

APPENDIX VIII

Borehole No. 01

Starting at the ground surface at 86.70m OD., the auger went through more than 14.5 metres of clay 'back-fill' before starting to bring up rather dirty brown sand and gravel. This continued for a further 3.5 metres before clasts of chalk were produced and the rate of penetration dropped as the harder material was encountered. Another half a metre was drilled before it was considered that this was likely to be the bedrock floor of the valley at this point; drilling stopped at 18.50m

Borehole No. 02

Starting at ground surface at 86.76m OD. the auger only encountered clay back-fill for 10 metres, at which depth it was considered that at least the upper gravels had been extracted at this point. Drilling was stopped at 10.0m

Borehole No. 03

Starting at 85.12m OD. this augered hole produced fine sand after 1 metre, continued in fine sands and silt for another 1.5 metres before encountering flint gravels. This was considered as evidence that the gravel sequence had not been extracted at this point. Drilling was stopped at 3.0m

Borehole No. 04

Starting at the ground surface at 85.81m OD. this hole was augered for the first 3.7 metres through clays with chalk clasts that might have been back-fill, but could equally have been slumped clays from the former quarry face immediately to the north of this location. Coring then commenced with the recovery of 5 sleeves.



Core 4

Sleeve 1 contained one metre of brown angular flint gravels in a reddish sandy matrix. In different beds the matrix ranged from granules and very coarse sand down to fine sand in size. The flint clasts

were mainly of a brown colour and typically ranged from around 10mm in the finer beds to around 20mm, with a maximum size of 60mm in the coarsest deposits.

After adjustment for movement and compaction, the contents of Sleeve 2 continued with a similar deposit for the full metre. Starting with a fine sand the matrix became coarser with depth; being slightly calcareous it contrasted with the previously examined gravel material. Below 610mm the matrix became darker brown and coarser, and the flint clasts were coated with a black deposit of iron and manganese oxides and hydroxides. The largest flints in this sleeve reached 50mm in maximum dimension, but typically were in the range of 10 to 20mm

Sleeve 3 continued with a black angular flint gravel for the first 250mm before a sharp change in colour to a reddish brown similar to that in the upper part of sleeve 1. The size of the matrix generally decreased with depth, changing from granules and coarse sand in the upper part to fine sand about half way down the core, where the colour had become a light brown. Between 750 and 840mm a darker brown bed occurred, but this colour variation may have been due to the downward movement of the matrix exposing larger areas of the clasts. Rarely exceeded 20mm in size the clasts in all the other beds in this sleeve comprised a fairly even mixture of brown and white coloured flints.

Sleeve 4 had just 80mm continuation of the previous bed before a very sharp change downwards to laminated, yellowish brown (10YR 5/5), very fine sands and silts. Between 470 and 670mm the colour changed to a greenish grey (2.5YR 5/4), before returning to a yellowish brown (10YR 6/5). The laminations in all but the bottom 30mm of this sleeve clearly showed the effects of drag-down adjacent to the sleeve side. Below 900mm the lowest part of the laminated sequence became less clearly laminated downwards, but showed a very distinctive black coating of medium to coarse sand size grains

Sleeve 5 continued this medium to coarse, very dark coated sand bed where laminations were not apparent for 290mm, before becoming less darkly coloured as the grain size decreased to a fine sand. Between 290mm and 350mm laminations occurred in a reddish brown fine sand bed that became a grey colour down to 390mm Below this a sharp change occurred to a grey brown angular flint gravel in a very fine sand matrix, that continued to 500mm when drilling was terminated. The flints in this lowest bed reached a maximum of 15mm in maximum length.

Borehole No. 05A

Starting at the ground surface at 85.85m OD, this borehole was the relocated aborted borehole No.5 that had been terminated after 7m of drilling in 'clay'. In the relocated borehole the first four metres were augered through clay back-fill before coring commenced.



Core 5A

Sleeves 01 and 02 were both entirely full of chalky clay that had been used as a back-fill at the end of working in this quarry.

Sleeve 03 started with 80mm of the same material, but then continued into a reddish brown angular flint gravel for the next 530mm. The gravels became a shade paler with depth, whilst the sand matrix became coarser. Flint clasts were brown coloured and increased in size with depth, ranging from 10mm to 20mm in the lowest part of this unit. Below 390mm the gravel continued to 610mm the flints became larger; the largest being 35mm; whilst the matrix became a very fine sand. Below this level the sleeve was filled with laminated very fine sands and silts with a yellowish brown colour, becoming a greenish grey below 870mm

Sleeve 04 started with 280mm of angular flint gravels in a sand matrix, with little matrix in the upper part due to shaking. The gravel formed a sharp contrast at 280mm with a sequence of laminated silts and very fine sands that extended to 630mm. Here sharp changes in colour occurred, with very pale laminae contrasting with dark grey ones in the slightly coarser and less thinly laminated beds in the centre of the unit. At the base of this unit laminae became less apparent as the sand became coarser and the colour changed to a reddish brown. Below 720mm angular flints occurred, with a maximum size of 40mm but averaging around 20mm on their longest axis. The matrix became a coarse sand to granule size and a darker reddish brown colour.

Sleeve 05 started with 100mm of loose, black, angular flint gravel that was almost certainly modified by shaking during the drilling process. Below 100mm the core contained a very dark matrix of coarse sand and granules containing scarce angular flints up to 15mm to a depth of 180mm, after which they became more abundant until the base of the unit at 260mm. Angular flint gravels continued in the next unit, still with a coarse sand matrix and a dark colour that became slightly paler below 320mm until 470mm when it became darker again to the bottom of the core where drilling was stopped at 580mm.

Borehole No. 07

Starting at the ground surface at 85.51m the first 3 metres were augered before coring commenced at 82.51m where the distinctive fine sand and silt bed at the base of the Welton Till was expected to occur.



