

**Proposed Hurst Farm (AS26) and Station Road (AS25) mineral sites:**  
**2016 borehole site investigation summary of findings**

This summary has been produced for the use of Dorset County Council (DCC) to support the proposed allocation of sites AS25 and AS26 in the DCC Minerals Local Plan and for no other purpose. Published BGS records indicate the underlying geology of the two sites to comprise superficial Quaternary deposits of river terrace sands and gravels underlain by Eocene sands of the Poole Formation of the Bracklesham Group.

Following an initial site survey using trial pits in 2015, Halletec Environmental was commissioned in the autumn of 2016 by the landowner to conduct a secondary site investigation using boreholes. The purpose of which was to help better characterize the quantity and quality of the sand and gravel resource beneath the two sites. A total of 42 shell and auger boreholes were sunk across the two sites. Piezometers were also installed at 10 locations to enable groundwater level monitoring.

Bulk disturbed samples representative of the mineral encountered were recovered for laboratory analysis. In total over 120 samples were selectively subjected to a range of appropriate analyses that included particle size distribution, sulphates, lignite and pH. The results demonstrate the deposits to be suitable for a wide variety of construction uses.

The site engineer's logs show that the mineral resource is overlain by overburden comprising top and subsoils varying in thickness between 0.3m and 0.8m was found at all 42 locations overlying river terrace deposits of sands and gravels. The sands and gravels typically varied in thicknesses between 0.8m and 6.4m. In 23 locations what is thought to be Poole Formation sands were encountered directly underlying the river terrace deposits. In a number of locations clay interburden was also observed again of varying thicknesses close to the interface with the two mineral horizons. Where proven the basal measures were shown to comprise mainly clay. Within the area of search the results show an overall the ratio of mineral to overburden (including interburden) to be in the region of 4 to 1.

The published BGS mapping indicates that the sands and gravels may be absent from within part of the western area of the Station Road site (AS25). However, a number of boreholes targeting this area indicate that the sand and gravel resource is indeed present in all locations.

The attached drawing of the two sites shows the location of each trial pit and borehole excavated on the sites. These results confirm the presence of what is considered to be both river terrace and Poole Formation sands with a favourable stripping ratio. Laboratory analysis confirms both horizons to be of commercial quality and with processing suitable for a range of construction applications.

The table below presents a summary of the borehole survey results in terms of quantity and type of mineral resource subdivided between both types of mineral resource<sup>1</sup>:

<i>Estimates in millions of tonnes (Mt)</i>	River terrace S&G (Mt)	Poole Formation sands (Mt)	Total resource (Mt)
Station Road (AS25)	2.1	1.0	3.1
Hurst Farm (AS26)	1.9	1.4	3.3
Total for both sites	4.0	2.4	6.4

**Table 1: estimated resource by site and type**

The figures shown in the above table represent an increase of approximately 30% over the previous estimates made following the 2015 trial pit survey as referred to in the 2015 DCC draft Minerals Sites Plan (MSP). Those trial pits did not penetrate the underlying Poole Formation sands. Accordingly, the table shows an overall increase in the total mineral resource and also a subdivision into the two mineral types that were found. Samples recovered for laboratory analysis also demonstrate the suitability of the two mineral horizons for a wide variety of construction uses typical of the area.

The above assessment is based on boreholes sunk to between 5.0m to 10.0m BGL and it is expected that similar depths could be achieved during the extraction phases of the workings assuming the underlying Poole Formation sands are worked contemporaneously.

The Dorset MSP states that the sites will be restored to a combination of agricultural land, suitable for mainly grassland, together with wetland and water bodies offering the potential for significant enhancement in biodiversity. Notwithstanding the presence of the additional Poole Formation resource, this proposed restoration is unlikely to materially alter. However, subject to planning and permitting the use of imported inert restoration materials would offer greater scope for increasing the proportion of dry restoration back to agriculture.

