.8 tonnes of grout.

In addition, previous site investigations had found a possible unrecorded abandoned coal mine entry. In order to investigate this feature a total of 20 no. probe holes were drilled to 7m bgl. However, no evidence of an unrecorded entry was not found.

Stabilisation grout holes were drilled to depths of 22.0m; which in practice, was at least 1m below the base of the identified coal seam or potential workings as evidenced by hard rock strata.

Grout was batched on site using an agitator mixer powered by an air compressor. Constituent materials were introduced by a loading shovel then pumped out via a 3"

electric matt pump down the grout holes under hydrostatic head pressure until the borehole was deemed full.

The grout for this project comprised a 10:1 PFA:OPC mix. Grout was batched on site using an agitator mixer powered by an air compressor. Constituent materials were introduced by a loading shovel, and pumped to each treatment borehole using a sand pump until the borehole was deemed to be full.

It is considered that works have been completed in accordance with the instructions given to Van Elle.

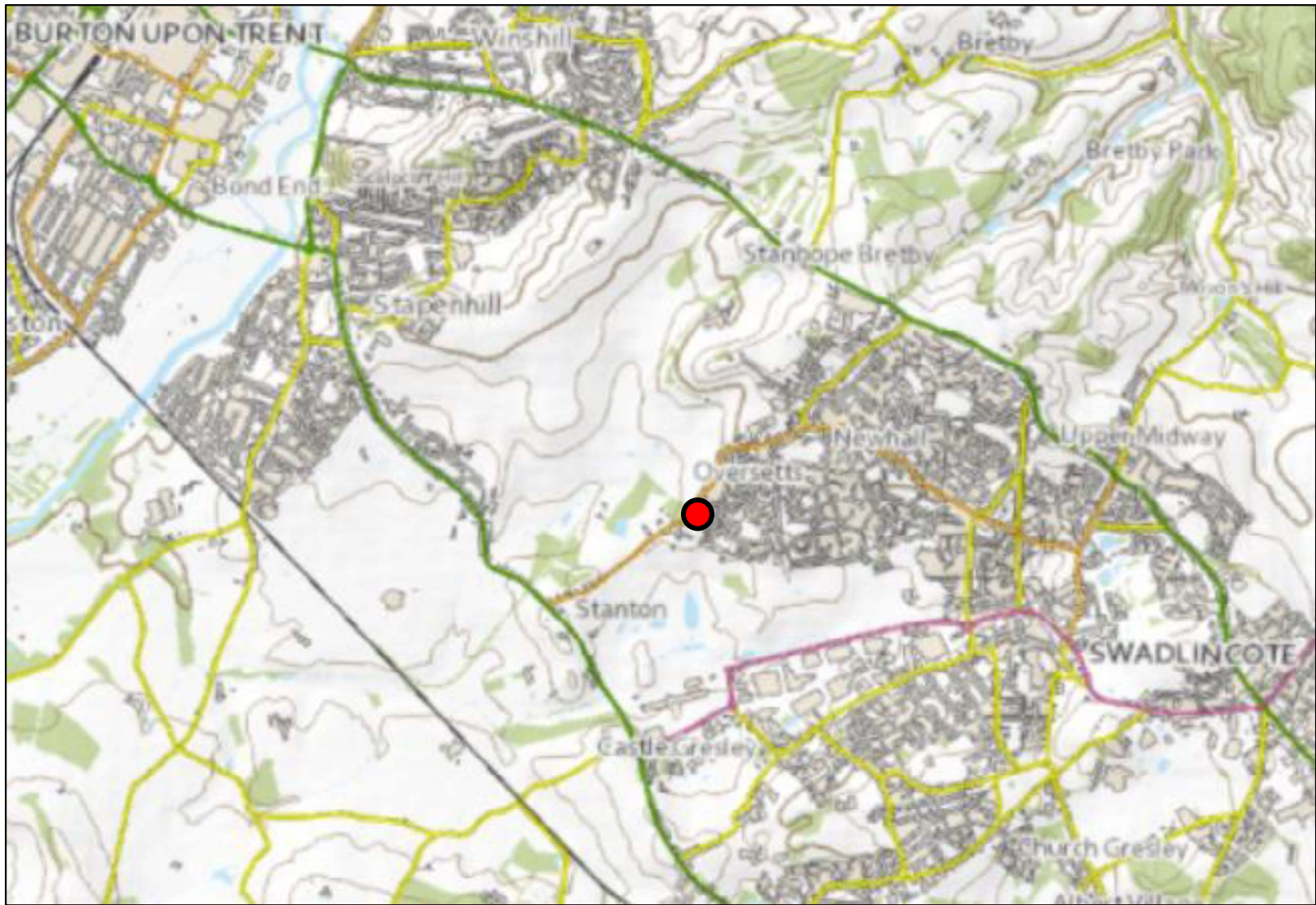
# Appendix A

## Site Plans



Van Elle Limited  
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Nottinghamshire  
NG16 6JA

Tel: 01773 580580  
Fax: 01773 862100



KEY:



Approximate Site Location



TITLE:

Site Location Plan

PROJECT:

Park Road, Newhall

PROJECT No:

VE22039

DATE:

July 2022

SCALE:

NTS

DRAWN:

PS

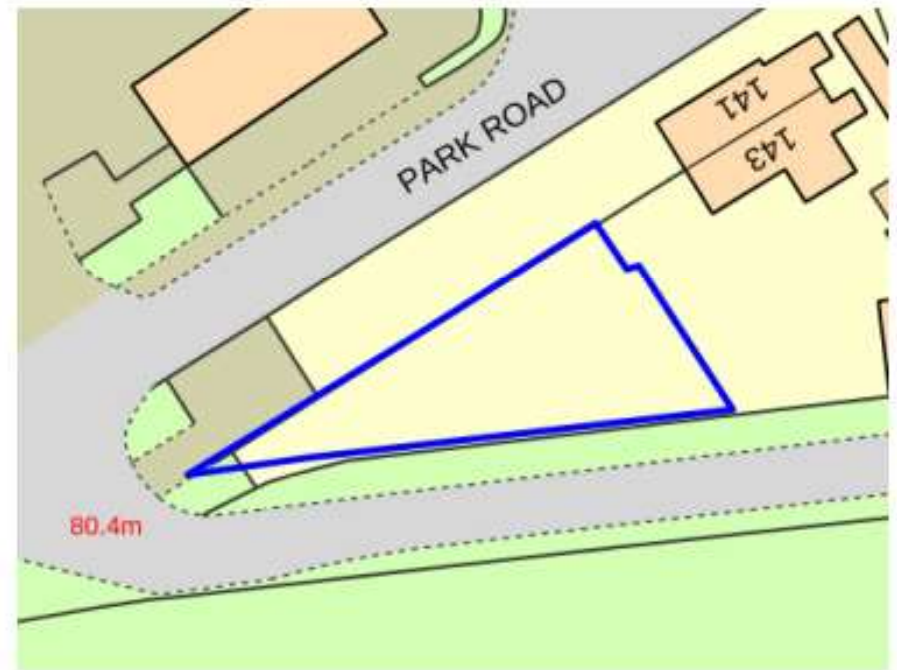
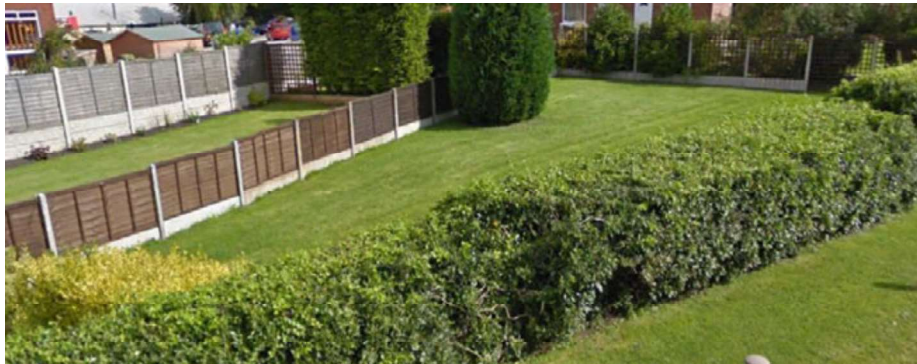
DWG No:

Figure 1

DO NOT SCALE



Permit Ref: 25150



KEY:



Site Boundary



TITLE:

Original Site Layout

PROJECT:

Park Road, Newhall

PROJECT No:

VE22039

DATE:

July 2022

SCALE:

NTS

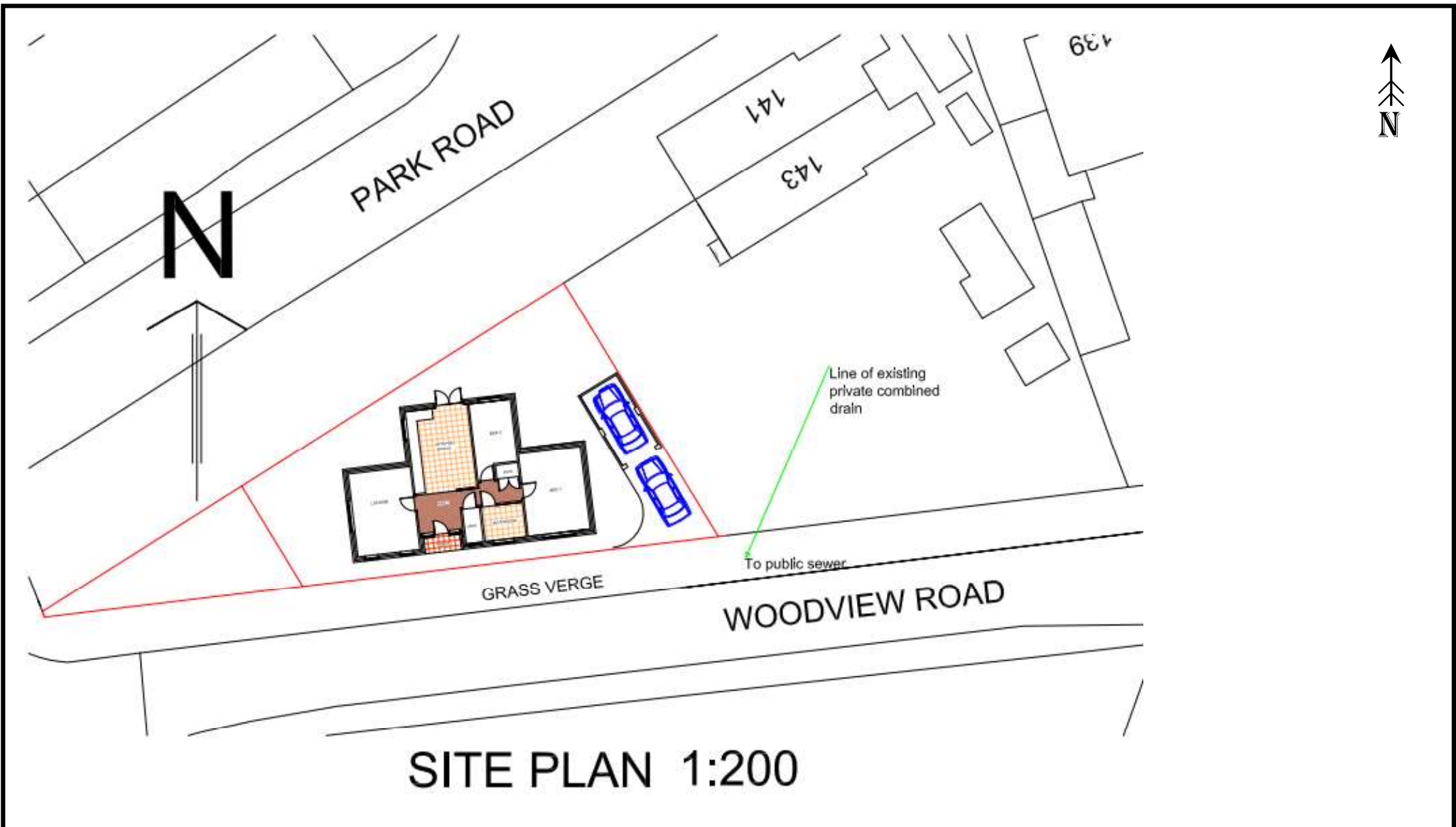
DRAWN:

PS

DWG No:

Figure 2

DO NOT SCALE

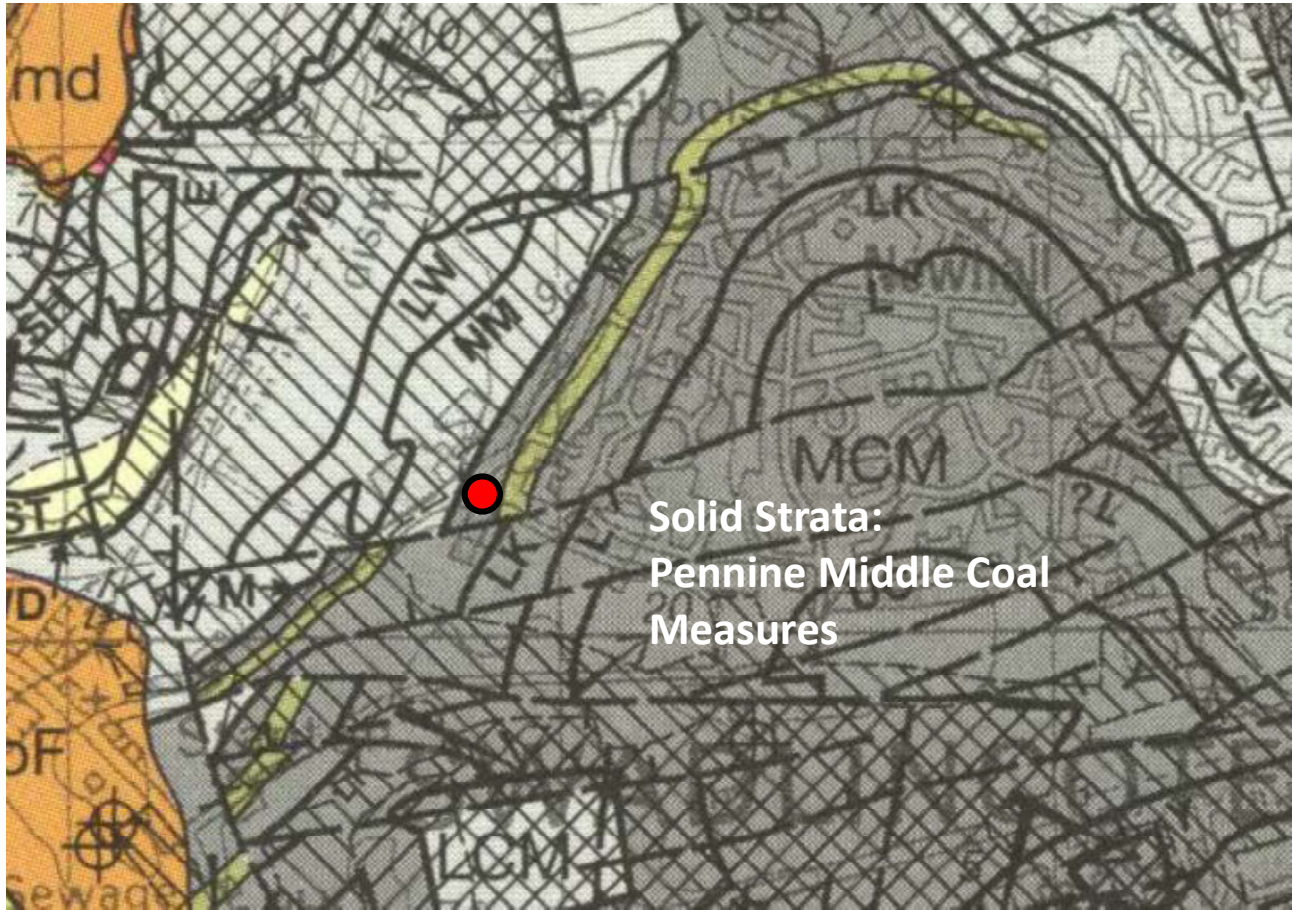


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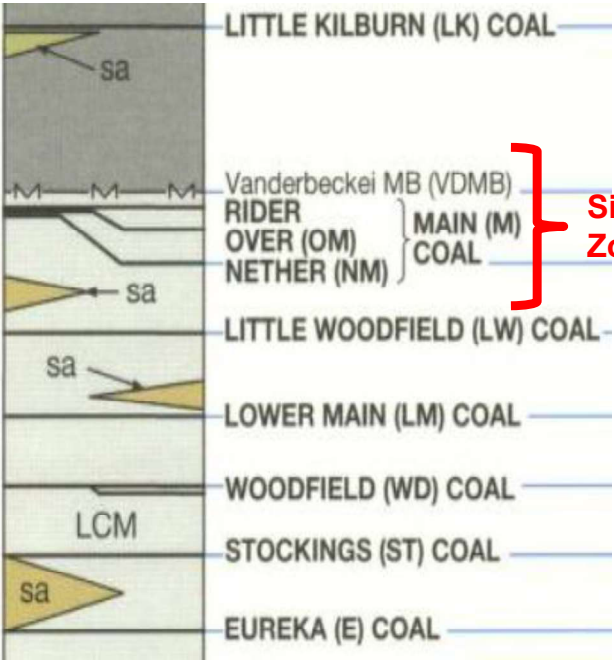
DO NOT SCALE



|                                       |                           |                            |
|---------------------------------------|---------------------------|----------------------------|
| TITLE:<br><b>Proposed Development</b> |                           |                            |