Core 7

Sleeve 1 started with brown (7.5YR 4/4) very fine sands and silty laminated deposits that became paler with depth for the first 670mm, except at 620mm when an iron rich horizon occurred associated with a thin band of angular flints. Below 670mm to the bottom of the core, was a light brown angular flint gravel in a coarse matrix of granules and coarse sand, but with a small proportion of finer sand present. The flint clasts were mostly about 5mm, but larger clasts reaching 30mm were recorded.

Sleeve 2 continued with another 90mm of small flint gravel in a sand matrix before a much coarser gravel unit was entered below this level and continued to the bottom of the sleeve. Flint clasts in the coarser units were mostly around 10mm in size, with the largest ones reaching 30mm and one measuring 60mm at the very base of the sleeve. The matrix was also much coarser, with coarse sands and granule sizes being dominant.

Sleeve 3 only penetrated 300mm at a very slow rate before being withdrawn. The core showed a continuation of the coarse flint gravel unit recorded in the previous sleeve. Nearly all the sand matrix had been shaken down from between the larger clasts, several of which reached 30mm in maximum dimension.

Sleeve 4 continued until 905mm with pale coloured coarse angular flint gravels with a sand matrix. As in the previous core the gravels, particularly in the upper part, showed evidence of shaking, with the matrix having moved down the unit. The largest flint clast observed measured 50mm in maximum dimension, whilst several more were larger than 30mm. Below 790mm the matrix within the gravels became finer, with very fine sand to silt sized grains, whilst the colour changed downwards from a light grey to a light brown.

Sleeve 5 continued with light grey angular flint gravels that had been shaken and hence lost most of their sand matrix. Below 320mm the colour darkened as the sand matrix content increased down to the bottom of this core at 630mm (78.58m OD.).

Sleeve 6 started with a 100mm compression that was cut from the top of the sleeve before measuring and description started. It is possible the compression was due to the sharp change in lithologies that occurred between the bottom of sleeve 5 and the top of sleeve 6. The remainder of this sleeve contained well laminated very fine sands and silty clays that ranged in colour from yellowish brown (10YR 5/4) to dark yellowish brown (10YR 4/4) Again the laminations showed drag-down close to the sleeve wall.

Sleeve 7 continued the stone-free, laminated sequence with a higher proportion of fine sand sized grains and less clays and silts. Laminations tended to be thicker than in sleeve 6 and colour variations occurred, probably related to the higher permeability of the coarser grain sizes where the secondary coating of grains was apparent.

Sleeve 8 continued the previous sequence becoming rather finer and paler in colour towards the middle of the sleeve, between 250mm and 750mm where a single 10mm white flint clast occurred. From 950mm to 980mm a strongly coloured band occurs in a bed of fine sand above a very fine sand and silt bed in the bottom 20mm of the core.

Sleeve 9 continued the units at the base of sleeve 8 to a depth of 630mm, with thicker alternating layers of very fine to fine and medium sands. Below 370mm darkening due to secondary staining occurred and becomes more pronounced to the boundary with the underlying beds at 630mm. Below this point to the bottom of the core at 74.21m OD. dark reddish brown coarse flint gravels with clasts reaching 50mm occurred in a predominantly medium to coarse sand or granule matrix, with a small quantity of finer sand and silts, particularly in the drill-bit 'shoe'. Some highly polished limonite oolites were recorded amongst the sand grains in the lower part of this core and may be the source of at least part of the iron staining in these gravels.

Borehole No. 08A

Starting at the ground surface at 85.31m OD. the first 2.27 metres were augered before coring commenced at 83.04m where distinctive fine sand and silts were obtained.



Sampling from Core 8A

Sleeve 1 was recovered with a 100mm compression at the top and 50mm of core extruded beyond the sleeve, which combined with the catcher sample produced a full metre of core. Very fine sands and silts with laminations occurred for the first 540 mm but it is possible that the laminations observed may have been at least partly produced as a result of the compression of the sleeve immediately above it. Below this level the sands became dominant, with thicker beds and slightly coarser grain sizes. After 540mm the core contained an angular flint gravel, with the largest flints in the 10 to 15mm maximum size, but a further compression close to the base of the core contributed to uncertainties of precise depths in this area. The hole was subsequently cleaned out with the auger to the 3.50m depth where coring continued.

Sleeve 2 continued the angular flint gravels from the previous sleeve, with brown and white flints reaching 25mm and 30mm respectively. The matrix varied from granules to silts and clay, with a distinctly bluish grey colour (Gley2 5/1) in the lower part of the recovered core to 680mm. Below this the bottom 320mm 'dropped-out' during recovery so was not available for inspection.

Sleeve 3 therefore started coring at 4.20m depth where the first 100mm consisted of open textured flint gravels that had lost their matrix. From 100mm to 590mm the core contained angular flint gravels, with mixed brown and white flints reaching 35mm maximum in the central part of this unit. The matrix was mainly sand grain size, but became coarser toward the centre of the unit, with a fining downwards from granules at that level to very fine sand at the base. Between 590 and 800mm fine sand, silts and clay particles formed an almost flint-free bed, before flints became more numerous towards the bottom of the core; ending with an apparent layer of larger (35mm) brown flints at the base, below 920mm

Sleeve 4 also suffered some compression, possibly related to compaction of the flint gravels that it contained throughout its length. Commencing with 230mm of very open textured brown and white flint gravels with a clast maximum dimension of 30mm it continued as a more normal coarse sand or granule matrix supported angular flint gravel, before reverting to the open texture for the lowest 190mm where the flints had maximum dimensions of 30mm for white flints and 35mm for brown flints.

