# OR/14/029 Assumptions, geological rules and limitations



H Burke, S J Mathers, J P Williamson, S Thorpe, J Ford and R L Terrington. 2014. *The London Basin superficial and bedrock LithoFrame 50 Model*. Nottingham, UK, British geological Survey.

## Assumptions, geological rules and limitations

### Assumptions and rules

Wherever possible, the model matches the corresponding 1:50 000 scale geological map sheets. However, where mismatches occur between the interpretation of boreholes and the geological mapping, the borehole have been used in preference. Therefore, the vast majority of the model matches DiGMapGB-50, but with minor amendments, these have not been carried over into an updated DiGMapGB-50 version at this stage. The most significant changes are to the pattern of subcrop of the bedrock units at rockhead.

As described above the artificial ground units were updated specifically for the model and have not been incorporated into the released version of DiGMapGB-50 at present. This was carried out as a desk study using modern Ordnance Survey topographic maps and aerial photographs, with emphasis given to cuttings and embankments along major transport routes. Backfilled workings are not included, unless indicated on the relevant published geological maps.

Sub-alluvial gravel is modelled beneath river alluvium as a separate geological unit wherever it is identified in boreholes. This gravel is modelled as River Terrace Deposits Undivided (rtdu) in the majority of the model, as in most areas it is uncertain which river terrace gravel occurs beneath the alluvium. The sub-alluvial gravel is modelled as Shepperton Gravel Member (shgr), the very lowest terrace in the sequence in areas where it crops out adjacent to the modern floodplain alluvium.

Tidal River or Creek Deposits (trd) are mapped as a thin strip on each side of the River Thames and its tributaries from easting 539980 (around Silvertown) downstream to easting 568570 (Tilbury Marshes). These tidal deposits have not been differentiated from alluvium in this model, due to the close similarity in their lithologies and the gradational nature of their relationship.

### Model limitations

Whilst every effort has been made to ensure accuracy, with the model constructed using a framework of cross-sections according to standard GSI3D workflow and procedures, not every available borehole was used in the model. Some variation may therefore occur between the depth of units modelled and depths recorded in boreholes that do not occur in the sections.

Where mismatches in the geological linework occur at 1:50 000 scale geological sheet boundaries, precedence is given to the most recently surveyed sheet, with the older linework adjusted to the newer version. Current BGS Lexicon codes are used in the model whereas DiGMapGB-50 data uses some older nomenclature. Artificial ground, mass movement deposits (landslide deposits), tufa and head are drawn in the cross-sections, but are excluded from the final model volume calculation

because the cross- sections alone provide insufficient information to calculate these units due to their complex distribution, size and shape.

This model is intended for use at around 1:50 000 resolution, in line with the corresponding DiGMapGB-50 geological map data, and is not recommended for site specific use.

The throw along modelled faults is often very small and may show undue ‘waviness’. The underlying reason for this is lack of data to support placing a fault at the modelled location.

The given methodology for attributing subcrop lines with z-coordinates means that the resolution of the DTM surface is propagated into the subsurface

## Model images

Figures 11 and 12 show views of the units as modelled in GSI3D.

