

Thesis
3620

**Processes of post-burial change in soils under archaeological
monuments: a micromorphological study with particular
reference to the processes of clay and iron redistribution.**

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CONTAINS DISKETTE

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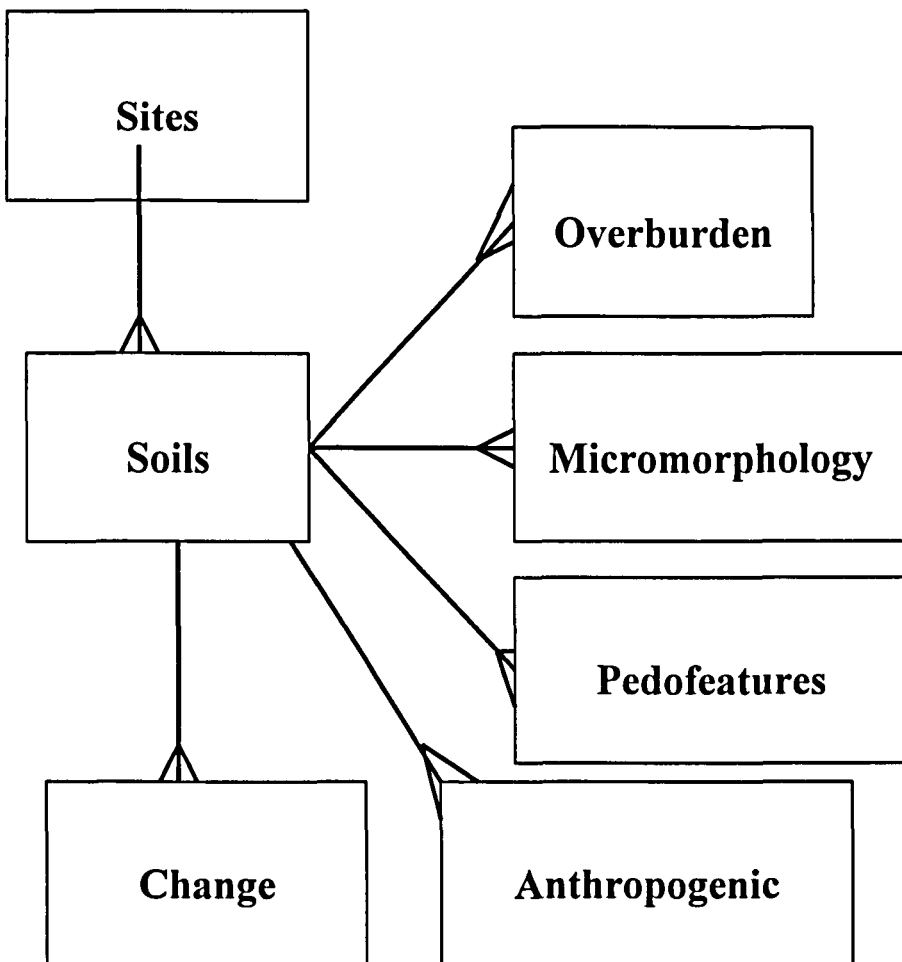
Appendix 1: A database of archaeological buried soil sites in Britain.

Location: floppy disk in sleeve at back of thesis

File name a:\Brit_soil.mdb

This electronic database was constructed to provide easy analysis of the archaeological buried soil literature collected as part of the literature review process. Microsoft Access '97 was chosen as the medium because the relational nature of this package allows the data to be stored in a series of easily managed and accessed tables without compromising the comparability of the data. The tables constructed include a table of sites- site name, location, characteristics and reference, soils- buried and the surrounding modern soil, overburden- depth and nature, micromorphology, pedofeatures, anthropogenic- interpreted anthropogenic disturbance of the soils, change- references to post-burial change in the buried soils. The entity and relationship diagram below (Figure 1) better explains the database design.

Figure 1: Entity and relationship diagram of Brit_buriedsoil.mdb



The primary keys that allow the tables to be tied together and their relationships to be analysed are Site number and Soil number. A few sites have more than one buried soil, either they belong to different time periods, or are buried beneath very different types of material, and / or the soils may represent different soil genetic classifications. Site name is also always given to make visual interpretation of the tables easier and this may also be used as a key.

The data presented was collected from published literature and unpublished site reports. In many cases the original site reports were not available and here the reference given refers to the text cited rather than to the original report. The work of Macphail (1987) and the database produced therein was particularly useful in these cases. The database contains only British sites and is in no way seen as a definitive work. Both those soils buried beneath 'natural' and anthropogenic deposits are represented. Where cells are left blank this indicates an absence of reference within the sources consulted and can therefore not be taken as evidence of an absence of feature or process. References are given in the main bibliography of this thesis.

Appendix 2: Bulk chemical and physical analyses

1. Bulk density and moisture content

Known volumes of soil (240cm^3) were taken in Kubiena tins, oven dried and weighed. Care was taken that excessive compression of the outermost edges did not occur and in the thin sections examined under the microscope compression generally appears to have been minimal. It is recognised however that some compression at the sides may have occurred and that holes left by stones are another potential problem. The latter problem was addressed by determining the bulk density of the $<2\text{mm}$ size fraction. This involved sieving through a 2mm mesh and determination of the volume occupied by the $>2\text{mm}$ fraction through volume displacement of water in measuring cylinders. The mass and volume of the $>2\text{mm}$ fraction were then subtracted from the total bulk density equation to give the $<2\text{mm}$ bulk density figure.

This has the advantage of equalising 'stoniness' between sites. Percentage soil moisture was calculated from the loss in weight of the blocks upon oven drying (105°C , to constant weight).

2. The determination of iron concentration

The methods followed and reagents used were those laid down by the Soil Survey for England and Wales (Bascomb, 1974). Extractions were carried out to determine pyrophosphate extractable iron and citrate dithionite extractable iron. The dithionite extraction was then also carried out upon the residue retained from the pyrophosphate experiment.

0.5g , $<0.5\text{mm}$ air dry earth was used. To this was added 50ml of the 0.1M pyrophosphate solution, or 50ml of $\text{pH } 3.8$ buffer and 2g of sodium dithionite powder. Solutions were shaken for 16hrs then centrifuged and the supernatant retained. Fe concentrations were determined in the decanted supernatant using a UNICAM 989 Atomic Absorption spectrophotometer. The solid residue from the pyrophosphate extraction was also retained after being washed in distilled water and then dried, to this was added another 50ml of $\text{pH } 3.8$ buffer and 2g of sodium dithionite and the dithionite extraction repeated.

Bascomb (cf. Loveland and Digby, 1984) established that variability of iron levels from a pyrophosphate extraction were reduced if the <500µm dry earth fraction was used rather than the previously standard method of taking the <2mm fraction (also used by the soil survey for England and Wales). For the primary site of Fordhouse Barrow, therefore, the <500µm size fraction was used, however, in thin section it was noted that at this and a number of other sites there were a number of iron nodules greater than 500µm in diameter. The particle size fraction used in these experiments was determined after a simple experiment to establish absolute levels of Fe extracted and the relative variability when <2mm and <500µm particle size fractions were calculated. 0.5g of <2mm and <500µm air dry fine earth from two of the Fordhouse barrow samples, chosen for contrasting profile positions, were subjected to standard extraction procedures using both 0.1 M pyrophosphate and citrate dithionite. The resultant treatments were: <2mm, Profile 2, Pyrophosphate; <2mm, Profile 3, Pyrophosphate; <2mm, Profile 2, Dithionite; <2mm, Profile 3, Dithionite; <0.5mm, Profile 2, Pyrophosphate; <0.5mm, Profile 3, Pyrophosphate; <0.5mm, Profile 2, Dithionite; <0.5mm, Profile 3, Dithionite.

Five replicates were made for each treatment. The results of these experiments are given in Table 1.

Table 1: The effect of particle size upon absolute levels of Fe and their variability.

Sample	Extraction		<2mm dry earth fraction	<500µm dry earth fraction
	Pyrophosphate			
FHB2/6-9		Mean	<i>0.285</i>	<i>0.320</i>
		Standard deviation	<i>0.031 (11.02%)</i>	<i>0.017 (5.42%)</i>
FHB3/42-45		Mean	<i>0.257</i>	<i>0.293</i>
		Standard deviation	<i>0.010 (3.92%)</i>	<i>0.023 (7.78%)</i>
	Citrate dithionite			
FHB2/6-9		Mean	<i>0.835</i>	<i>0.957</i>
		Standard deviation	<i>0.037 (4.42%)</i>	<i>0.092 (9.63%)</i>
FHB3/42-45		Mean.	<i>0.956</i>	<i>1.183</i>
		Standard deviation	<i>0.047 (4.93%)</i>	<i>0.048 (4.04%)</i>

Figure in brackets is the coefficient of variation $C = (SD/Mean) * 100$

Overall little was to be gained in controlling variability by using the less than 500µm dry earth fraction. The variability seems to be due largely to the individual sample and

the extraction method. In all cases however, the % Fe fraction (ppm) was greatest for the finer fraction, leading to the decision to use the < 500 μ m fraction for all of the subsequent samples.

3. The determination of Loss on Ignition.

The air-dried, < 2mm fraction derived from the bulk density samples was returned to the oven at 105°C to ensure dryness. Approximately 10g portions of this were then accurately weighed out into clean, dry crucibles and placed into a muffle furnace and left overnight (16hrs) at 375°C (Ball, 1964). After being left to cool in a dessicator, the samples were then re-weighed to determine the percentage loss of mass resulting from the ignition of the organic fraction. The long, cool burn scheme was chosen out of caution and the possibility of shell, carbonates and clay fractions being affected if a higher temperature had been used.

4. The determination of particle size distribution

The field determination of particle size was made by hand testing soils at their sticky point. Sieving of the samples involved the gentle disaggregation of the air-dried soils with a pestle and mortar, soils were then placed in a brass sieve stack of 16mm, 8mm, 4mm, and 2mm sieve sizes with a base pan and placed on a shaker for 15 minutes. After this time the size fraction retained in each sieve was weighed and recorded. The <2mm size fraction was then sub-sampled using a pie and cone method. This involved tipping the fine earth out onto a covered bench and forming it into an approximate circle. The sample was taken by removing a 'pie slice' of suitable size from the circle. The remainder of the fine earth fraction was retained for chemical analysis. The sub-sample was weighed and then sieved through a second brass and nylon sieve stack of 2mm, 1mm, and 0.5mm, meshes with a base pan. After weighing, the <0.5mm fraction was retained for iron extraction and the laser particle size determination.

Coulter counter theory, methodology and problems.

The LS230 Coulter counter uses a 5mW, 750nm laser beam to determine grain sizes between 0.04 μ m and 2000 μ m within 116 fractions. The diffracted light is transformed

with a fourier lens into a composite stationary pattern measured by 126 detectors. The particle size distribution is determined from this using the Fraunhofer diffraction model, which is itself based upon Mie theory. For particles 0.8 μm to 0.04 μm the Coulter Counter uses a Polarization Intensity Differential of Scattered Light (PIDS) which measures the scattered light intensity at two perpendicular optical polarisation angles. The difference between the two intensities is proportional to the amount of material at with a grain size one-third the wavelength of the light, this is measured at 3 wavelengths and the light is detected at 6 positions related to the angle of scatter. The assumptions made in the course of this determination reflect those of the Mie theory upon which the underlying model is based, these include the assumption of a homogeneous refractive index and sphericity defined by Stokes Law. Stokes law treats grain size as spherical equivalents, for platy or rod shaped particles this assumption of sphericity may lead to an overestimation of relative area. Grain sizing is most accurate at specific suspension densities defined as % obscuration, and usually in the range of 10%, for the PIDS module to operate a PIDS obscuration level of 45 to 55 % is required.

The system requires that particulate material is disaggregated for which reason 'Calgon' solution (defined below) was added to each sample and then shaken for at least one hour. Hydrogen peroxide pre-treatment to remove organics would also normally be necessary to reduce aggregation, however as the organic fraction may move down profile with clays and silts this fraction was of interest and so the samples were thoroughly sonicated instead. Problems were encountered in precision and the determination of grain size at the extremes of the range (<0.4 μm and >ca. 200 μm), when analysing the samples from the clay rich soils of the Somerset region. The inability of the system to cope with clay rich soil has been encountered elsewhere (Buurman *et al.*, 1997). These problems may be due to inaccuracies in the Fraunhofer model below 5 μm (Beuselinck *et al.*, 1998), or to conflicts between the required loading levels for the laser diffraction determination and the PIDS module when fine textured materials are being analysed (Buurman *et al.*, 1997). Both possibilities were investigated within this work. The first was addressed by the use of a new model based upon a refractive index of 1.55 and assumed a mixture of quartz and clays as indicated in thin section. The clay mineralogy was not determined but, the range of

refractive indices of the commonest was not great enough to badly skew the model according to Coulter documentation. No significant differences in particle size distributions were found with the use of this model as compared to the Fraunhofer. Loading levels however were found to affect the results and so a standard protocol was required. Conflict was noted here, with PIDS obscuration levels reaching in some cases 80% before the laser diffraction obscuration level reached 10%. Because it was the finer particle sizes which were of interest to this study all samples were consistently loaded to a 50% +/-1% PIDS obscuration level. This gave a repeatable and, within horizons and profiles, a broadly comparable result at the finest grain sizes although in some samples the machine failed to detect medium sand sized fractions.

‘ Calgon’ surfactant chemistry

35g Sodium Hexametaphosphate

7g Sodium Carbonate

Made up to 1litre with distilled water in a volumetric flask.

5. The determination of soil pH

The determination of pH was carried out in the laboratory following the standard methods of Bascomb (1974). Approximately 10g of the air-dried fine earth fraction (<2mm) was mixed into a 1:2.5 soil/water slurry with distilled water, The slurry was left to stand for 30 minutes. Determination of the pH of each solution was made using a glass electrode pH meter calibrated to pH 4 and 7. Readings were made twice to ensure a stable measurement was obtained. The pH was also determined in the presence of 0.01M CaCl₂. 2ml of calcium chloride was added to each suspension and the pH determined a second time in the same manner as above.

Appendix 3: Micromorphological methodologies and descriptions, and Image analysis protocols.

3.1. Thin section manufacture

Kubiena tins returned to the laboratory from the field were stored at ca. 5°C when immediate processing was not possible. The immiscibility of the resins with water necessitates the thorough drying of the sample prior to impregnation of the sample. This was achieved by immersing the blocks in acetone of gradually increasing grade until the water content, as measured gravimetrically, of the spent acetone was less than 0.5%. This usually took between four and six weeks. Not all samples were suited to drying in acetone, however, and very organic samples were dried using acetone vapour, whilst those samples with high sand contents and low cohesivity were left to air dry for 4-6 weeks. Once dry, samples were ready for impregnation with resin. The resin used was a CRYSTIC 17449 resin, thinned with technical grade acetone, and a MAKP LA3 catalyst was used to speed the curing process. The proportions of these elements varied according to the nature of the sample, a heavy clay sample would be impregnated with a less viscose resin thinned with a greater proportion of acetone, than an open textured sandy one.

Table 10.2.1: Proportions of acetone, resin and catalyst.

	Acetone	Resin	Catalyst
Loose, friable, sandy	25ml	180ml	1.8ml
Firm compact cohesive	25ml	180ml	1.8ml
Very compact clay	30-35ml	180ml	1.8ml
Peaty, organic	180ml	180ml	0.9ml
Rapid impregnation	25ml	180ml	3.5ml

From Stirling's Thin Section Preparation Handbook, produced by Muriel Macleod.

The preliminary samples from Fordhouse Barrow were also stained using keystone oil blue (0.6ml), to aid distinction of voids from the optically similar quartz as an aid to image analysis. This dye was found effect the curing of the resin and so was omitted from later samples. Resin was carefully introduced under vacuum to all but the least

cohesive samples to ensure proper penetration of the soil materials. Samples were then left to cure for between three weeks and three months as appropriate, before being placed in an oven at 40°C for a further week. The production of a stable block ready for slicing took between two and four months. Blocks were sliced using a diamond tipped saw (Logitech CS10) into three approximately equal slices. The surface of the best slice - usually the inner was chosen as it was assumed this would be the least disturbed - would then be polished using silicon carbide solution, and thoroughly cleaned with the organic solvent limonene. The slice was then bonded to a polished glass slide using epoxy resin and left under pressure overnight. Once bonded the excess was carefully cut off and the slice was precision lapped using a Logitech LP40 lapping plate to a thickness of 30 – 40µm, and the quartz grains lost all hint of yellow in cross polarised light. The slide was then polished using diamond paste and a polishing cloth, and finally cover slipped and labelled.

A few clay rich and very sandy soils failed during either the polishing of the sliced blocks or the machine lapping of the slides, usually because of poor penetration by the resin, these samples were re-impregnated using a fast-curing resin mixture. This additional curing took approximately two weeks, whilst the processing of an individual slide took three days. The manufacture of each slide took between two and a half, and five months.

3.2 Feature discrimination

Feature description followed the system of Bullock *et al.* (1985). Feature interpretation was made with reference to Courty *et al.* (1989) and Fitzpatrick (1984; 1993). Many features are very difficult to differentiate upon the basis of their micromorphology alone, the protocols adopted for describing and classifying these features are given below. These definitions are understood not to be conclusive classifications, they were adopted to ensure constancy throughout the description process and to provide clarity for future users.

Charcoal / Charred organics / Amorphous black organics

Charred organics and charcoal as part of a continuum of completeness of burning provide numerous distinctions in their differentiation, not least because the terms themselves draw subjective boundaries within this continuum. Amorphous black organics may include those particles of either of the former two which fall outside of the strict classification boundaries, and also covers those decayed organics blackened by the fungal mediated processes of humification. The carbonisation that occurs during combustion helps retain cellular structure so that charcoal is distinguished by the presence of original cell structure, although these structures may be missed in the plane of cut, and also by a 'sparkly' appearance in OIL relative to the dull black of humified organics. The preservation of cell structure in incompletely carbonised charred organics is much poorer than that in charcoal, and so bears more structural resemblance to the degraded humified organic remanants. The designation of this classification depended upon reddening apparent in OIL associated with the combustion process.

Clay illuviation cutans / stress cutans

Besides the oriented clay skins (cutans) which form around voids through the illuviation of clays down profile, orientation of clays around voids may form in response to pressure exerted at the edge of the void where the soil matrix is clay rich. These stress cutans can be differentiated from the illuvial coatings upon the basis of texture, orientation, and soil context. Illuvial clay will often be better sorted than that of a stress cutan, the texture of which will reflect the textural characteristics of the soil fine fabric. Orientation, of both the clay micelles and coarser inclusions, will tend to be poorer within a stress cutan depending upon the intensity of pressure applied. A heavy clay soil matrix would alert the observer to the possibility of stress cutans and the presence of 'granostriations' around coarse particles and / or a strial limpidity to the fine fabric would suggest compressive pressures.

Excremental features

Excremental features are primarily differentiated upon the basis of form. Size and composition may differ with age and food type (Fitzpatrick, 1993). The main types differentiated with this study were Enchytraeid, earthworm and mite excrements. Enchytraeid excrements were small (ca. 100µm) bacillo-cylinders, occurring in 'beaded' groups often within channels containing decaying roots, or together with and reworking earthworm excrement. Mite excrements were small (<100 µm) individual, spheres often with a higher organic content than the other two forms. These were almost always found within organic remains. The larger mammilated organo-mineral forms were classified as earthworm.

3.3 Image analysis protocols for feature thresholding

The equipment used was based within the Department of Environmental Science and consists of an Olympus BX-50 petrological polarising microscope linked to a Hitachi HCV-10, 3-chip colour camera, in turn linked to a PC. The image analysis software used is the SIS AnalySIS 3.0 system. This is complemented by the Marschuaser mechanical stage, which allows the spatial mapping and recording of features.

The analysis of clay cutans and iron nodules was made upon an image taken in PPL, the Hue Saturation and Intensity (HSI) thresholds were imposed upon the colour image. The analysis of void area was more difficult. Of the 22 slides from Fordhouse Barrow, 11 had been impregnated with a blue dye, the remaining eleven, along with those of the reference profile, had not. Different approaches to the thresholding of these two groups had to be adopted and issues of comparability had to be resolved. Those slides with the blue dye were captured in PPL and thresholding was reasonably simple using HSI values, inconsistencies in colour between and across slides though meant that flexibility in the thresholding values was necessary. Where no dye had been added, problems were encountered with the discrimination of void space from quartz grains both in PPL and XPL. Many attempts were made to overcome this problem, including the mathematical addition, subtraction and multiplication of

images taken with the polars crossed at various angles. Eventually the best compromise was with polars crossed and the insertion of a 530 nm filter plate. This allowed the distinction of ca. 95% of the quartz, and any remaining grains could simply be manually deleted.

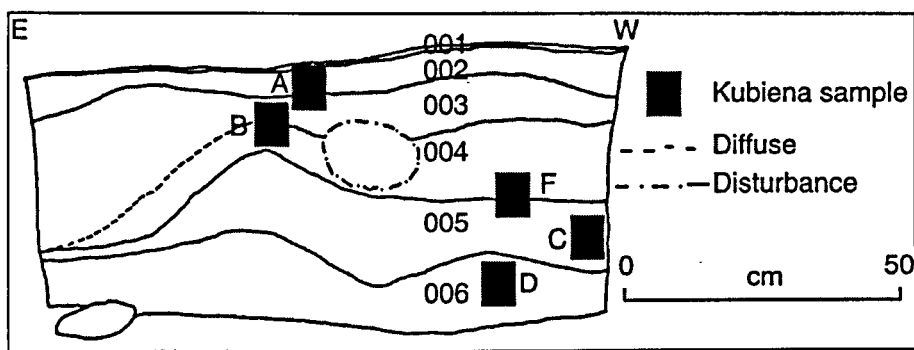
Hue, saturation, intensity threshold values

Feature	Hue	Saturation	Intensity
Unstained voids	175.3-210.5	71-107	106-166
Iron pedofeatures	48.3 - 60	0 – 132	20 – 48
Orange clay	73.6 - 285	19 –128	71 – 123
Brown clay	7-41.3	28-142	121-192
Blue stained voids	70-249	70-255	126-255

Measurements were made of, particle count, total area, percentage area, the mean area of individual particles, shape factor, feret diameters and orientation, and hole area. Void space measurements were made according to size classes based upon the area equivalent of circles with diameters of 0-100 μ m, 100-200 μ m, 200-300 μ m, 300-400 μ m, 400-500 μ m, >500 μ m. The measurements outlined were made for each of these size classes. Where features cut the edge of the image frame they were truncated, no forbidden zone was used as measurement were based upon the total frame area rather than upon the measurement of individual particles (Ringrose-Voase, 1994).

Appendix 4: Field descriptions of study sites.

Site Name: Fordhouse reference



Context No./Horizon: 001

Description: Litter layer, birch and alder leaf litter, branches and twigs, moss and herb litter.

Context No./Horizon: 002

Colour: field - 7.5YR 3/2, wet - 7.5YR 2.5/2

Description: Black humic layer, ca. 5-8cm deep. Friable, silty clay loam, with rare medium-fine sand with weak fine sub-angular blocky structure. Very slightly sticky when wet. Abundant fine roots and rare medium roots up to 1cm in diameter. Lower horizon boundary, moderately distinct, wavy and moderately abrupt. Ah horizon.

Context No./Horizon: 003

Colour: field - 7.5YR 2.5/2, wet - 7.5YR 2/1

Description: Silty clay loam, with a greater medium sand component than overlying horizon. Weak, semi-deformable, fine, weak blocky structure with occasional stone clasts, up to 2 cm diameter, sub-rounded and sub-angular. Few fine roots and occasional medium roots up to 2cm diameter. Lower horizon boundary with 004 clear, moderately diffuse and wavy, fading to diffuse where soil disturbed by animal activity and roots. A horizon.

Context No./Horizon: 004

Colour: field - 7.5YR 3/3, wet - 7.5YR 2.5/3

Description: Silty clay loam with a fine weak blocky structure, very slightly sticky when wet. Few fine roots, few medium roots up to 2cm diameter. Frequent stone clasts 9-12cm diameter concentrated towards base of horizon. Lower horizon boundary wavy, distinct, and moderately sharp except where roots have caused smearing. AB horizon.

Context No./Horizon: 005

Colour: matrix - 7.5YR 4.5/7, wet - 7.5YR 4/6

mottles 7.5YR 4/4, wet - 7.5YR 3/4

Description: Sandy clay loam with medium sand, occasionally sharp, slightly sticky when wet. Moderately weak, fine to medium blocky structure, with occasional subangular sandstone and schist clasts up to 5cm diameter and rare medium roots up to 3cm diameter. Common mottles moderately distinct with moderately sharp boundaries, up to 5cm diameter. Lower horizon boundary wavy, moderately distinct and moderately diffuse. B(g) horizon

Context No./Horizon: 006

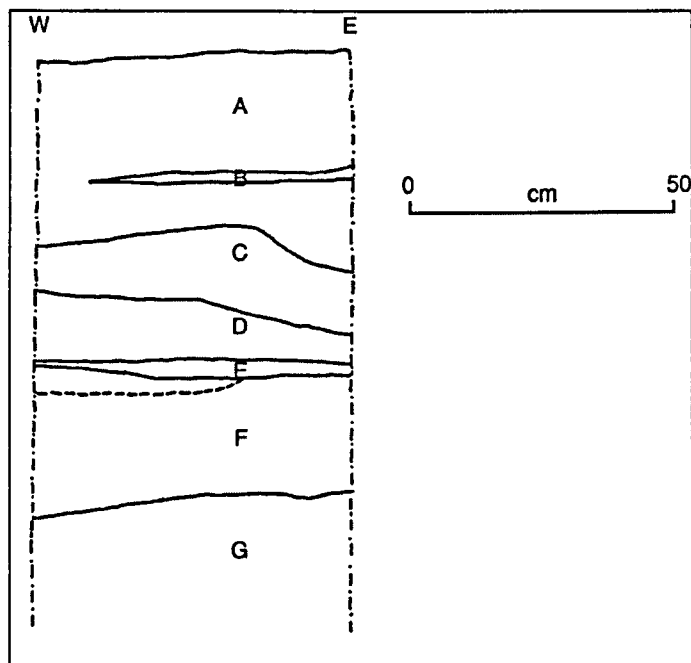
Colour: field - 5YR 4.5/4, wet - 5YR 4/6

Description: Sandy clay loam with moderately weak and semi-deformable, fine sub-angular blocky structure, moderately sticky when wet. Sand component medium grained, occasionally sharp. Common

rounded and sub-angular schist and sandstone gravels and stones up to 10cm diameter. Medium roots up to 2.5cm diameter rare. Horizon C - Till parent material.

Site Name: Ford House Barrow

Fordhouse Barrow Profile: 1



(profile recorded in 1997, thin sections sampled by Ian Simpson, University of Stirling, 1996, therefore not recorded on this section, see figure 3.4, p. 63)

Context No. / Horizon: A

Colour: field - 7.5YR4/4

Description: Very sandy loam cut by a lens of organic rich material, frequent orange mottling (5YR4/6) and ashy grey mottles, frequent black flecks, frequent rounded / sub-rounded sandstone ca. 4-5cm diameter, occasional roots. Lower horizon boundary: moderately distinct.

Context No. / Horizon: B

Colour: field - 5YR4/2

Description: Very sandy loam with frequent orange / red mottles, grey / ashy mottles, occasional black flecks and streaks, occasional roots. Lower horizon boundary: moderately distinct.

Context No. / Horizon: C

Colour: field - 5YR4/3

Description: Slightly loamy sand with occasional lath shaped sandstone up to 10cm long and 2cm thick with evidence of Fe concentration and depletion rims, occasional rounded / sub-rounded sandstone cobbles between 5 and 10 cm diameter, occasional roots. Lower horizon boundary: moderately distinct.

Context No. / Horizon: D

Colour: field - 7.5YR5/3

Description: Slightly loamy sand with frequent black and reddish flecks, frequent grey mottles, occasional sub-rounded / sub-angular sandstone ca. 3cm diameter, occasional roots. Lower horizon boundary: moderately indistinct.

Context No. / Horizon: E

Colour: field - 5YR4/2

Description: Slightly loamy sand. Similar in nature to context D but with occasional black flecks and with a less reddish coloured matrix. Lower horizon boundary: moderately distinct.

Context No. / Horizon: F

Colour: field - 7.5YR4/4

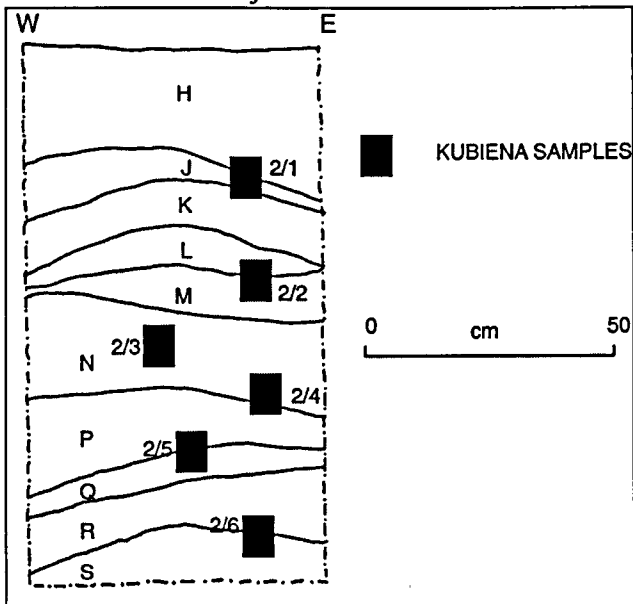
Description: Sandy loam with frequent black flecks of a randomly clustered distribution., occasional roots, occasional / frequent, rounded / sub-rounded sandstone some split in half between 3 and 15 cm diameter. Lower horizon boundary: distinct.

Context No. / Horizon: G

Colour: field - 2.5YR3/6

Description: Sandy clay loam with frequent sub-angular black coloured rocks 7-10 cm, some of which were fractured.

Fordhouse Barrow Profile: 2



Context No. / Profile: H

Colour: field - 7.5YR4/4

Description: Very sandy loam with a massive structure and occasional mottling (2.5YR3/6), occasional black flecks, frequent rounded / sub-rounded sandstone ca. 1-2cm diameter, occasional fine roots.

Lower horizon boundary: diffuse and indistinct.

Context No. / Horizon: J

Colour: field - 7.5YR4/6

Description: Slightly loamy sand of massive structure, similar in nature to context H with occasional roots. Lower horizon boundary: indistinct.