Sleeve 5 commenced at 6.00m depth (79.31m OD.), with 210mm of open textured angular flint gravel, before 370mm of angular brown and white flints in a medium sand to granule matrix. The flints had maximum dimensions of 40mm in this part of the core. Between 580 and 640mm the matrix was finer and changed from a pale brown to a greenish grey colour. (Gley2 5/1)

Sleeve 6 commenced with 250mm of open textured angular flint gravel, containing white and brown flints with maximum dimension to 35mm. The remainder of the core consisted of angular brown and white flint gravels in a coarse sand or granule matrix. The largest flints occurred between 620 and 750mm in depth and measured 50mm, whilst those above and below were mainly in the 15 to 20mm size range, reaching a maximum of 35mm.

Sleeve 7 had 230mm of open textured angular flint gravel at the top, whilst the remainder of the core consisted of angular brown and white flints in a matrix of mainly coarse sand that varied from granules to medium sand. The matrix variation occurred in beds between 50 and 100mm in thickness, whilst the largest flints ranged between 15 and 40mm, the larger sizes occurring in the coarsest matrix beds.

Sleeve 8 suffered a breakage during extraction, the two pieces being re-sleeved after extraction, whilst the extruded 50mm base of the core and the shoe material was taken in a separate bag. A 20mm compression occurred at 180mm depth, and a further 30mm compression also occurred near the centre of this sleeve, the latter probably due to the presence of two larger flints within the core near this level. The core contained a mixture of brown and white flints within matrix material that ranged from granules to clay. In the top 100mm the finer sizes were dominant, becoming coarser below this level above the 50mm flint at 240mm, around which the matrix included a very broad range of sizes from clay to granules. This varied matrix also included the second 50mm flint at 580mm. Below 840mm the flints were usually less than 10mm in maximum dimension, and the matrix became dominated by the finer sizes.

Sleeve 9 continued this sequence despite a small compression at 60mm below which laminated very fine sands and silts continued to the base of the core. Mainly they had a yellowish brown colour (10YR 5/6), with individual laminations varying between 1 and 2mm generally, but with possibly cyclic patterns around 270mm, where coarser sand sizes were involved in beds of around 20mm thickness.

Sleeve 10 had expanded on recovery to fill the entire sleeve although only drilled for 830mm hence the actual measurements recorded within this sleeve had to be graphically corrected before use for illustrations. The sequence in sleeve 9 continued downwards with less apparent lamination in alternating fine sands and silts to 770mm where a 10mm brown clay separated them from 220mm of angular flint gravels. The flints at this level were nearly all angular, white or grey in colour, mainly 10mm to 15mm in maximum dimension, with the largest reaching 30mm. The matrix consisted of mixed clay to granule sizes, with the dominant size decreasing downwards.

Sleeve 11 commenced at 11.83m below the surface and drilling continued for a full metre, ending at 72.48m OD. An oblique compression occurred between 210 and 270mm, but was balanced by the recovery of material from the shoe at 1000 mm. For illustrations a correction has been applied, but the following measurements are actual recorded measurements from the top of this sleeve. The top 140mm consisted of a fine sand to clay matrix with angular flints reaching 30mm maximum dimension. At an irregular boundary between 310 and 370mm there was a sharp change to a dark brown to black coloured, well graded bed of coarse to very coarse sand, that consisted largely of well-rounded quartz grains, but also contained a small percentage of limonite oolites and an occasional larger flint fragment. At 570mm the sands merged into a flint-rich gravel layer with an even mixture of brown and white flints, the larger being over 30mm, but the largest 62mm in maximum dimension. The matrix of coarse to medium sand sizes graded down to finer sands below 740mm, whilst the main constituent continued to be well rounded and polished quartz grains. Of the total matrix content Limonite oolites formed between 5% and 15%, resulting in progressively darker coloured sands associated with the higher percentages. The core terminated at a depth of 72.48m OD, with a very angular white flint deposited in a reddish brown silt to clay matrix in the shoe sample.

Borehole No. 09

Starting at a ground level of 85.60m OD the first 3.70m were augered, prior to commencing coring at 81.90m.



Core 9

Sleeve 1 started in reddish brown flints and chalk clasts in a clay matrix for the first 70mm before entering slightly calcareous yellowish brown (10YR 4/6) laminated silts and fine sands that coarsened downwards to 380mm. Between 380 and 810mm angular flint gravels, with a maximum size of 30mm in a sand matrix continued down to 810mm, where the matrix became richer in silts and clays and had a dark grey colour (5YR 5/1) down to 950mm, when it showed secondary staining.

Sleeve 2 commenced with open textured angular brown flint gravel for the first 110mm above an angular brown flint gravel in a medium to coarse sand matrix that became paler coloured with depth to 440mm when penetration became very slow. The core was subsequently recovered with a 60mm brown flint across the core at this depth.

Sleeve 3 continued from 5.20m to 6.20m through angular flint gravels in a matrix that changed from mainly fine sands in the upper beds, to medium and coarse sands at the bottom. The flints were mainly less than 20mm whilst the largest measured 35mm on the longest axis. They were predominantly brown in colour, with approximately 10% white or grey; some with a dark brown to black secondary coating of iron and manganese oxides and hydroxides, an effect that became more intense in the lowest 160mm. In the lowest bed the matrix was poorly sorted with fine to coarse sand sizes, consisting of rounded to well rounded quartz grains and less than 5% Limonite oolites.

Sleeve 4 continued the previous dark stained angular flint gravels to a depth of 380mm with the largest flints measuring 30mm, in a matrix of coarse sand. Below 380mm the angular brown flint gravels continued to the base of the core, but with much less secondary staining. The largest flints increased in size from 20mm near the top, to 40mm near the base of the unit, where they had an open texture and a lack of matrix in the bottom 40mm. Throughout the matrix, rounded to well-rounded sand grains were poorly sorted, with clays, silts and very fine sands occurring in addition to medium to coarse sands.

Sleeve 5 started with 180mm of open textured angular flint gravels, above dark grey (10YR 4/1) angular brown flint gravels in a matrix of silts and fine sands that coarsened with depth to medium

sands at the base, where the last 210mm had strong secondary staining of iron and manganese oxides and hydroxides. The largest flint occurred at 790mm and measured 65mm maximum dimension; the largest flints above and below this level measuring 45mm and 15mm respectively.