| PROJECT:<br><b>Park Road, Newhall</b> |                           |                            |
| PROJECT No:<br><b>VE22039</b>         | DATE:<br><b>July 2022</b> |                            |
| SCALE:<br><b>NTS</b>                  | DRAWN:<br><b>PS</b>       | DWG No:<br><b>Figure 3</b> |



Solid Strata:  
Pennine Middle Coal  
Measures



KEY:

 Approximate Site Location



TITLE:

**Extract BGS Sheet 141 Loughborough**

PROJECT:

**Park Road, Newhall**

PROJECT No:

**VE22039**

DATE:

**July 2022**

SCALE:

**NTS**

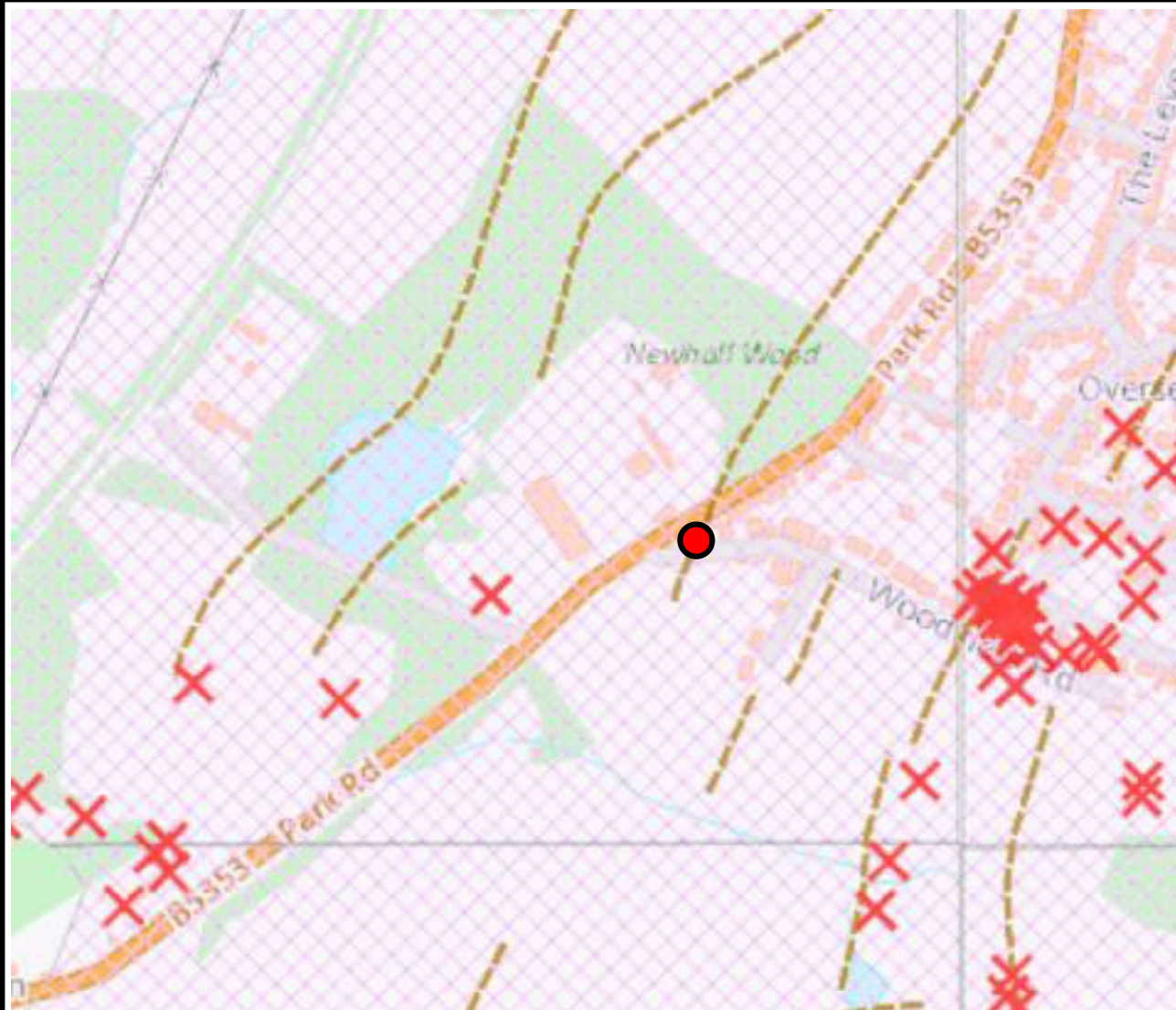
DRAWN:

**PS**

DWG No:

**Figure 4**

DO NOT SCALE



-  Development High Risk and Probable Shallow Workings
-  Development High Risk and Recorded Shallow Workings
-  Recorded Coal Mine Entry

KEY:

 Approximate Site Location



TITLE:

Mining Context

PROJECT:

Park Road, Newhall

PROJECT No:

VE22039

DATE:

July 2022

SCALE:

NTS

DRAWN:

PS

DWG No:

Figure 5

DO NOT SCALE

# **Appendix B**

## **Coal Authority Permit**



Van Elle Limited  
Kirkby Lane, Pinxton  
Nottinghamshire  
NG16 6JA

Tel: 01773 580580  
Fax: 01773 862100



The Coal  
Authority

# Permit to Enter or Disturb Coal Authority Interests

**Permit 25150**

**Name and Address of Permit Holder:**

*Songalt Building Contractors Ltd  
Old Police Station  
Newhall  
Swadlincote  
DE11 8LN*

**Site Location:**

*143 Park Road  
Newhall  
Swadlincote  
DE110TX*

**This certificate hereby grants the above named Permit Holder a Permit to carry out:-**

***Treatment of shallow mine workings by drilling and grouting to 21m, probe drilling to locate one mine entry, if found treatment by pressure grouting***

within the Authority's interests at the identified site location above as shown on the Grant Permit Boundary (overleaf) for the period of **12 months** from the granted date shown below. *The granting of this Permit does not constitute advice given by the Authority in relation to the proposed operations. It is the Permit Holder's responsibility to obtain appropriate health, safety, environmental, technical and legal advice.*

**Conditions:**

- *Manned entry (i.e. into mine entries/workings) is strictly prohibited.*
- *Water flush*
- *Gas Monitoring CO, CH<sub>4</sub>, CO<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub>S at borehole and rig*
- *Operators undertaking the work must be in possession of this certificate and the Permit boundary plan at the time of works*
- *Appropriate borehole sealing without delay and to withstand site level changes*

Signed: Paul Hobson Granted Date: 01 June 2022

For and on behalf of The Coal Authority

*Nominated Representative: Paul Hobson, Permitting Manager;*

*The Coal Authority, Permitting Office, 200 Lichfield Lane, Mansfield, Notts, NG18 4RG*

*Tel: 01623 637450; E-Mail: [permissions@coal.gov.uk](mailto:permissions@coal.gov.uk)*

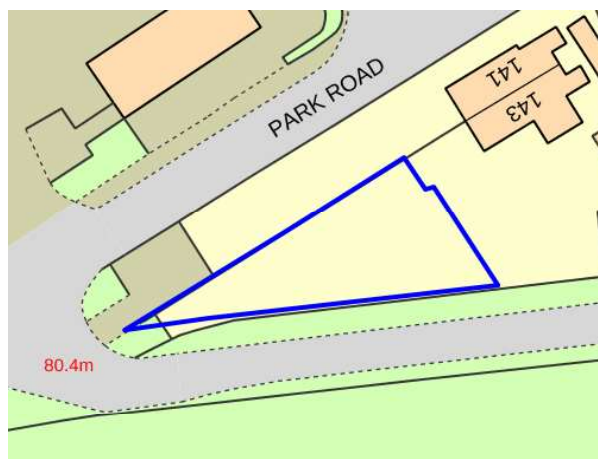


The Coal  
Authority

# Granted Permit Boundary

**Permit Ref: 25150**

Permit Boundary:



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# Appendix C

## Drilling and Grouting Data



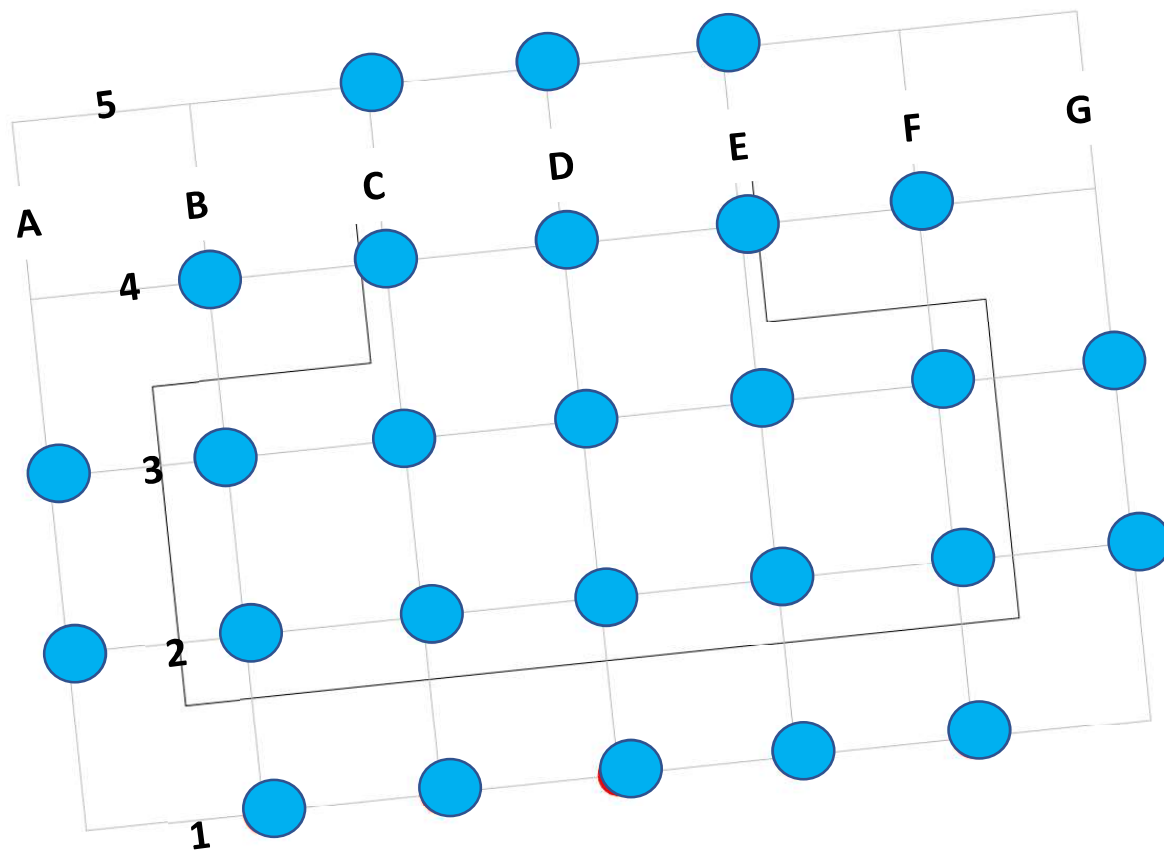
Van Elle Limited  
Kirkby Lane, Pinxton  
Nottinghamshire  
NG16 6JA

Tel: 01773 580580  
Fax: 01773 862100



[illegible]