Context No. / Horizon: K

Colour: field - 5YR4/2

Description: Very sandy loam with a massive structure, occasional black flecks, occasional roots, frequent sub-rounded sandstone, ca. 3-4cm diameter. Lower horizon boundary: moderately distinct.

Context No. / Horizon: L

Colour: field - 7.5YR4/4

Description: Discontinuous lens of an organic rich very sandy loam running out on the left-hand side of the profile. Occasional black flecks, and occasional roots. Lower horizon boundary: moderately distinct.

Context No. / Horizon: M

Colour: field - 5YR3/1

Description: Very sandy loam with a mottled appearance, frequent black flecks and streaks, occasional red/brown mottles (degraded sandstone?) occasional roots, occasional sub-rounded, sandstone clasts, 5-7cm. Lower horizon boundary: moderately distinct.

Context No. / Horizon: N

Colour: field - 5YR4/4

Description: Slightly loamy sand with occasional roots, degraded sandstone, frequent rounded / sub-rounded sandstone clasts between 5 and 20 cm diameter. Lower horizon boundary: indistinct.

Context No. / Horizon: P

Colour: field - 5YR4/6

Description: Very slightly loamy sand with occasional red mottles (degraded sandstone?), occasional roots and occasional degraded mica schist. Lower horizon boundary: diffuse and moderately indistinct.

Context No. / Horizon: Q

Colour: field - 5YR4/4

Description: Slightly loamy sand, otherwise similar to context P. Lower horizon boundary: indistinct.

Context No. / Horizon: R

Colour: field - 7.5YR4/4

Description: Slightly loamy sand, similar to above. Lower horizon boundary: moderately distinct.

Context No. / Horizon: S

Colour: field - 2.5YR3/6

Description: Sandy clay loam, probably contiguous with Context G. Sub-angular black rocks 5-10cm diameter.

Profile: 3

Context No. / Horizon: T

Colour: field - 7.5YR3/2

Description: Discontinuous lens of loamy sand with frequent black flecks (possible turf material)

Context No. / Horizon: V

Colour: field - 7.5YR4/4

Description: Very sandy loam with frequent roots up to 2 cm thick. Patchy appearance, frequent indistinct brown / orange mottles up to 3-4 cm across, occasional black flecks, frequent rounded sandstone between 5 and 15 cm diameter. Lower horizon boundary: indistinct.

Context No. / Horizon: W

Colour: field matrix - 7.5YR4/4

Description: Layer of rounded cobbles and sandstone flags, possible construction, occasional roots, frequent black flecks, matrix the same as above.

Context No. / Horizon: X

Colour: field - 5YR 4/6

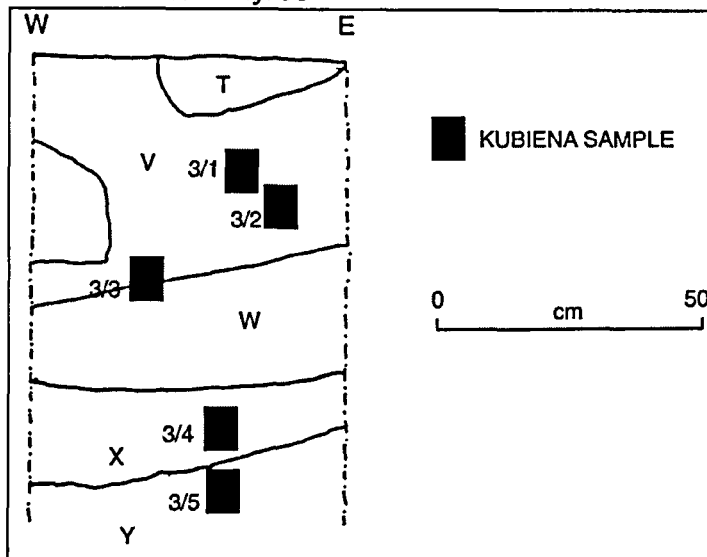
Description: Slightly loamy sand with occasional fine roots, patchy orange and grey / brown mottles up to 4 cm diameter, degraded sandstone and frequent sub-rounded sandstone clasts 2-5cm diameter. Lower horizon boundary: moderately distinct.

Context No. / Horizon: Y

Colour: field - 5YR3/4

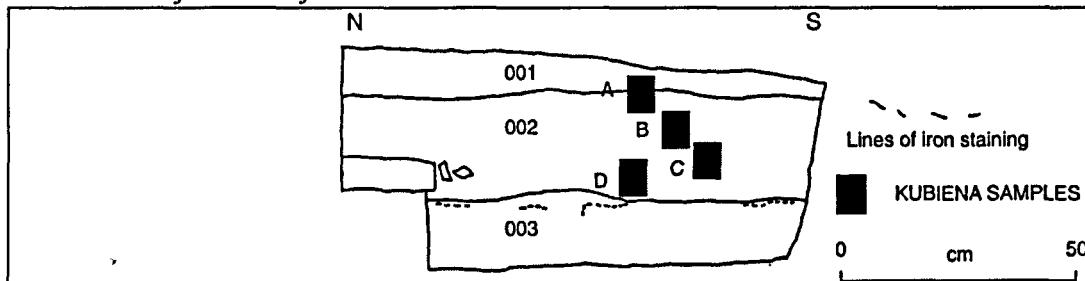
Description: Sandy clay loam, probably contiguous with Context G and S, but with sub-rounded sandstone clasts.

Fordhouse Barrow Profile 3



Site Name: Gallows Hill

Gallows Hill Reference Profile



Context No. / Horizon: 1 / A

Colour: wet - 10YR 3.5/2

Description: A moderately sticky silty clay loam, with a medium, moderately firm, blocky structure which was semi-deformable. Well rooted, stone-free, occasional organics, roots and stems of *Calluna vulgaris*. Lower horizon boundary: diffuse.

Context No. / Horizon: 2 / B

Colour: wet - 10YR 4/2

Description: A silty clay loam with a moderately developed, coarse, blocky structure, moderately firm and semi-deformable. Frequent roots, frequent sandstone clasts becoming concentrated at base of horizon (5-10%), 1-15 cm in length, sub-angular, tabular, some with depletion hypo- and quasi-coatings. Lower horizon boundary: abrupt.

Context No. / Horizon: 3 / C

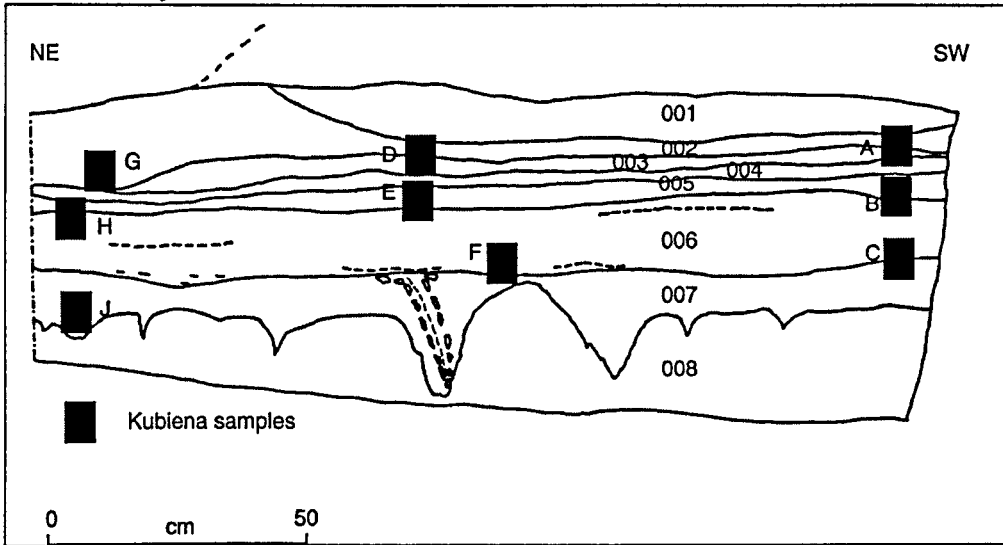
Colour: wet - 10YR 5/4

Description: Silty clay loam with a coarse, angular, sand fraction and massive structure. Abundant stone clasts (40-50%) embedded in matrix, length 5-15 cm, sub-rounded to sub-angular and tabular, many degraded. Frequent orange flecks, 2-5 mm long of moderate contrast (degraded sandstone?). Along the top of the horizon ran a discontinuous iron pan (5YR 4.5/8) through which there was no root

penetration. Horizon may have been concreted. Lower horizon boundary with sandstone bedrock: distinct.

Site Name: Roos Loch

Roos Loch Profiles 1-3.



Profile: 1-3

Context No. / Horizon: 1

Colour: wet - 10YR 5/4

Description: Spoil tip material consisting of up to 50% volume stones of varying sizes, most 2 cm but, some between 20-30 cm long, set in a silty clay matrix with abundant grit and inclusions of clay rich clods (parent material?). Lower horizon boundary abrupt / distinct.

Context No. / Horizon: 2

Colour: field - 10YR 5/3, wet - 10YR 4/2

Description: A silty clay loam with a very low sand content, compressed to half original depth beneath spoil tip. Abundant gravel, ca. 2 cm long, angular to sub-angular, prismoidal. Heavily rooted away from dump, occasional roots beneath dumped material. Lower horizon boundary: distinct.

Context No. / Horizon: 3

Colour: field - 7.5YR 2.5/2, wet - 10YR 2/2

Description: A very humic silty loam with many dead roots, stone free. Lower horizon boundary: abrupt.

Context No. / Horizon: 4

Colour: field - 10YR 2/2, wet - 10YR 2/2

Description: A very humic silt loam moderately rooted with frequent gravel inclusions 0.5 - 2 cm. Lower horizon boundary: abrupt / gradual.

Context No. / Horizon: 5

Colour: field: 10YR 4/2.5, wet: 10YR 4/1.5

Description: Clayey silt with occasional grit and occasional clear and prominent, medium, orange mottles (5YR 4/6). Lower horizon boundary: abrupt.

Context No. / Horizon: 6

Colour: field - 10YR 4/2, wet - 10YR 4/2

Description: A silty clay loam matrix with abundant distinct, coarse mottles (10YR 5/8) many of which were arranged in a double layer and had a sandy texture than the matrix material. Localised rooting, frequent degraded sandstone clasts 0.5 - 4 cm, sub-angular, tabular, some of which were located at the centre of mottle features. Lower horizon boundary: distinct / abrupt.

Context No. / Horizon: 7

Colour: field - 10YR 7/2, wet - 10YR 6/3

Description: A sandy silt the sand fraction being of a fine size class. Occasional diffuse, coarse mottles (10YR 5/8) of distinct contrast. Lower horizon boundary: abrupt / gradual.

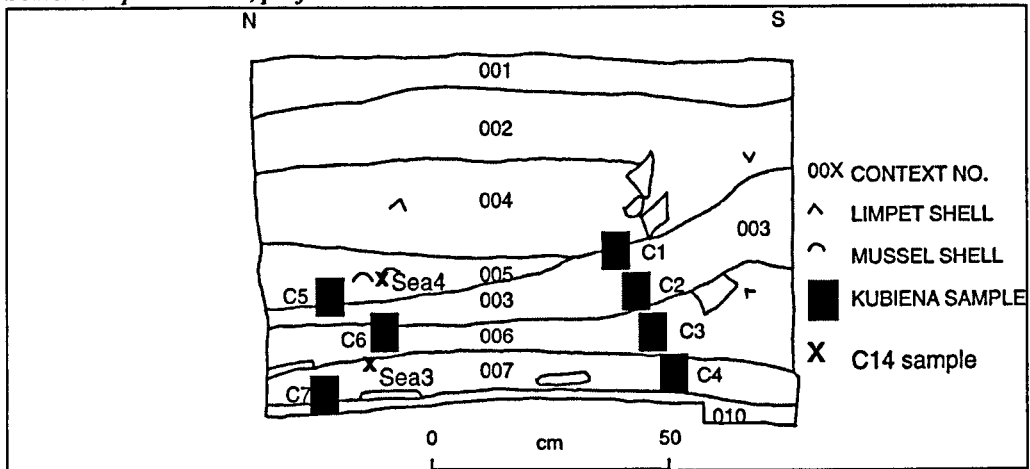
Context No. / Horizon: 8

Colour: field colours - 10YR 5/3, 10YR 6/6, 10YR 6/8, main wet - 10YR 5/3.5, 10YR 5/4, 10YR 5/4

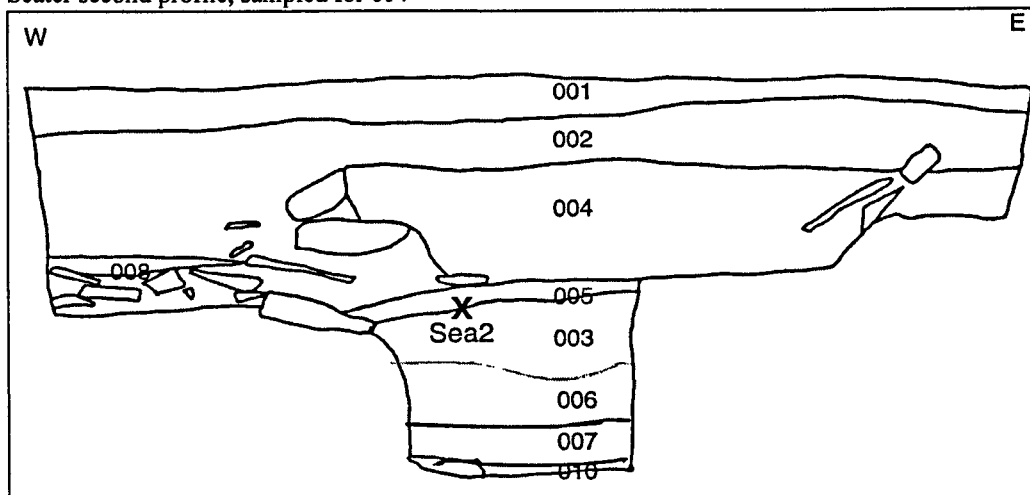
Description: Slightly silty clay with an intimately and heavily mottled appearance. Mottles coarse with a distinct / faint contrast and clear / diffuse boundaries. Lower horizon boundary with weathering bedrock: gradual to diffuse.

Site Name: Seater

Seater sampled section, profiles 1 and 2.



Seater second profile, sampled for c14



Context Number: 001

Section described: 2.

Field Colour: 10YR 2/1; Wet Colour: 2.5Y 2.5/1

Description: Silty clay loam material with a weak fine to moderate blocky structure. Sand component coarse, frequent fine roots (Gramineae). Few sandstone clasts, angular to sub-angular, ca. 3cm, tabular and cuboidal. Lower horizon boundary: diffuse and horizontal relating to a possible worm sorted layer. Modern Soil.

Context Number: 002

Section described: 2

Field Colour: 10YR 2/2; Wet Colour: 2.5Y 3/3

Description: A silty clay loam with a weak, fine to medium blocky structure. Medium sand component, few fine roots, occasional limpet shell, occasional sandstone clasts ca. 3cm, angular to sub-angular. Lower horizon boundary: moderately distinct and uneven. Modern Soil.

Context Number: 003

Section described: 2

Field Colour: 5YR 4/4; Wet Colour: 5YR 3.5/4

Description: A sloping horizon consisting of medium sandy silt. Includes rare fine roots, occasional bone fragments up to 5 cm. long, occasional limpet shell, and occasional sandstone clasts, angular, up to 20 cm. long, tabular. Lower horizon boundary: moderately distinct and sloping. Midden.

Context Number: 004

Section described: 2

Field Colour: 10YR 3/3; Wet Colour: 5Y 3/4

Description: A silty clay loam filling a stone structure. Includes occasional limpet shell, frequent black and orange flecks and streaks. Upper horizon boundary with context 002: moderately diffuse; lower boundary: straight and even. Sediment.

Context Number: 005

Section described: 2

Field Colour: 10YR 3/2; Wet Colour: 10YR 3/1

Description: A silty clay loam with very little sand, and no apparent structure. Includes local cluster of mussel shells (RC14 sample no. 4), occasional orange flecks, frequent small (<1 mm.) black flecks, and occasional sandstone clasts, 2-3 cm., cuboidal, sub-rounded and sub-angular. Upper horizon boundary with context 004: diffuse and straight; lower horizon boundary with context 003: moderately distinct and sloping. Midden.

Context Number: 006

Section described: 2

Field Colour: 10YR 3/2.5; Wet Colour: 10YR 3/3.5

Description: A massive, silty clay loam. Includes frequent limpet shell, occasional orange flecks, frequent black flecks, frequent sandstone clasts; 15-20 cm. long, tabular and angular. Upper horizon boundary with context 003: moderately distinct and sloping; lower horizon boundary with context 007: moderately distinct and straight. Midden.

Context Number: 007

Section described: 2

Field Colour: 10YR 5/4.5; Wet Colour: 10YR 4/4.5

Description: A silty clay loam with a greater clay fraction than previous. Includes frequent black flecks in upper 1-2 cm which disappear lower down, and frequent sandstone clasts up to 30cm long, tabular and rounded. Upper horizon boundary with context 006: moderately distinct straight and even; undulating lower horizon boundary with context 009: distinct and sharp. Buried Soil.

Context Number: 008

Section described: 4& 5

Field Colour: 2.5Y 3/1; Wet Colour: 2.5Y 3/2

Description: A lens of massive sandy silt material with frequent black flecks and occasional yellow flecks. Upper and lower horizon boundaries with context 002: moderately distinct, even and sharp. Midden.

Context Number: 009

Section described: 4

Field Colour: 10YR 3/3; Wet Colour: 10YR 3/2

Description: A silty clay loam lens. Includes frequent black flecks, occasional orange flecks, and occasional sandstone clasts up to 6cm long, sub-angular and tabular. Upper horizon boundary with context 008 and 002: moderately diffuse; lower horizon boundary with context 003: moderately distinct. Midden.

Context Number: 010

Section described: 2

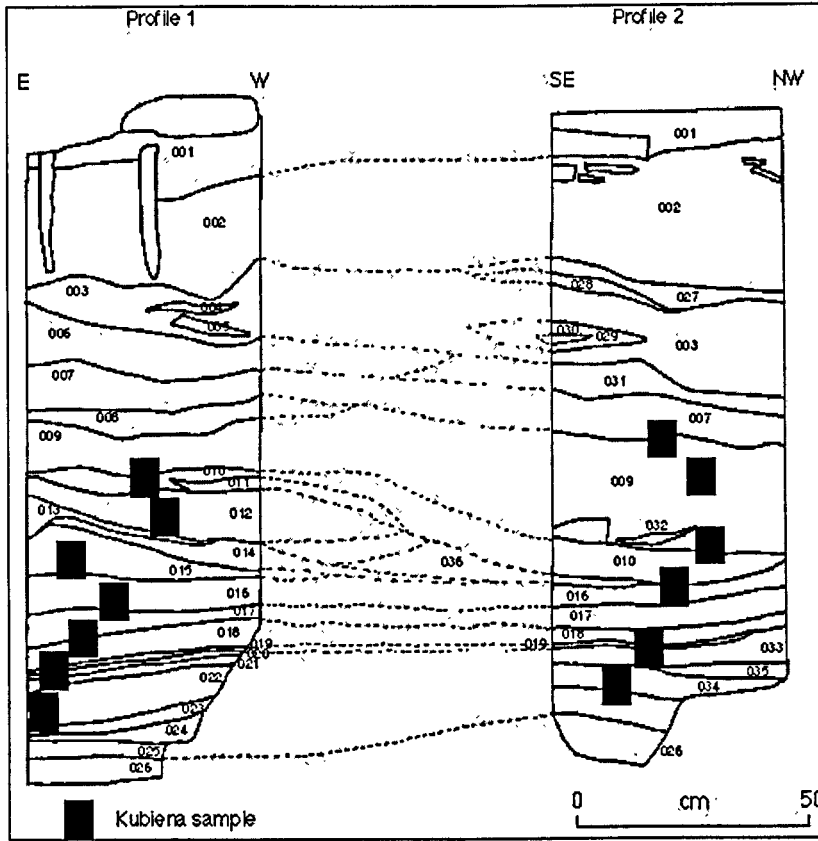
Field Colour:

Wet colour:

Description: Old Red Sandstone derived Till.

Site Name: Woo

Woo section.



Profile: 1 and 2

Context No. / Horizon: 001

Colour: wet - 10YR 2.5/2

Description: A silty clay loam with a weakly developed fine crumb structure. Occasional limpet shell, occasional sandstone clasts, angular and polygonal up to 4 cm long, occasional roots but mostly protected by surface stonework. Lower horizon boundary: gradual in profile 1, diffuse in profile 2.

Profile: 1 and 2

Context No. / Horizon: 002

Colour: wet - 10YR 1/1.5

Description: A silty clay loam with a lesser proportion of sand than 001. Occasional limpet, whelk and cockle shells, occasional sandstone clasts sub-angular / angular and tabular ca. 2 cm long. Lower horizon boundary: abrupt.

Profile: 1 and 2

Context No. / Horizon: 003

Colour: wet - 10YR 3/1

Description: A silty clay loam including frequent black flecks (2-4mm), occasional orange flecks (5YR 5/6), occasional whelk and limpet shell and lenses of material 004 and 005. Lower horizon boundary with context 006: abrupt.

Profile: 1

Context No. / Horizon: 004

Colour: wet - 10YR 4/3

Description: Slightly sandy silt with abundant black flecks ca. 1 mm. Boundaries with context 003: abrupt.

Profile: 1

Context No. / Horizon: 005

Colour: wet - 10YR 4/3

Description: Slightly sandy silt with abundant black flecks ca. 1 mm. Boundaries with context 003: abrupt.

Profile: 1

Context No. / Horizon: 006

Colour: wet - 7.5YR 4/2

Description: A silty clay loam with abundant black flecks 0.1 - 2 cm, frequent orange flecks (5YR 5/6) ca. 2 mm. Lower horizon boundary: abrupt.

Profile: 1 and 2

Context no. / Horizon: 007

Colour: wet - 10YR 4.5/3

Description: A silty clay loam with occasional orange flecks (5YR5/6), occasional stone clasts sub-angular and tabular, up to 3 cm long, occasional fish bone, occasional limpet shell. Lower horizon boundary: abrupt.

Profile: 1

Context No. / Horizon: 008

Colour: wet - 10YR 4/4

Description: A silty sand with frequent limpet shell, occasional bone fragments, frequent orange flecks ca. 2-8 mm, frequent black flecks ca. 2-8 mm. Lower horizon boundary: abrupt.

Profile: 1 and 2

Context No. / Horizon: 009

Colour: wet - 10YR 4/2

Description: A silty clay loam with occasional orange flecks ca. 3 mm, occasional limpet shell, occasional bone fragment, occasional angular sandstone clasts, tabular ca. 4-8 mm long. Lower horizon boundary: gradual.

Profile: 1 and 2

Context No. / Horizon: 010

Colour: wet - 10YR 3.5/2

Description: A silt loam with occasional orange and black flecking ca. 2-3 mm, occasional sandstone clasts sub-angular and tabular. Lower horizon boundary: gradual.

Profile: 1

Context No. / Horizon: 011

Colour: wet - 10YR 3/2

Description: A sandy clay loam with coarse, angular sand and a massive structure. Abundant orange flecks of distinct contrast 2-4 mm, abundant black flecks 4-6 mm, common, fine, faint grey mottles. Lower horizon boundary: gradual.

Profile: 1

Context No. / Horizon: 012

Colour: wet - 10YR 3/1.5

Description: A silty clay loam with a finer sand fraction than context 011. Abundant black flecking ca. 2-5 mm, occasional orange flecking ca. 4 mm, abundant limpet shell, occasional bone fragment, occasional cuboidal sandstone clasts, angular / sub-angular, ca. 3 cm. Lower horizon boundary: abrupt.

Profile: 1

Context No. / Horizon: 013

Colour: wet - 10YR 5/3

Description: A highly porous sandy silt with occasional black flecks 2-3 mm, frequent orange flecks 1-2 mm, occasional angular sandstone clasts tabular ca. 7 cm long, abundant elliptical pores 0.5 - 1 mm long (woodlouse disturbance?). Lower horizon boundary: gradual.

Profile: 1

Context No. / Horizon: 014

Colour: wet - 10YR 3.5/2

Description: Silty clay, loam lens, with a moderate sand content. Occasional fine roots, few faint ochre mottles (10YR 5.5/4) ca. 3 cm, abundant orange flecking ca. 2-3 mm, abundant black flecks ca 2-5 mm, occasional limpet shell towards bottom of context. Lower horizon boundary: abrupt.

Profile: 1 and 2

Context No. / Horizon: 015

Colour: wet - 10YR 4/2

Description: A silty clay loam with abundant distinct orange mottles ca. 4-6 mm, abundant black flecks, 8 -10 mm, abundant limpet shells concentrated at the boundaries of the deposit and occasional cockle shells. Lower horizon boundary: gradual.

Profile: 1 and 2

Context No. / Horizon: 016

Colour: wet - 10YR 4.5/2

Description: A relatively porous sandy clay loam with coarse angular white sand. Occasional limpet shell fragments, occasional fish bone, occasional orange flecks in upper portion and a distinct black line running for 10 cm along lower boundary of profile 2. Lower horizon boundary: distinct.

Profile: 1 and 2

Context No. / Horizon: 017

Colour: wet - sand (2.5Y 8/1), silty sand (10YR 4/2)

Description: Comprises 3 layers of material which are well developed in profile 2 but, very much less so in profile 1, the outer 2 bands being of sand and the middle a darker silty sand with wavy / mammilated boundaries. Occasional sandstone clasts sub-rounded, ca. 6-8 mm and present in all three layers.. Lower horizon boundary: distinct.

Profile 1 and 2

Context No. / Horizon: 018

Colour: wet - 10YR 5/2.5

Description: A sandy clay loam with visible white sand, occasional sandstone clasts angular and tabular ca. 10cm. Lower horizon boundary: abrupt.

Profile: 1

Context No. / Horizon: 019

Colour: wet - 2.5Y 8/1

Description: A thin 'pure' sand layer with very little silt and no apparent inclusions. Lower horizon boundary: distinct.

Profile: 1

Context No. / Horizon: 020

Colour: wet - 10YR 4/2

Description: A sandy silt with occasional black flecks ca. 3-4 mm, black band along lower boundary approximately 0.5 - 1 cm depth. Lower boundary: abrupt.

Profile: 1

Context No. / Horizon: 021

Colour: 10YR 5/2.5

Description: A sandy clay loam with visible grains of white sand. Probably a continuous layer but, not possible to show continuity between profiles 1 and 2. Occasional, sub-angular sandstone clasts, ca. 5mm. Lower horizon boundary: abrupt / gradual.

Profile: 1

Context No. / Horizon: 022

Colour: wet - 10YR 4.5/3

Description: A sandy loam with visible grains of white sand. Occasional diffuse, faint orange mottles ca. 2 cm across, occasional sandstone clasts sub-rounded and tabular ca. 2 cm long. Lower horizon boundary: diffuse.

Profile: 1

Context No. / Horizon: 023

Colour: wet - 10YR 5/3

Description: Slightly silty sand with no obvious inclusions. Lower horizon boundary: diffuse.

Profile: 1

Context No. / Horizon: 024

Colour: wet - 10YR 6/4

Description: sand with a very slight silt content. Frequent gravel clasts sub-rounded 2-3mm. Lower horizon boundary: gradual.

Profile: 1 and 2

Context No. / Horizon: 025

Colour: wet - 10YR 5/3.5

Description: A continuous layer of a sandy clay loam with visible white sand. Lower horizon boundary: abrupt.

Profile: 1 and 2

Context No. / Horizon: 026

Colour: wet - 10YR 5.5/4

Description: A continuous layer overlying the Middle Old Red Sandstone parent material. Silty clay loam with visible white sand, and frequent faint orange flecks ca. 5 mm. Lower horizon boundary with bedrock: distinct.

Profile: 2

Context No. / Horizon: 027

Colour: wet - 10YR 2.5/1

Description: A silty clay loam with occasional limpet shells and occasional bone fragments. Frequent sandstone clasts sub-rounded / sub-angular up to 3cm. Lower horizon boundary: gradual / diffuse.

Profile: 2

Context No. / Horizon: 028

Colour: wet - 2.5Y 3.5/1.5

Description: A silty clay loam lens of material with occasional sub-rounded sandstone clasts ca. 1 cm, occasional black flecks ca. 5 mm, abundant diffuse orange flecks ca. 2 mm. Lower horizon boundary: abrupt.

Profile: 2

Context No. / Horizon: 029

Colour: wet - 10YR 5/1

Description: A silty clay loam / silt loam with frequent black flecks 2-3 mm, frequent orange flecks 2-3mm and frequent gravel clasts 2-5 mm. Lower horizon boundary: abrupt.

Profile: 2

Context No. / Horizon: 030

Colour: wet - 10YR 4/2

Description: A silty clay loam with frequent orange flecks and rare black flecks. Lower horizon boundary: abrupt.

Profile: 2

Context No. / Horizon: 031

Colour: wet - 10YR 4.5/2

Description: A silty clay loam lens with abundant distinct orange flecks ca. 2mm, frequent black flecks 3-5 mm, abundant diffuse mottling (7.5YR 6.5/3) ca. 3-5cm across, occasional fine roots and occasional sub-angular sandstone clast ca. 1 cm long. Lower horizon boundary: abrupt.

Profile: 2

Context No. / Horizon: 032

Colour: wet - 2.5Y 5/2.5

Description: A silty clay loam lens with abundant faint mottling (2.5Y 6.5/3, 2.5Y 6.5/4), occasional sub-rounded sandstone clasts ca. 5mm long. Lower horizon boundary: gradual.

Profile: 2

Context No. / Horizon: 033

Colour: wet - 10YR 4/1

Description: Silty sand with the silt fraction locally dominant. Occasional black flecks ca. 1 mm, occasional sandstone clasts sub-angular and tabular up to 3 cm long. Lower horizon boundary: diffuse.

Profile: 2

Context No. / Horizon: 034

Colour: wet - 10YR 4/2

Description: A sandy silt with occasional sub-rounded / sub-angular, spheroidal gravel ca. 2-3 mm. Lower horizon boundary: abrupt.

Profile: 2

Context No. / Horizon: 035

Colour: wet - 2.5Y 5/3

Description: A silty sand with occasional patches of 'pure' sand (2.5Y 8/1) ca. 5mm across, frequent sub-angular / sub-rounded sandstone clasts ca. 2-4 cm. Lower horizon boundary: gradual.

Profile: 2

Context No. / Horizon: 036

Colour: wet - 2.5Y 6/2.5

Description: Slightly silty sand with occasional clear black mottles ca. 1 cm across. Lower horizon boundary: abrupt.