Sleeve 6 started with 160mm of open textured, angular, brown flint gravel above a similar deposit in a fine sand to silt matrix that continued to the bottom of the core. Whilst nearly all the flints above 640mm were brown, below that level there was an increase of white flints to almost equal proportions with brown. Combined with an increasing proportion of silts in the lower half of the core, the colour changed to brown (7.5YR 4/3).

Sleeve 7 started with 200mm of open textured angular flint gravel, lacking matrix materials, with the largest flint measuring 60mm on its longest dimension. The flint size decreased downwards to a maximum of 30mm in the first 350mm where the matrix was predominantly fine sand. At 350mm a thick sequence of stone free, laminated, yellowish brown, (10YR 5/6), fine sands and silts started, and occupied the remainder of this core.

Sleeve 8 continued this unit with the interruption of a bed of white flint gravels in a sand matrix between 100 and 120mm. The laminated, light yellowish brown (10YR 6/4) silts and fine sands continued to 740mm, when small flints with a maximum dimension of 20mm first appeared in a bed of medium sand to 880mm. Below this depth flint-free fine sands and silt continued to the end of the sleeve core and into the shoe.

Sleeve 9 contained 70mm of flints that could have been contamination from the borehole, above an equal thickness of yellowish brown fine sands and silts. Below 140mm these red stained fine sands continue, whilst the flint clasts increase in size from 10mm to a maximum dimension of 50mm at 380mm. At 580mm a large broken white flint partially blocked the sleeve, below which the predominantly white flints continue in a medium sand matrix to 850mm. The remainder of the core, to a depth of 11.90m, contains similar material to that immediately above, with the addition of darker secondary staining by iron and manganese compounds.

Borehole No. 10

Drilling started at a ground level of 85.85m OD with an augered hole for the first 2.70m before coring commenced.



Core 10

Sleeve 1 contained five individual compressions that separated the core into a number of individual pieces that had to be measured and assembled for the illustrations. This was achieved within the metre length by using the extruded material from the bottom of the sleeve and the shoe sample that together made up 100mm. Starting in brown clay (7.5YR 4/4), the first compressions at 50mm, 200mm, 315mm, and 470mm divided this unit of fine sandy clay into four separate sections, below which the lowest part of the unit with recognisable laminations extended down to 645mm. This unit was followed by 125mm of angular flint gravel in a sandy matrix that became finer with depth, whilst the flints were mainly less than 12mm. Below 770mm a bed of fine sands and silts continued to the bottom of the sleeve and formed the 65mm of extruded core and shoe material. The only coarse material being at 940mm, where a 50mm flint was enclosed.

Sleeve 2 continued with 11mm of the same stained fine sands and silts above 230mm of similarly reddened angular flint gravels in a sand matrix. Between 240 and 460mm the flint gravel became free of secondary colouring and the flint sizes reached a maximum of 20mm with a general coarsening upwards of clast and matrix sizes. See Plate 10/2. Between 460 and 770mm the next unit consisted of fine sands and silts; stone-free except for a broken white flint clast that must have been larger than 25mm. The bottom 230mm consisted of secondary stained, black, angular flint gravel, with a maximum clast size of 20mm.

Sleeve 3 commenced with 170mm of open textured angular flint gravel, with little or no matrix, and flints to a maximum of 25mm. The following 100mm below this consisted of similar flints with a sandy matrix; then the matrix became very fine sands, silts and clays, giving a grey colour to the next 100mm. The rest of this core consisted of angular flint gravels, starting with a pale coloured band approximately 20mm thick immediately below the grey material. Downwards this became a dark grey with secondary staining that itself became less prominent towards 510mm when the flint gravels had become very pale; continuing until 680mm when the black secondary staining re-established to the bottom of the core. Flints had a maximum size in this unit of 25mm, but showed a fining upwards trend above 860mm.

Sleeve 4 continued the alternating pale to black flint gravels throughout the entire core, with the top 180mm showing an open texture and lack of matrix and consisting of clasts with a maximum of 40mm. The remainder of the core showed a series of similar beds that graded into one another, but were

distinguished by clast size (maximum of 50mm) and staining. Secondary staining was greatest in the coarsest beds, where the matrix is also coarsest and porosity is highest.

Sleeve 5 the trend of coarsening downwards seemed to be continued in to the top 150mm of the core, where open textured flint gravels included the largest clast of flint, 70mm. However this may have been related to a blockage in the previous core at 686mm when the drill-string was withdrawn and the hole drilled out to 7.00m. Unfortunately a compression at the base of the top unit also destroyed any contact with the underlying very fine sands and silts that formed the remainder of this core. Laminations were observed in the upper section of the fine sands and silts that extended down through most of the remainder of the core. The only exception to the fine sediment sizes was a 20mm white flint included in this unit at 480mm. Below this depth the sands had a slightly higher clay content and a number of small black spots and stains occurred in otherwise silty sands. Possibly these represent some organic activity such as burrows or roots, or they may be related to the distribution of a specific mineral grain. During extraction the core sleeve was split due to the use of compressed air to aid the retrieval and some compaction will have occurred.

Sleeve 6 continued the strong brown coloured (7.5YR 5/6) gravel in a clay matrix caught in the shoe of the previous core for the first 130mm. A compression at 130mm marked a sharp contrast in lithology, with coarse angular flint gravels below the gap in the sleeve at this level. Drilling records also indicate that some material may have been introduced into the top of this core because the hole was not cased at this level. The dark reddish brown colour (5YR 3/3) of much of this sand and silt unit is distinctive, as is the presence of a number of small white flint clasts scattered throughout its length. Drilling only went to 880mm with a shoe sample being taken at 870 to 880mm. With measured depths going to 970mm and 40mm of material extruded by the compression, adjustments had to be made to these measurements for illustration purposes.