### Drilling Summary – Lower Coal



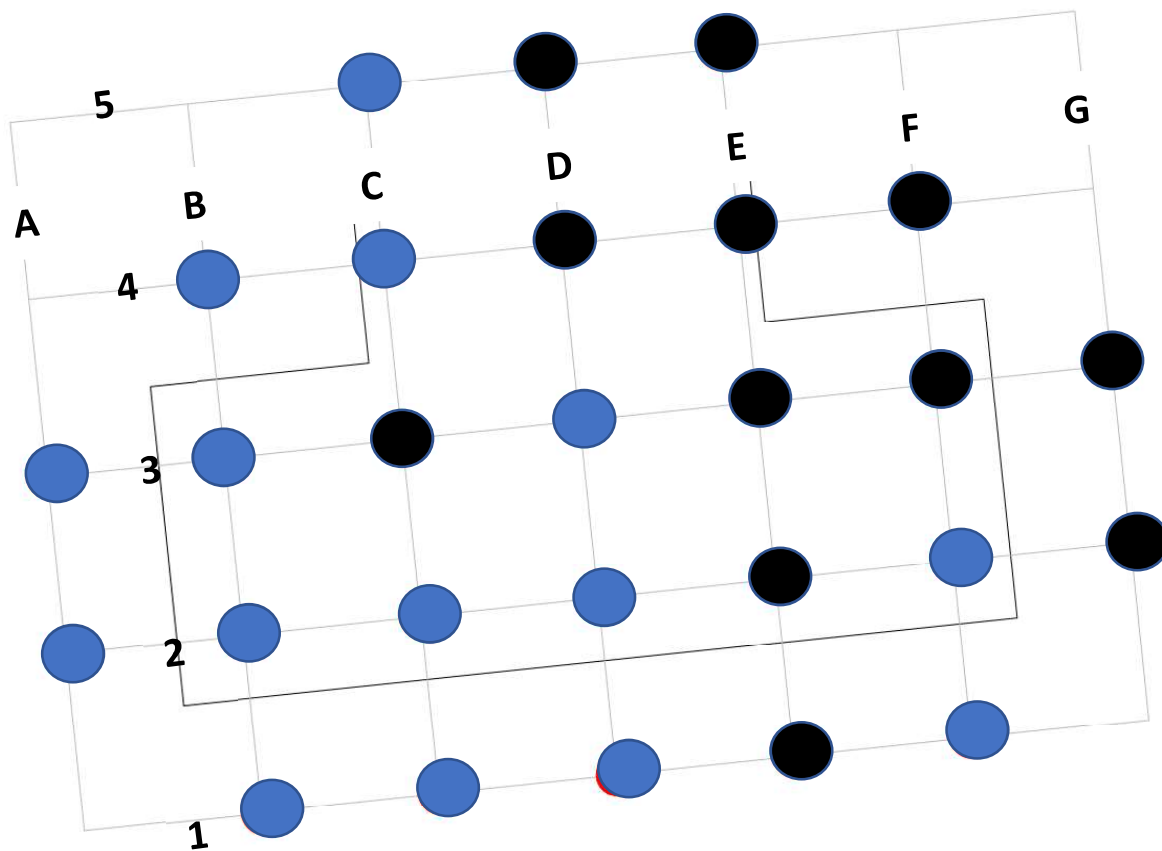
☐ Coal absent

● Soft Coal

● Void

VE22039 Park Road, Newhall, South Derbyshire

### Drilling Summary – Upper Coal

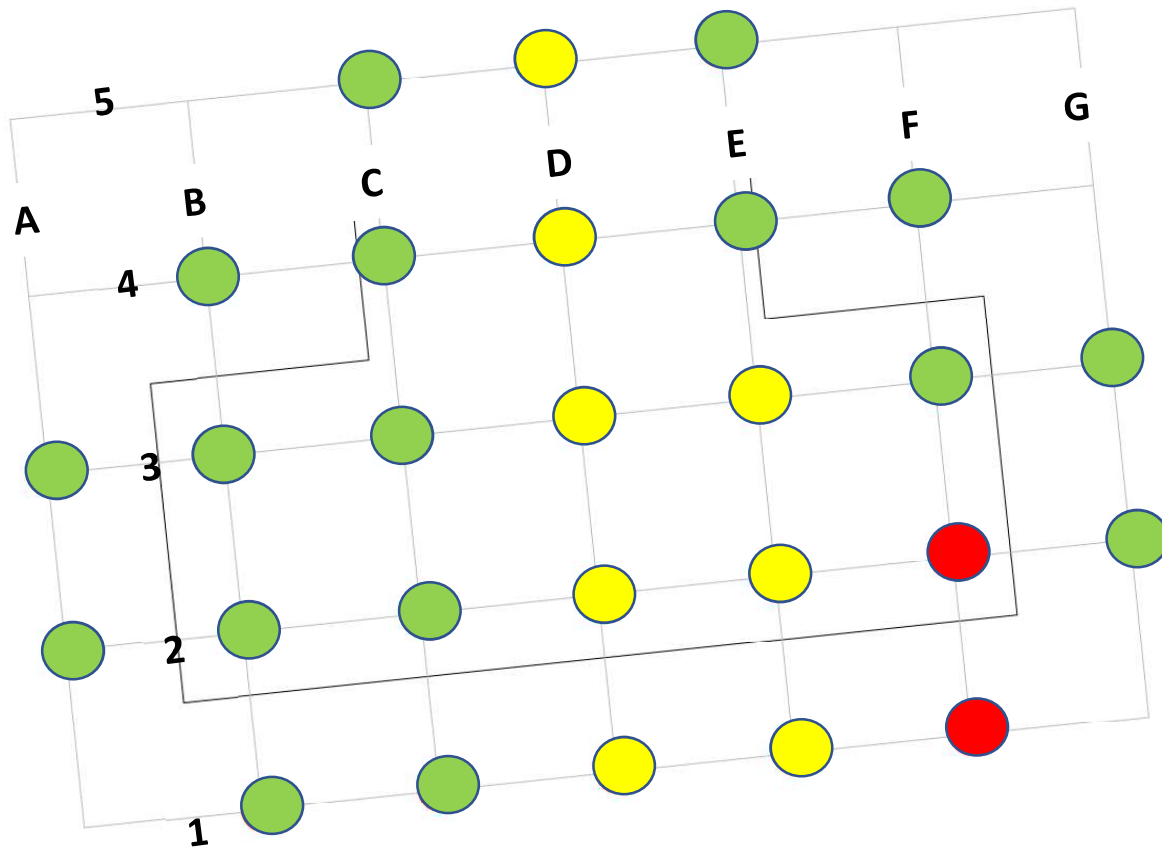


#### Key

- Coal absent
- Intact Coal
- Soft Coal
- Broken Ground
- Void

VE22039 Park Road, Newhall, South Derbyshire

## Grouting Summary



### Key

- Less than 0.5 tonnes
- 0.5 to 2.0 tonnes
- 2.0 to 10.0 tonnes
- More than 10 tonnes