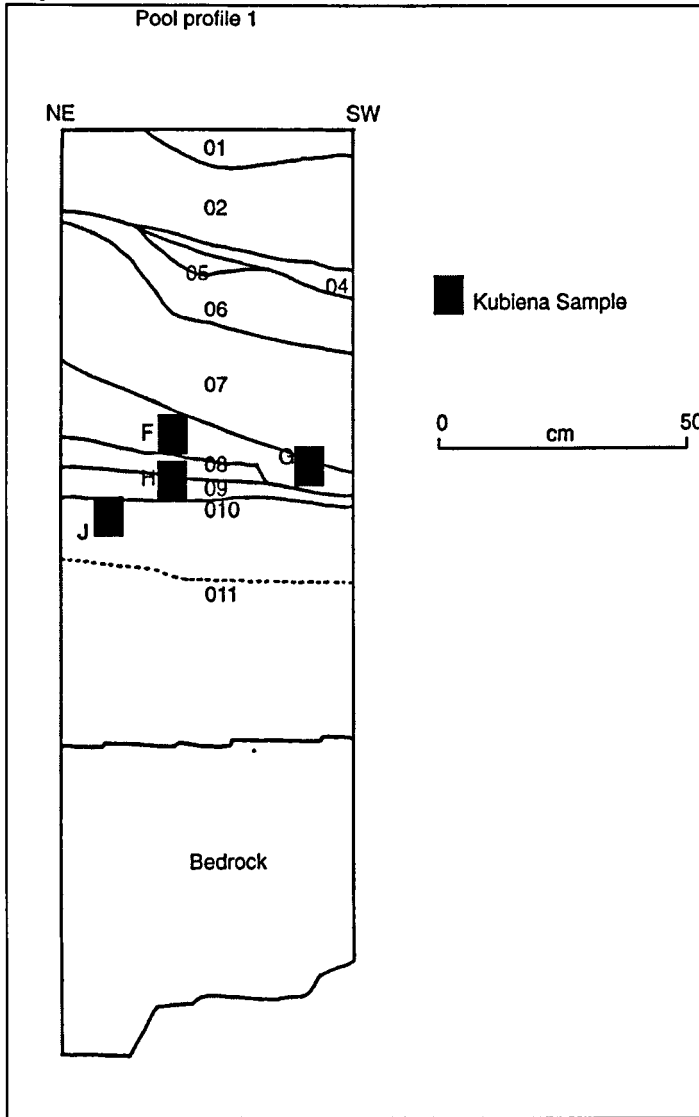
Pool

Context Number / Horizon: 1

Colour: wet 10YR 3/2.5

Description: Sandy clay loam with a massive structure and occasional orange mottling of moderate contrast, ca. 1 cm. Lower horizon boundary: moderately diffuse.

Profile: 1



Context No. / Horizon: 2

Colour: field - 10YR 3.5/2, wet - 10YR 3/1.5

Description: Silty clay loam with fine sand and a massive structure. Occasional yellow and black flecks, and yellow mottles of moderate contrast. Frequent stone, sub-angular, tabular, ca. 7.5-10cm, also occasional stone clasts, ca. 1 cm. Upper and lower horizon boundary: moderately diffuse.

Context No. / Horizon: 3

Colour: field - 10YR 4/1, wet - 10YR 4/2

Description: Silty clay loam of massive structure. Frequent orange flecks, frequent black flecks, occasional gravel ca. 3-5 mm. Upper and lower horizon boundary: moderately diffuse.

Context No. / Horizon: 4

Colour: field - 10YR 4/3, wet - 10YR 3/1.5

Description: Silty clay loam with fine sand, field texture more friable than previous contexts, medium crumb structure. Abundant black flecks ca. 3-4 mm. Upper horizon boundary: moderately diffuse; lower boundary: diffuse.

Context No. / Horizon: 5

Colour: field - 10YR 5/3.5, wet - 10YR 4/3.5

Description: A massive, silty clay loam with fine sand. Abundant orange flecks, occasional buff low contrast mottles ca. 2-3 cm. Upper boundaries with context 4 diffuse, with 6 moderately sharp; lower boundary: moderately sharp.

Context No. / Horizon: 6

Colour: field - 10YR 4/5, wet - 10YR 3.5/2

Description: A massive silty clay loam. Abundant black flecks, abundant orange flecks, occasional buff flecks, and frequent stone clasts, sub-angular, tabular 6-7 cm with a clustered distribution. Upper boundaries with context 4 moderately diffuse, with 5 moderately distinct and sharp; lower horizon boundary: moderately diffuse.

Context No. / Horizon: 7

Colour: field - 10YR 4/3.5, wet - 10YR 3/2

Description: A massive silty clay loam. Occasional pottery, abundant orange flecks, frequent black flecks and streaks. Upper and lower horizon boundaries: moderately diffuse.

Context No. / Horizon: 8

Colour: field - 10YR 3/2.5, wet - 10YR 2.5/2

Description: A massive silty clay loam with higher sand content than previously. Occasional pottery, abundant black flecks and streaks, frequent orange and buff flecks. Upper boundary - moderately diffuse, lower boundary - variable, moderately sharp to moderately diffuse.

Context No. / Horizon: 9

Colour: field - 10YR 4/2, wet - 10YR 3/2

Description: A massive silty clay loam with similar sand content to context 8. Frequent black flecks, occasional buff flecks. Upper horizon boundary: moderately sharp / moderately diffuse; lower boundary: sharp.

Context No. / Horizon: 10

Colour: field - 10YR 5.5/2, wet - 10YR 4.5/3

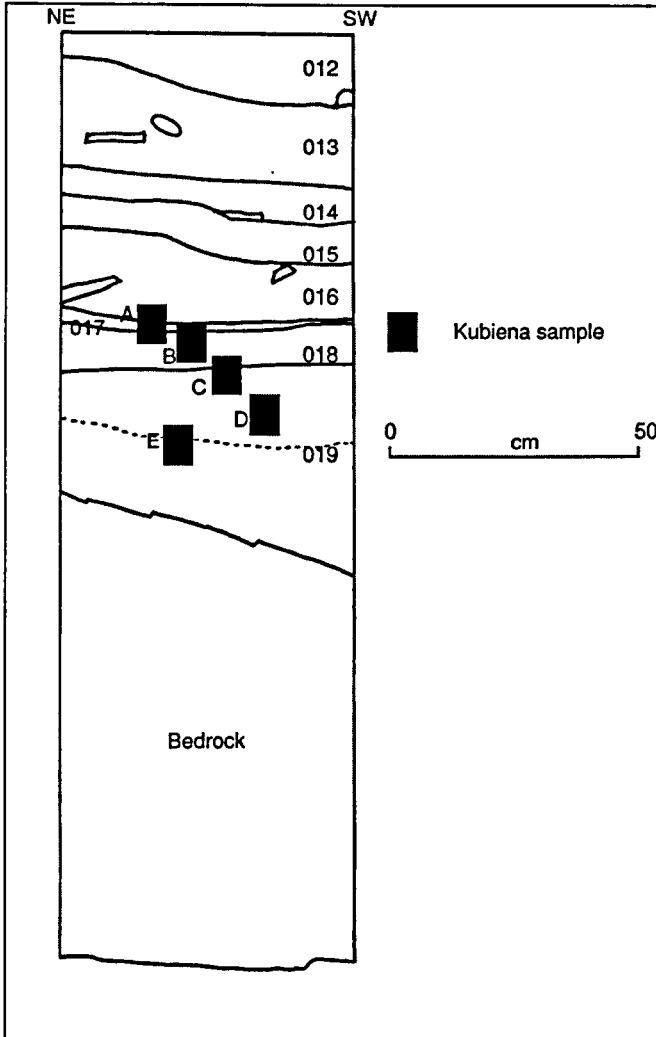
Description: Sandy clay loam. Abundant buff flecks, frequent grey streaks, occasional orange flecks, occasional stone clasts ca. 1 and 7 cm, sub-angular, tabular. Upper horizon boundary: sharp; lower boundary: moderately sharp and moderately distinct.

Context No. / Horizon: 11

Colour: field - 10YR 6/4, wet - 10YR 5/5

Description: A sandy clay loam with a coarser sand fraction than context 10. Abundant, moderately diffuse, distinct mottles (10YR 6/8), ca. 6 cm. The upper 10-12 cm contained frequent sandstone ca. 5-10 cm. sub-angular / angular and tabular, stoniness increased with depth to become dominant soil constituent. Lower horizon boundary with bedrock: abrupt.

Profile: 2



Context No. / Horizon: 12

Colour: field - 10YR 4/3.5, wet - 10YR 4/2.5

Description: A silty clay loam of massive structure. Abundant orange flecking, occasional buff flecks, occasional stone clasts angular / sub-angular, ca. 3-5 cm. Lower horizon boundary: diffuse.

Context No. / Horizon: 13

Colour: field - 10YR 3.5/3, wet - 10YR 3.5/2.5

Description: A silty clay loam with fine sand. Occasional orange flecks, occasional black flecks, Occasional rounded burnt stone ca. 10 cm, frequent stone clasts, sub-angular, tabular, ca. 3-5 cm. Lower boundary diffuse. Lower horizon boundary: distinct.

Context No. / Horizon: 14

Colour: field - 7.5YR 3.5/3, wet - 7.5YR 4/3

A silty clay loam with medium / coarse sand. Frequent stone clasts, sub-angular / angular, tabular, ca. 5-6 cm, occasional pottery sherd. Lower horizon boundary: abrupt.

Context No. / Horizon: 15

Colour: field - 10YR 3.5/3, wet - 10YR 3/2

Description: A massive sandy clay loam with a significant fraction of medium / coarse sand. Occasional orange mottles ca. 1.5 cm of low contrast, locally abundant black flecks. Lower horizon boundary: diffuse.

Context No. / Horizon: 16

Colour: field - 10YR 4.5/2.5, wet - 10YR 3.5/2

Description: A silty clay loam with medium sand. Occasional stone clasts ca. 1 cm and frequent stone clasts sub-angular, tabular ca. 5-10 cm, frequent black flecks, occasional yellow flecks. Lower horizon boundary: abrupt.

Context No. / Horizon: 17

Colour: field - 10YR 4.5/3, wet - 10YR 4/2.5

Description: A silty clay loam with fine sand. Occasional yellow mottles ca. 1 cm, occasional black flecks, occasional orange flecks, occasional black streaks. Lower horizon boundary: gradual.

Context No. / Horizon: 18

Colour: field - 10YR 5.5/2, wet - 10YR 4.5/2.5

Description: Silty clay loam with abundant diffuse mottles ca. 2 cm of distinct contrast (10YR5.5 / 8). Occasional black flecks, occasional orange flecks, frequent stone clasts, sub-angular / angular, tabular, ca. 1-5 cm. Lower horizon boundary: gradual.

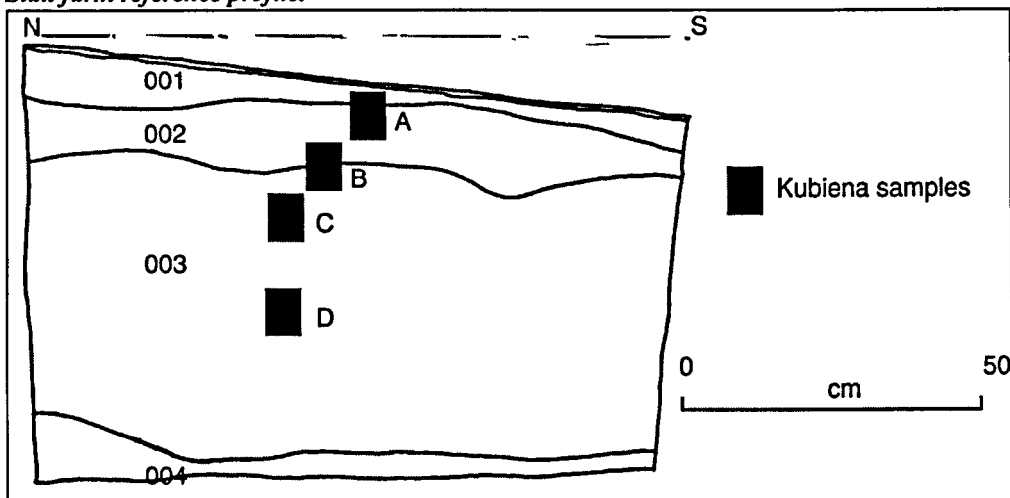
Context No. / Horizon: 19

Colour: field - 10YR 6.5/6, wet - 10YR 5.5/6

Description: A sandy clay loam with abundant clear mottles of distinct contrast (10YR 5.5/7) ca. 2-3 cm. Occasional orange flecks, frequent stone clasts, sub-angular, tabular, ca. 1-5 cm, stoniness increasing at 20 cm depth to become abundant with a size of ca. 10-15 cm. Lower horizon boundary with bedrock: abrupt.

Site Name: Slait Farm

Slait farm reference profile.



Profile: 1

Context No. / Horizon: LFH

Colour:

Description: Moderately thick litter layer of intact through to finely commuted and indistinguishable plant material. Predominantly elder, sycamore, nettle, and bramble.

Context No. / Horizon: 1 A

Colour: field - 10YR3/1.5, wet - 10YR3.5/1.5

Description: Fine sandy silt loam with a well developed fine granular structure and low stickiness. Heavily rooted with abundant fine roots and occasional medium roots up to 2 cm in diameter. High organic content with identifiable fragments of bark, leaves, roots and twigs. Lower horizon boundary: moderately distinct and moderately sharp.

Context No. / Horizon: 2 A/B

Colour: field - 10YR4/3, wet - 10YR4/2

Description: Fine, semi-deformable sandy clay loam with a poorly developed, weak, sub-angular blocky structure of low stickiness. Heavily rooted with fine and medium roots up to 2 cm in diameter, occasional stone clasts sub-angular / sub-rounded ca. 1 cm. Lower horizon boundary: distinct and moderately sharp.

Context No. / Horizon: 3 B

Colour: field - 10YR4.5/6, wet - 10YR4.5/4

Description: Fine sandy clay loam, slightly greater stickiness than contexts 1 and 2 and a moderately developed, weak, sub-angular blocky structure, semi-deformable. Heavily rooted with medium / fine and medium / coarse roots up to 2.5 cm in diameter, occasional rounded limestone clasts ca. 7 cm, occasional sandstone clasts sub-angular, ca. 2.5 cm. Lower horizon boundary: moderately distinct and sharp.

Context No. / Horizon: 4 B/C (parent material)

Colour: field - 10YR4.5/6, wet - 10YR4/5

Description: Fine sandy loam material, semi-deformable and of similar stickiness to context 3, with a poorly developed, moderately firm, medium / coarse sub-angular blocky structure. Moderately rooted with medium coarse roots up to 3 cm in diameter, occasional (locally abundant) sandstone clasts, sub-angular to sub-rounded ca. 2-3 cm.

Site Name: Sigwells

Context No. / Horizon: 6000

Colour: field – 10YR 5.5/3; wet – 10YR3.5/3.5

Description: very fine sandy silt turfy layer, very heavily rooted with fine grass roots of *Agrostis*, *Festuca* and *Holcus* and a moderately weak crumb structure with a low packing density. Abundant organic matter, stone free. Lower horizon boundary: distinct and wavy.

Context No. / Horizon: 6001A

Colour: field – 10YR 5.5/6; wet – 10YR 4/5

Description: A sandy clay loam with a weakly developed fine sub-angular blocky structure, moderately weak to moderately firm and semi-deformable with low stickiness. Abundant fine grass roots, occasional sandstone clasts, sub-rounded, 1-2cm diameter. Lower horizon boundary: diffuse and wavy.

Context No. / Horizon: 6001B

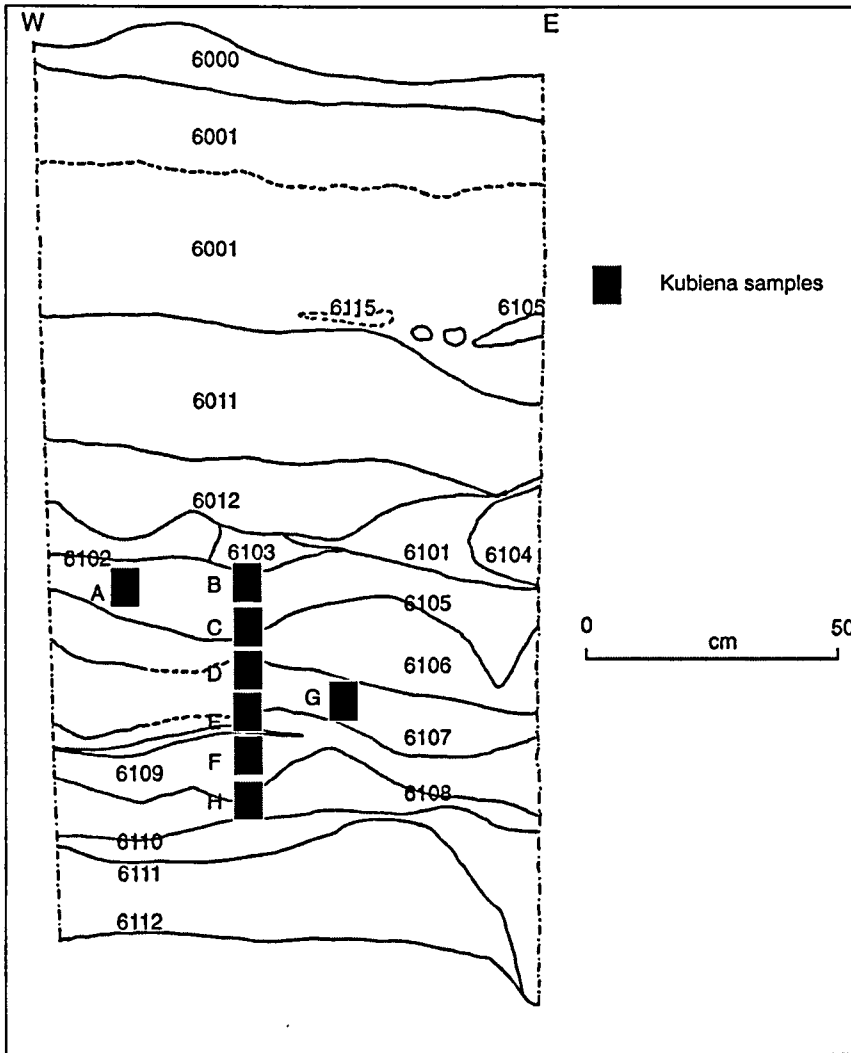
Colour: field – 10YR 4.5/4; wet – 10YR 3.5/4

Description: A slightly sticky, sandy clay loam with a moderately weak, semi-deformable, weakly developed sub-angular blocky structure. Abundant fine grass roots, occasional charcoal (0.5 – 1cm long), occasional degraded sandstone clasts, sub-rounded, 1-2cm diameter. Lower horizon boundary with 6011: clear and wavy; with 6100: distinct and sharp.

Context No. / Horizon: 6011

Colour: field – 10YR 4.5/6; wet – 10YR 5/4

Description: A sandy clay loam with very weakly developed, fine sub-angular blocky structure, weak and brittle. Frequent fine grass roots, occasional charcoal, abundant sandstone clasts, sub-rounded, 1-2cm diameter. Matrix of brown sandy silt with orange mottles (10YR 6/6) and holes caused by sandstone clasts. Lower horizon boundary: clear / diffuse and wavy. Mix of cap material (6012) and overlying soil profile



Context No. / Horizon: 6012

Colour: field – 10YR 5/6; wet – 10YR 4/6

Description: Slightly sticky, fine sandy loam with a weakly developed, weak and brittle fine sub-angular blocky structure. Occasional fine grass roots, fine charcoal, abundant sub-rounded and sub-angular sandstone clasts, 1-3 cm. Lower horizon boundary: clear and wavy. Stony cap material

Context No. / Horizon: 6100, 6113, 6114, 6115.

Colour: field – 5YR 3.5 /3; wet; 5YR 3/2.5

Description: Burnt silt loam layer, including burnt stone and charcoal. Horizon boundaries: distinct and sharp.

Context No. / Horizon: 6101

Colour: field – 10YR 5.5/4; wet – 10YR 5/3.5

Description: Massive sandy loam with occasional fine grass roots and frequent fine mottling associated with diffuse boundaries and degraded sandstone. Horizon boundaries: clear and diffuse.

Context No. / Horizon: 6102

Colour: field – 10YR 6/4; wet – 10yr 5/4

Description: Massive sandy loam with occasional fine grass roots and frequent fine mottling associated with diffuse boundaries and degraded sandstone. Horizon boundaries: clear and diffuse.

Context No. / Horizon: 6103

Colour: field – 10YR 4.5/3; wet – 10YR 4.5/3

Description: Massive sandy loam forming a grey 'ashy' layer. Occasional charcoal, occasional sandstone clasts, sub-angular, 1-2cm diameter. Lower horizon boundaries: clear and wavy.

Context No. / Horizon: 6104

Colour: field – 10YR 5/7; wet – 10YR 4/6

Description: Sandy clay loam with very weakly developed, weak and brittle, fine sub-angular blocky structure. Occasional fine grass roots, rare voids filled with earthworm cast, rare charcoal, occasional sub-rounded sandstone clasts 1-1.5cm diameter. Lower horizon boundary: clear.

Context No. / Horizon: 6112

Colour: field – 10YR 5.5/7; wet – 10YR 5/6

Description: A very compact and cohesive sandy clay loam with weakly developed, moderately weak blocky structure. Abundant sandstone clasts, sub-rounded, 1-2 cm diameter with frequent iron stained rims.

Context No. / Horizon: 6113

Colour: field – 5YR 3.5/3, wet – 5YR 3/2.5

Description: Contiguous with contexts 6100 and 6114.

Context No. / Horizon: 6114

Colour: field – 5YR 3.5/3, wet – 5YR 3/2.5

Description: Contiguous with contexts 6100 and 6113.

Context No. / Horizon: 6116

Colour: field – 5YR 3/1.5, wet – 5YR 3/1.5

Description: Small burnt lens, frequent charcoal. Horizon boundaries: clear.

Context No. / Horizon: 6118

Colour: field – 10YR 5/6, wet – 10YR 4/6

Description: A reddened massive, sandy clay loam with slight stickiness. Occasional charcoal, rare sandstone clast, sub-rounded, ca. 0.5 cm diameter. Horizon boundaries: moderately diffuse and moderately indistinct.

Context No. / Horizon: 6117

Colour: field – 10YR 4.5/2, wet – 10YR 4.5/3

Description: A massive sandy silt loam forming ashy grey lens. Occasional charcoal, rare burnt stone, occasional sandstone, sub-rounded, ca. 2 cm diameter. Lower horizon boundary: indistinct, but moderately sharp.

Context No. / Horizon: 6115

Colour:

Description: Mixture of context 6001B and 6100 material. Reddened and includes charcoal and burnt stone. Contiguous with contexts 6100, 6113 and 6114.

Context No. / Horizon: 6111

Colour: field – 10YR 5/6, wet – 10YR 5/6

Description: A massive silt sand loam filling a gully feature. Occasional charcoal, rare sandstone sub-rounded, up to 0.5cm diameter. Horizon boundaries: moderately sharp but indistinct as is a textural differentiation.

Context No. / Horizon: 6110

Colour: field – 10YR 4/3, wet – 10YR 4/3

Description: A massive sandy clay loam of grey ashy material. Frequent charcoal, occasional flint, occasional degraded sandstone up to 1cm diameter. Upper horizon boundary: diffuse; lower horizon boundary: sharp, indistinct and wavy.

Context No. / Horizon: 6105

Colour: field – 10YR 4/6, wet – 10YR 4/4

Description: A firm and compact, massive sandy clay loam. Occasional charcoal, rare fine grass roots, rare flint, occasional sandstone, sub-rounded, 1-2cm diameter with rare iron stained rims. Occasional grey mottling (wet – 10YR 4/3) edges clear to diffuse. Possible turf line.

Context No. / Horizon: 6107

Colour: field – 10YR 5/6, wet – 10YR 5/3.5

Description: A massive sandy loam, forming a variable orangey layer. Occasional charcoal, rare sandstone, sub-rounded, up to 1cm diameter. A discontinuous layer running out to mottling to left of profile, mottling diffuse (7.5 YR 5/6), with distinct line of mottling along top and base of context. Horizon boundaries: clear to very diffuse.

Context No. / Horizon: 6106

Colour: field – 10YR 8/2.5, wet – 10YR 5/5

Description: A massive very fine, white sand Rare fine grass roots, rare charcoal, occasional sandstone clasts, sub-rounded, up to 1cm in diameter. Frequent, fine red mottling (10YR 6/6). Horizon boundaries: diffuse to clear.

Context No. / Horizon: 6108

Colour: field – 10YR 8/2.5, wet – 10YR 5/5

Description: Massive, white sand similar to context 6106. Occasional charcoal, and occasional burnt stone. Frequent fine red mottling (10YR 6/6). Horizon boundaries: diffuse.

Site Name: CHB2

Profile: 2

Context Number / Horizon: 2000

Colour: field - 10YR4.5/5, wet - 10YR4.5/3

Description: Sandy clay loam with a weak, medium sub-angular blocky structure, semi-deformable. Moderately rooted, frequent degraded sandstone clasts. Lower horizon boundary: indistinct but, moderately sharp.

Context No. / Horizon: 2001

Colour: field - 10YR5/4, wet - 10YR4.5/3.5

Description: Fine sandy loam with a weak, weakly developed, medium sub-angular blocky structure, semi-deformable and moderately sticky. Moderately rooted, frequent degraded sandstone clasts, occasional charcoal flecks, occasional sub-angular sandstone ca. 1-2 cm. Lower horizon boundary: moderately distinct and moderately sharp.

Context No. / Horizon: 2002

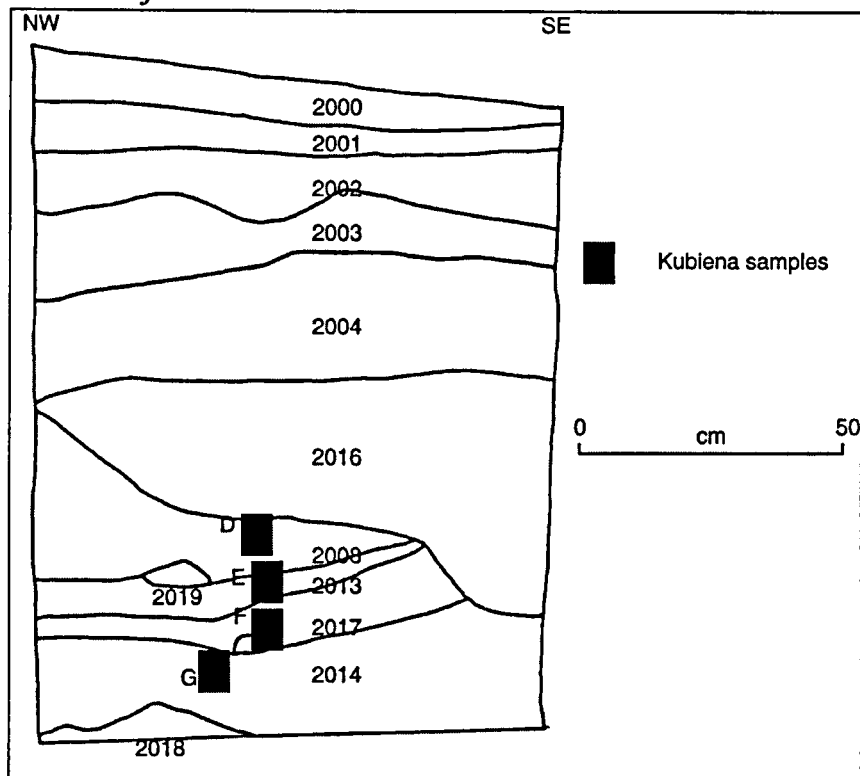
Colour: field - 10YR4.5/3.5, wet - 10YR4.5/2

Description: A fine sandy clay loam with a weak, weakly developed medium sub-angular blocky structure, semi-deformable and moderately sticky. Moderately rooted with frequent degraded sandstone with iron enrichment rims, occasional charcoal flecking, occasional burnt stone and frequent voids. Lower horizon boundary: distinct and moderately sharp.

Colour: field - 10YR5.5/7, wet - 10YR5/3.5

Description: A fine sandy loam with a weak, weakly developed, fine /medium sub-angular blocky structure which was semi-deformable and of low stickiness. Occasional root, frequent degraded sandstone, frequent voids, occasional burnt stone. Lower horizon boundary: moderately indistinct and moderately diffuse.

CHB2 Profile



Context No. / Horizon: 2004

Colour: field - 10YR5/6, wet - 10YR5/3.5

Description: Fine sandy loam with a weak, weakly developed medium sub-angular blocky structure, semi-deformable and moderately sticky. Occasional roots, occasional sandstone clasts ca. 1cm, occasional charcoal flecks. Lower horizon boundary: indistinct.

Context No. / Horizon: 2016

Colour: field - 10YR5/6, wet - 10YR5/3

Description: A fine sandy loam with a weak, weakly developed medium sub-angular blocky structure that was semi-deformable. Occasional roots, occasional sub-rounded sandstone clasts ca. 1-2cm. Lower horizon boundary with 2008: distinct and moderately sharp; lower horizon boundary with 2017 and 2013: moderately distinct and moderately diffuse; lower horizon boundary with 2014: moderately sharp and distinct.

Context No. / Horizon: 2008

Colour: field - 10YR5.5/8, wet - 10YR5/6

Description: Interpreted as barrow cap material it consisted of a massive structure of abundant sub-rounded / sub-angular sandstone clasts ca. 1-2 cm set in a matrix of fine sand loam. Occasional roots, occasional charcoal flecks and some animal disturbance. Lower horizon boundary: moderately distinct and moderately sharp.

Context No. / Horizon: 2013

Colour: field - 10YR6.5/5, wet - 10YR6/6

Description: Interpreted as the buried land surface this was characterised by iron depletion and enrichment. A sandy clay loam with a weak, very weakly developed sub-angular blocky structure which was semi-deformable. A thin discontinuous iron pan ran along the top of the context beneath which the matrix was bleached. Occasional roots, occasional charcoal flecks and some animal disturbance. Lower horizon boundary: moderately distinct and moderately diffuse.

Context No. / Horizon: 2017

Colour: field - 7.5YR5/5, wet: 10YR5/8

Description: A sandy clay loam with a weak, weakly developed sub-angular blocky, semi-deformable structure. Frequent indistinct orange mottles ca. 5 cm, occasional sub-rounded sandstone clasts ca. 3 cm, occasional charcoal flecks. Lower horizon boundary: moderately distinct and diffuse.

