

# OR/15/064 Review and interpretation of selected Single Onshore Borehole Index logs

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Ford, J R, Hughes, L, Burke H F and Lee, J R. 2015. The Vale of Pickering: an initial summary of the Quaternary/superficial geology and data holdings. *British Geological Survey Internal Report*, OR/15/064.

A review of selected borehole logs available via the Single Onshore Borehole Index (SOBI) has been completed. Logs that contain potentially relevant information on the Quaternary succession have been prioritised. Lithological information has been codified in the BGS Borehole Geology database for the purpose of cross-section construction. Where possible, lithostratigraphical interpretations have been applied. Boreholes have been selected to provide a uniform coverage of the study area and to align with possible cross-section positions. A total of around 250 borehole logs have been considered, of which about 135 have provided usable information on the Quaternary succession ([Figure 9](#)).

The lithostratigraphical interpretation of the information presented on the logs can involve a degree of subjectivity and a variable level of confidence in the corresponding cross-section correlation. For the study area, one of the greatest areas of uncertainty in the borehole information is the distinction between weathered rockhead (i.e. weathered mudstone — often reported as clay and including gravel that may be interpreted as drilled bands of more indurated material) and the clay-rich Quaternary succession (including primary clay and gravel sediments). As a rule, clay deposits that are described as “soft” have been interpreted as forming part of the Quaternary succession; clay deposits that are described as “hard” or “blue” are typically interpreted as weathered bedrock. Each log is considered in the context of surrounding information and some exceptions to these rules have been made where demanded by the weight of additional evidence and the geologists’ conceptual understanding of the succession.

When considering 3rd party borehole logs it is necessary to accept that the confidence in the data can vary considerably between logs. Examples of low-confidence/questionable borehole logs include those where: the same lithological description has been given for a number of boreholes (e.g. as noted on the logs for SE77NE54 [478040, 476890] and SE87NW15 [480580, 479130]); the location of the borehole is uncertain; the succession recorded on the log is based on verbal accounts rather than direct observation. Where data are deemed to be too low in confidence, they have been excluded from the study/superseded by the interpretations shown in the cross sections.

In addition to location, lithological and related geological information the logs available through SOBI can include a range of additional notes, often anecdotal. An example of a historical observation that may be relevant to the current study, in this case a recorded occurrence of “gas, probably methane...” during reopening of a borehole, is presented in [Figure 10](#).

ADDITIONAL NOTES:

Used to feed two cattle troughs and the house. Now disused. Gas, probably methane, given off - when the bore had been off for a bit and the tap was re-opened, enough gas was given off to provide a blue flame for up to 30 seconds.

J.B.J. 22.10.70.

"Used to feed two cattle troughs and the house. Now disused. Gas, probably methane, given off - when the bore had been left off for a bit and the tap was re-opened, enough gas was given off to provide a blue flame for up to 30 seconds."

**Figure 10** Extract and transcript from a log for a borehole located approximately 2 km to the east of Kirby Misperton.

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