Sources of Information Used.

The following sources of information have been used in compiling this report:

- A Coal Authority site specific mining report referenced 51000608546001 (dated 15th August 2014).
- British Geological Survey map 1:10,000 scale Sheet SE 30 NE.
- Historical Ordnance Survey (OS) maps for the site (obtained by Sirius from Landmark Information Group).
- BGS borehole records.
- Sirius Preliminary Appraisal Report (Desk Study), dated September 2014, referenced C6138.

Identification and Assessment of Site Specific Coal Mining Risks.

Table 1 summarises the potential risks associated with coal mining legacy for the proposed development:

Table 1: Potential Risks Associated with Coal Mining Legacy

Coal Mining Issue	Yes	No	Risk Assessment
Underground Coal Mining (recorded at shallow depths)		✓	The CA states that according to its records the property is within the likely zone of influence from past underground workings in seven seams of coal at 250m to 660m depth. The shallowest recorded worked seam is conjectured to be the Low Beamshaw Coal Seam. Any ground movements should have stopped by now.
Unrecorded underground Coal Mining (potentially at shallow depth)	✓		The site lies within an area where the CA believes there is coal at or close to the surface which may have been worked at some time in the past. The BGS 1:10,000 scale map shows the Sharlston Low Coal Seam to outcrop in the western portion of the site, orientated north / south and dipping to the east. The Sharlston Top Coal Seam is conjectured to outcrop on or within proximity to the sites eastern boundary, aligned north / south, dipping to the east. Whilst the CA does not hold any records for these

			seams having been worked, the presence of shallow unrecorded workings within the Sharlston Low / Top Coal Seams cannot be discounted based on desk study evidence alone.
Mine entries (shafts and adits)		✓	None recorded on site, however, the CA records and historical mapping, indicate the presence of an mine entry / airshaft c. 20m to the south west of the site. The approximate position of the mine entry is shown on the site specific CA report (Appendix C) and Site Features Plan (Drawing No. C6138/02, within Appendix A). There are no record of what steps, if any, have been taken to treat the mine entry. The CA state that records may be incomplete. Consequently, there may exist in the local area mine entries of which the CA has no knowledge.
Coal mining geology (fissures)		✓	The CA is not aware of any evidence of damage arising due to geological faults or other lines of weakness that have been effected by coal mining.
Record of past mine gas emissions		✓	There is no record of a mine gas emission requiring action by the CA within the boundary of the property.
Recorded coal mining surface hazard		✓	The CA states that the property has not been subject to remedial works by, or on behalf of, themselves, under its Emergency Surface Hazard Call Out procedures.
Surface Mining (opencast workings)		✓	The CA indicates that the property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

Conclusions and Recommendations

A coal mining risk assessment has been undertaken on behalf of Barratt & David Wilson Homes for a proposed residential development at land off Carrs Lane, Cudworth, Barnsley, South Yorkshire. It is understood the residential development is to comprise the construction of c. 300 two storey residential properties with associated gardens. This assessment has been carried out in accordance with the CA guidance notes and model report template.

The risk assessment has identified that the Sharlston Low, and potentially the Sharlston Top Coal Seams, lie at shallow depth beneath the site. Workings in these seams of coal could affect surface

stability of the site and warrants further investigation to accurately assess the risks, in relation to the proposed development of the site.

The potential for any possible workings beneath the site to affect surface stability is dependent upon their depth, thickness and extent. Further work is required to identify these parameters. Following this work, should surface stability be considered to be at risk from historic mining, then consideration may have to be given to either extracting the coal by opencast methods or stabilising the mine workings (by drilling and grouting or other means) prior to construction.

The viability of coal extraction is dependent on a number of factors, including depth to coal, coal thickness, coal quality, market value, etc. The data set from which much of an assessment can be undertaken can be obtained from a ground investigation.

In addition, from review of the CA mining report a mine entry / airshaft is recorded c. 20m to the south west of the site. At this stage, there are no records of any treatment having been afforded.

The risks identified above associated with potential coal workings are not unusual on sites being developed/redeveloped in coalfield areas and can be easily addressed/mitigated through widely practiced ground engineering solutions, and, as such, should not preclude planning permission. It is anticipated however that conditions requiring investigation of the site will be attached to any permission.

As a provisional scope (provided as a guideline at this stage), it is recommended that the following works are undertaken to assess the impact of shallow coal below the site:

- Acquisition of a Coal Authority license to enter and/or disturb Coal Authority property. (A Coal Authority license must be acquired and be in place before any works outlined below can commence);
- Drilling of rotary probeholes to provide an initial assessment of ground conditions in relation to historic mining.

Furthermore to the works outlined above, an assessment of risks from ground gas associated with underground mining is likely to be required by the Local Planning Authority as part of any future planning conditions for the site.

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