Context No. / Horizon: 2019 & 2020

Animal disturbances with loose, friable, crumb structure of mid-brown colour.

Context No. / Horizon: 2014

Colour: field - 10YR5/7, wet - 10YR5/8

Description: A sandy clay loam with a weak, weakly developed, semi-deformable, medium, sub-angular blocky structure and occasional charcoal flecks. Lower horizon boundary: distinct and sharp.

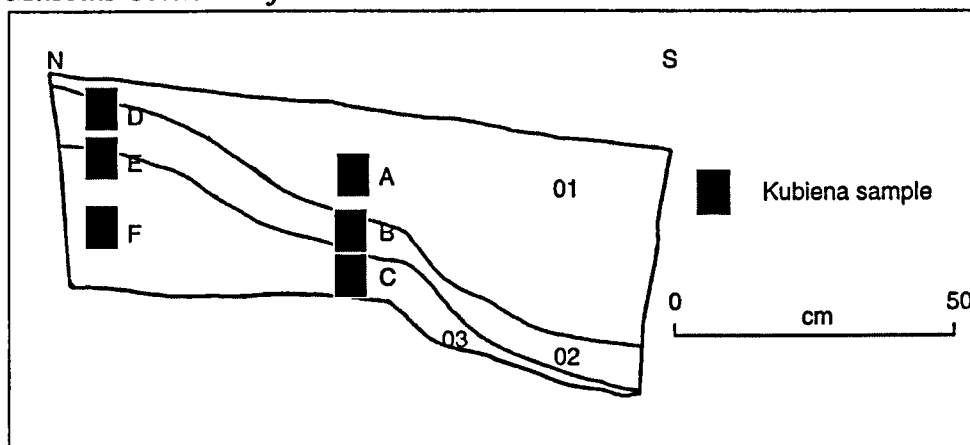
Context No. / Horizon: 2018

Colour: field - 10YR6/5, wet - 10YR5/7

Similar in nature to context 2008 with abundant sub-rounded / sub-angular sandstone clasts ca. 2-5 cm, set within a sandy loam matrix.

Site Name: Milsoms Corner

Milsoms Corner Profiles 1 and 2.



Profile: 1&2

Context No. / Horizon: 001

Colour: field - 10YR4.5/6, wet - 10YR5/3.5

A slightly sticky, silty clay loam with a massive structure / very weakly developed sub-angular blocky structure of high packing density. Occasional black flecks (manganese nodules) occasional orange flecks, occasional gravel clasts ca. 2-5 mm. Lower horizon boundary: moderately distinct but, diffuse.

Context No. / Horizon: 002

Colour: field - 10YR5.5/6, wet: 10YR5/7

Description: Interpreted as a buried land surface this was a silty clay loam with a massive or very weakly developed moderately weak, semi-deformable, fine sub-angular blocky structure. Abundant mottles, moderately sharp and of moderate contrast (10YR4.5/7), occasional orange flecks, occasional black flecks. Lower horizon boundary: moderately distinct and moderately diffuse.

Context No. / Horizon: 003

Colour: field - 10YR5.5/5, wet - 10YR5.5/6

Description: Interpreted as the natural Lias clay this was a very dense, slightly sticky and slightly fluid when wet, clay loam with a massive structure or possibly a very weakly developed, moderately firm

and deformable, sub-angular blocky structure. Occasional gravel clasts ca. 2 mm., frequent diffuse mottling of moderate contrast (10YR5/8).

Profile 3

Context No. / Horizon: 004

Colour: field - 10YR5/5, wet: 10YR5.5/7

Description: Interpreted as and Iron Age floor level this was a sticky, silty clay loam / clay loam with a platy surface structure beneath which the structure was a moderately weak, semi-deformable, medium, sub-angular blocky. Surface platy structures may have been due to modern trampling upon a very clayey substrate liable to smearing and puddling. Lower horizon boundary: distinct and moderately diffuse.

Context No. / Horizon: 005

Colour: field - 10YR4.5/5, wet - 10YR5/4

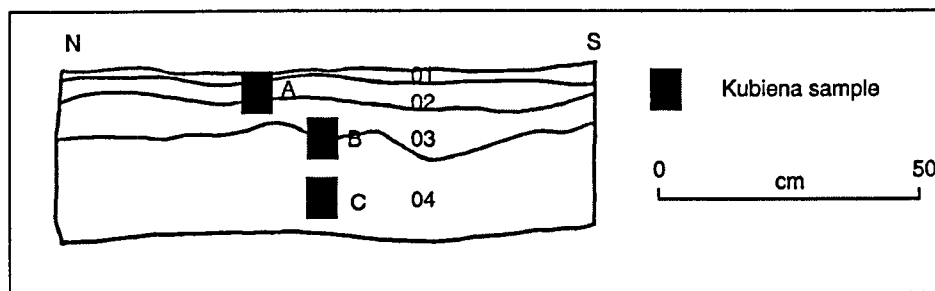
Description: A silty clay loam with a medium, complex blocky and granular structure. Abundant black flecking, Frequent orange flecks, occasional degraded silt- and mudstone. Lower horizon boundary: distinct and moderately diffuse.

Context No. / Horizon: 006

Contiguous with context 003.

Site Name: Little Weston Farm

Little Weston Farm reference profile



Context No. / Horizon: A, 01

Colour: field - 10YR3.5/1.5, wet - 10YR3.5/1

Description: A sticky silty clay loam with a complex structure of medium crumb and moderately firm, deformable medium / fine sub-angular blocky. High in organics this horizon was heavily rooted with fine grass roots and medium tree roots and contained occasional sub-rounded stone clasts. Lower horizon boundary: moderately distinct and moderately sharp.

Context No. / Horizon: B 02

Colour: field - 10YR3/1, wet - 10 YR 3.5/2.5

Description: A sticky, silty clay loam with a moderately developed, firm and semi-deformable / deformable, medium, angular blocky structure. Frequent fine roots, occasional medium roots, occasional clasts of rounded limestone and brick ca. 2-8 cm. and frequent orange flecks. Lower horizon boundary: moderately indistinct and moderately diffuse.

Context No. / Horizon: B/C 003

Colour: field: 10YR3.5/1, wet - 10YR4/1.5

A moderately sticky clay loam with a moderately strong, semi-deformable, medium / coarse, angular blocky structure. Occasional fine roots, frequent medium roots, frequent diffuse mottles ca. 1-2cm of moderate / high contrast (10YR5/7), occasional sub-angular stone clasts ca. 2-3 cm.

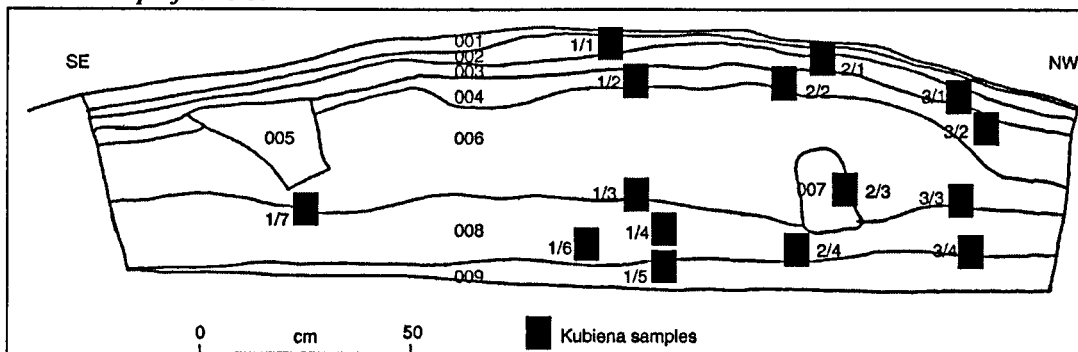
Context No. / Horizon: C 004

Colour: field - 10YR4.5/1.5, wet - 10YR5.5/3.5

Description: Interpreted as the natural parent material of Lias clay this was a silty clay with a moderately strong, semi-deformable, medium / coarse, blocky structure. Occasional fine roots in upper surface, but no apparent root penetration to any depth. Abundant, moderately diffuse orange mottles ca. 1-2 cm of moderate / high contrast (10YR5/7), occasional limestone, siltstone and mudstone clasts between 0.5 and 2 cm., frequent black flecks (manganese nodules).

Site Name: Wether Hill

Wether Hill profiles 1-3.



Profile: 1-3

Context No. / Horizon: 1 / A

Colour: wet - 5YR 2.5/1

Description: A moderately sticky, friable, sandy loam with a weakly developed, fine crumb structure. Very dry and very heavily rooted with fine grass roots and occasional sub-angular stone clasts ca. 2cm. Lower horizon boundary: abrupt to distinct.

Context No. / Horizon: 2

Colour: wet: 10YR 4.5/6

Description: A very dry layer of unhumified organic matter predominantly stems and roots (80%+) of the close *Agrostis* / *Festuca* sward. The mineral component was predominantly silt sized. Lower horizon boundary: distinct.

Context No. / Horizon: 3 / Ao

Colour: wet - 10YR 2/1

Description: A moderately dry, black, organic horizon with a moderately developed medium / fine, moderately firm blocky structure, which was semi-deformable under pressure when wet with dominant mineral fraction being silt. Abundant fine roots and occasional angular / sub-angular stones ca. 3-4 cm. Lower horizon boundary: gradual.

Context No. / Horizon: 4

Colour: field - 7.5YR 2.5/2.5, wet - 5YR 2.5/1

Description: A silty clay loam with a complex crumb and medium, moderately weak blocky structure which when wet was semi-deformable / brittle under pressure. Medium rooting, occasional sub-rounded / sub-angular stone clasts 1-10 cm long. Lower horizon boundary: diffuse and irregular, cut by context 5.

Context No. / Horizon: 5

Colour: field - 7.5YR 4/5, wet - 7.5YR 3/2

Description: A silty clay loam with a poorly developed, weak, blocky structure. Moderate to heavy rooting, frequent sub-rounded stone clasts 2-5 cm, and frequent sub-angular gravel 0.25-0.5 cm. Possible result of animal disturbance. Horizon boundaries: gradual.

Context No. / Horizon: 6 / Bank material

Colour: field - 10YR 4/5, wet - 7.5YR 4/3.5

Description: Silty clay loam, with common clear mottles of distinct contrast (7.5YR 5/7). Moderately to heavily rooted with frequent sub-rounded / sub-angular stone clasts 1-7 cm long. Lower horizon boundary: abrupt, but irregular.

-Context No. / Horizon: 7

Colour: field - 7.5YR 3/2, wet - 7.5YR 3/2

Description: A sandy clay loam, with coarse angular sand, and a very friable, loose texture and crumb structure. Thought to be the result of animal disturbance. Heavily rooted with occasional sub-angular stone clasts ca. 2 cm long. Horizon boundaries: distinct and abrupt.

Context No. / Horizon: 8 / bA

Colour: field - 5YR 2.5/1, wet - 5YR 2.5/1

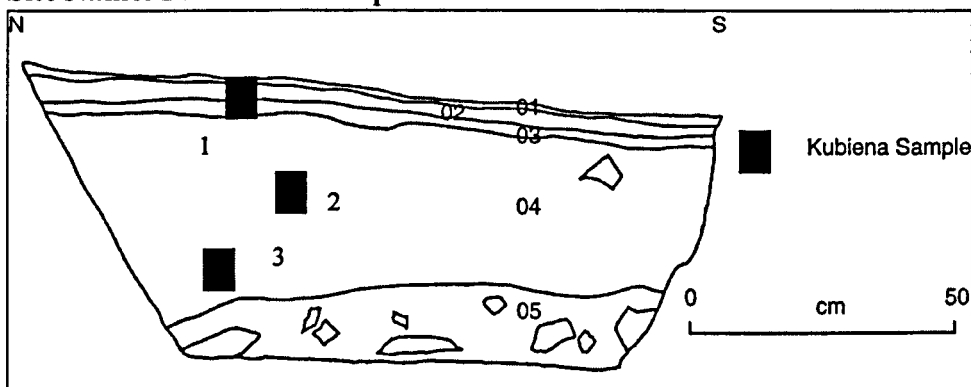
Description: A silty clay loam with coarse sand with a weak, brittle / semi-deformable, medium blocky structure. Lightly rooted and organic rich with distinct lines of dark black silty material possibly turves. Occasional distinct mottles (5 YR 3/4) ca. 2 cm across, frequent rounded to sub-angular stone clasts between 2 and 10 cm long. Lower horizon boundary: distinct.

Context No. / Horizon: 9 / C?

Colour: field - 7.5YR 5/4, wet - 10YR 5.5/4

Description: A deposit possibly of glacial origin consisting of angular / sub-angular stones 0.5-5 cm long set in a matrix of silty clay loam. Massive and compact with common, faint, diffuse mottles (5YR 5/6) ca. 3 cm across.

Site Name: Plantation Camp



Profile: 1

Context No. / Horizon: 01 / LFH

Colour: 5YR 2.5/1

Description: Modern LFH layers of grass remains and tree leaves and twigs with some development of a moderately sticky, friable, sandy loam with a weakly developed fine crumb structure. Very heavily rooted with fine grass roots and occasional sub-angular stone clasts ca. 2cm. Lower horizon boundary: abrupt and irregular.

Context No. / Horizon: 02 / relict L?

Colour: field - 10YR 6/6, wet - 10YR 5/6

Description: Continuous horizon of unhumified organic matter and in particular roots and stems of the *Agrostis - Festuca* sward up to 5 cm long, with little mineral material (predominantly silt and fine sand) Mineral material had a loose friable texture when removed but the organics were very tightly matted. Abundant live fine grass roots, apparently stone free. Lower horizon boundary: distinct and smooth.

Context No. / Horizon: 03 / Ao?

Colour: field - 5Y 3/1, wet - 2.5Y 2.5/1

Description: Very dry peaty organic layer with ca. 80% medium and finely commuted organic material. Mineral fraction predominantly silt and fine sand. Abundant fine grass roots, occasional tree roots and occasional bracken rhizomes, occasional sub-angular stone clasts ca. 0.5 cm. Lower horizon boundary: distinct.

Context No. / Horizon: 04 / B

Colour: wet - 7.5YR 3/3

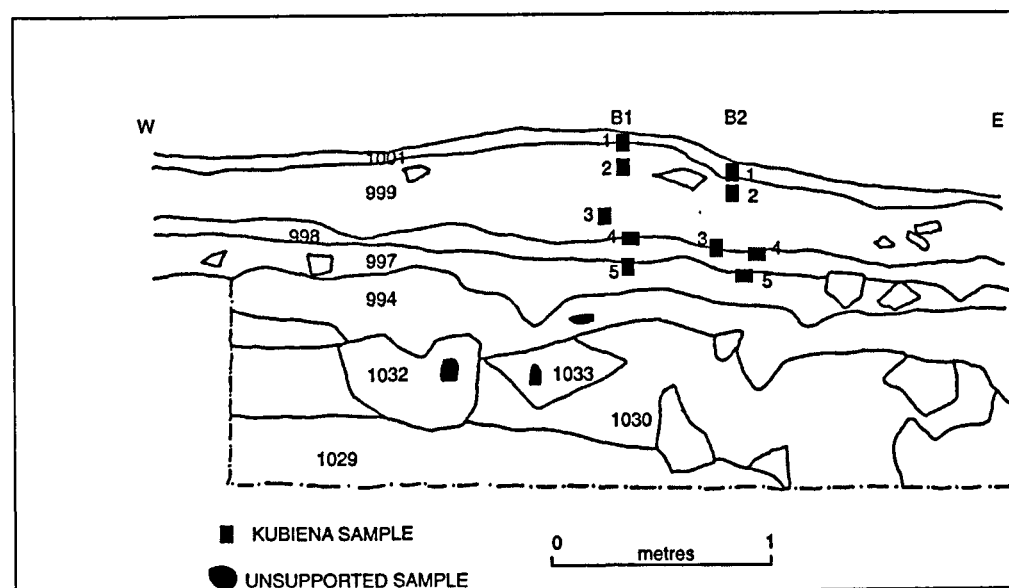
Description: A silty clay loam with very little fine sand and a medium / coarse blocky structure. Abundant fine roots, occasional bracken rhizomes, frequent sub-rounded to sub-angular volcanic stone clasts between 6 and 20 cm long stoniness increasing with depth, occasional black silty lenses associated with rhizomes. Lower horizon boundary: distinct and wavy.

Context No. / Horizon: 05 / Bx?

Colour: wet - 7.5YR 4/6

Description: A very stony layer impenetrable with a mattock consisting of sub-rounded to sub-angular stones up to 30 cm long set in a compact and apparently structureless matrix of sandy clay loam material.

Site Name: Turf Knowe



Profile: 1 and 2

Context No. / Horizon: 1002

Colour:

Description: Dense root mat of fresh and living grass roots, with very little mineral material. Lower horizon boundary: distinct and clear.

Context No. / Horizon: 1001

Colour: wet - 7.5YR 3/3

Description: A matted black, layer of finely divided, humified and partially humified organic material, with a weakly developed blocky structure. Mineral component a sandy silt. Frequent fine grass roots, rare stone clasts, sub-rounded and rounded, ca. 0.5cm diameter. Lower horizon boundary: sharp, clear and straight.

Context No. / Horizon: 999

Colour: wet - 10YR 3/3

Description: A friable silt loam with frequent fine grass roots, frequent sub-rounded stone clasts, 0.5 – 3cm diameter. Showed evidence of an accumulation of material over time with ‘floating’ archaeological stratigraphy. Lower horizon boundary: moderately distinct, and moderately clear.

Context No. / Horizon: 998

Colour: wet – 7.5YR 2.5/2

Description: A blackened, silt loam, massive or with very weakly developed sub-angular blocky structure. Occasional stone clasts, sub-rounded and sub-angular, up to 5cm diameter, occasional fine grass roots. Lower horizon boundary: sharp and distinct. Buried cultivated soil.

Context No. / Horizon: 997

Colour: wet – 7.5YR 4/4

Description: Friable silt loam, with occasional fine grass roots and occasional stone clasts, sub-angular, ca. 1-2cm diameter. Lower horizon boundary: sharp, distinct and wavy.

Context No. / Horizon: 994

Colour: wet – 10YR 5/4

Description: Compact stony layer with a silt loam matrix. Dominant stones, angular and sub-angular, 1-10cm diameter. Lower horizon boundary: sharp, distinct and wavy.

Context No. / Horizon: 1030

Colour: wet – 7.5YR 4/4

Description: Massive, silt clay loam. Abundant stone clasts, angular, 0.5 - 3 cm diameter. Horizon boundaries: distinct and sharp.

Context No. / Horizon: 1032

Colour: wet – 5YR 4/4

Description: A massive clay loam, pink in colour. Abundant, angular stone clasts, up to 8cm diameter. Horizon boundaries: distinct and sharp. Andesite derived till.

Appendix 5. Micromorphology descriptions, level 1, level 2 and codings for statistical analysis, and image analysis data.

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Key to summary tables

Abundances following Bullock *et al.*, (1985)

t	Trace
*	Rare
**	Few
***	Common / Frequent
****	Dominant

Pedofeature abundances

*	<1%	Total slide area
**	1-2%	4433
***	2-5%	4433
****	5-10%	4433
*****	10-20%	4433
	>20%	4433

Appendix 5.1: Level 1 thin section micromorphology summary tables - Fordhouse Reference

Section	Zone	Context	Coarse mineral matter (>10µm)		Organic material							Voids			Pedofeatures					Microstructure	Coarse material arrangement	Total porosity	Related distribution	C:F ratio 10µm					
			Quartz	Feldspar	Biotite	Garnet	Muscovite	Horneblende	Quartzites	Sandstones	Siltstones	Volcanics	Phyloliths	Lignified tissue	Parenchymatic tissue	Amorphous (black)	Amorphous (yellow)	Amorphous (red)	Cell residue						Fungal spores	Pollen	Vughs	Channels	Planar

A I 002 Heterogeneous mid-brown, yellow/brown and orange/brown; organic and organo-mineral; low birefringence, weakly stipple speckled or undifferentiated. █ Inter-grain micro-aggregate

B I 003 . † Yellow brown, organic and very rare organo-mineral; undifferentiated. █ Channel / vughy

B II 004 Heterogeneous, mid-brown, organic and organo-mineral; low birefringence, weakly stipple speckled or undifferentiated. █ Inter-grain micro-aggregate

C I 005 Grey/brown and yellow/brown, mineral, mod-high birefringence; stipple speckled and rare granostations. █ Inter-grain micro-aggregate and rare channel.

F I 004/005 Brown and yellow/brown; organo-mineral; mod. Birefringent; stipple speckled. █ Channel

D I 006 Mottled buff brown and orange/brown; mineral; mod-high birefringence; stipple speckled with few grano-strations. █ Channel / vughy

- Key**
- † Trace
 - ‡ Very few
 - Few
 - Common/frequent
 - Dominant

- Pedofeatures**
- <1% slide area
 - 1-2% slide area
 - 2-5% slide area
 - 5-10% slide area
 - 10-20% slide area
 - █ >20% slide area

Appendix 5.1: Level1 thin section micromorphology summary tables - Milsoms Corner

Section	Zone	Context	Coarse mineral matter (>10um)								Fine matter (<10um)		Organic material		Voids				Pedofeatures						Microstructure	Coarse material arrangement	Total porosity	Related distribution	C:F ratio 10um			
			Quartz	Feldspar	Biotite	Muscovite	Hornblende	Sandstones	Oolitic limestone	Ooids	Bone	Parenchymatic tissue	Brown pigmentation	Amorphous (black)	Amorphous (red)	Cell residue	Charcoals	Vughs	Channels	Planar	Packing	Textural (dusty clay cutans)	Textural (limpid clay coatings)	Amorphous & crypto-crystalline nodules						Amorphous & crypto-crystalline infills & coatings	Depletions	Fabric	Excremental (mamillate)	Excremental (spheroidal)
Milsoms Corner																																
Profile 1																																
CAD/1/A	I	01	***	*						t	Yellow and brown; mineral and organo-mineral; stipple speckled and strial; few FeO punctuations.	**	t			*	**			**	*/*	**	*	*	*			Channel	Random basic	25%	Close and single space porphyric	1:1
CAD/1/B	I	02	***	*						t	Yellow and brown; mineral and organo-mineral; stipple speckled and strial. Few FeO punctuations.	*	t			*	**			*/*	*	**						Channel	Random basic	22%	Close and single space porphyric	1:1
CAD/1/C	I	02	***	*							Yellow/brown; pred. mineral; stipple speckled with few granostriations; Few FeO punctuations.					*	*			*	*	*/*						Channel	Random basic	15%	Single space porphyric	2:3
CAD/1/C	II	03	***	*							Yellow/brown and colourless; mineral; stipple speckled with granostriations; few FeO punctuations.					*	**	t		*	**	*/*	*		*	*		Channel	Random basic	20%	Double and single space porphyric	1:2
Profile 2																																
CAD/2/D	I	01	***	*							Brown and yellow/brown; organo-mineral; rel. silty; stipple speckled and occ. strial; few FeO punctuations.	t	**	*		*	**	*		*	**	*	*	*	*	*		Channel	Random basic	18%	Double space porphyric	1:1

Appendix 5.2.1: Textural pedofeatures

Slide	Zone	Context	Textural type						Thickness um					Position	Ageing	
			Orange 1	Orange 2	brown	orange/brown	orange/red	silty	>10	10-25	25-50	50-100	>100			
Fordhouse reference																
A	I	002														
B	I	003														
B	II	004														
C	I	005			*				*	*	*	t		Within channels and vughs 100-300um wide. 80% thickest at base of void.	Few fractured; extinctions diffuse to clear, masked by silts and organics.	
F	I	004,005														
D	I	006	**						*	*	*	*	t	Packing voids and channels upto 400um thick. 70% thickest at base, frequency increasing down slide.	Few fractured; clear, occasionally haphazard extinctions.	
Fordhouse Barrow Profile 1																
1/8	I		t	**	t				t	t	*	*	**	**	V. few still in-situ. Orange clay apparently coated channels forming compound coatings with silty layers	Almost all coatings fractured.
1/9	I		**	*					*	*	**	**	*	Infilling and coating channels and simple packing voids. V. few still in-situ most are fractured but, those that are occupy voids upto 600um diam. (modal 100-200um). Coatings fragmented. Apparently originally coating channels.	Most coatings fractured, extinctions clear/diffuse.	
1/10	I		*	*		**			*	*	*	*		Coatings fragmented. Apparently originally coating channels.	All fractured, extinctions diffuse.	
1/10	II			**	t				t	*	*	*	**	Brown clay coating channels upto 200 um diam. Orange coating and infilling channels upto 300um (modal 100-200um).	Few orange coatings fractured, brown clay fractured, evidence of high levels of biological activity.	
1/10	III		*	*		*			t	*	*	*		Silt in compound coatings often uppermost, clay coating channels upto 700um diam. (modal 300um).	Few fractured coatings, extinctions clear/diffuse.	
1/1	I			*		*			*	*	*	*	t	V. few still in-situ, coating channels upto 400um diam. (modal 100um)	Frequent fractured coatings, extinctions clear/diffuse.	
1/3	I				**				*	**	*	*		Brown clay in channels upto 300um (modal 100-150um) diam. Orange/red clay in channels upto 300um diam. (modal 100-200um).	Few fractured coatings, Extinctions diffuse/absent, possibly masked in the redder clays.	
1/3	II			**	*	*			*	*	*	**	*	Brown clay in channels upto 400um diam. (modal 100-200um). Orange clay in channels and packing voids upto 300um (modal 100-200um). Orange/red clay in channels upto 700um (modal 150-250um). Brown clay occ. coated by orange clay.	Frequent fractured coatings, orange extinctions clear/diffuse, brown clay diffuse/absent.	
1/3	III		*	t		**			*	*	**	**	*	Orange/red and orange clay coating channels and infilling packing voids upto 500um diam. (modal 100-250um), Brown clay coating channels and vughs upto 300um diam. (modal 100-150um).	V. few coatings fractured, orange extinction clear/diffuse, brown diffuse/absent.	

Slide	Zone	Position	Textural type					Thickness μm					Position	Ageing
			Orange 1	Orange 2	brown	orange/brown	orange/red	silty	>10	10-25	25-50	50-100		
1/7	I		*	**/***	*	**/***	†	*	**	**	**	*	Orange and orange/red clay coating channels and vughs upto 1000um diam. (modal 150-250um), brown clay in channels upto 300um. (modal 100-200um).	Few fractured coatings, orange clay extinctions clear/diffuse, brown diffuse/absent.
1/2	I		*	†	**/***	**/***	*	*	**	**	**	*	Red/orange clay in channels and vughs upto 400um diam. (modal 150-200um), brown clay in channels 100-200um diam. Many not in-situ. Orange clay in simple packing voids and channels upto 400um diam. (modal 100-200um). No brown clay in-situ.	Freq. fractured coatings, red/orange clay extinctions clear/diffuse occ. masked. Most coatings fractured. Orange clay extinctions clear/diffuse, brown diffuse/absent.
1/2	II		**	*	*	*	*	*/*	*/*	*	*	*	Orange clay coating channels, vughs and packing voids upto 500um diam. (modal 100-200um), brown clay in channels upto 300um (modal 100-200um) diam.	Frequent orange coatings fractured, few brown fractured. Orange clay extinctions clear/diffuse, brown diffuse/absent.
1/4	I		**	*	*	*	*	*	*	*	*	*	Orange clay in packing voids and channels upto 400um diam. (modal 100-1200 um). Brown clay in channels upto 300um diam. (modal 100-150um).	Most fractured, orange clay extinctions clear/diffuse, brown clay diffuse/absent.
1/6	I		†	*	*	*	*	*	*	*	*	*	Orange clay in channels upto 700 um diam. (modal 100-200um). Brown clay in channels upto 300um diam. (modal 100-200um). Distributions largely mutually exclusive but, occ. orange clay overlying brown clay.	Few fragmented coatings, orange clay extinctions clear/diffuse and haphazard, brown diffuse/absent.
1/5	II		*	**	*	*	†	*	*/*	**	**	*/*	Orange clay in channels upto 600um diam. (modal 200um)	Few fractured coatings, extinctions clear/diffuse and haphazard.
1/5	I		**	†	*	*	*	*	*/*	*/*	*	*	Channels upto 600um diam. (modal 200um)	Few fractured coatings, extinctions clear/diffuse and haphazard.
Profile 2														
2/1	I	H,J	*	*	*	*	*	*	*	*	*	*	Channels and vughs 50-100 um diameter. Ubiquitous, in channels and vughs upto 1000 um diameter (modal 200-300um)	Mostly fractured, v. few intact. Most intact, v. few fractured. Extinctions diffuse and haphazard, rare green extinction colours.
2/2	I	L,M	**	*	*	*	*	*	**	**	**	**	Mutually exclusive, brown in channels upto 300um diameter (modal 200um), orange and orange/brown infilling channels and packing voids upto 500um (modal 200-250um). Very rare orange overles brown.	Few of all types fractured. Brown extinctions diffuse/absent.
2/3	I	N	**	*	*	*	†	*	*	**	**	*	Channels and vughs 50-100 um diameter. Ubiquitous, in channels and vughs upto 1000 um diameter (modal 200-300um)	Mostly fractured, v. few intact. Most intact, v. few fractured. Extinctions diffuse and haphazard, rare green extinction colours.
2/4	I	N	†	*	*	*	†	†	*	*	*	*	Channels and vughs 50-100 um diameter. Ubiquitous, in channels and vughs upto 1000 um diameter (modal 200-300um)	Few of all types fractured. Brown extinctions diffuse/absent.
2/5	I	P	?	*	*	*	†	†	*	*	*	*	Channels and vughs 50-100 um diameter. Ubiquitous, in channels and vughs upto 1000 um diameter (modal 200-300um)	Few of all types fractured. Brown extinctions diffuse/absent.
2/5	II	P,Q	*	?	*	*	*	*	*	*	*	*	Channels and vughs 50-100 um diameter. Ubiquitous, in channels and vughs upto 1000 um diameter (modal 200-300um)	Few of all types fractured. Brown extinctions diffuse/absent.
2/5	III	Q	†	†	*	*	†	*	*	*	†	*	Channels and vughs 50-100 um diameter. Ubiquitous, in channels and vughs upto 1000 um diameter (modal 200-300um)	Few of all types fractured. Brown extinctions diffuse/absent.