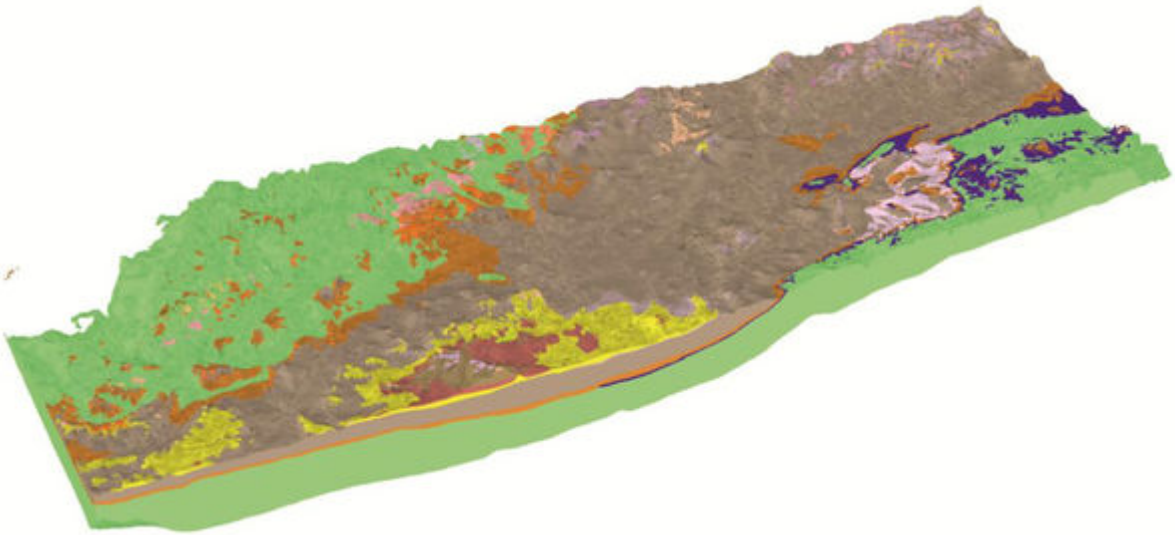

**Figure 11** The bedrock units to the base of the Chalk (in green) as modelled in GSI3D, viewed from the southwest. The legend is shown in Figure 2.

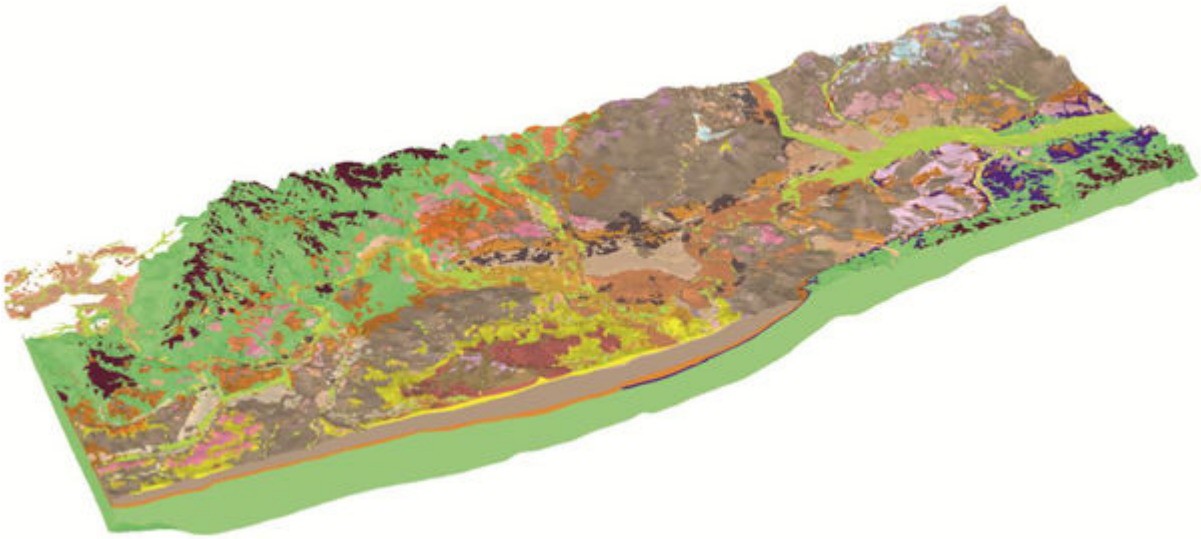

**Figure 12** The GSI3D model of bedrock and superficial deposits, viewed from the southwest.
Retrieved from ‘http://earthwise.bgs.ac.uk/index.php?title=OR/14/029_Assumptions,_geological_rules_and_limitations&oldid=7748’

Category:

- OR/14/029 The London Basin superficial and bedrock LithoFrame 50 model

# Navigation menu

## Personal tools

- Not logged in
- Talk
- Contributions
- Log in
- Request account

## Namespaces

- Page
- Discussion

□

## Variants

## Views

- Read
- View source
- View history
- PDF Export

□

## More

## Search

Search Go

## Navigation

- Main page
- Recent changes
- Random page
- Help about MediaWiki

## Tools

- What links here

- Related changes
- Special pages
- Permanent link
- Page information
- Cite this page
- Browse properties

- This page was last modified on 11 March 2015, at 17:16.

- Privacy policy
- About Earthwise
- Disclaimers
- 
- 