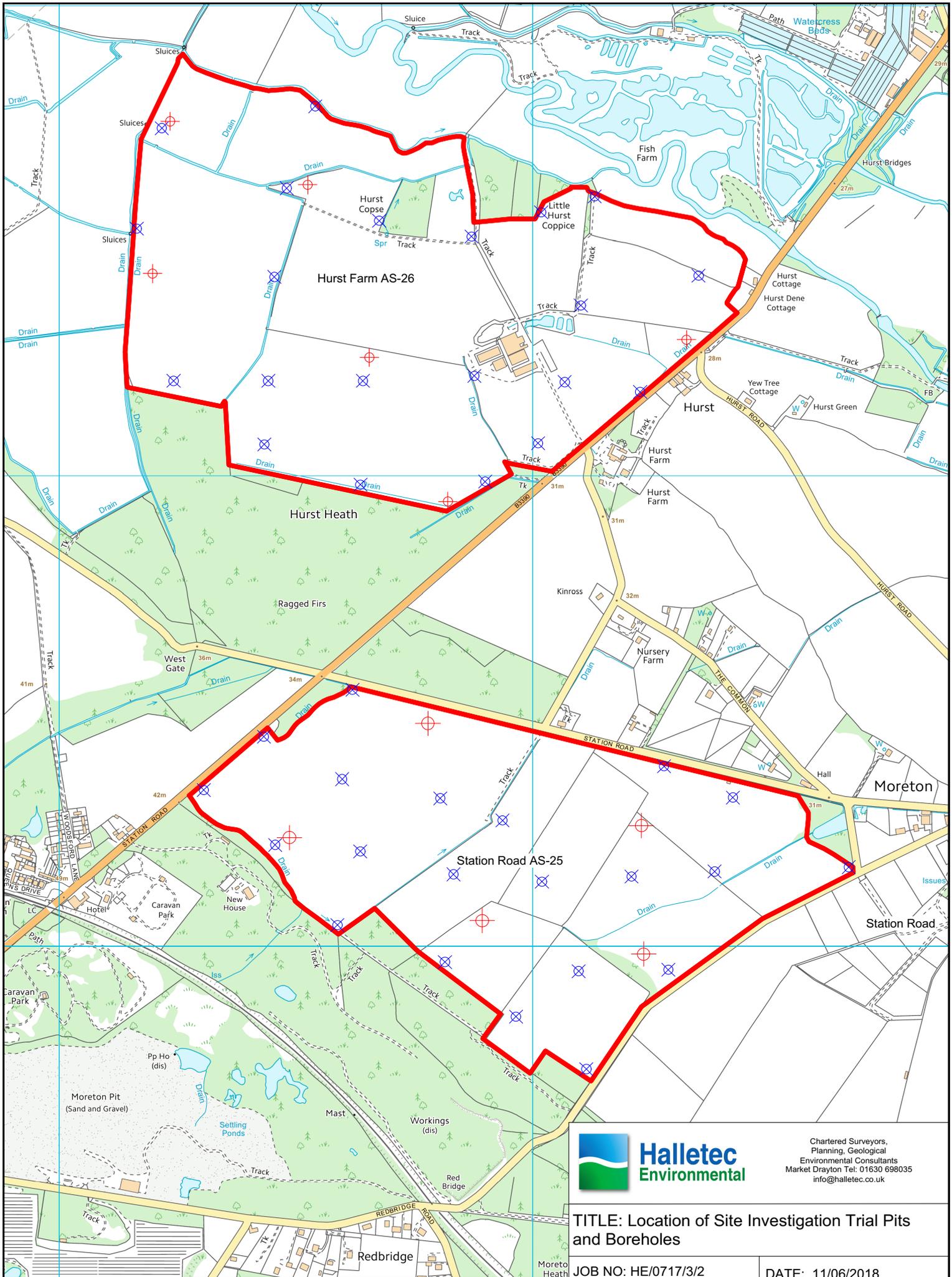
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<sup>1</sup> Basis adopted for calculation of reserves:

- Batters of 1 in 2 to the base of the workings
- Density of in situ mineral estimated at 1.6 tonnes per cubic metre
- Estimated 15% processing losses

Moreton Estate 2016 SI2 Summary - Cont'd:

Attached is the site plan drawing No HE/0717/3/2/8 (AS25 and AS26) and on which are shown the trial pit and borehole locations for the intrusive surveys conducted in 2015 and 2016.



- KEY**
- Trial Pit Location
  - Borehole Location
  - Site Boundary



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<b>TITLE: Location of Site Investigation Trial Pits and Boreholes</b>			
JOB NO: HE/0717/3/2		DATE: 11/06/2018	
DRG NO: HE/0717/3/2/8		DRAWN BY: JA	
SCALE: Not to Scale		OS Copyright Reserved Licence No ES 029942	
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