Slide	Zone		Textural type					Thickness um					Position	Ageing	
			Orange 1	Orange 2	brown	orange/brown	orange/red	silty	>10	10-25	25-50	50-100			>100
2/6	I	R,S	****	t				*/**	*	**	**	***	***	Orange clay and silt ubiquitous as coatings and infillings, in channels and packing voids upto 1000um diam. (modal 100-300) Silt occurs as cappings and in compound coatings	Extinctions clear/diffuse but, haphazard. V. rare fractures, v. rare green extinction colours.
Profile 3															
3/1	I	V		*	*/**		*	*	*	*				Both in channels as coatings and v. rare orange infillings. Generally mutually exclusive distributions. Some evidence of orange clay overlying brown. In channels and packing voids: brown-100-250um, orange-150-300um diameter.	Few fragmented coatings especially of the brown clay. Orange extinctions clear/diffuse, brown diffuse/absent.
3/2	I	V		*	**		t	*	*	*	*	*	*	Generally mutually exclusive. Silt uppermost occasionally infilling channels. Rare brown clay in channels and vughs upto 500um (modal 150um). Orange/brown clay in channels and packing voids upto 1000um diameter (modal 200-300um).	Few fractured coatings. Orange/brown clay extinctions diffuse and haphazard, brown clay diffuse/absent.
3/3	I	V,W			*/**		*	*	*					Orange/red clay in channels 50-100um. Brown clay in channels and vughs 50-100 um diameter and rare simple packing voids.	Few brown clay coatings fragmented, extinctions diffuse/absent. Orange extinctions absent.
3/4	I	X			*/**	**		*	*/**	**	*/**	*	*	Brown clay in channels and vughs upto 200um diameter (modal 100um). Orange/brown clay in rare cases overlies brown but, distributions generally mutually exclusive. Orange/brown clay in channels upto 500um (modal 200um).	Rare fractured brown clay, extinctions diffuse/absent, orange clay extinctions diffuse.
3/5	III	Y		*		*	*	*	*					Orange/ red clay fragments in channels. Brown clay as coatings in channels and vughs upto 250um diam. (modal 100um).	Orange/red clay fractured, brown mostly intact.
3/5	II	Y		**		*	*	**	*	*	*	*	*	Orange/red fragments in channels. Brown clay coating channels and vughs upto 250um diam. (modal 100um).	Orange/red clay fractured, few brown fractures, extinctions diffuse.
3/5	I	Y	**			*/**		*	*	**	*/**			In channels and packing voids forming infillings and coatings upto 700um diam. (modal 200-300um).	Extinctions clear/diffuse, few fractured coatings.

Key	abundance
*	<1% slide area
**	1-2% slide area
***	2-5% slide area
****	5-10% slide area
*****	10-20% slide area
█	>20% slide area

Appendix 5.2.1: Textural pedofeatures

Slide	Zone	Context	Textural type				Silty	Thickness um					Position	Ageing
			Yellow limpid/ dusty	Orange/red limpid	Brown dusty/ Silty			>10	10-25	25-50	50-100	>100		
Gallows Hill														
A	I	001,002												
B	I	002												
C	I	002												
D	I	002												
D	II	002												
Roos Loch														
Profile 1														
1/A	I	001												
1/A	II	002												
1/A	III	003												
1/B	I	005												
1/B	II	006												
1/C	I	006												
1/C	II	007												
Profile 2														
2/D	I	002												
2/D	II	003												
2/E	I	005												
2/E	II	006												
2/F	I	006												
2/F	II	007	.				.	.	t				Meso-sized channels with a random basic distribution	many coated by organics and organo-mineral material
Profile 3														
3/G	I	002												
3/G	II	002												
3/H	I	004												
3/H	II	005												
3/H	III	006												
3/J	I	007	.				.	.	t				Towards base of horizon in channels 100-200um diam	v. rare fractured.
3/J	II	007	.				.	.	.				Lining channels 75-250um diam (modal 100-150um) commonly associated with iron stained regions.	v. rare fractured.
Seater														
Profile 1														
CPr1C1	I	003												
CPr1C3	I	006												
CPr1C3	II	006		.			.	.	.	.	.	.	Lining channels upto 300um diam.	
CPr1C4	I	007												
CPr1C4	II	007		.			.	.	.	.	.	.	Lining channels upto 300um diam.	
Profile 2														
CPr2 C5	I	005		.			.	.						
CPr2C5	II	003												
CPr2C6	I	003												
CPr2C6	II	006												
CPr2C7	II	007												
CPr2C7	I	010			?		.							

Slide	Zone	Context	Textural type			Thickness um					Position	Ageing	
			Yellow limpid/ dusty	Orange/red limpid	Brown dusty/ silty	>10	10-25	25-50	50-100	>100			
Woo													
Profile 2													
Woo2/2(20-26,89)	I	007	.	.	.	.	.	.	.	.	.	70% thickest at base, frequency increasing down slide.	clear, occasionally haphazard extinctions.
Woo2/2(20-26,89)	II	007,009	.	.	.	.	.	.	.	.	.
Woo2/2(20-26,89)	III	009	.	.	.	.	.	.	.	.	.
Woo2/2(27-33,95)	I	009	.	.	.	.	.	.	.	.	.		V, few limpid, few dusty fractured.
Woo2/2(27-33,95)	II	009	.	.	.	.	.	.	.	.	.		V, few fractured.
Woo2/2(27-33,95)	III	009	.	.	.	.	.	.	.	.	.		V, few fractured.
Woo2/2(29-35,111)	I	032	.	.	.	.	.	.	.	.	.
Woo2/2(29-35,111)	II	009	.	.	.	.	.	.	.	.	.
Woo2/2(29-35,111)	III	010	.	.	.	.	.	.	.	.	.
Woo2/2(22-28,119)	I	010,016	.	.	.	.	.	.	.	.	.
Woo2/2(22-28,127)	I	017	.	.	.	.	.	.	.	.	.
Woo2/2(16-22,133)	I	018	.	.	.	.	.	.	.	.	.		Coating shell fragment.
Woo2/2(16-22,133)	II	033	.	.	.	.	.	.	.	.	.		Coating intra-aggregate channels ca. 100um diam.
Woo2/2(10-16,139)	I	034	.	.	.	.	.	.	.	.	.		Coating channel ca. 200um diam.
Profile 1													
Woo1/1(21-27,95)	I	009	.	.	.	.	.	.	.	.	.		Within channels 100-250um diam. (modal 150-200um.)
Woo1/1(21-27,95)	II	010	.	.	.	.	.	.	.	.	.
Woo1/1(26-32,103)	II	012	.	.	.	.	.	.	.	.	.
Woo1/1(26-32,103)	III	013	.	.	.	.	.	.	.	.	.
Woo1/1(9-15,114)	I	015	.	.	.	.	.	.	.	.	.
Woo1/1(9-15,114)	II	015	.	.	.	.	.	.	.	.	.
Woo1/1(9-15,114)	III	016	.	.	.	.	.	.	.	.	.		Coating channels upto 300um diam. (modal 200-250um.)
Woo1/1(8-25,122)	I	016	.	.	.	.	.	.	.	.	.
Woo1/1(8-25,122)	II	017	.	.	.	.	.	.	.	.	.		Coating channels 100-250um diam.
Woo1/1(8-25,122)	III	017	.	.	.	.	.	.	.	.	.		Coating channels 100-250um diam.
Woo1/1(12-18,129)	I	018	.	.	.	.	.	.	.	.	.		Coating channels 50-200um diam. (modal 100-150um.)
Woo1/1(12-18,129)	II	018	.	.	.	.	.	.	.	.	.		Coating channels 50-200um diam. (modal 100-150um.)
Woo1/1(4-10,136)	I	018,019	.	.	.	.	.	.	.	.	.
Woo1/1(4-10,136)	II	020,021	.	.	.	.	.	.	.	.	.
Woo1/1(1-7,145)	I	022	.	.	.	.	.	.	.	.	.
Pool													
Profile 1													
Pool/1/E	I	019	?	.	.	.	.	.	.	.	.
Pool/1/F	I	008	?	.	.	.	.	.	.	.	.
Pool/1/F	II	008	?	.	.	.	.	.	.	.	.
Pool/1/G	I	007	.	.	.	.	.	.	.	.	.
Pool/1/G	II	008	.	.	.	.	.	.	.	.	.
Pool/1/G	III	008	.	.	.	.	.	.	.	.	.
Pool/1/H	I	009	.	.	.	.	.	.	.	.	.		Lining channels ca. 150um wide
Pool/1/H	II	010	.	.	.	.	.	.	.	.	.		Lining channels ca. 150um wide
Pool/1/J	I	010	.	.	.	.	.	.	.	.	.		Lining channels ca. 150um wide
Pool/1/J	II	011	.	.	.	.	.	.	.	.	.		Lining channels ca. 150um wide
Profile 2													
Pool/2/A	I	016	.	.	.	.	.	.	.	.	.		Lining channels ca. 250um wide
Pool/2/A	II	017	.	.	.	.	.	.	.	.	.
Pool/2/A	III	018	.	.	.	.	.	.	.	.	.
Pool/2/B	I	018	.	.	.	.	.	.	.	.	.
Pool/2/B	II	018	.	.	.	.	.	.	.	.	.

Slide	Zone	Textural type					Thickness um						Position	Ageing	
		Yellow limpid/ dusy	Orange/red limpid	Brown dusy/ Silty	Silty		>10	10-25	25-50	50-100	>100				
Profile 2															
WEA2/2	I	004													
WEA2/2	II	006	*												Lining channels and relic channels 100-200 um diameter.
WEA2/3	I	006													Few fractured, interference colours include purple and red.
WEA2/3	II	007													
WEA2/4	I	008													
WEA2/4	II	008													
WEA2/4	III	009	†												Coating andesite gravel
Profile 3															
WEA3/2	I	004													
WEA3/3	I	006	*												
WEA3/3	II	008													Channels and relic channels upto 250um diameter.
WEA3/4	I	008													Few fractured, interference colours include purple and red.
WEA3/4	II	008													
WEA3/4	III	009													
Little Weston Farm															
WES1/A	I	01,02,03													
WES3/B	I	03,04													
WES3/C	I	04	*												Channels ca. 250um wide
Milsons Corner															
Profile 1															
CAD11/A	I	01	†	*	**	*	*	*	*	*	*	*	*	*	
CAD11/B	I	02	†	*	**	*	*	*	*	*	*	*	*	*	
CAD11/C	I	02		*	*	*	*	*	*	*	*	*	*	*	
CAD11/C	II	03		**	**	*	*	*	*	*	*	*	*	*	
CAD2/D	I	01		†	**	*	*	*	*	*	*	*	*	*	
CAD2/D	II	02	*		**	*	*	*	*	*	*	*	*	*	
CAD2/E	I	02	*		**	*	*	*	*	*	*	*	*	*	
CAD2/E	II	03		**	**	*	*	*	*	*	*	*	*	*	
CAD2/F	I	03		**	**	*	*	*	*	*	*	*	*	*	

Key

- * abundance <1% slide area
- ** 1-2% slide area
- *** 2-5% slide area
- **** 5-10% slide area
- ***** 10-20% slide area
- † >20% slide area



Appendix 5.2.1 Textural pedofeatures

Slide	Zone	Context	Textural type					Thickness um					Position	Ageing	
			Yellow limpid	Orange dusty	Orange/red	Brown silty	Silt capping	>10	10-25	25-50	50-100	>100			
Slait Farm															
SLA/A	I	001													
SLA/A	II	002													
SLA/B	I	002,003													
SLA/C	I	003													
SLA/D	I	003													
Sigwells															
Sig A	I	6105	t	*		*	*	*						Packing voids and channels, brown 100-200um diam. orange 100-250um diam towards base of slide. brown 60% thickest at base	Many brown fractured.
Sig A	II	6105	*	**		*	*	*	*	*				orange ca. 75% thickest at base, within bridged grain. Packing voids and channels upto 300um diameter (modal 100-200um) orange within channels upto 500um diam. (modal 100-250um) orange 75% thickest at base, brown 80%.	Few fractured
Sig B	I	6103		?		*	*	*						Channels and packing voids 100-200um diameter.	Few fractured
Sig B	II	6105	*	**		*	*	*	*					Packing voids and channels upto 300um diameter (modal 100-200um) 75% orange and 80% brown thickest at base.	v. few fractured.
Sig C	I	6105	*	**			*	*	*	*				Channels and packing voids upto 800um diam. Modal (100-200um). 80% thickest at base.	few/common fractured
Sig C	II	6106		*		t	*	*	*					Packing voids and occ. channels upto 200um diam. Brown within bridged grain areas. Ca. 75% brown and orange thickest at base. Limpid and dusty orange coating charcoals and black organics.	Few fractured
Sig D	I	6106	*	*		t	*	*	*	*			t	Channels and packing voids upto 400um diam. (modal 100-200um) Orange clay upon upperside of stones, ca.80% normally oriented.	v. few fractured.
Sig D	II	6107	t	*		*?	*	*	*	*			t	Channels and packing voids upto 300um diam (modal 100-200um) Thickest and silliest coatings above sandstones andcoarse charcoals. Ca. 90% normally oriented.	v. few fractured.
Sig G	I	6107		*		t	*	*	*					Channels and packing voids in bridged grain areas upto 200um diam. Ca. 90% normally oriented, orange conc above sandstones, brown fractured within matrix.	orange fractured
Sig G	II	6107	t	*		?	*	*	*	*			*	Channels and packing voids upto 300um diam, often v. silty therefore very difficult to distinguish brown silty cutans.	few fractured

Slide	Zone		Textural type					Thickness um					Position	Ageing
			Yellow limpid	Orange dusty	Orange/red	Brown silty	Silt capping	>10	10-25	25-50	50-100	>100		
Sig E	I	6107,6108	*			?	*	*	*				Channels and packing voids upto 200um. <90% normally oriented, clustered basic distribution although no obvious obstructions.	Few fractured
Sig F	I	6108	t			t	*	*					Channels and packing voids upto 200um diam. V. few crescentic cutans but, these are thickest at base.	Few fractured
Sig F	II	6108	*			?	*	*	*				Channels and packing voids upto 200um diam. 90% normally oriented, orange clay very silty above fe pans.	Few fractured
Sig F	I	6108	t			?	*	*					Channels and packing voids upto 200um diam. V. few crescentic cutans but, these are thickest at base.	Few fractured
Sig H	I	6108	*			?	*	*	*		t		Channels and packing voids upto 300um diam. 95% normally oriented, conc above sandstones.	v. few fractured.
Sig H	II	6110	*	*/*			*	*	*		t		Channels and packing voids upto 300um diam. 90% normally oriented, some very silty, is a continuum between limpid, and dusty.	v. few fractured.
CHB2														
CHB2/A	I	2008	*	*		*	*	*	*		t		Dusty coatings capping sandstones, limpid clays often within packing voids in sandstone clasts.	v. few fractured.
CHB2/A	II	2013	*	****	*	?	*	**	**	**	*		Within simple packing voids and channels, most coated channels still in place, poss orange/brown clay coating brown silty cutans.	v. few fractured.
CHB2/B	I	2013	***	*	t		*	*	**	**	*		Yellow coating fe nodules / pan within channels upto 600um diam, orange/brown coating channels (150-300um) and fe pan.	few fractured.
CHB2/B	II	2013	*	*		*	*	*					Fragments in packing voids, few coating channels 100-200 um diam.	many fractured.
CHB2/C	I	2017	*	*		*	*	*					Within channels upto 350um diam, inc towards base of zone and becoming siltier.	few fractured, part brown.
CHB2/C	II	2017	t	****	t	*	*	**	**	**	*		Channels and packing voids upto 500um diam (modal 150-250um), occ coat black organics, more abundant above fe pan than below, build up of siltiest coatings above fe pan.	few fractured, part brown.
CHB2/C	III	2017	*/*	*		*	*	*	*	*	*		Channels and packing voids upto 400um diam, rare limpid clay coating brown silty cutans, slight inc in siltiness down profile.	few fractured, part brown.
CHB2/C	IV	2017	*/*	**			*	*	**	**	*		Channels and packing voids upto 500um diam (modal 150-250um), occ coat black organics, few yellow limpid coatings within meso channels cuttin' fe pans, siltiest clay immediately above fe pans.	v. few fractured.

Appendix 5.2.2: Amorphous iron pedofeatures

Section	Zone	Context	Size / Thickness (microns)					Shape	Impregnation	Continuity				Boundaries			Position		Comments
			<20	20-100	100-50	500-10	>1000			1	2	3	4	Diffuse	Clear	Sharp	Matrix	rock clasts	
Fordhouse reference																			
A	I	002			*	*	Hypocoatings	moderate	.				.	t			.		
B	I	003							.										
B	II	004				*	Stones	moderate/weak	.				.				.		
C	I	005	.	**	**	**	Typic, hypo-coatings and stones.	moderate - strong	***				.	**	**	**	**	**	
F	I	004,005		.	.	.	Typic and biotite pseudomorphs	moderate - strong	.				.	.	.	.	.	Many formed in-situ
D	I	006	.	.	**	.	Typic and biotite pseudomorphs	moderate - strong	.				**	.	**	**	**	All appear to have formed in-situ.	
Fordhouse Barrow																			
Profile 1																			
8	I				.	.	Typic	weak-moderate	.				t	.	.	.	.
9	I			t	.	**	Typic	weak/moderate-str	**/**	.			.	**	.	**/**	.	Associated with red and yellow amorphous organics.	
10	I			.	.	**	Typic	moderate-strong	**				**/**	**/**	**	**	.		
10	II		t	.	.	.	Typic	moderate	**/**	.			**/**	.	**/**	**/**	.		
10	III			.	.	.	Typic	moderate	**/**	.			**/**	.	**/**	**/**	.		
1	I			.	.	**/**	Typic	moderate-strong	**/**	.			**/**	**/**	**/**	**/**	.		
3	I			.	.	.	Typic	weak-moderate	.				.	.	.	.	.
3	II			.	.	.	Typic	weak-strong	.				.	.	.	.	.
3	III			t	.	.	Typic	moderate-strong	**	.	.	.	**	**	**	**	.		
7	I			.	.	**	Typic and pans	moderate-strong	**	.	.	.	**	**	**/**	**	.		
2	I			t	.	**/**	Typic	moderate-strong	**	.	.	.	**	**	**	**	.	Associated with red and yellow amorphous organics.	
2	II			.	.	.	Typic	weak/moderate-str	**/**	.			.	.	**/**	**	.		
4	I			t	**	.	Typic	weak-moderate	.				t	**	**	**	.		
6	I			.	.	**	Typic	moderate-strong	**/**	.			t	.	**	**/**	.		
5	II			.	t	**/**	Typic	weak-moderate	**	.			.	.	.	.	.
5	I			**	**/**	**	Typic	weak-strong	**	.			.	.	**	**	**		
Profile 2																			
1	I	H,J		.	.	.	Typic	moderate-strong	.				.	.	.	.	**
2	I	L,M		.	.	.	Typic	moderate-strong	**/**	.			.	.	.	.	**
3	I	N		.	**	.	Typic	moderate-strong	**/**	.			t	**	**	**	.		
4	I	N		.	**	.	Typic	strong	**/**	.			.	.	.	.	.
5	III	P		.	.	.	Typic	moderate-strong	.				.	.	.	.	.
5	II	P,Q		.	.	.	Typic and elongate	weak/moderate-str	**	.			t	.	**	**/**	.		
5	I	Q		.	.	.	Typic	moderate-strong	.				t	.	.	.	.
6	I	R,S		t	.	.	Typic	moderate-strong	.				.	.	.	.	.
Profile 3																			
1	I	V		.	.	**/**	Typic	moderate-strong	**/**	.			.	**	**	**/**	.	large nodules (>1000um arranged in horizontal rows)	
2	I	V		.	**	.	Typic	moderate-strong	**	.			.	**	**	**	.		
2	II	V		.	**	.	Typic	weak/moderate-str	**	.			**/**	**/**	.	**/**	**/**		
3	I	V,W		.	.	.	Typic	weak-moderate	.				.	.	.	.	.
4	I	X		.	**/**	.	Typic	weak-moderate	.				.	.	.	.	.
5	III	Y		.	**/**	.	Typic	moderate-strong	**	.			.	**	**	**	**		
5	II	Y		.	**	.	Typic	weak/moderate-str	**	.			.	**	**	**	**	**/**	
5	I	Y		.	**	t	Typic	moderate-strong	**/**	.			t	**	**	**/**	t		
Gallows Hill																			
A	I	001,002		.	.	.			.				.	.	.	.	.
B	I	002		.	.	.	Typic	weak-moderate	.				.	.	.	.	.	No clear association with organics.
C	I	002		.	.	.	Typic	moderate	.				.	t	.	.	.	Rarely associated with organics	
D	I	002		.	.	.	Typic	moderate	.				.	.	.	.	.	Matrix nodules formed in-situ, with red organics
D	II	002		.	.	.	Typic	moderate/strong	.				.	.	.	**	.	Matrix nodules formed in-situ, with red organics

Section	Zone		Size / Thickness (microns)					Shape	Impregnation	Continuity				Boundaries			Position		Comments
			<20	20-100	100-500	500-1000	>1000			1	2	3	4	Diffuse	Clear	Sharp	Matrix	rock clasts	
Roos Loch																			
Profile 1																			
1/A	I	001	.	.	.	.	Typic and hypocoatings	weak-moderate	.	.	.	.	.	.	.	.	t	.	matrix nodules with Fe-organics
1/A	II	002	.	.	.	.	Typic	weak	.	.	.	.	.	.	.	.	t	.	matrix nodules with decaying organics
1/A	III	003	t	t	.	.	Typic and hypocoatings	weak	.	.	.	.	.	.	.	.	t	.	void coatings with organics.
1/B	I	005	t	.	.	.	Typic	weak	.	.	.	.	.	.	.	.	t	.	matrix nodules with organics
1/B	II	006	.	t	.	.	Typic and hypocoatings	weak-moderate	.	t	.	.	.	t	.	.	.	.	void coatings with organics.
1/C	I	006	.	.	.	..	Typic	weak	..	t	.	.	..	.	.	..	.	.	Impregnation of aggregates between channels, many aggregates with depleted walls.
1/C	II	007	.	.	.	.									
Profile 2																			
2/D	I	002	.	.	.	.	Typic	moderate	.	.	.	.	.	.	.	.	t	.	matrix nodules rounded, inherited?
2/D	II	003	.	.	.	.	Typic and hypocoatings	moderate	.	.	.	.	.	.	.	.	.	.	void coatings with organics
2/E	I	005	.	.	.	.	Typic and hypocoatings	moderate	.	.	.	.	.	.	.	.	.	.	void coatings with organics.
2/E	II	006	.	.	.	..	Typic and hypocoatings	moderate	.	.	.	.	.	.	.	.	..	.	void coatings with organics, and groundmass in contact with voids.
2/F	I	006	.	.	.	.	Typic	weak	.	t	.	.	.	.	.	.	.	t	aggregate impregnations around voids, in particular those with organics
2/F	II	007	.	.	.	.									
Profile 3																			
3/G	I	002	.	.	.	.	Typic and hypocoatings	weak-moderate	.	t	.	.	.	.	.	.	.	.	matrix nodules associated with organics
3/G	II	002	t	.	.	.	Typic and hypocoatings	weak-moderate	.	t	.	.	.	.	.	.	.	t	matrix nodules associated with organics
3/H	I	004	.	.	t	.	Typic and hypocoatings	weak	.	.	.	.	.	.	.	.	.	t	associated with organics
3/H	II	005	.	.	.	..	Typic	weak-moderate	..	.	.	.	..	.	.	.	..	..	impregnated sand- and siltstones
3/H	III	006	.	.	.	.	Typic	weak	.	.	.	.	.	.	.	.	t	.	impregnated sand- and siltstones
3/J	I	007	.	.	.	.	Typic	weak-moderate	.	.	.	.	.	.	.	.	.	.	matrix around and between macro- and meso-voids
3/J	II	007	.	.	..	....	Typic	weak-moderate	....	.	.	.	..	..	.	....	.	.	matrix around and between macro- and meso-voids
Seater																			
Profile 1																			
CPr1C1	I	003	.	.	.	.									
CPr1C3	I	006	.	.	.	.	Typic	Moderate	.	.	.	.	.	.	.	.	.	.	External hypocoating around sandstone
CPr1C3	II	006	.	.	.	.	Typic	Moderate	.	.	.	.	.	.	.	.	.	.	Close to channel void.
CPr1C4	I	007	.	.	.	.	Typic / aggregate	Moderate - strong	.	.	.	.	.	.	.	.	.	.
CPr1C4	II	007	.	.	.	.	Typic / aggregate	Moderate - strong	.	.	.	.	.	.	.	.	.	t	
Profile 2																			
CPr2 C5	I	005	.	.	.	.									
CPr2C5	II	003	.	.	.	.									
CPr2C6	I	003	.	.	.	t	Typic	Moderate	.	.	.	.	.	.	.	.	.	.
CPr2C6	II	006	.	.	t	.	Typic	Moderate	.	.	.	.	.	.	.	.	.	.
CPr2C7	II	007	.	.	.	.	Typic	Moderate	.	.	.	.	.	.	.	.	.	.	Often associated with organics
CPr2C7	I	010	.	.	.	.	Typic	Moderate	.	.	.	.	.	.	.	.	.	.	Often associated with organics
Woo																			
Profile 2																			
Woo2/(20-26,89)	I	007	.	.	.	.	Typic	weak	.	.	.	.	.	.	.	.	.	.
Woo2/(20-26,89)	II	007,009	.	.	.	.	Typic	weak-moderate	.	.	.	.	.	.	.	.	.	.
Woo2/(20-26,89)	III	009	.	.	.	.	Typic	moderate	..	.	.	.	.	.	.	.	..	.
Woo2/(27-33,95)	I	009	.	.	.	.	Typic	weak-moderate	.	.	.	.	.	.	.	.	t	.	
Woo2/(27-33,95)	II	009	.	.	.	.	Typic	weak-moderate	.	.	.	.	.	.	.	.	t	.	

Section	Zone	Size / Thickness (microns)	Shape	Incorporation	Continuity				Bourdonnes			Position		Comments	
					1	2	3	4	Drifted	Clear	Sharp	Matrix	rock class		
WoodZ/27-33-95)	III	009	Typic	moderate	.	.	.	.	.	.	.	.	.	.
WoodZ/29-35-111)	I	032	Typic	moderate	.	.	.	.	.	.	.	.	.	.
WoodZ/29-35-111)	III	009	Typic	weak-mod/strong	.	.	.	.	.	.	.	.	.	.
WoodZ/29-35-111)	III	010	Typic	weak	.	.	.	.	.	.	.	.	.	.
WoodZ/22-28-127)	I	017	Typic	weak-moderate	.	.	.	.	.	.	.	.	.	.	Fe quartz-coating
WoodZ/16-22-133)	II	018	Typic	moderate-strong	.	.	.	.	.	.	.	.	.	.
WoodZ/16-22-133)	II	033	Typic	moderate	.	.	.	.	.	.	.	.	.	.
WoodZ/16-18-139)	I	034	Typic	weak-mod/strong	.	.	.	.	.	.	.	.	.	.
Profile 1															
Wood/1(21-27,95)	I	009	Typic	moderate	.	.	.	.	.	.	.	.	.	.
Wood/1(21-27,95)	II	010	Typic	moderate	.	.	.	.	.	.	.	.	.	.
Wood/1(26-32,103)	I	012	Typic	weak-moderate	.	.	.	.	.	.	.	.	.	.	Matrix impreg. is of a mainbale excrement.
Wood/1(26-32,103)	II	013	Typic	moderate	.	.	.	.	.	.	.	.	.	.
Wood/1(9-15,114)	I	015	Typic	moderate	.	.	.	.	.	.	.	.	.	.
Wood/1(9-15,114)	II	015	Typic	moderate-mod/stro	.	.	.	.	.	.	.	.	.	.
Wood/1(9-15,114)	III	016	Typic	weak	.	.	.	.	.	.	.	.	.	.
Wood/1(18-25,122)	I	016	Typic	moderate	.	.	.	.	.	.	.	.	.	.
Wood/1(18-25,122)	II	016	Typic	moderate	.	.	.	.	.	.	.	.	.	.
Wood/1(18-25,122)	III	017	Typic	weak/mod.-strong	.	.	.	.	.	.	.	.	.	.
Wood/1(12-18,129)	I	018	Typic	weak-moderate	.	.	.	.	.	.	.	.	.	.
Wood/1(12-18,129)	II	018	Typic	moderate	.	.	.	.	.	.	.	.	.	.
Wood/1(4-10,136)	I	018,019	Typic	moderate	.	.	.	.	.	.	.	.	.	.
Wood/1(4-10,136)	II	020,021	Typic	weak-moderate	.	.	.	.	.	.	.	.	.	.
Wood/1(1-7,145)	I	022	Typic	weak-moderate	.	.	.	.	.	.	.	.	.	.
Pool															
Profile 1															
Pool/1/E	I	019	Typic	Weak - mod/strong	.	.	.	.	.	.	.	.	.	.	Concentrated around macro voids.
Pool/1/F	II	008	Typic	Moderate-mod/st	.	.	.	.	.	.	.	.	.	.	Random distribution of iron impregnated stones
Pool/1/F	II	008	Typic	Moderate-mod/st	.	.	.	.	.	.	.	.	.	.	Random basic distribution with no depilator rims.
Pool/1/G	I	007	Typic	Moderate-mod/st	.	.	.	.	.	.	.	.	.	.
Pool/1/G	II	008	Typic	Moderate	.	.	.	.	.	.	.	.	.	.	Random basic
Pool/1/G	III	008	Typic	Moderate	.	.	.	.	.	.	.	.	.	.	Random basic distribution associated with organics
Pool/1/H	I	010	Typic	Moderate	.	.	.	.	.	.	.	.	.	.	Random basic distribution associated with organics
Pool/1/H	II	010	Typic	Moderate	.	.	.	.	.	.	.	.	.	.	Weilyly associated with meso-channels
Pool/1/J	II	011	Typic	Moderate	.	.	.	.	.	.	.	.	.	.	V. weak coalescence of nodules.
Profile 2															
Pool/2/A	I	016	Typic	Moderate/strong	.	.	.	.	.	.	.	.	.	.	Random basic with no depilator rims.
Pool/2/A	II	017	Typic	Moderate - mod/st	.	.	.	.	.	.	.	.	.	.	Concentrated at base of layer, few with organics.
Pool/2/A	III	018	Typic	Moderate - mod/st	.	.	.	.	.	.	.	.	.	.	Random basic; few associated with organics
Pool/2/B	II	018	Typic	Moderate - strong	.	.	.	.	.	.	.	.	.	.	Forming discontinuous pans upto 250um thick
Pool/2/B	III	018	Typic	Moderate - strong	.	.	.	.	.	.	.	.	.	.	Associated with black organics.
Pool/2/B	IV	018	Typic	Typic and coatings	.	.	.	.	.	.	.	.	.	.	Weak association with black and yellow organics
Pool/2/B	V	018	Typic	Moderate - strong	.	.	.	.	.	.	.	.	.	.	Random basic distribution.
Pool/2/C	I	018	Typic	Moderate	.	.	.	.	.	.	.	.	.	.	Random basic distribution, few with organics
Pool/2/C	II	018	Typic	Weak - strong	.	.	.	.	.	.	.	.	.	.	Parring and weilyly clustered distribution.
Pool/2/C	III	019	Typic	Weak - strong	.	.	.	.	.	.	.	.	.	.	Some coalescence.
Pool/2/D	II	019	Typic	Moderate	.	.	.	.	.	.	.	.	.	.	Random basic distribution
Pool/2/D	II	019	Typic	Moderate	.	.	.	.	.	.	.	.	.	.	Weilyly concentrated around macro channels.
Planation camp															
REF1	1	01	Typic	Weak	.	.	.	.	.	.	.	.	.	.
REF2	2	02	Typic	Mod-strong	.	.	.	.	.	.	.	.	.	.
REF3	3	03	Typic	Mod-strong	.	.	.	.	.	.	.	.	.	.
REF4	4	04	Typic	Mod-strong	.	.	.	.	.	.	.	.	.	.

