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MJY/AJK/02/32921

BY E MAIL ONLY

19 October 2011

Dear Chris

Cannon Hall Farm – Mining Risk Assessment

We have reviewed the geological maps and memoirs of the site which we hold in our office, and write to comment on the issue of past mining beneath the site.

The site is located approximately 5 miles to the north west of Barnsley town centre, in South Yorkshire. The geological map for the area, Sheet 273 NE (1:10,560 scale) shows the strata underlying the site to comprise Lower Coal Measures. The majority of the site is underlain by a band of sandstone (likely to be the Silkstone Rock, although not labelled as such by the maps), with undifferentiated mudstone and shale underlying the north eastern corner of the farm complex.

Coal Mining

There is a history of coal mining in the area surrounding the site in several seams.

Below the site, the shallowest seam of coal will be the Silkstone Coal. This is conjectured to outcrop around 70 m south of the current buildings, through the park to the south of the farm and stately home, with an east-west trend. The maps indicate the strata to dip towards the north at around 15º. The seam is recorded by the geological maps to be around 0.6 m thick in a single seam, although the seam splits into two distinct leafs in the area to the south of Cannon Hall Park.

Based on the above information, the Silkstone Coal seam is expected at a depth beneath the site in the region of 25 m. Although heavily worked throughout the South Yorkshire coal field, including the areas to the north and south of this site, it is not expected that the seam has been

extensively worked beneath Cannon Hall. Historical maps do not indicate any old coal shafts within the immediate vicinity of the site.

If any workings have been undertaken below the site within the Silkstone Coal or any other lower seams, they will be at a depth where they will not be expected to influence developments at surface. This is due to there being in excess of ten times the worked seam thickness of competent ground between the top of the workings and the underside of footings. In this instance, for workings within the Silkstone Coal, there would need to be at least 6 m of competent ground. There is actually likely to be in the region of 20 m of competent rock, assuming a maximum seam thickness of 1 m and a nominal footing depth not exceeding 2.5 m.

We therefore conclude that the proposed development will not be affected by any past coal mining activities.

Ironstone Mining

The Claywood Ironstone is a relatively persistent band which lies above the Silkstone Coal and below the Silkstone Rock. The measures in this horizon are usually between 30 and 50 feet thick. However, in the area around Cannon Hall, they are much thinner, with the rock practically lying on top of the coal. The geological memoir for Barnsley records this, and states that the Claywood Ironstone is generally absent from this localised area, although is present to the north west and south east due to rapid thickenings of the shales between the Silkstone Coal and Silkstone Rock.

Therefore, ironstone workings beneath the proposed development are not expected, and if present, will be at a similar depth to the Silkstone Coal, and will therefore be at such a depth so as to not influence developments at surface.

Yours sincerely



M J Yates