Sleeve 7 was drilled from 8.80m but core was only recovered to 9.20m due to the bottom half being lost in the hole. The top 200mm was very loose sandy gravel, below which dark stained silty sands occupied 200mm with a single flint at the base.

Sleeve 8 was obtained after the hole had been cleaned out to 9.50m to remove an obstruction (large flint ?). Drilling only penetrated 850mm but the sleeve length was full due to compactions at 100mm and 300mm and a large flint across the sleeve causing 180mm of gap in the core. Some expansion of the finer sediments also occurs when pressure changes during recovery of the core from depth. Much of this core contained angular flint gravels in fine sand to clay matrixes; varying in colour from brown (7.5YR 5/4) to strong brown (7.5YR 5/6), with particularly dark black secondary staining between 290mm and 470mm. In many individual beds the largest flints had maximum dimensions of 40mm and 50mm. Below 810mm a yellowish red (5YR 4/6) silty clay with black spots and vertical markings continued for 220mm to the base of the core. The shoe contained a 45mm flint in a clay and fine sand matrix.

Sleeve 9 was drilled from 10.35m to 10.95m when further penetration ceased. The core continued the lowest unit from sleeve 8 with similar coloured flint gravels in a sandy matrix to 175mm. Below this level chalk clasts with maximum dimensions of 60mm and freshly fragmented chalk occurred in a brown clay matrix (7.5YR 4/4) to the bottom of the core.

Borehole No. 11

Drilling started at a ground level of 85.81m OD. This borehole was designed to test the findings in boreholes 4 and 5A where slumping of the former quarry face was suspected. The hole was augered and coring commenced at the level when sand and gravel were being produced; i.e. 3.50m.