Section	Zone	Size / Thickness (microns)					Shape	Impregnation	Continuity				Boundaries			Position		Comments	
		<20	20-100	100-50	500-10	>1000			1	2	3	4	Diffuse	Clear	Sharp	Matrix	rock clasts		
Turf Knowe																			
Profile 1																			
ALLB1/1	1	1001																	
	2	1001		.			Typic	Mod.-strong	.				.					.	
	3	999					Typic	Mod.-strong	.				.					.	
ALLB1/2	1	999		**			Typic	Mod.-strong	**				**	.	.	.		**	
ALLB1/3	1	999		**			Typic	Mod.-strong	**				**	**	.	.		**	
ALLB1/4	1	999,998	.	**			Typic	Mod.-strong	**				**	**	.	.		**	
ALLB1/5	1	997		**	.		Typic	Mod.-strong	**				**	.	.	.		**	
Profile 2																			
ALLB2/1	1	1001		.			Typic	Mod.-strong	.				.					.	
	2	1001		.			Typic	Mod.-strong	.				.					.	
	3	1001		.			Typic	Mod.-strong	**				**					**	
ALLB2/2	1	999		**			Typic	Mod.-strong	**				**	.	.	.		**	
ALLB2/3	1	999,998	.	**			Typic	Mod.-strong	**				**	.	.	.		**	
ALLB2/4	1	998	.	**			Typic	Mod.-strong	**				**	.	.	.		**	
ALLB2/5	1	997		.			Typic	Moderate	.				.					.	
Fragpan		994	.	**			Typic	Moderate	**				**		.	.		**	
Grey Clay		1033	.	**			Typic	Weak-strong	**				.	.	.	.		**
Pink Clay		1032	.	.			Typic	Weak-mod.	**				.	.	.	.		.
Wether Hill																			
Profile 1																			
WEA1/2	I	004		.	.	.	Typic and quasi-coatings	Moderate	Basic random distribution with few depletion rims
WEA1/2	II	006		.	.	.	Typic and quasi-coatings	Moderate	Basic random distribution with few depletion rims
WEA1/3	I	006	t	.	.	t	Typic	Moderate	Matrix nodules clustered besides heavily aged excrement and around channels.
WEA1/3	II	008		.	.	.	Typic	Moderate	.				.	.				t	Basic random distribution.
WEA1/4	I	008	Typic	Weak-moderate	.				.	.	t			.	Basic random distribution with few depletion rims
WEA1/5	I	008	Typic	Moderate			t	Basic random distribution.
WEA1/5	II	009	.	.	.	***	Typic	Moderate	***				***	.	.			***	Basic random distribution all with depletion rims
Profile 2																			
WEA2/2	I	004		.	.	**	Typic and quasi-coatings	Moderate	**				.	**				**	Basic random distribution many with depletion nms
WEA2/2	II	006		.	.	**	Typic	Moderate	**				.	**				**	Basic random distribution many with depletion nms
WEA2/3	I	006	.	**	***	***	Typic	Weak-moderate	*****	.			***	***	.	*****		.	Impregnation of soil aggregates in contact with voids divided by Fe depleted groundmass
WEA2/3	II	007	Typic	Moderate	.				.	.	t			.	Basic random distribution.
WEA2/4	I	008	Typic	Weak	Associated with channels containing decaying organic matter and fungal sclerotia
WEA2/4	II	008	Typic	Moderate	.				.	.	t			**	Random basic distribution, impregnated volcanics
WEA2/4	III	009	.	.	.	**	Typic and quasi-coatings	Weak-moderate	**				.	**	t			**	Random basic distribution, impregnated volcanics
Profile 3																			
WEA3/2	I	004	t	.	.	.	Typic	Weak-moderate	.				.	.	t	.		.	Matrix nodules associated with black organics
WEA3/3	I	006	.	.	***	***	Typic and rare void coatings	Weak-mod/strong	****	**			***	***	.	██████		.	Strongest impregnations occur around planar voids
WEA3/3	II	008	Typic	Weak-moderate	Matrix impregnations around channels
WEA3/4	I	008	t	**	.	t	Typic	Moderate	.				.	**	.	.		.	Associated with channels containing decaying organics.
WEA3/4	II	008	Typic	Moderate	Associated with black organics.
WEA3/4	III	009	.	.	.	**	Typic	Moderate	.	t			.	**	**	**	**	**	Associated with channels containing decaying
Slaith Farm																			
SLA/A	I	001	Typic	moderate-strong	In-situ impregnation.
SLA/A	II	002	t	.	.	.	Typic	moderate	In-situ impregnation associated with organics

Section	Zone		Size / Thickness (microns)					Shape	Impregnation	Continuity				Boundaries			Position		Comments
			<20	20-100	100-50	500-10	>1000			1	2	3	4	Diffuse	Clear	Sharp	Matrix	rock clasts	
SLA/B	I	002,003	.	.	.	.	Typic	strong	.					.	.	.	.	In-situ random impregnation
SLA/C	I	003	.	.	.	.	Typic	moderate-mod/stro	.					.	.	.	.	In-situ random impregnation.
SLA/D	I	003	.	.	.	.	Typic	moderate-strong	.					.	.	.	.	In-situ impregnation.
Sigwells																			
Profile 1																			
Sig A	I	6105	.	.	.	.	Typic	Strong-strong/mod	.					.	.	.	.	Random dist. Within grain microstructure
Sig A	II	6105	.	.	.	.	Typic	Strong-strong/mod.	.					.	.	.	.	Random basic distribution.
Sig B	I	6103	.	.	.	.	Typic	Moderate	.					.	.	.	.	Random basic distribution.
Sig B	II	6105	t	.	.	.	Typic	Moderate-strong/m	.					.	.	.	.	Random basic distribution
Sig C	I	6105	.	.	.	.	Typic	Strong-strong/mod	.					.	.	.	.	Random basic distribution.
Sig C	II	6106	.	.	.	.	Typic	Strong-strong/mod.	.					.	.	.	.	Random basic distribution.
Sig D	I	6106	.	.	.	.	Typic	Moderate	.					.	.	.	.	Random basic distribution. Inherited?
Sig D	II	6107	.	.	.	.	Typic	Moderate	.					.	.	.	.	Random basic distribution. Inherited?
Sig G	I	6107	.	.	.	.	Typic	Moderate	.					.	.	.	.	Random basic distribution. Most inherited?
Sig G	II	6107	.	.	.	.	Typic	Moderate	.	t				.	.	.	.	Random basic distribution and coating channel.
Sig E	I	6107,6108	.	.	.	.	Typic	Moderate	.					.	.	.	.	Random basic distribution.
Sig F	I	6109	.	.	.	.	Typic	Strong-strong/mod	.					.	.	.	.	Randomly conc. at top of slide.
Sig F	II	6108	.	.	.	.	Typic	Strong-strong/mod.	.	.				.	.	.	.	Random nodules and fractured iron pan
Sig F	I	6108	.	.	.	.	Typic	Strong-strong/mod.	.					.	.	.	.	Random basic distribution.
Sig H	I	6108	.	.	.	.	Typic	Strong-strong/mod.	.					.	.	.	.	Random basic distribution.
Sig H	II	6110	.	.	.	.	Typic	Moderate	.					.	.	.	.	Random basic distribution.
CHB2																			
CHB2/A	I	2008	.	.	.	.	Typic	Moderate	.					.	.	.	.	In-situ matrix noduled and stone rim impregnations
CHB2/A	II	2013	.	.	.	.	Typic and hypo-coatings.	Moderate - mod/str	.					.	.	.	.	In-situ nodules concentrated towards base of slide
CHB2/B	I	2013	.	.	.	**	Typic and pan	Moderate - strong	***	.	Most in-situ, many coated by yellow/orange clay
CHB2/B	II	2013	.	.	.	.	Typic	Moderate-strong	.					.	.	.	.	May be inherited.
CHB2/C	I	2017	.	.	.	.	Typic	Moderate	.					.	.	.	.	In-situ and inherited nodules?
CHB2/C	II	2017	Typic and weak pans	Moderate-mod/stro	Weak pans at base of horizon upto 150 um thick.
CHB2/C	III	2017	.	.	.	.	Typic	Moderate	.					.	.	.	.	In-situ matrix nodules and Ooid pseudomorphs
CHB2/C	IV	2017	Typic and weak pans	Moderate	Senes of 3-4 pans ca 10-150 um thick.
CHB2/C	V	2017	.	.	.	.	Typic	Moderate	.					.	.	.	.	In-situ matrix nodules randomly distributed.
CHB2/D	I	2016	.	.	.	.	Typic	Moderate	.					.	.	.	.	From weathering of micas and feldspars.
CHB2/D	II	2008	.	.	.	.	Typic	Moderate	.					.	.	.	.	Few matrix impregnations associated with clay cutans.
CHB2/D	III	2008	.	.	.	.	Typic and rare void coating/pan	Moderate-mod/stro	.	.				.	.	.	.	Void coating or fractured and inherited pan
CHB2/E	I	2008,2013	.	.	.	.	Typic, coatings and hypocoatings	Moderate	.					.	.	.	.	Nodules and coatings may be inherited.
CHB2/F	I	2017	.	.	.	.	Typic	Moderate	.					.	.	.	.	In-situ and few possibly inherited, few coated with orange clay.
CHB2/F	II	2017	.	.	.	.	Typic	Moderate-strong	.					.	.	.	.	In-situ few coated with orange clay
CHB2/F	III	2017	.	.	.	.	Typic	Moderate-strong	.					.	.	.	.	In-situ or inherited? Few within excremental features.
CHB2/F	IV	2017	.	.	.	.	Typic	Moderate	.					.	.	.	.	In-situ or inherited?
CHB2/G	I	2014	t	.	.	.	Typic	Moderate-strong	**	t	In-situ matrix nodules.
Little Weston Farm																			
WES/A	I	01,02,03	.	**	.	.	Typic	weak-moderate	.				.	.	.	.	**	Strength of impregnation increasing with depth.
WES/B	I	03,04	.	**	**	.	Typic	weak-strong	.				.	.	.	.	***	Size and strength of impregnation incr. with depth
WES/C	I	04	.	**	***	**	Typic	weak-very strong	.	t			.	.	**	.	*****	Incr. in abundance down slide within soil aggregates	
Milsoms Corner																			
Profile 1																			
CAD/1/A	I	01	.	.	**	**	Typic and few elongate	Strong - strong/mod	**	.				**	**	.	.	**	Impregnated ooids and few void coatings
CAD/1/B	I	02	.	.	**	.	Typic	Strong - strong/mod	**					.	**	.	.	**	Impregnated ooids
CAD/1/C	I	02	.	.	**	.	Typic	Strong - strong/mod	**	**				.	**	.	.	**	Impregnated ooids.
CAD/1/C	II	03	.	**	.	.	Typic and aggregat	Strong - strong/mod	**	.				**	.	**	.	*	Nodules around channels in a mottled matrix

Section	Zone	Size / Thickness (microns)					Shape	Impregnation	Continuity			Boundaries			Position		Comments		
		<20	20-100	100-500	500-10	>1000			1	2	3	4	Diffuse	Clear	Sharp	Matrix		Rock clasts	
Profile 2																			
CADZD	I	01	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1	Rare ooids and random basic matrix nodules.
CADZD	II	02	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	Occasional ooids and with orange clay around voids
CADZE	I	03	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	Occasional ooids and with orange clay around voids
CADZE	II	03	Occasional ooids and nodding of matrix
CADZF	I	03	.	ym	ym	ym	1	Nodules around channels in a modded matrix

Key

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- <1% slide area
- 1-2% slide area
- 2-5% slide area
- 5-10% slide area
- 10-20% slide area
- >20% slide area

Appendix 5.2.3: Depletion Pedofeatures

Section	Zone	Context	Rock 2ndry depletion #	Thickness um			Distribution	Contrast with matrix			Clay	Silt	Fe	Other	Positions	Contrast		
				<25	25-50	50-100		>100	1	2						3	1	2	3
Fordhouse reference																		
A	I	002	*				Single	*	*									
B	I	003	*															
B	II	004	*		*	*	Single	*										
C	I	005	*	*	*	*	Random basic	*	t			?		Matrix, grey b-fabric mottles.	*	*		
F	I	004,005	*		*	*	Random basic	*	t			?		Matrix, grey b-fabric mottles.	*	*		
D	I	006	*	t	*		Random basic	*				?		Matrix, grey b-fabric mottles	*	*		
Fordhouse Barrow																		
<i>Profile 1</i>																		
1/8	I		*	*	*	*	Basic random	*			?			Inherited or depleted matrix				
1/9	I		*	*	*	*	Basic random	*			?			Inherited or depleted b-fabric				
1/10	I		*	*	*	*	Basic random	*										
1/10	II		*	*	*	*	Basic random	*	*									
1/10	III		*	*	*	*	Basic random	*	*									
1/1	I		* ^{***}	*	*	*	Basic random	*	*	*								
1/3	I		* ^{***}	*	*	*	Basic random	*	*									
1/3	II		* ^{***}	*	*	*	Basic random	*	* ^{***}	*				Loose matrix material infilling cha *				
1/3	III		*	*	*	*	Basic random	*	*									
1/7	I		* ^{***}	*	*	*	Top and base of slide	*	* ^{***}	*				Matrix surrounding channels	*			
1/2	I		*	*	*	*	Basic random	*	*									
1/2	II		*	*	*	*	Basic random	*	*	*				Loose matrix material infilling cha *				
1/4	I		*	*	*	*	Basic random	*	*	*				Loose matrix material infilling cha *				
1/6	I		*	*	*	*	Basic random	*	*									
1/5	II		*	*	*	*	Basic random	*	*									
1/5	I		*	*	*	*	Basic random	*	*									
<i>Profile 2</i>																		
2/1	I	H,J	*	*	*	*	Basic random	*	*									
2/2	I	L,M	* ^{***}	*	*	*	Basic random	*	*	*	**			Matrix surrounding channels	*	**		
2/3	I	N	**	*	*	* ^{***}	Basic random	*	* ^{***}	*	*			Loose matrix material infilling cha *				
2/4	I	N	*	*	*	*	Basic random	*	*		?			Inherited or depleted b-fabric				
2/5	I	P	*	*	*	*	Basic random	*	*									
2/5	II	P,Q	* ^{***}	*	*	*	Basic random	*	*									
2/5	III	Q	*	*	*	*	Basic random	*	*									
2/6	I	R,S	*	*	*	*	Basic random	*	*									
<i>Profile 3</i>																		
3/1	I	V	* ^{***}	*	*	*	Basic random	*	*									
3/2	I	V	**	*	*	* ^{***}	Basic random	*	* ^{***}	*	*			Channel walls and infill material	*			
3/2	II	V	* ^{***}	*	*	*	Basic random	*	* ^{***}									
3/3	I	V,W	*	*	*	*	Basic random	*	*									
3/4	I	X	* ^{***}	*	*	*	Basic random	*	*	*				Loose matrix material infilling cha *				
3/5	III	Y	*	*	*	*	Basic random	*	*					Loose matrix material infilling channels	*	*		
3/5	II	Y	* ^{***}	*	*	*	Basic random	*	*	* ^{***}		?	humic	Loose matrix material infilling cha *	*	*		
3/5	I	Y	*	*	*	*	Basic random	*	*					Loose matrix material infilling cha *	*	*		
Gallows Hill																		
A	I	001,002	*															
B	I	002	*															
C	I	002	t	*			Single random	*				?		Matrix at top of slide	*			
D	I	002	*															
D	II	002	*		*		Basic random	*	*			?		Matrix	*	*		
Roos Loch																		
<i>Profile 1</i>																		
1/A	I	001	*	*	*	t	random	*										
1/A	II	002	t	*	*	t	random	*										

Section	Zone	Rock 2ndry depletion ri	Thickness um			Distribution	Contrast with matrix			Clay	Silt	Fe	Other	Positions	Contrast		
			<25	25-50	50-100		>100	1	2						3	1	2	3
1/A	III	003	.	.	.	random	.	.									
1/B	I	005	.	.	t	random	.	.			?		Grey matrix	.	.	.	.
1/B	II	006	.	.	t	random	.	.			?		Grey matrix	.	.	.	.
1/C	I	006	.	.	.	random	.	.			?		Grey matrix	.	.	.	.
1/C	II	007	.	.	.	random	.	.			?		Grey matrix	.	.	.	.
Profile 2																	
2/D	I	002	.	.	.	random	.	.									
2/D	II	003	.	.	.	random	.	.			?		Buff/grey matrix	.	.	.	.
2/E	I	005	.	.	.	random	.	.			?		Grey matrix	.	.	.	.
2/E	II	006	.	.	.	random	.	.			?		Grey matrix	.	.	.	.
2/F	I	006	.	.	.	random	.	.			?		Grey matrix at edge of aggregate	.	t	.	.
2/F	II	007	.	.	.	random	.	.			?		Grey matrix	.	.	.	.
Profile 3																	
3/G	I	002	.	.	.	random	.	.									
3/G	II	002	.	.	.	random	.	.									
3/H	I	004	.	.	.	random	.	.			?		Grey matrix	.	.	.	.
3/H	II	005	***	.	.	random	.	.									
3/H	III	006	.	.	.	random	.	.			?		Grey matrix	.	.	.	.
3/J	I	007	.	.	.	single random	.	.		?	?		Grey silty matrix	.	.	.	.
3/J	II	007	.	.	.	single random	.	.			?		Grey matrix	.	.	t	.
Seater																	
Profile 1																	
CPr1C1	I	003	.	.	.												
CPr1C3	I	006	.	.	.												
CPr1C3	II	006	.	.	.								CaCO3 Shell, within dung	.	.	.	.
CPr1C4	I	007	.	.	.								CaCO3 Matrix	.	.	.	.
CPr1C4	II	007	.	.	.								CaCO3 Matrix	.	.	.	.
Profile 2																	
CPr2 C5	I	005	.	.	.												
CPr2C5	II	003	.	.	.								CaCO3 Shell, within dung	.	.	.	.
CPr2C6	I	003	.	.	.												
CPr2C6	II	006	.	.	.												
CPr2C7	II	007	.	.	.	Single	.	.									
CPr2C7	I	010	.	.	.	Single	.	.									
Woo																	
Profile 2																	
Wool2/(20-26,89)	I	007	.	.	.												
Wool2/(20-26,89)	II	007,009	.	.	.					??	?	?	?Organ Matrix	.	.	.	.
Wool2/(20-26,89)	III	009	.	.	.												
Wool2/(27-33,95)	I	009	.	.	.												
Wool2/(27-33,95)	II	009	.	.	.												
Wool2/(27-33,95)	III	009	.	.	.												
Wool2/(29-35,111)	I	032	.	.	.												
Wool2/(29-35,111)	II	009	t	.	.	Basic random	.	.									
Wool2/(29-35,111)	III	010	t	.	.	Basic random	.	.									
Wool2/(22-28,119)	I	010,016	.	.	.	Basic random	.	.									
Wool2/(22-28,127)	I	017	.	.	.	Basic random	.	.									
Wool2/(18-22,133)	I	018	.	.	.	Basic random	.	.									
Wool2/(18-22,133)	II	033	.	.	.	Basic random	.	.									
Wool2/(10-16,139)	I	034	.	.	.	Cluster in centre of slide.	.	.									
Profile 1																	
Wool1/(21-27,95)	I	009	.	.	.												
Wool1/(21-27,95)	II	010	.	.	.												

Section	Zone	Rock 2ndry depletion ri	Thickness um				Distribution	Contrast with matrix			Clay	Silt	Fe	Other	Positions	Contrast		
			<25	25-50	50-100	>100		1	2	3						1	2	3
<i>Profile 2</i>																		
ALLB2/1		1 1001																
		2 1001																
		3 1001					Basic random	*	*	*								
ALLB2/2		1 999	*				Basic random	*	*	*								
ALLB2/3		1 999,998	*	t	*	t	Basic random	*	*	*								
ALLB2/4		1 998	*	*	*		Conc at base of slide	*	*	*								
ALLB2/5		1 997	*	*	*		Basic random	*	*	*								
Fragipan		994	*	*	*		Basic random	*	*	*	****	**	*		All matrix depleted			
Grey Clay		1033									**	*	*		Matrix depleted in grey areas	*	***	
Pink Clay		1032																
Wether Hill																		
<i>Profile 1</i>																		
WEA1/2	I	004	*		*	*	Random basic	*	*	*								
WEA1/2	II	006	*		*	*	Random basic	*	*	*								
WEA1/3	I	008	*		*	*	Random basic	*	*	*	**	*		Grey/colourless matrix	*	*		
WEA1/3	II	008	*		*	*												
WEA1/4	I	008	*		*	*	Random basic	*	*	*								
WEA1/4	II	008	*		*	*	Random basic	*	*	*								
WEA1/5	I	008	*		*	*	Random basic	*	*	*								
WEA1/5	II	009	**		**	**	Random basic	*	**	*								
<i>Profile 2</i>																		
WEA2/2	I	004	*		*	*												
WEA2/2	II	006	*		*	*	Random basic	*	*	*								
WEA2/3	I	006	*		*	*	Random basic	*	*	*				Aggregate interiors and between impregnations				
WEA2/3	II	007	**		**	**	Random basic	*	**	*								
WEA2/4	I	008	*		*	*												
WEA2/4	II	008	*		*	*												
WEA2/4	III	009	**		**	**	Random basic	*	*	*								
<i>Profile 3</i>																		
WEA3/2	I	004	*		*	*	Random basic	*	*	*								
WEA3/3	I	006	*		*	*	Random basic	*	*	*								
WEA3/3	II	008	*		*	*	Random basic	*	*	*								
WEA3/4	III	008	**		**	**	Random basic	**	*	*								
<i>Slat Farm</i>																		
SLA/A	I	001																
SLA/A	II	002																
SLA/B	I	002,003																
SLA/C	I	003																
SLA/D	I	003																
<i>Sigwells</i>																		
Sig A	I	6105									?	?	?	Matrix depleted or inherited?	*			
Sig A	II	6105																
Sig B	I	6103									?	?	?	Matrix depleted or inherited?	*			
Sig B	II	5105																
Sig C	I	6105																
Sig C	II	6106									?	?	?	Matrix depleted or inherited?	*			
Sig D	I	6106									?	?	?	Matrix depleted or inherited?	*			
Sig D	II	6107									?	?	?	Matrix depleted or inherited?	*			
Sig G	I	6107									?	?	?	Matrix depleted or inherited?	*			
Sig G	II	6107																

Section	Zone	Rock study depletion n	Thickness um			Distribution	Contrast with matrix			Clay	Silt	Fe	Other	Positions	Contrast			
			<25	25-50	50-100		>100	1	2						3	1	2	3
		6107,6108																
Sig E	I	6109				Single random								Matrix depleted or inherited?				
Sig F	II	6108												Matrix depleted or inherited?				
Sig F	I	6108												Matrix depleted or inherited?				
Sig H	I	6108												Matrix depleted or inherited?				
Sig H	II	6110												Matrix depleted or inherited?				
CHB2																		
CHB2/A	I	2008												Matrix between sandstones				
CHB2/A	II	2013																
CHB2/B	I	2013												Matrix, could be parent sands				
CHB2/B	II	2013												Channels infilled with pure sand				
CHB2/C	I	2017																
CHB2/C	II	2017												Channels infilled with pure sand				
CHB2/C	III	2017																
CHB2/C	IV	2017																
CHB2/C	V	2017																
CHB2/D	I	2016																
CHB2/D	II	2008																
CHB2/D	III	2008,2013																
CHB2/E	I	2017																
CHB2/E	I	2017																
CHB2/F	I	2017																
CHB2/F	III	2017																
CHB2/F	III	2017																
CHB2/F	IV	2017																
CHB2/G	I	2014																
Little Weston Farm																		
WESA	I	01,02,03																
WES/B	I	03,04																
WES/C	I	04																
Millsoms Corner																		
Profile 1																		
CAD1/A	I	01																
CAD1/B	I	02																
CAD1/C	I	02																
CAD1/C	II	03																
Profile 2																		
CAD1/D	I	01																
CAD1/D	II	02																
CAD1/D	I	02																
CAD1/E	I	02																
CAD1/E	II	03																
CAD1/F	I	03																

Degree of continuity/mergence between nodules

- 1 All nodules discreet
- 2 Few nodules coalescing (<10%)
- 3 Occasional to common nodules coalescing (>10%)
- 4 Iron pan continuous over slide width

Appendix 5.2.4: Excremental pedofeatures

Section	Zone	Context	Mammilated	Large ellipsoids >100 um	Small ellipsoids 50-100 um	Cylindrical	Others/ unident.	Coalescence/Disintergration			Position
								Weak	Moderate	Strong	
Fordhouse reference											
A	I	002	t					****	***		Forming the micromass of the soil.
B	I	003	**				***	***	**		Within and between organics.
B	II	004	*					***	****		Forming the micromass of the soil.
C	I	005					*	*	*		Within meso sized channel voids.
F	I	004,005		*			**		**		Within macro and meso sized channel voids.
D	I	006									
Fordhouse Barrow											
Profile 1											
8	I			*				*			In packing voids upto 250um.
9	I			*					*		In channels upto 300um wide
10	II			*			**		*	**	Small ellipsoids within channels of 250um diameter.
10	III			*					*		In channels 300um wide with decayed plant root.
1	I			*				*	*		In packing voids and channels 200-300um wide.
3	I			*			**	*	*	**	Ellipsoids within channels upto 500um wide.
3	II			*				*	*		In channels 300 um wide.
3	III			*			**		*	**	Forms the groundmass.
7	I			*					*		In channels upto 600um wide.
2	I			*			*/**	*	*	*	Ellipsoids within channels upto 400um wide.
4	I			*			*/**		*	*	Form the groundmass
6	I			*			**	*	**	**	Ellipsoids within channels upto 400um wide.
5	II			*				*	*		Within channel 500Um wide
Profile 2											
3	I	N		*				*	*		Infilling a channel 1000um wide
4	I	N		*				*	*		In packing voids ca. 200um wide.
5	I	P					*		*	*	Lining channels upto 500um wide.
5	II	P,Q					*		*	*	Lining channels upto 500um wide.
6	I	R,S					*		*	*	Lining channels upto 600um wide.
Profile 3											
1	I	V		*			*		*	*	Ellipsoids within channels upto250um wide.
2	I	V		*					*	*	In channels upto 200um wide.
4	I	X		*				*	*	*	In channels upto 400um wide.
5	II	Y		*			***		*	**/**	Ellipsoids within channels 300um wide.
5	I	Y		*					*	*	
Gallows Hill											
A	I	001,002	**	*	*	t		**	*		Macro- and meso-channels. Often together.
B	I	002	*	*	*			**	*		Within and lining fine macro and meso channels.
C	I	002	*	*	*			*	*	t	Within macro- and meso-channels. Often together.
D	I	002	*	*	*			*	**		Within macro- and meso-channels. Often together.
D	II	002	*	*	*	t		t	*/**		Within macro- and meso-channels. Often together.

Section	Zone		Mammillated	Large ellipsoids >100 um	Small ellipsoids 50-100 um	Cylindrical	Others/ unident.	Coalescence/Disintergration			Position
								Weak	Moderate	Strong	
Roos Loch											
Profile 1											
1/A	I	001	*			*	*	*	*	*	Within and fused to walls of meso-sized channels.
1/A	II	002	*			**		*	**	*	Within fine macro and meso-channels with organics.
1/A	III	003	*			**		*	**	t	Within fine macro and meso-channels with organics.
1/B	I	005	?							?	Within and fused to walls of meso-sized channels.
1/B	II	006	?							?	Within and fused to walls of meso-sized channels.
1/C	I	006				t				t	Within meso-channels with decaying roots.
1/C	II	007			t	t			t		Within meso-channels with decaying roots.
Profile 2											
2/D	I	002	*			***		*	**	*	Forming micromass and in fine macro and meso-channels.
2/D	II	003	*			*		*	*	*	Within fine macro and meso-channels with organics.
2/E	I	005				*		*	*	*	Within fine macro and meso-channels with organics.
2/E	II	006				*		*	*	*	Within fine macro and meso-channels with organics.
2/F	I	006			t				t	t	Within meso-channels with decaying roots.
2/F	II	007									
Profile 3											
3/G	I	002	**	*	t	**		**	**	*	Forming micromass and within macro and meso-channels.
3/G	II	002	*	*		*		*	**	*	Within macro and meso-sized channels.
3/H	I	004				*		*	*	*	Within fine macro and coarse meso-channels.
3/H	II	005				*		*	*	*	Within fine macro and coarse meso-channels.
3/H	III	006				*		*	*	*	Within fine macro and coarse meso-channels.
3/J	I	007				*		*	*	*	Within fine macro and coarse meso-channels.
3/J	II	007				*		*	*	*	Within fine macro and coarse meso-channels.
Seater											
Profile 1											
CPr1C1	I	003	*/*	*	t		***	*	**	***	Aged excrement forming microfabric.
CPr1C3	I	006	*/*	*				*	*	*	Within coarse meso-sized channels. Often together.
CPr1C3	II	006	**	*		t		*	**	*	Aged to form fabric pedofeatured. Often together.
CPr1C4	I	007	*	*	*			*	*	*	Within coarse meso-, and fine macro-sized channels.
CPr1C4	II	007	*	*				*	*	*	Within coarse meso-, and fine macro sized channels.
Profile 2											
CPr2C5	I	005	**	t	*			*	**	*	Within coarse meso-, and fine macro-sized channels.
CPr2C5	II	003	*					*	*	*	Within coarse meso-sized channels.
CPr2C6	I	003	*		t			*	*	*	Within coarse meso-sized channels.
CPr2C6	II	006	*					*	*	*	Within coarse meso-, and fine macro-sized channels.
CPr2C7	II	007	*/*	*				*	*	*	Within coarse meso-, and fine macro-sized channels.
CPr2C7	I	010	*	*	t			*	*	*	Within meso-, and fine/medium macro-sized channels.
Woo											
Profile 2											
Woo2/(20-26,89)	I	007	*			*		*	*	*	Within fine and medium macro channels.
Woo2/(20-26,89)	II	007,009	*		*	*		*	*	*	Within fine and medium macro channels.
Woo2/(20-26,89)	III	009	*		*	*		*	*	*	Within fine and medium macro channels.
Woo2/(27-33,95)	I	009	*	*	*	*		*	*	*	Within fine macro, and meso channels.
Woo2/(27-33,95)	II	009	**	*	*	*		*	*	*	Within fine and medium macro, and meso channels
Woo2/(27-33,95)	III	009	*	*	*	*		*	*	*	Within fine macro and meso channels.
Woo2/(29-35,111)	I	032				*	**	*	*	*	Within simple and complex packing voids.
Woo2/(29-35,111)	II	009	*					*	*	*	Within fine macro channels.