## **APPENDIX D**

### **SUMMARY OF DRILLING AND GROUTING RECORDS RECORDED AND UNRECORDED COAL MINE ENTRIES**



Van Elle Limited  
Kirkby Lane, Pinxton  
Nottinghamshire  
NG16 6JA

Tel: 01773 580580  
Fax: 01773 862100

**PS3370 - Park Road, Newhall**  
**VE220539**  
**Probe Drilling for Mine Entry**

| Reference | Date      | Angle ° | Overburden      |      | Coal   |      | Comments  |  | Flush<br>Return | Grouting |     |       |
|-----------|-----------|---------|-----------------|------|--------|------|-----------|--|-----------------|----------|-----|-------|
|           |           |         | Comp<br>Depth m | To m | From m | To m |           |  |                 | OPC      | PFA | TOTAL |
| P 1       | 24-Jun-22 | 90      | 8.0             | 4.0  | 5.00   | 6.50 | Coal      |  | Poor            |          |     |       |
| P 2       | 24-Jun-22 | 90      | 7.0             | 4.0  | 5.00   | 6.30 | Coal      |  | Poor            |          |     |       |
| P 3       | 24-Jun-22 | 90      | 7.0             | 3.5  | 4.50   | 6.00 | Soft Coal |  | Poor            |          |     |       |
| P 4       | 24-Jun-22 | 90      | 7.0             | 3.5  | 4.50   | 6.00 | Coal      |  | Poor            |          |     |       |
| P 5       | 24-Jun-22 | 90      | 7.0             | 3.5  | 4.20   | 5.80 | Coal      |  | Poor            |          |     |       |
| P 6       | 24-Jun-22 | 90      | 7.0             | 3.5  | 4.20   | 5.70 | Coal      |  | Poor            |          |     |       |
| P 7       | 24-Jun-22 | 90      | 7.0             | 4.0  | 5.00   | 6.30 | Coal      |  | Poor            |          |     |       |
| P 8       | 24-Jun-22 | 90      | 7.0             | 4.0  | 5.00   | 6.80 | Coal      |  | Poor            |          |     |       |
| P 9       | 24-Jun-22 | 90      | 7.0             | 4.0  | 4.80   | 6.00 | Coal      |  | Poor            |          |     |       |
| P 10      | 24-Jun-22 | 90      | 7.0             | 3.5  | 4.40   | 6.00 | Coal      |  | Poor            |          |     |       |
| P 11      | 27-Jun-22 | 90      | 7.0             | 4.0  | 4.50   | 6.00 | Soft Coal |  | Full            |          |     |       |
| P 12      | 27-Jun-22 | 90      | 7.0             | 4.0  | 5.00   | 6.50 | Coal      |  | Full            |          |     |       |
| P 13      | 27-Jun-22 | 90      | 7.0             | 3.5  | 4.50   | 6.00 | Coal      |  | Full            |          |     |       |
| P 14      | 27-Jun-22 | 90      | 7.0             | 3.6  | 4.00   | 5.50 | Soft Coal |  | Full            |          |     |       |
| P 15      | 27-Jun-22 | 90      | 7.0             | 3.5  | 4.00   | 5.50 | Coal      |  | Full            |          |     |       |
| P 16      | 27-Jun-22 | 90      | 7.0             | 4.0  | 5.00   | 6.50 | Soft Coal |  | Full            |          |     |       |
| P 17      | 27-Jun-22 | 90      | 7.0             | 4.0  | 4.50   | 6.00 | Soft Coal |  | Full            |          |     |       |
| P 18      | 27-Jun-22 | 90      | 7.0             | 3.7  | 4.20   | 5.80 | Soft Coal |  | Full            |          |     |       |
| P 19      | 27-Jun-22 | 90      | 7.0             | 4.0  | 4.50   | 6.00 | Soft Coal |  | Full            |          |     |       |
| P 20      | 27-Jun-22 | 90      | 7.0             | 4.0  | 4.10   | 5.70 | Coal      |  | Full            |          |     |       |
| Count     |           |         | 20.0            |      |        |      |           |  |                 |          |     |       |
| Sum       |           |         | 141.0           |      |        |      |           |  |                 |          |     |       |
| Max       |           |         | 8.0             | 4.0  |        |      |           |  |                 |          |     |       |
| Min       |           |         | 7.0             | 3.5  |        |      |           |  |                 |          |     |       |
| Average   |           |         | 7.1             | 3.8  |        |      |           |  |                 |          |     |       |

## **APPENDIX E**

### **CUBE TEST RESULTS**



Van Elle Limited  
Kirkby Lane, Pinxton  
Nottinghamshire  
NG16 6JA

Tel: 01773 580580  
Fax: 01773 862100

SOCOTEC Central  
Leofric Business Park  
Progress Close  
Coventry  
West Midlands  
CV3 2TF  
United Kingdom  
Tel: +44(0) 2475 310700

# CONCRETE TEST CUBE REPORT



Date: 06/07/2022

Report no: DAB41054020\_01

Client: VAN ELLE LTD

Scheme: Songalt Building Contractors Park Road DE11 0TX

Contract no: 51070000

| Request Sheet No.         | Lab Ref. | Client Ref. | Date Made  | Time Made | Date Received in Laboratory | Date Tested | Age days | Dimensions mm | Density kg/m <sup>3</sup> | Failure Load kN | Compressive Strength N/mm <sup>2</sup> | Specified Strength N/mm <sup>2</sup> |
|---------------------------|----------|-------------|------------|-----------|-----------------------------|-------------|----------|---------------|---------------------------|-----------------|----------------------------------------|--------------------------------------|
| S4422057                  | 41054020 | A           | 28/06/2022 | 0930      | 01/07/2022                  | 05/07/2022  | 7        | 100x100x100   | 1520                      | 44.1            | 4.4                                    | not given                            |
| Location: NOT GIVEN       |          |             |            |           |                             |             |          |               |                           |                 |                                        |                                      |
| Mix details: 10-1 PFA/OPC |          |             |            |           |                             |             |          |               |                           |                 |                                        |                                      |

The following apply unless otherwise stated under Remarks.

- 1) Laboratory curing range 18°-22°C.
- 2) Cube appearance as received satisfactory.
- 3) Test moisture condition and density saturated.
- 4) Cube failure normal. Concrete appearance normal.
- 5) Volume determined by measurement or designated size. Any fins removed by abrasive stone.
- 6) Laboratory curing conditions cannot be assured during tank cleaning.
- 7) Certificate of sampling not received. Certificate of making and curing not received.
- 8) Rate of Loading 0.4 to 0.8 N/mm<sup>2</sup> per sec.

Certified that curing of the hardened concrete in the laboratory and testing for shape, dimensions, density and compr  
BS EN 12390-1:2021, BS EN 12390-2:2019,  
BS EN 12  
Air Conte  
BS EN 12  
9, Slump test carried out in accordance with

Sign

Vethakkan - Concrete Section Manager

for and on behalf of SOCOTEC UK Limited

Issued to: Conor White