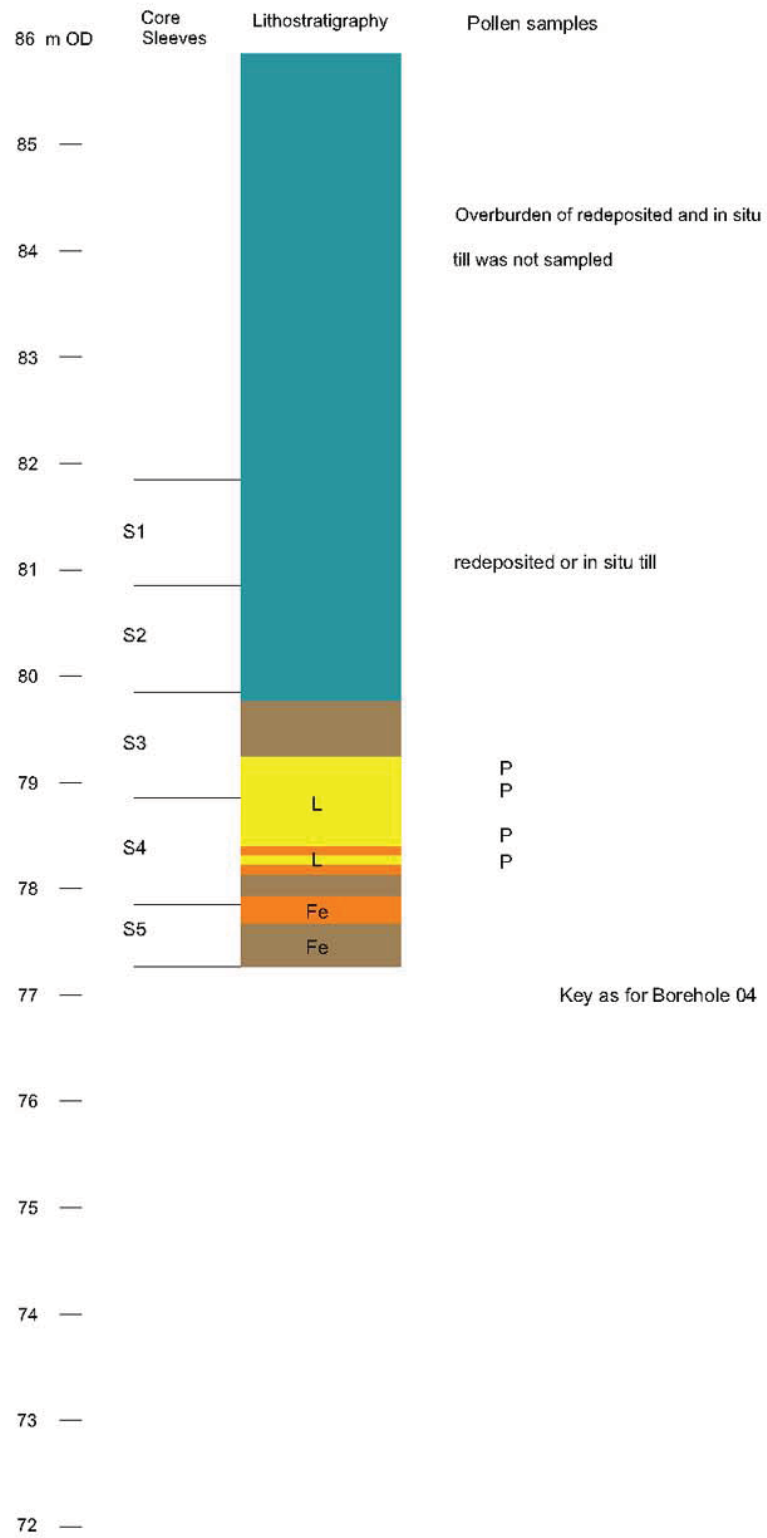


Spiral compressions showing in Core 11

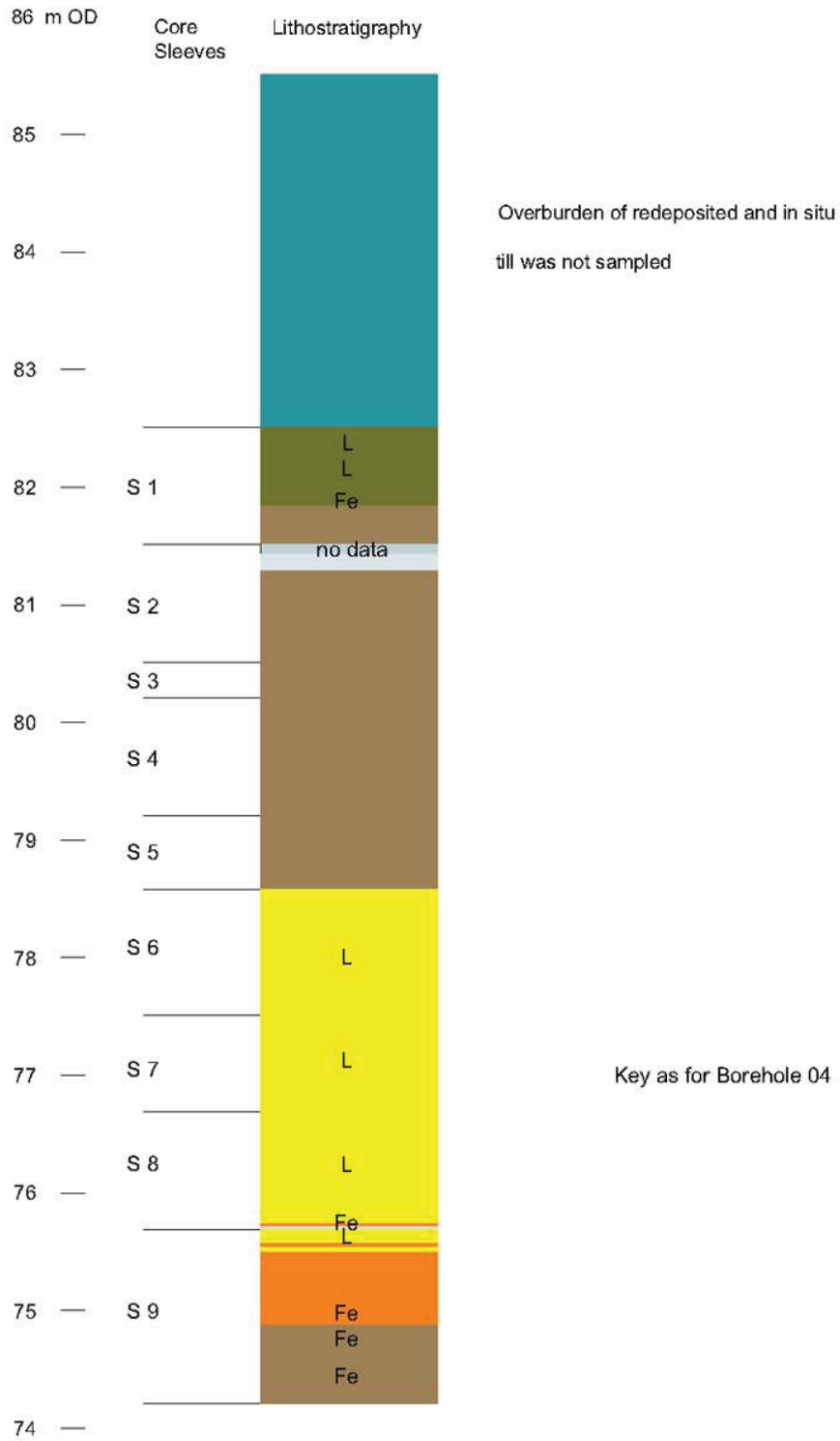
In sleeve 1 the first 240mm of the core contained a mixture of loose gravel and chalky till that were clearly not in situ. From 240 to 750mm the core contained angular brown flints in a coarse sandy matrix, the largest flints measuring 35mm. Coring stopped at this level due to lack of penetration where a large flint was suspected of blocking the progress.

The hole was cleaned out to 3.50m with an auger and coring re-commenced. with sleeve 2. The top 260mm consisted of very loose angular flint gravel, with no matrix, the largest flint measuring 40mm on its greatest dimension. Below this level a number of spiral compressions in the sleeve divided the core into sections that might be related to the lithological properties of the different beds within this unit. The section from 260 to 490mm consisted of angular brown flint gravels in a fine sand matrix; the largest flints measuring 25mm. Below this level similar flint gravels were darkened with secondary staining of iron and manganese compounds for 120mm. The main difference being the larger size of the flints; maximum 50mm; and the coarse sand and granule sizes of the matrix. Below 580mm the gravels became paler in colouring down to 710mm where a 70mm flint stuck across the core. From this level to the bottom of the core at 5.50m the gravel became reddish brown in colour and the matrix became a fine sand.