Section	Zone		Mammilated	Large ellipsoids >100 um	Small ellipsoids 50-100 um	Cylindrical	Others/ unident	Coalescence/Disintergration			Position
								Weak	Moderate	Strong	
Woo/2/(29-35,111)	III	010	*			*					Within fine macro and meso channels, and packing voids.
Woo/2/(22-28,119)	I	010,016	*			*		*	*		Within fine macro and coarse meso channels.
Woo/2/(22-28,127)	I	017	?							?	Within relict channels?
Woo/2/(16-22,133)	I	018		*				*	*		Within simple packing voids.
Woo/2/(16-22,133)	II	033	?			*		*	*		
Woo/2/(10-16,139)	I	034	*			*		*	*		Within fine and medium macro and coarse meso channels.
Profile 1											
Woo/1/(21-27,95)	I	009	*			*		*	*	*	Within fine and medium macro channels.
Woo/1/(21-27,95)	II	010	*			*		*	*	?	Within simple and complex packing voids.
Woo/1/(26-32,103)	I	012	**	*		***		**	**	*	Within fine and medium macro channels.
Woo/1/(26-32,103)	II	013	*			*		*	*	?	Within fine and medium macro channels.
Woo/1/(9-15,114)	I	015	*			*		*	*		Within fine macro channels
Woo/1/(9-15,114)	II	015	*			*		*	*	t	Within fine macro channels
Woo/1/(9-15,114)	III	016	*			*	*	*	*		Within fine macro channels and complex packing voids.
Woo/1/(18-25,122)	I	016	*			*		*	*		Within fine and medium macro channels
Woo/1/(18-25,122)	II	016	*			*		*	*		Within fine macro channels and complex packing voids.
Woo/1/(18-25,122)	III	017	*			*	*	*	*		Within complex and simple packing voids.
Woo/1/(12-18,129)	I	017	*			*	*	*	*		Within fine and medium macro channels
Woo/1/(12-18,129)	II	018	*	*		*		*	*	*	Within fine macro, and meso channels.
Woo/1/(4-10,136)	I	018,019	*			*		*	*	*	Within fine macro channels.
Woo/1/(4-10,136)	II	020,021	*			t		*	*	*	Within fine and medium macro channels.
Woo/1/(1-7,145)	I	022	*			*		*	*	*	Within fine and medium macro channels.
Pool											
Profile 1											
Pool/1/E	I	019	*			*		*	*	*	Within fine macro and coarse meso channels.
Pool/1/F	I	008	*			*		*	*	*	Within fine macro and coarse meso channels.
Pool/1/F	II	008	t			*		*	*	*	Within coarse meso channels.
Pool/1/G	I	007	*			*		*	*	*	Within coarse meso channels.
Pool/1/G	II	008	*			*		*	*	*	Within coarse meso channels.
Pool/1/G	III	008	*			*		*	*	*	Within coarse meso channels.
Pool/1/H	I	009	*			*		*	*	*	
Pool/1/H	II	010	*			*		*	*	*	Within fine macro channels.
Pool/1/J	I	010	*			*		*	*	*	
Pool/1/J	II	011	t			*		*	*	*	Within coarse meso channels.

Section	Zone	Mammilated	Large ellipsoids >100 um	Small ellipsoids 50-100 um	Cylindrical	Others/ unident.	Coalescence/Disintergration			Position
							Weak	Moderate	Strong	
Profile 2										
Pool2/A	I	016								
Pool2/A	II	017								
Pool2/A	III	018								
Pool2/B	I	018	*					*		Within meso and fine macro channels.
Pool2/B	II	018								
Pool2/B	III	018	*					*		Within meso and fine macro channels.
Pool2/B	IV	018	*					*		Within meso and fine macro channels.
Pool2/B	V	018	*					*		Within meso and fine macro channels.
Pool2/C	I	018	*					*	*	Within fine macro and coarse meso channels.
Pool2/C	II	019								
Pool2/D	I	019	*					*	*	Within fine macro and coarse meso channels.
Pool2/D	II	019	*					*	*	Within fine macro and coarse meso channels.
Plantation Camp										
Ref 1	1	01	**	**			**	*		Between and within organics.
	2	02	**	*				**	*	Within channels and forming microfabric.
	3	03	**	*	*****		†	**	***	Within channels and forming microfabric.
Ref 2	1	04	**		****		*	**	***	Within channels and forming microfabric.
Ref 3	1	04			*****	*	*	**	**	Within channels and forming microfabric.
Ref 4	1	04								
Turf Knowe										
Profile 1										
A11B1/1	1	1001	****	*	**		***	**		Between and within organics.
	2	1001	**		*			**	*	Within channels and forming microfabric.
	3	999	*		*****		*	**	***	Within channels and forming microfabric.
A11B1/2	1	999	*		****		*	**	**	Within channels and forming microfabric.
ALLB1/3	1	999	*		***		†	*	**	Within channels and forming microfabric.
ALLB1/4	1	999,998	†		*		*	*	*	Within channels and forming microfabric.
ALLB1/5	1	997	†		*		*	†	*	Within channels and forming microfabric.
Profile 2										
ALLB2/1	1	1001	***	*	**		***	**		Between and within organics.
	2	1001	*		**		*	*	*	Within channels and forming microfabric.
	3	1001	*		*		*	**	**	Within channels and forming microfabric.
ALLB2/2	1	999	*		*		***	***	**	Within channels and forming microfabric.
ALLB2/3	1	999,998	*		***		**	**	**	Within channels and forming microfabric.
ALLB2/4	1	998	†		*		*	*	*	Within channels and forming microfabric.
ALLB2/5	1	997	*		**		*	*	*	Within channels and forming microfabric.
Fragipan		994								
Grey clay	1	1033								
Pink clay		1032								

Section	Zone	Mammilated	Large ellipsoids >100 um	Small ellipsoids 50-100 um	Cylindrical	Others/ unident.	Coalescence/Disintergration			Position	
							Weak	Moderate	Strong		
Wether Hill											
Profile 1											
WEA1/2	I	004	*		**		*	**		t	Forming soil micromass
WEA1/2	II	006	*		**		*	**		*	Forming soil micromass
WEA1/3	I	006	*		**			**		*	Within channels and compound packing voids.
WEA1/3	II	008	*		**			*		**	Within channels and compound packing voids.
WEA1/4	I	008	*		**		*	**		*	Within macro- and coarse meso-channels.
WEA1/4	II	008	*		**		*	**		*	Within macro- and coarse meso-channels.
WEA1/5	I	008	**		**		*	**		*/**	Within macro channels with decaying organics.
WEA1/5	II	009	*		**		*	**		*	Within macro- and coarse meso-channels.
Profile 2											
WEA2/2	I	004	*	*	*		*	*			Within channels and forming micro-mass.
WEA2/2	II	006	*		**		**	*			Within channels and forming micro-mass.
WEA2/3	I	006	*		*			*			Within macro-channels, usually together.
WEA2/3	II	007	*		**		*	**		*	Within channels, usually together.
WEA2/4	I	008	*		**		**	*			Within channels with organics, usually together.
WEA2/4	II	008	*		*		*	*		t	Within macro- and meso-channels, usually together.
WEA2/4	III	009	*/**		t		*	*			Within macro- and meso-channels, usually together.
Profile 3											
WEA3/2	I	004	*	*	**	*	*	**		*	Mammilate in channels, cylindrical forming micromass.
WEA3/3	I	006	*		*			*			Within channels, usually together.
WEA3/3	II	008	*		**		*	**		t	Within macro- and coarse meso-channels.
WEA3/4	I	008	*		**		**	*			Within channels with organics, usually together.
WEA3/4	II	008	*		*		*	*		*	Within macro- and meso-sized channels.
WEA3/4	III	009	?		*	*	*	*		*	Within channels and fusing to form groundmass.
Slait Farm											
SLA/A	I	001	*	*			*	*			Within meso- and fine macro-channels and organics.
SLA/A	II	002	*	*	t		*	*		t	Within meso- and fine macro-channels.
SLA/B	I	002,003	*	*			*	*		t	Within meso- and fine macro-channels and organics.
SLA/C	I	003	*	*			*	*			Within meso-channels and organics.
SLA/D	I	003	*		*		*	*		*	Within meso- and fine macro-channels and organics.
Sigwells											
Sig A	I	6105									
Sig A	II	6105									
Sig B	I	6103									
Sig B	II	6105									
Sig C	I	6105									
Sig C	II	6106									
Sig D	I	6106									
Sig D	II	6106									
Sig G	I	6107									
Sig G	II	6107									

Section	Zone		Mammilated	Large ellipsoids >100 um	Small ellipsoids 50-100 um	Cylindrical	Others/ unident.	Coalescence/Disintergration			Position
								Weak	Moderate	Strong	
Sig E	I	6107,6108									
Sig F	I	6109									
Sig F	II	6108									
Sig F	I	6108									
Sig H	I	6108									
Sig H	II	6110									
CHB2											
CHB2/A	I	2008									
CHB2/A	II	2013									
CHB2/B	I	2013									
CHB2/B	II	2013									
CHB2/C	I	2017									
CHB2/C	II	2017									
CHB2/C	III	2017									
CHB2/C	IV	2017									
CHB2/C	V	2017									
CHB2/D	I	2016									
CHB2/D	II	2008									
CHB2/D	III	2008									
CHB2/E	I	2008,2013									
CHB2/F	I	2017									
CHB2/F	II	2017									
CHB2/F	III	2017									
CHB2/F	IV	2017									
CHB2/G	I	2014									
Little Weston Farm											
WES/A	I	01,02,03	*	*	*			*	*	*	Within macro- and meso- channels and organics.
WES/B	I	03,04		*		*			*	*	Within macro- and meso- channels and organics.
WES/C	I	04	*						*	*	Within fine macro-channels.
Millsoms Corner											
Profile 1											
CAD/1/A	I	01	*							*	Within fine macro and coarse meso channels.
CAD/1/B	I	02									
CAD/1/C	I	02									
CAD/1/C	II	03	*								Vermiforms.
Profile 2											
CAD/2/D	I	01									
CAD/2/D	II	02									
CAD/2/E	I	02									
CAD/2/E	II	03									
CAD/2/F	I	03	*								Vermiforms.
Key											
		Degree of coalescence/disintergration (Bullock <i>et al.</i> , 1985)									
weak		< 30% of the excrements are coalesced or disintergrated		*							abundance <1% slide area
moderate		30-70% of the excrements are coalesced or disintergrated		**							1-2% slide area
strong		> 70% of the excrements are coalesced or disintergrated		***							2-5% slide area
				****							5-10% slide area
				*****							10-20% slide area
				■							>20% slide area

Appendix 5.2.5: Mineral weathering

Section	Zone	Context	Biotite	Muscovite	Plagioclase Feldspar	Alkali Feldspar
Fordhouse reference						
A	I	002	n/a	1(2)	1-2(3)	2-3
B	I	003	n/a	1(2)	2*	2(3)*
B	II	004	n/a	1-2	2*	2-3
C	I	005	3-4	1(2)	1-2(3)	2-3
F	I	004,005	3-4	1(2)	1-2(3)	1-3
D	I	006	3-4	1(2)	1-2(3)	1-3
Fordhouse Barrow						
<i>Profile 1</i>						
8	I		2-3	1-(2)	1-2	1-3
9	I		1-3	1-2	1-2	1-2(3)
10	I		1-2(3)	1-(2)	1-2(3)	2-3
10	II		1-3	1-(2)	1-2	2-3
10	III		1-3	1-2	1-2	1-3
1	I		2-3(4)	1-2(3)	1-3	2-3
3	I		1-3	1-(2)	1-2	2-3
3	II		1-3	1-2	1-2(3)	2-3
3	III		2-3	1-2	1-2(3)	1-3
7	I		1-2(3)	1-(2)	1-2	2-3
2	I		2-3	1-2(3)	1-2(3)	(1)2-3
2	II		2-3(4)	1-2	1-2(3)	2-3
4	I		2-3(4)	1-2	1-3	1-3
6	I		2-3	1-2	1-2	1-3
5	II		1-3	1-(2)	1-2(3)	1-3
5	I		1-2	1-(2)	1-2	1-3
<i>Profile 2</i>						
1	I	H,J	1-3(4)	1-2(3)	1-2	1-3
2	I	L,M	2-3	1-2	1-2	1-2(3)
3	I	N	1-3	1-2	1-2	(1)2-3
4	I	N	1-3(4)	1-2(3)	1-2(3)	1-3
5	I	P	2-4	1-(2)	1-2	1-3
5	II	P,Q	1-4	1-(2)	1-2	1-3
5	III	Q	1-2(3)	1-(2)	1-(2)	1-2
6	I	R,S	1-3	1-(2)	1-2	1-2(3)
<i>Profile 3</i>						
1	I	V	1-3	1-2(3)	2-3	2-3(4)
2	I	V	1-3	1-2	1-(2)	1-2(3)
2	II	V	2-3(4)	1-2	1-2(3)	1-3
3	I	V,W	1-3	1-2(3)	1-2	1-3
4	I	X	2-3(4)	1-(2)	1-2(3)	1-3
5	III	Y	2-3	1-2	1-2	1-3
5	II	Y	2-3	1-(2)	1-2	1-3
5	I	Y	1-2(3)	1-(2)	1-2	1-2
Gallows Hill						
A	I	001,002	2-3	1(2)	1(2)	1-3
B	I	002	2-3	1-2	1-2	1-3
C	I	002	2-3	1(2)	1-2	2(3)
D	I	002	2	1	1-2(3)	1-2(3)
D	II	002	2-1	1-2	1-2	1-2

Section	Zone		Biotite	Muscovite	Plagioclase Feldspar	Alkali Feldspar
Roos Loch						
Profile 1						
1/A	I	001	2-3*	1-2	2-3	2-3
1/A	II	002	2-3*	1-2	2-3	2-3
1/A	III	003	n/a	1-2	2-3	2-3
1/B	I	005	n/a	1-2	2(3)	2-3
1/B	II	006	n/a	1-2	2-3	2-3
1/C	I	006	2-3*	1-2	2-3	(1)2-3
1/C	II	007	n/a	1(2)	1-2(3)	1-2(3)
Profile 2						
2/D	I	002	n/a	1-2	1-2	1-3
2/D	II	003	n/a	1-2	1-2(3)	2-3
2/E	I	005	n/a	1-2	2-3	(1)2-3
2/E	II	006	n/a	1-2	2-3	(1)2-3
2/F	I	007	2-3(4)	1(2)	2(3)	2(3)
2/F	II	007	n/a	1(2)	2-3	(1)2-3
Profile 3						
3/G	I	002	n/a	1-2	1-3	2-3
3/G	II	002	n/a	1-2	2	2-3
3/H	I	004	n/a	1-2	(1)2	2-3
3/H	II	005	n/a	1-2	2	2-3
3/H	III	006	n/a	1-2	2	2-3
3/J	I	007	n/a	1(2)	1-2(3)	1-2(3)
3/J	II	007	n/a	1(2)	1-2(3)	1-2(3)
Seater						
Profile 1						
CPr1C1	I	003	n/a	1(2)	1-2	2-3
CPr1C3	I	006	n/a	1(2)	1-2	1-2(3)
CPr1C3	II	006	n/a	1(2)	1-2	1-3
CPr1C4	I	007	n/a	1(2)	1-2	(1)2-3
CPr1C4	II	007	n/a	1(2)	1-2	(1)2-3
Profile 2						
CPr2 C5	I	005	n/a	1(2)	1-2	2(3)
CPr2C5	II	003	n/a	1(2)	1(2)	1-2
CPr2C6	I	003	n/a	1(2)	1(2)	1-2(3)
CPr2C6	II	006	n/a	1(2)	1-2(3)	1-3
CPr2C7	II	007	n/a	1(2)	1-2	2(3)
CPr2C7	I	010	n/a	1(2)	1-2(3)	2-3
Woo						
Profile 2						
Woo/2/(20-26,89)	I	007	n/a	1	(0)1-2	1-2(3)
Woo/2/(20-26,89)	II	007,009	n/a	1	1-2	1-3
Woo/2/(20-26,89)	III	009	n/a	1(2)	1-2(3)	1-3(4)
Woo/2/(27-33,95)	I	009	n/a	1	2	2-3
Woo/2/(27-33,95)	II	009	n/a	1	2(3)	2-3
Woo/2/(27-33,95)	III	009	n/a	1	2-3	2-3
Woo/2/(29-35,111)	I	032	n/a	1*	n/a	2*

Section	Zone		Biotite	Muscovite	Plagioclase Feldspar	Alkali Feldspar
Woo/2/(29-35,111)	II	009	n/a	1	1-2	1-2(3)
Woo/2/(29-35,111)	III	010	2*	1	1-2	2-3
Woo/2/(22-28,119)	I	010,016	n/a	1(2)	1-2	1-2(3)
Woo/2/(22-28,127)	I	017	n/a	1	1*	n/a
Woo/2/(16-22,133)	I	018	n/a	1	2	2*
Woo/2/(16-22,133)	II	033	n/a	1	1-2	2*
Woo/2/(10-16,139)	I	034	n/a	1	1-2	1-2
Profile 1						
Woo/1/(21-27,95)	I	009	n/a	1	1-2	2-3
Woo/1/(21-27,95)	II	010	n/a	1	1-2(3)	2-3
Woo/1/(26-32,103)	I	012	n/a	1	1-2(3)	2-3
Woo/1/(26-32,103)	II	013	n/a	1	(1)2	2-3
Woo/1/(9-15,114)	I	015	n/a	1	2*	2-3
Woo/1/(9-15,114)	II	015	n/a	1	2	2-3
Woo/1/(9-15,114)	III	016	n/a	1	2*	2-3
Woo/1/(18-25,122)	I	016	n/a	1	1-2*	1-2*
Woo/1/(18-25,122)	II	016	n/a	1	1-2	2-3
Woo/1/(18-25,122)	III	017	n/a	1	1-2*	2*
Woo/1/(12-18,129)	I	017	n/a	1	1-2	2-3
Woo/1/(12-18,129)	II	018	n/a	1	n/a	2-3
Woo/1/(4-10,136)	I	018,019	n/a	1	2(3)	2-3
Woo/1/(4-10,136)	II	020,021	n/a	1	2(3)	2-3
Woo/1/(1-7,145)	I	022	n/a	1	1-2(3)	2-3
Pool						
Profile 1						
Pool/1/E	I	019	n/a	1(2)	1-2(3)	1-2(3)
Pool/1/F	I	008	n/a	1(2)	1-2	1-2(3)
Pool/1/F	II	008	n/a	1(2)	1-2	1-3
Pool/1/G	I	007	n/a	1-2	1-2(3)	1-3
Pool/1/G	II	008	n/a	1-2	1-2(3)	1-2(3)
Pool/1/G	III	008	n/a	1-2	1-2(3)	1-3
Pool/1/H	I	009	n/a	1-2	1-3	1-3
Pool/1/H	II	010	n/a	1-2	1-2	1-2(3)
Pool/1/J	I	010	n/a	1-2	1-2(3)	1-3
Pool/1/J	II	011	n/a	1-2	1-3	1-3
Profile 2						
Pool/2/A	I	016	n/a	1(2)	1-2	1-3
Pool/2/A	II	017	n/a	1(2)	1-2(3)	2-3
Pool/2/A	II	018	n/a	1(2)	1-2(3)	2-3
Pool/2/B	I	018	n/a	1(2)	1-2	1-3
Pool/2/B	II	018	n/a	1(2)	1-2	1-2(3)
Pool/2/B	III	018	n/a	1-2	1-2	1-3
Pool/2/B	IV	018	n/a	1-2	1-2(3)	1-3
Pool/2/B	V	018	n/a	1-2	1-2(3)	1-3
Pool/2/C	I	018	3	1-2	1-2(3)	1-3
Pool/2/C	II	019	3	1-2	1-2(3)	1-3
Pool/2/D	I	019	n/a	1-2	1-3	1-3

Section	Zone		Biotite	Muscovite	Plagioclase Feldspar	Alkali Feldspar
Pool/2/D	II	019	n/a	1-2	1-3	1-3
Plantation Camp						
REF1		1 01	n/a	n/a	n/a	n/a
		2 02	n/a	n/a	n/a	n/a
		3 03	3(4)	2(3)	2-3	2-3(4)
REF2		1 04	2-3	2	2(3)	2-3
REF3		1 04	n/a	2(3)	2(3)	3(4)
REF4		1 04				
Turf Knowe						
<i>Profile 1</i>						
ALLB1/1		1 1001	n/a	n/a	n/a	n/a
		2 1001	n/a	n/a	n/a	n/a
		3 999	3(4)	2-3	2-3	2-3(4)
ALLB1/2		1 999	2	1	2-3	2-3
ALLB1/3		1 999	3	2(3)	2-3	(2)3
ALLB1/4		1 999,998	3	2	2(3)	3(4)
ALLB1/5		1 997	(2)3	2	2(3)	3
<i>Profile 2</i>						
ALLB2/1		1 1001	n/a	n/a	n/a	n/a
		2 1001	n/a	n/a	n/a	n/a
		3 1001	3(4)	2(3)	2-3	2-3(4)
ALLB2/2		1 999	3	2	2-3	3(4)
ALLB2/3		1 999,998	3	2	2	2-3
ALLB2/4		1 998	3(4)	2(3)	2(3)	2-3(4)
ALLB2/5		1 997	2-3	2	2-3	2-3
Fragipan		994	2-3	0-1	(1)2-3	2-3(4)
Grey Clay		1033	3	1-2	2-3	3(4)
Pink Clay		1032	n/a	n/a	2-3	3
Wether Hill						
<i>Profile 1</i>						
WEA1/2	I	004	n/a	n/a	3	(2)3-4
WEA1/2	II	006	n/a	n/a	3	(2)3-4
WEA1/3	I	006	3(4)*	1-2	2-3(4)	2-3(4)
WEA1/3	II	008	n/a	1-2	3	(2)3(4)
WEA1/4	I	008	n/a	n/a	2-3	(2)3(4)
WEA1/4	II	008	n/a	n/a	2-3	2-3
WEA1/5	I	008	n/a	n/a	2*	(2)3
WEA1/5	II	009	n/a	1-2*	2-3	2-3(4)
<i>Profile 2</i>						
WEA2/2	I	004	n/a	n/a	3	2-3(4)
WEA2/2	II	006	n/a	n/a	3	(2)3-4
WEA2/3	I	006	n/a	1(2)	2-3	2-3(4)
WEA2/3	II	007	n/a	n/a	3*	3
WEA2/4	I	008	n/a	1(2)	2-3	2-3
WEA2/4	II	008	n/a	1(2)*	2-3	2-3
WEA2/4	III	009	n/a	1-2	2-3	2-3(4)

Section	Zone		Biotite	Muscovite	Plagioclase Feldspar	Alkali Feldspar
Profile 3						
WEA3/2	I	004	3*	1-2	3	3(4)
WEA3/3	I	006	n/a	n/a	2-3	2-3
WEA3/3	II	008	n/a	n/a	2-3	2-3(4)
WEA3/4	I	008	n/a	1(2)*	(1)2-3	2-3
WEA3/4	II	008	n/a	n/a	2-3	(2)3(4)
WEA3/4	III	009	n/a	1(2)	3	2-3(4)
Slait Farm						
SLA/A	I	001	2(3)	1(2)	1-2	1(2)
SLA/A	II	002	3	1(2)	1-2	1-2
SLA/B	I	002,003	2-3	1-2	1*	1-2(3)
SLA/C	I	003	n/a	1-2	1(2)	1-2
SLA/D	I	003	2-3	1(2)	1-2	1-2(3)
Sigwells						
Sig A	I	6105	n/a	1(2)	1-2	1-3
Sig A	II	6105	n/a	1(2)	1-2	1-3
Sig B	I	6103	n/a	1(2)	1-2	1-3
Sig B	II	6105	n/a	1(2)	1-2	1-3
Sig C	I	6105	n/a	1(2)	1-2	1-3
Sig C	II	6106	n/a	1(2)	1(2)	1-3
Sig D	I	6106	n/a	1(2)	1-2(3)	1-3
Sig D	II	6107	n/a	1(2)	1-2(3)	1-3
Sig G	I	6107	n/a	1(2)	1-2	1-3
Sig G	II	6107	n/a	1(2)	1-2	1-3
Sig E	I	6107,6108	n/a	1(2)	1-2	1-3
Sig F	I	6109	n/a	1(2)	1-2	1-2(3)
Sig F	II	6108	n/a	1(2)	1-2	1-3
Sig F	I	6108	n/a	1(2)	1-2	1-2(3)
Sig H	I	6108	n/a	1(2)	1-3	1-3
Sig H	II	6110	n/a	1(2)	1-2(3)	1-3
CHB2						
CHB2/A	I	2008	2-3(4)	1(2)	1-2	1-2
CHB2/A	II	2013	2-4	1(2)	1-2	1-2
CHB2/B	I	2103	2-3(4)	1(2)	1-2	1-2(3)
CHB2/B	II	2013	2-3(4)	1-2	1-2	1-2(3)
CHB2/C	I	2017	n/a	1(2)	1(2)	1-2(3)
CHB2/C	II	2017	n/a	1(2)	1(2)	1-2
CHB2/C	III	2017	n/a	1(2)	1-2	1-2(3)
CHB2/C	IV	2017	n/a	1(2)	1-2	1-2(3)
CHB2/C	V	2017	n/a	1(2)	1-2	(1)2(3)
CHB2/D	I	2016	n/a	1(2)	1-2	1-2(3)
CHB2/D	II	2008	3-4	1(2)	1-2	1-2
CHB2/D	III	2008	n/a	1(2)	1-2	1-2
CHB2/E	I	2008,2013	2-3(4)	1(2)	1-2	1-2(3)
CHB2/F	I	2017	3	1(2)	1(2)	1-2
CHB2/F	II	2017	3*	1(2)	1(2)	1-2

Section	Zone		Biotite	Muscovite	Plagioclase Feldspar	Alkali Feldspar
CHB2/F	III	2017	2-3(4)	1(2)	1-2	1-2(3)
CHB2/F	IV	2017	3*	1(2)	1-2	1-2
CHB2/G	I	2014	3*	1(2)	1-2	1(2)
Little Weston Farm						
WES/A	I	01,02,03	2*	1*	1	1(2)
WES/B	I	03,04	n/a	1*	1*	1*
WES/C	I	04	n/a	1*	1*	1-2*
Milsoms Corner						
Profile 1						
CAD/1/A	I	01	n/a	1(2)	1-2	1-3
CAD/1/B	I	02	n/a	1(2)	1-2	1-3
CAD/1/C	I	02	n/a	1(2)	1*	1-2(3)
CAD/1/C	II	03	n/a	1(2)	1-2	1-2(3)
Profile 2						
CAD/2/D	I	01	n/a	1(2)	1-2	(1)2-3
CAD/2/D	II	02	n/a	1(2)	1-2	1-3
CAD/2/E	I	02	n/a	1(2)	1-2	1-2(3)
CAD/2/E	II	03	n/a	1(2)	1-2	1-2(3)
CAD/2/F	I	03	n/a	1(2)	1(2)	1-2(3)

Dominant Alteration class

(Bullock *et al.*, 1985)

- 0 Original mineral, 0-2.5% altered
- 1 2.5-25% altered
- 2 25-75% altered
- 3 75-97.5% altered
- 4 Completely altered, 97.5-100% altered, include pseudomorphs

Figures in brackets represent occasional extremes.

Appendix 5.3: Coded thin section data

Key to codings

Region 1=Angus, 2=Sanday, 3=Breamish, 4=Sigwells, 5=Milsoms Corner.

Burial 1=unburied, 2=buried.

Age 1=Modern, 2=3-5 years, 3=Norse, 4=Iron Age, 5=Bronze Age, 6=Neolithic.

Overburden 1=quarry waste, 2=midden, 3=earth bank, 4=barrow.

Burial depth 0=0-5cm, 50=6-85cm, 125=86-180cm, 250=181-400cm.

Depth from buried soil 60=83-41, 15=40-6, 2.5=0-5, -2.5= -1- -5, -10= -6- -11, -35= -16- -65.

Quartz, 0=absent, 1=very few - occasional, 2=frequent - dominant.

All other features and inclusions, 0=absent, 1=present.

Fine matter 1= mineral, 2= organo-mineral, 3= organic.

Limpidity 1= undifferentiated, 2= stipple speckled and strial.

Void space 1= 0-19% slide area, 2= 20-35% slide area, 3= >35% slide area .

Microstructure 1= single grain, inter-grain, bridged grain, 2= channel, vughy, spongy, 3= blocky, crumb.

C:f ratio 1= low (<1.5), 2= moderate (1.5-3), 3= high (>3)

C:f related distribution 1= monic, enaulic, chitonic, gefuric, 2= porphyric

Coarse material arrangement 1= random, 2= laminar and other.

Weathered biotite 1= low alteration (<2), 2= high alteration (>2).