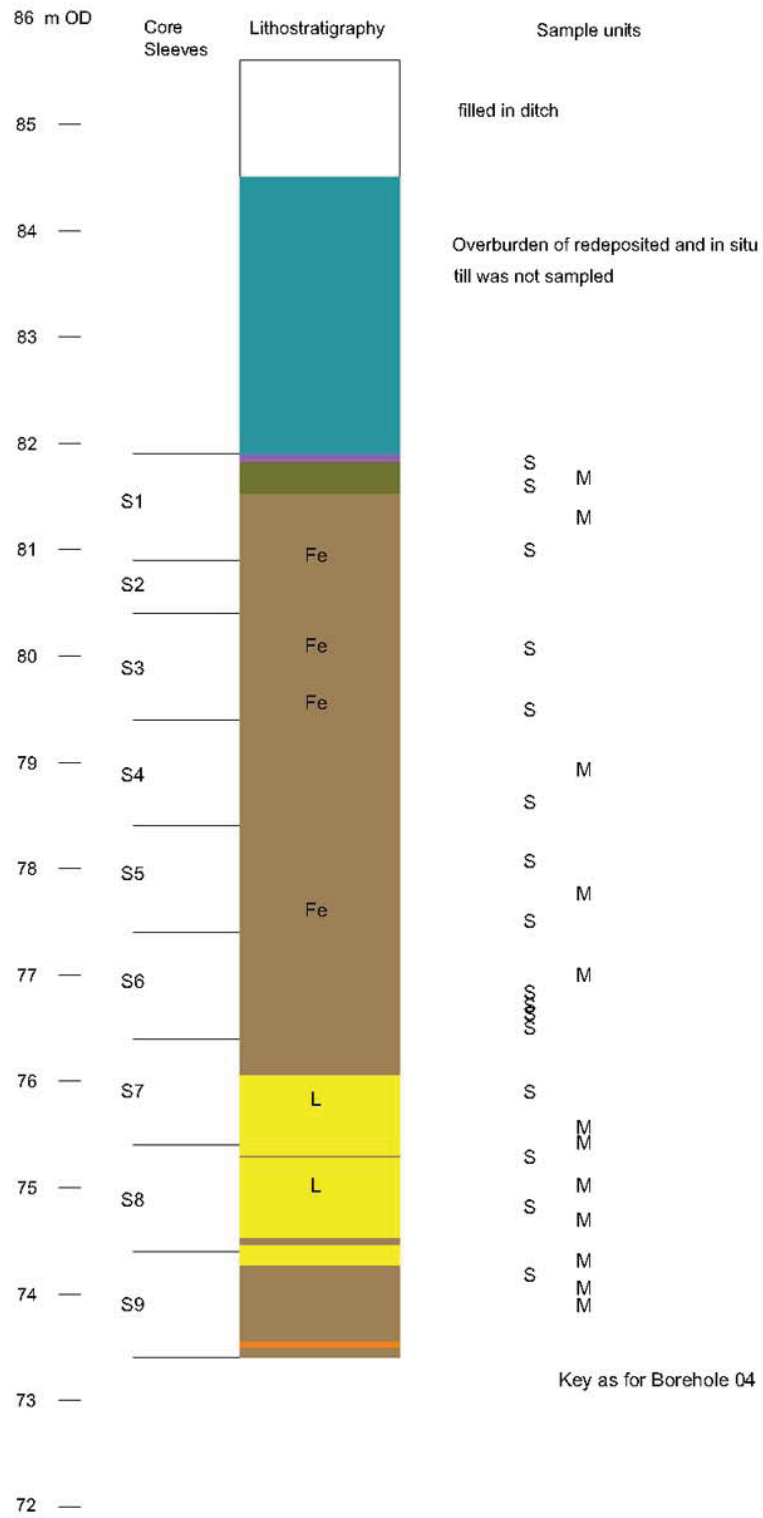
Borehole 05A



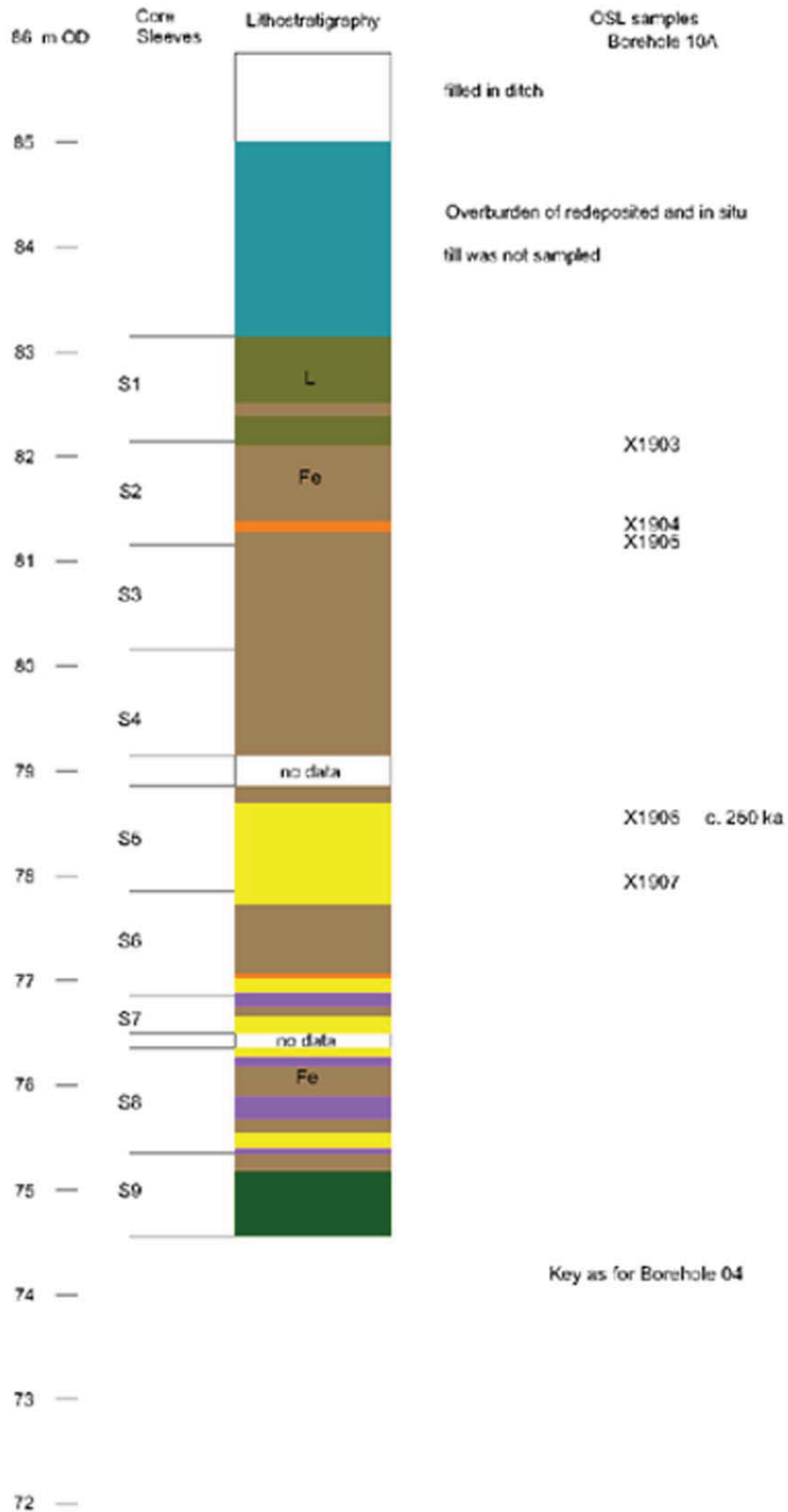
Borehole 07



Borehole 09

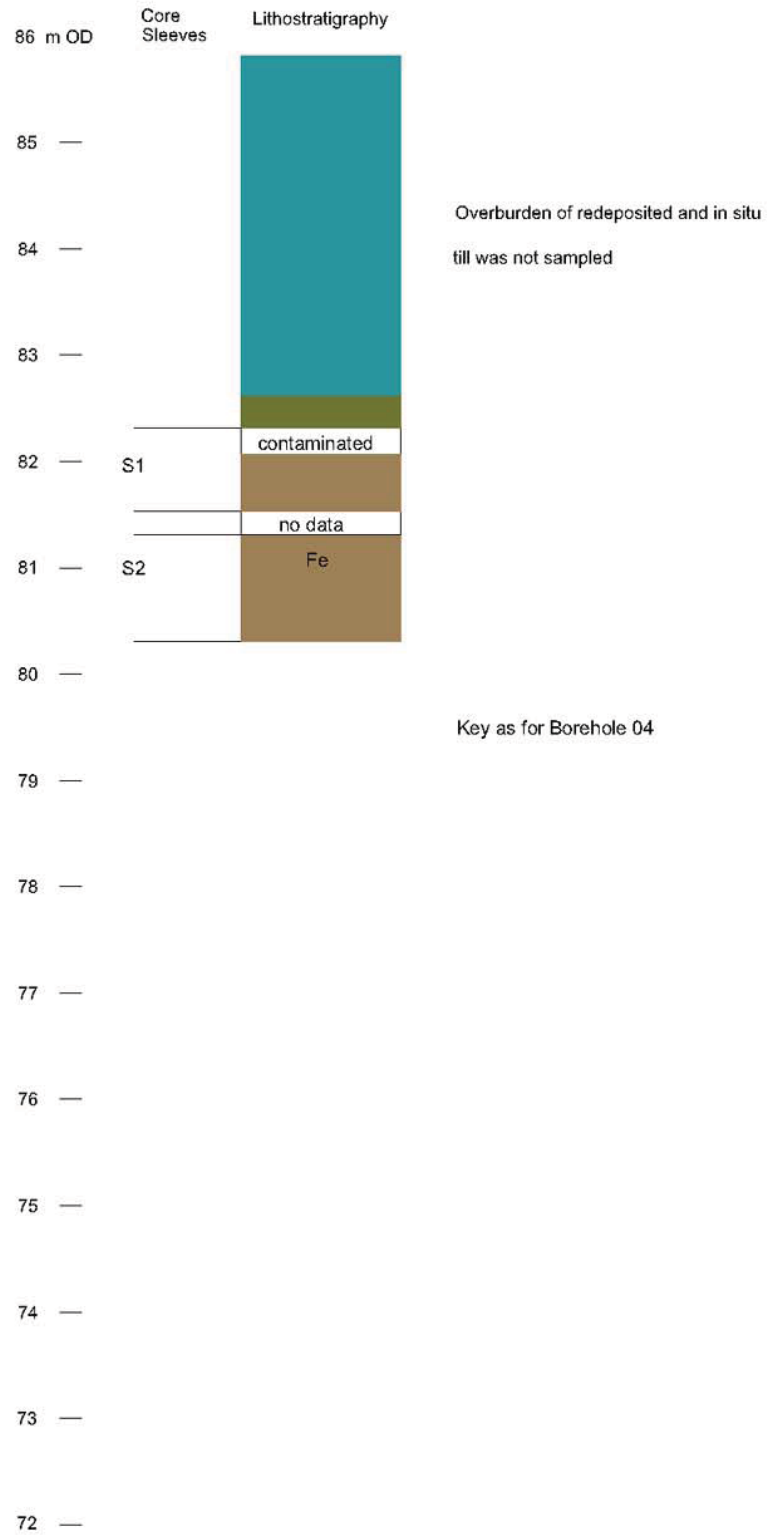


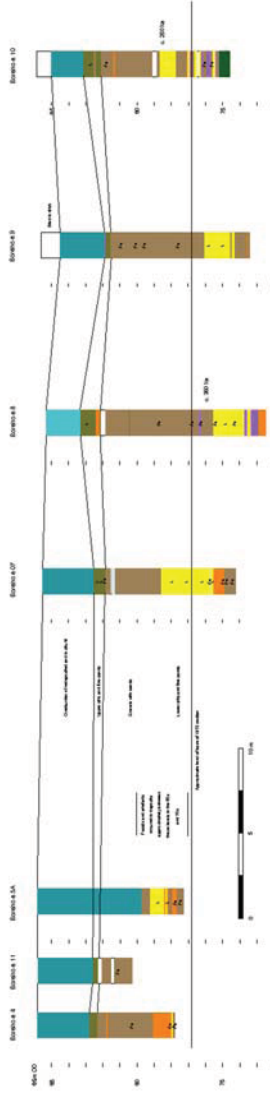
Borehole 10



Key as for Borehole 04

Borehole 11





All core