Appendix 5.4.1 Image analysis void totals

SLIDE	Mean area (um ²)	Mean shape	SLIDE	Mean area (um ²)	Mean shape	SLIDE	Mean area (um ²)	Mean shape
FHRA4-6vt	3368	0.22	FHB1/20-2	8645	0.23	FHB2/44-6	22978	0.20
FHRA6-8vt	3018	0.20	FHB1/22-4	12537	0.24	FHB2/46-8	22994	0.26
FHRB0-2vt	6162	0.21	FHB1/24-6	16479	0.18	FHB2/50-2	9919	0.24
FHRB2-4vt	4036	0.21	FHB1/26-8	3296	0.21	FHB2/52-4	5091	0.28
FHRB4-6vt	2395	0.21	FHB1/60-2	4683	0.22	FHB2/54-6	9617	0.28
FHRB6-8vt	2890	0.23	FHB1/62-4	11992	0.19	FHB2/56-8	11128	0.26
FHRC0-2vt	7079	0.23	FHB1/64-6	9933	0.28	FHB2/60-2	3387	0.31
FHRC2-4vt	14715	0.28	FHB1/66-8	6564	0.22	FHB2/62-4	6856	0.25
FHRC4-6vt	4335	0.28	FHB1/40-2	5042	0.21	FHB2/64-6	12588	0.25
FHRC6-8vt	4815	0.33	FHB1/42-4	6663	0.22	FHB2/66-8	4863	0.28
FHRD0-2vt	4718	0.31	FHB1/44-6	2218	0.21	FHB3/10-2	5336	0.28
FHRD2-4vt	4044	0.31	FHB1/46-8	3197	0.20	FHB3/12-4	5533	0.33
FHRD4-6vt	7671	0.35	FHB1/50-2	7048	0.24	FHB3/14-6	5687	0.30
FHRD6-8vt	5305	0.47	FHB1/52-4	9478	0.23	FHB3/16-8	8117	0.28
FHRF0-2vt	10598	0.41	FHB1/54-6	11543	0.22	FHB3/20-2	8134	0.23
FHRF2-4vt	6678	0.40	FHB1/56-8	15439	0.28	FHB3/22-4	9516	0.19
FHRF4-6vt	6283	0.38	FHB2/10-2	6608	0.28	FHB3/24-6	5082	0.21
FHRF6-8vt	6305	0.40	FHB2/12-4	6067	0.28	FHB3/26-8	5145	0.22
FHB1/110-2	9810	0.20	FHB2/14-6	9704	0.22	FHB3/30-2	8817	0.22
FHB1/112-4	8717	0.21	FHB2/16-8	25901	0.20	FHB3/32-4	3526	0.23
FHB1/114-6	9701	0.22	FHB2/20-2	2597	0.20	FHB3/34-6	3940	0.22
FHB1/116-8	4519	0.21	FHB2/22-4	2481	0.25	FHB3/36-8	5975	0.22
FHB1/90-2	3282	0.21	FHB2/24-6	1787	0.14	FHB3/40-2	6600	0.21
FHB1/92-4	6190	0.22	FHB2/26-8	1070	0.14	FHB3/42-4	7425	0.21
FHB1/94-6	6787	0.23	FHB2/30-2	6627	0.25	FHB3/44-6	9961	0.22
FHB1/96-8	8529	0.25	FHB2/32-4	2991	0.20	FHB3/46-8	8907	0.24
FHB1/10-2	6547	0.21	FHB2/34-6	8221	0.25	FHB3/50-2	2781	0.19
FHB1/12-4	8007	0.21	FHB2/36-8	6610	0.23	FHB3/52-4	3299	0.22
FHB1/14-6	13695	0.21	FHB2/40-2	27501	0.22	FHB3/54-6	2186	0.15
FHB1/16-8	8044	.24	FHB2/42-4	33780	0.24	FHB3/56-8	2566	0.21

Shape SI unitless

1= round

0= non-round

Appendix 5.4.2: Image analysis results of amorphous iron pedofeatures

SLIDE	DEPTH (cm)	DEPRBSO (cm)	PARTCOUN	AREAFRAC	MEANAREA (um2)	SHAPEFAC	FERETMAX (um)	FERETMIN (um)	FERETORI (o)	DIAMMAX (um)	DIAMMEAN (um)	DIAMMIN (um)	CONVEXIV
FHRA0-2feav	1	-1	2	0	6249	0.4	120	83	90	119	105	82	1
FHRA2-4fe	3	-3	1	0	8161	0.5	147	82	80	148	127	78	1
FHRA4-6fe	5	-5	0	0	6791	0.4	239	109	16	239	211	154	1
FHRA6-8fe	7	-7	2	1	11952	0.3	253	136	120	251	224	152	1
FHRB0-2fe	7	-7	0	0	0	0.0	0	0	0	0	0	0	0
FHRB2-4fe	9	-9	0	0	0	0.0	0	0	0	0	0	0	0
FHRB4-6fe	11	-11	0	0	0	0.0	0	0	0	0	0	0	0
FHRB6-8fe	13	-13	0	0	0	0.0	0	0	0	0	0	0	0
FHRC0-2fe	31	-31	24	6	6634	0.3	134	65	83	133	119	80	1
FHRC2-4fe	33	-33	12	4	8061	0.3	113	68	102	112	99	72	1
FHRC4-6fe	35	-35	5	1	5581	0.3	123	64	79	123	109	65	1
FHRC6-8fe	37	-37	13	4	5811	0.3	121	67	104	121	107	71	1
FHRD0-2fe	48	-48	6	2	13495	0.4	141	78	83	140	124	80	1
FHRD2-4fe	50	-50	15	4	10317	0.3	153	85	77	153	134	89	1
FHRD4-6fe	52	-52	6	1	6222	0.3	118	67	82	118	105	67	1
FHRD6-8fe	54	-54	22	4	6452	0.3	122	72	83	122	108	72	1
FHRF0-2fe	28	-28	22	3	3995	0.4	84	51	92	83	74	51	1
FHRF2-4fe	30	-30	2	0	1598	0.3	110	49	69	110	96	50	1
FHRF4-6fe	32	-32	7	1	5388	0.4	101	57	108	101	89	57	1
FHRF6-8fe	34	-34	10	2	5778	0.3	118	64	83	117	104	67	1
FHB1/110-2f	123	122	7	2	7268	0.3	127	79	85	127	113	80	1
FHB1/112-4f	125	211	11	1	3247	0.3	97	55	85	97	85	56	1
FHB1/114-6f	127	122	20	3	5945	0.2	116	72	79	115	103	73	1
FHB1/116-8f	129	120	4	1	7638	0.2	159	70	99	158	141	73	1
FHB1/90-2fe	174	118	7	1	3160	0.4	80	53	68	80	71	53	1
FHB1/92-4fe	176	116	13	4	7616	0.3	128	72	86	127	111	74	1
FHB1/94-6fe	178	71	11	3	9375	0.3	138	79	87	137	121	82	1
FHB1/96-8fe	180	69	14	2	6016	0.3	127	71	74	127	112	73	1
FHB1/10-2fe	195	67	32	3	3343	0.3	99	55	96	98	86	57	1
FHB1/12-4fe	197	65	23	3	4969	0.3	111	66	80	111	97	68	1
FHB1/14-6fe	199	50	17	6	9012	0.2	154	88	89	154	135	93	1
FHB1/16-8fe	201	48	10	4	14054	0.2	163	93	95	162	142	97	1
FHB1/20-2fe	226	46	15	4	18183	0.1	225	133	100	224	198	138	1
FHB1/22-4fe	228	44	2	1	12696	0.3	181	113	94	181	161	120	1
FHB1/24-6fe	230	19	7	1	4726	0.2	116	62	46	116	100	64	1
FHB1/26-8fe	232	17	10	2	6511	0.4	126	74	86	125	111	76	1
FHB1/40-2fe	231	15	4	2	16457	0.5	186	117	51	187	162	117	1
FHB1/42-4fe	233	13	3	3	33209	0.1	287	146	106	286	246	148	1
FHB1/44-6fe	235	14	13	1	2528	0.2	94	51	113	94	82	54	1
FHB1/46-8fe	237	12	9	14	73537	0.3	262	139	94	261	235	163	1
FHB1/50-2fe	251	10	9	1	4531	0.2	103	63	90	103	91	63	1
FHB1/52-4fe	253	8	5	1	7490	0.2	135	72	67	135	116	73	1
FHB1/54-6fe	255	-6	8	1	5044	0.3	130	67	103	128	114	73	1
FHB1/56-8fe	257	-8	9	1	5058	0.2	130	69	68	129	113	72	1
FHB1/60-2fe	277	-10	37	7	4501	0.3	103	56	92	102	89	58	1

SLIDE	DEPTH (cm)	DEPFRBSO (cm)	PARTCOUN	AREAFRAC	MEANAREA (um ²)	SHAPEFAC unitless	FERETMAX (um)	FERETMIN (um)	FERETORI (o)	DIAMMAX (um)	DIAMMEAN (um)	DIAMMIN (um)	CONVEXIV unitless
FHB1/62-4fe	279	-12	7	2	11727	0.3	159	100	68	159	141	104	1
FHB1/64-6fe	281	-32	2	1	14853	0.3	206	111	67	206	178	110	1
FHB1/66-8fe	283	-34	3	1	9273	0.4	137	98	96	136	124	98	1
FHB2/10-2fe	123	-76	17	6	10228	0.3	135	80	78	134	118	83	1
FHB2/12-4fe	125	-78	10	5	14515	0.2	185	98	74	184	161	104	1
FHB2/14-6fe	127	82	10	1	2439	0.3	81	51	85	80	70	50	1
FHB2/16-8fe	129	80	5	0	1353	0.2	70	42	53	70	60	39	1
FHB2/20-2fe	154	78	19	3	7436	0.4	124	70	85	123	108	73	1
FHB2/22-4fe	156	76	17	2	4099	0.3	97	54	95	97	85	56	1
FHB2/24-6fe	158	51	20	1	2218	0.3	83	46	92	82	71	47	1
FHB2/26-8vt	160	49	13	1	4324	0.2	147	63	113	146	130	72	1
FHB2/30-2fe	164	47	3	0	4988	0.3	124	57	67	124	111	59	1
FHB2/32-4fe	166	45	9	2	13936	0.2	196	112	112	194	170	117	1
FHB2/34-6fe	168	41	4	2	18473	0.2	224	138	96	223	203	139	1
FHB2/36-8fe	170	39	9	1	4166	0.2	101	59	102	99	89	62	1
FHB2/40-2fe	190	37	1	0	4600	0.1	118	74	123	118	106	75	1
FHB2/42-4fe	192	35	9	2	9412	0.2	142	79	96	141	126	84	1
FHB2/44-6fe	194	15	12	2	6081	0.2	119	63	101	118	103	65	1
FHB2/46-8	196	13	9	1	3418	0.2	95	57	94	94	82	58	1
FHB2/50-2	200	11	23	3	3507	0.2	100	55	81	100	87	57	1
FHB2/52-4fe	202	9	9	2	10835	0.2	152	97	58	152	137	100	1
FHB2/54-6fe	204	5	8	3	11624	0.2	172	104	57	172	152	107	1
FHB2/56-8fe	206	3	9	3	14084	0.2	143	89	77	142	126	92	1
FHB2/60-2fe	220	1	5	1	6957	0.3	123	72	100	122	107	72	1
FHB2/62-4fe	222	-1	17	3	5195	0.3	114	68	95	113	99	71	1
FHB2/64-6fe	224	-15	7	1	6772	0.3	137	85	77	136	121	87	1
FHB2/66-8fe	226	-17	13	4	8349	0.2	162	85	86	161	142	90	1
FHB3/10-2fe	113	-64	4	2	20150	0.3	220	125	81	220	193	127	1
FHB3/12-4fe	115	-66	2	4	75787	0.3	411	255	56	411	360	265	1
FHB3/14-6fe	117	47	5	3	26627	0.2	271	158	103	271	245	166	1
FHB3/16-8fe	119	45	6	2	11992	0.2	180	109	129	178	158	113	1
FHB3/20-2fe	123	43	4	1	7581	0.3	137	76	125	135	119	85	1
FHB3/22-4fe	125	41	9	1	2710	0.4	90	49	80	89	79	51	1
FHB3/24-6fe	127	37	17	3	7428	0.3	142	82	87	142	124	86	1
FHB3/26-8fe	129	35	15	3	7744	0.3	134	78	85	134	117	82	1
FHB3/30-2fe	133	33	12	2	7654	0.2	158	75	113	157	139	80	1
FHB3/32-4fe	135	31	13	2	6384	0.3	131	71	91	130	115	75	1
FHB3/34-6fe	137	27	9	3	14350	0.2	214	117	96	213	186	120	1
FHB3/36-8fe	139	25	6	3	12872	0.3	163	105	96	162	145	109	1
FHB3/40-2fe	154	23	8	1	5876	0.3	118	64	92	117	102	67	1
FHB3/42-4fe	156	21	4	0	3326	0.3	94	53	75	94	82	55	1
FHB3/44-6fe	158	6	7	1	5413	0.2	111	69	70	110	97	70	1
FHB3/46-8fe	160	4	4	1	4121	0.3	98	58	64	98	88	59	1
FHB3/50-2fe	172	2	4	2	15340	0.2	198	124	93	198	177	129	1
FHB3/52-4fe	174	0	2	1	21110	0.2	256	157	99	255	228	165	1
FHB3/54-6fa	176	-12	21	6	23871	0.3	185	119	82	185	164	120	1
FHB3/56-8fe	178	-14	19	5	11091	0.2	179	103	73	179	156	105	1

Appendix 5.4.3 Image analysis results for orange clay

SLIDE	LABEL	DEPTH (cm)	DEPFRBSO (cm)	PARTCOUN	AREAFRAC	MEANAREA (um ²)	SHAPEFAC	FERETMAX (um)	FERETMIN (um)	FERETORI (o)	DIAMMAX (um)	DIAMMEAN (um)	DIAMMIN (um)	CONVEXTV
FHRA4-6oc	4	5	-5	0	0	0	0.0	0	0	0	0	0	0	0
FHRA6-8oc	4	7	-7	0	0	0	0.0	0	0	0	0	0	0	0
FHRB0-2oc	4	7	-7	0	0	0	0.0	0	0	0	0	0	0	0
FHRB2-4oc	4	9	-9	0	0	0	0.0	0	0	0	0	0	0	0
FHRB4-6oc	4	11	-11	0	0	0	0.0	0	0	0	0	0	0	0
FHRB6-8oc	4	13	-13	0	0	0	0.0	0	0	0	0	0	0	0
FHRC0-2oc	4	31	-31	0	0	0	0.0	0	0	0	0	0	0	0
FHRC2-4oc	4	33	-33	0	0	0	0.0	0	0	0	0	0	0	0
FHRC4-6oc	4	35	-35	0	0	0	0.0	0	0	0	0	0	0	0
FHRC6-8oc	4	37	-37	0	0	0	0.0	0	0	0	0	0	0	0
FHRD0-2oc	4	48	-48	0	0	0	0.0	0	0	0	0	0	0	0
FHRD2-4oc	4	50	-50	70	11	0	0.2	127	68	94	126	110	72	1
FHRD4-6oc	4	52	-52	119	16	0	0.2	126	70	96	125	110	74	1
FHRD6-8oc	4	54	-54	79	9	0	0.2	113	61	83	112	98	64	1
FHRF0-2oc	4	28	-28	0	0	0	0.0	0	0	0	0	0	0	0
FHRF2-4oc	4	30	-30	0	0	0	0.0	0	0	0	0	0	0	0
FHRF4-6oc	4	32	-32	0	0	0	0.0	0	0	0	0	0	0	0
FHRF6-8oc	4	34	-34	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/110-	1	123	122	3	0	0	0.3	112	71	89	112	98	74	1
FHB1/112-	1	125	120	2	0	863	0.2	129	49	77	129	115	57	1
FHB1/114-	1	127	118	7	0	1300	0.2	102	54	104	101	89	58	1
FHB1/116-	1	129	116	8	1	0	0.2	118	55	93	117	104	58	1
FHB1/90-2	1	174	71	5	1	0	0.2	132	72	84	131	114	77	1
FHB1/92-4	1	176	69	18	2	848	0.2	112	62	106	110	97	63	1
FHB1/94-6	1	178	67	4	0	0	0.2	82	44	93	81	70	45	1
FHB1/96-8	1	180	65	5	0	265	0.2	68	41	95	67	60	41	1
FHB1/10-2	1	195	50	21	2	3389	0.2	107	61	69	106	94	63	1
FHB1/12-4	1	197	48	21	2	2178	0.2	100	52	87	99	87	54	1
FHB1/14-6	1	199	46	26	5	6604	0.2	145	83	93	144	127	88	1
FHB1/16-8	1	201	44	21	3	4863	0.2	123	68	110	121	107	72	1
FHB1/20-2	1	226	19	17	1	2547	0.2	101	53	98	100	88	56	1
FHB1/22-4	1	228	17	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/24-6	1	230	15	1	0	2304	0.3	101	52	137	101	88	57	1
FHB1/26-8	1	232	13	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/40-2	1	231	14	3	0	1832	0.2	96	49	80	95	84	53	1
FHB1/42-4	1	233	12	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/44-6	1	235	10	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/46-8	1	237	8	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/50-2	1	251	-6	41	5	1400	0.2	108	66	94	107	95	68	1
FHB1/52-4	1	253	-8	15	1	0	0.2	103	60	81	103	89	62	1
FHB1/54-6	1	255	-10	28	3	555	0.2	91	54	95	90	79	56	1
FHB1/56-8	1	257	-12	22	2	0	0.2	94	42	91	94	82	44	1
FHB1/60-2	1	277	-32	14	1	1537	0.2	77	44	87	76	67	45	1
FHB1/62-4	1	279	-34	7	0	2178	0.1	89	56	86	89	79	58	1
FHB1/64-6	1	281	-36	22	1	2217	0.2	98	52	89	98	86	54	1

SLIDE	LABEL	DEPTH (cm)	DEPFBSO (cm)	PARTCOUN	AREAfrac	MEANAREA (um2)	SHAPEFAC unitless	FERETMAX (um)	FERETMIN (um)	FERETORI (c)	DIAMMAX (um)	DIAMMEAN (um)	DIAMMIN (um)	CONVEXIV unitless
FHB1/66-8	1	283	-38	15	1	2489	0.2	91	52	95	91	80	53	1
FHB2/10-2	2	123	82	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/12-4	2	125	80	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/14-6	2	127	78	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/16-8	2	129	76	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/20-2	2	154	51	14	1	0	0.2	88	51	87	87	76	53	1
FHB2/22-4	2	156	49	26	4	0	0.2	116	65	91	115	101	69	1
FHB2/24-6	2	158	47	22	3	0	0.2	105	57	84	104	91	60	1
FHB2/26-8	2	160	45	15	1	0	0.2	88	49	96	87	76	49	1
FHB2/30-2	2	164	41	45	9	4305	0.2	131	74	89	130	114	77	1
FHB2/32-4	2	166	39	48	4	1854	0.1	106	59	95	105	92	63	1
FHB2/34-6	2	168	37	26	2	2615	0.2	95	53	79	95	84	54	1
FHB2/36-8	2	170	35	20	2	3643	0.2	103	59	84	102	89	62	1
FHB2/40-2	2	190	15	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/42-4	2	192	13	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/44-6	2	194	11	1	0	1299	0.1	78	46	57	79	71	43	0
FHB2/46-8	2	196	9	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/50-2	2	200	5	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/52-4	2	202	3	13	1	1421	0.2	83	39	85	82	71	42	1
FHB2/54-6	2	204	1	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/56-8	2	206	-1	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/60-2	2	220	-15	37	3	230	0.2	94	53	89	93	82	55	1
FHB2/62-4	2	222	-17	45	3	0	0.2	97	53	91	97	85	55	1
FHB2/64-6	2	224	-19	28	2	0	0.2	95	50	96	94	83	53	1
FHB2/66-8	2	226	-21	18	1	0	0.2	95	51	105	94	82	53	1
FHB3/10-2	3	113	47	0	0	1924	0.0	0	0	0	0	0	0	0
FHB3/12-4	3	115	45	0	0	4968	0.0	0	0	0	0	0	0	0
FHB3/14-6	3	117	43	0	0	2994	0.0	0	0	0	0	0	0	0
FHB3/16-8	3	119	41	0	0	4143	0.0	0	0	0	0	0	0	0
FHB3/20-2	3	123	37	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/22-4	3	125	35	0	0	2549	0.0	0	0	0	0	0	0	0
FHB3/24-6	3	127	33	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/26-8	3	129	31	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/30-2	3	133	27	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/32-4	3	135	25	0	0	3177	0.0	0	0	0	0	0	0	0
FHB3/34-6	3	137	23	0	0	4984	0.0	0	0	0	0	0	0	0
FHB3/36-8	3	139	21	0	0	4961	0.0	0	0	0	0	0	0	0
FHB3/40-2	3	154	6	0	0	4347	0.0	0	0	0	0	0	0	0
FHB3/42-4	3	156	4	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/44-6	3	158	2	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/46-8	3	160	0	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/50-2	3	172	-12	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/52-4	3	174	-14	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/54-6	3	176	-16	1	0	0	0.3	90	66	62	91	82	63	1
FHB3/56-8	3	178	-18	31	3	0	0.2	107	62	92	107	94	65	1

Appendix 5.4.4 Image analysis results for orange/red clay

SLIDE	DEPTH (cm)	DEPFBSO (cm)	PARTCOUN	AREAFRAC	MEANAREA (um ²)	SHAPEFAC unitless	FERETMAX (um)	FERETMIN (um)	FERETORI (o)	DIAMMAX (um)	DIAMMEAN (um)	DIAMMIN (um)	CONVEXIV unitless
FHRA4-6orc	5	-5	0	0	0	.00	0	0	0	0	0	0	0
FHRA6-8orc	7	-7	0	0	0	.00	0	0	0	0	0	0	0
FHRB0-2orc	7	-7	0	0	0	.00	0	0	0	0	0	0	0
FHRB2-4orc	9	-9	0	0	0	.00	0	0	0	0	0	0	0
FHRB4-6orc	11	-11	0	0	0	.00	0	0	0	0	0	0	0
FHRB6-8orc	13	-13	0	0	0	.00	0	0	0	0	0	0	0
FHRC0-2orc	31	-31	0	0	0	.00	0	0	0	0	0	0	0
FHRC2-4orc	33	-33	0	0	0	.00	0	0	0	0	0	0	0
FHRC4-6orc	35	-35	0	0	0	.00	0	0	0	0	0	0	0
FHRC6-8orc	37	-37	0	0	0	.00	0	0	0	0	0	0	0
FHRD0-2orc	48	-48	0	0	0	.00	0	0	0	0	0	0	0
FHRD2-4orc	50	-50	0	0	0	.00	0	0	0	0	0	0	0
FHRD4-6orc	52	-52	0	0	0	.00	0	0	0	0	0	0	0
FHRD6-8orc	54	-54	0	0	0	.00	0	0	0	0	0	0	0
FHRF0-2orc	28	-28	0	0	0	.00	0	0	0	0	0	0	0
FHRF2-4orc	30	-30	0	0	0	.00	0	0	0	0	0	0	0
FHRF4-6orc	32	-32	0	0	0	.00	0	0	0	0	0	0	0
FHRF6-8orc	34	-34	0	0	0	.00	0	0	0	0	0	0	0
FHB1/110-2orc	123	122	0	0	0	.00	0	0	0	0	0	0	0
FHB1/112-4orc	125	120	1	0	2764	.21	118	55	99	117	102	57	1
FHB1/114-6orc	127	118	0	0	0	.00	0	0	0	0	0	0	0
FHB1/116-8orc	129	116	0	0	0	.00	0	0	0	0	0	0	0
FHB1/90-2orc	174	71	0	0	0	.00	0	0	0	0	0	0	0
FHB1/92-4orc	176	69	0	0	0	.00	0	0	0	0	0	0	0
FHB1/94-6orc	178	67	3	0	2755	.20	96	62	87	96	84	64	1
FHB1/96-8orc	180	65	0	0	0	.00	0	0	0	0	0	0	0
FHB1/10-2orc	195	50	0	0	0	.00	0	0	0	0	0	0	0
FHB1/12-4orc	197	48	1	0	1769	.25	101	36	76	100	89	43	1
FHB1/14-6orc	199	46	0	0	0	.00	0	0	0	0	0	0	0
FHB1/16-8orc	201	44	0	0	0	.00	0	0	0	0	0	0	0
FHB1/20-2orc	226	19	0	0	0	.00	0	0	0	0	0	0	0
FHB1/22-4orc	228	17	0	0	0	.00	0	0	0	0	0	0	0
FHB1/24-6orc	230	15	0	0	0	.00	0	0	0	0	0	0	0
FHB1/26-8orc	232	13	0	0	0	.00	0	0	0	0	0	0	0
FHB1/40-2orc	231	14	0	0	0	.00	0	0	0	0	0	0	0
FHB1/42-4orc	233	12	0	0	0	.00	0	0	0	0	0	0	0
FHB1/44-6orc	235	10	0	0	0	.00	0	0	0	0	0	0	0
FHB1/46-8orc	237	8	0	0	0	.00	0	0	0	0	0	0	0
FHB1/50-2orc	251	-6	0	0	0	.00	0	0	0	0	0	0	0
FHB1/52-4orc	253	-8	0	0	0	.00	0	0	0	0	0	0	0
FHB1/54-6orc	255	-10	0	0	0	.00	0	0	0	0	0	0	0
FHB1/56-8orc	257	-12	0	0	0	.00	0	0	0	0	0	0	0
FHB1/60-2orc	277	-32	4	0	1565	.18	79	46	61	79	68	47	1
FHB1/62-4orc	279	-34	0	0	0	.00	0	0	0	0	0	0	0

SLIDE	DEPTH (cm)	DEPFRBSO (cm)	PARTCOUN	AREAFRAC	MEANAREA (um2)	SHAPEFAC unitless	FERETMAX (um)	FERETMIN (um)	FERETORI (o)	DIAMMAX (um)	DIAMMEAN (um)	DIAMMIN (um)	CONVEXIV unitless
FHB1/64-6orc	281	-36	0	0	0	.00	0	0	0	0	0	0	0
FHB1/66-8orc	283	-38	0	0	0	.00	0	0	0	0	0	0	0
FHB2/10-2orc	123	82	0	0	0	.00	0	0	0	0	0	0	0
FHB2/12-4orc	125	80	0	0	0	.00	0	0	0	0	0	0	0
FHB2/14-6orc	127	78	8	1	2193	.23	87	51	61	87	76	52	1
FHB2/16-8orc	129	76	0	0	0	.00	0	0	0	0	0	0	0
FHB2/20-2orc	154	51	0	0	0	.00	0	0	0	0	0	0	0
FHB2/22-4orc	156	49	0	0	0	.00	0	0	0	0	0	0	0
FHB2/24-6orc	158	47	0	0	0	.00	0	0	0	0	0	0	0
FHB2/26-8	160	45	0	0	0	.00	0	0	0	0	0	0	0
FHB2/30-2orc	164	41	0	0	0	.00	0	0	0	0	0	0	0
FHB2/32-4orc	166	39	0	0	0	.00	0	0	0	0	0	0	0
FHB2/34-6orc	168	37	0	0	0	.00	0	0	0	0	0	0	0
FHB2/36-8orc	170	35	0	0	0	.00	0	0	0	0	0	0	0
FHB2/40-2	190	15	0	0	0	.00	0	0	0	0	0	0	0
FHB2/42-4orc	192	13	0	0	0	.00	0	0	0	0	0	0	0
FHB2/44-6orc	194	11	0	0	0	.00	0	0	0	0	0	0	0
FHB2/46-8orc	196	9	0	0	0	.00	0	0	0	0	0	0	0
FHB2/50-2orc	200	5	0	0	0	.00	0	0	0	0	0	0	0
FHB2/52-4orc	202	3	0	0	0	.00	0	0	0	0	0	0	0
FHB2/54-6orc	204	1	0	0	0	.00	0	0	0	0	0	0	0
FHB2/56-8orc	206	-1	0	0	0	.00	0	0	0	0	0	0	0
FHB2/60-2orc	220	-15	0	0	0	.00	0	0	0	0	0	0	0
FHB2/62-4	222	-17	0	0	0	.00	0	0	0	0	0	0	0
FHB2/64-6orc	224	-19	0	0	0	.00	0	0	0	0	0	0	0
FHB2/66-8orc	226	-21	0	0	0	.00	0	0	0	0	0	0	0
FHB3/10-2orc	113	47	0	0	0	.00	0	0	0	0	0	0	0
FHB3/12-4orc	115	45	0	0	0	.00	0	0	0	0	0	0	0
FHB3/14-6orc	117	43	0	0	0	.00	0	0	0	0	0	0	0
FHB3/16-8orc	119	41	0	0	0	.00	0	0	0	0	0	0	0
FHB3/20-2orc	123	37	0	0	0	.00	0	0	0	0	0	0	0
FHB3/22-4orc	125	35	0	0	0	.00	0	0	0	0	0	0	0
FHB3/24-6orc	127	33	0	0	0	.00	0	0	0	0	0	0	0
FHB3/26-8orc	129	31	0	0	0	.00	0	0	0	0	0	0	0
FHB3/30-2orc	133	27	0	0	0	.00	0	0	0	0	0	0	0
FHB3/32-4orc	135	25	0	0	0	.00	0	0	0	0	0	0	0
FHB3/34-6orc	137	23	0	0	0	.00	0	0	0	0	0	0	0
FHB3/36-8orc	139	21	0	0	0	.00	0	0	0	0	0	0	0
FHB3/40-2orc	154	6	0	0	0	.00	0	0	0	0	0	0	0
FHB3/42-4	156	4	0	0	0	.00	0	0	0	0	0	0	0
FHB3/44-6orc	158	2	0	0	0	.00	0	0	0	0	0	0	0
FHB3/46-8orc	160	0	0	0	0	.00	0	0	0	0	0	0	0
FHB3/50-2orc	172	-12	0	0	0	.00	0	0	0	0	0	0	0
FHB3/52-4orc	174	-14	0	0	0	.00	0	0	0	0	0	0	0
FHB3/54-6orc	176	-16	0	0	0	.00	0	0	0	0	0	0	0
FHB3/56-8orc	178	-18	0	0	0	.00	0	0	0	0	0	0	0

Appendix 5.4.5: Image analysis orange / brown clay results

SLIDE	DEPTH (cm)	DEPFBSO (cm)	PARTCOUN	AREAFRAC	MEANAREA (um ²)	SHAPEFAC unitless	FERETMAX (um)	FERETMIN (um)	FERETORI (o)	DIAMMAX (um)	DIAMMEAN (um)	DIAMMIN (um)	CONVEXIV unitless
FHRA4-6obc	5	-5	0	0	0	0.0	0	0	0	0	0	0	0
FHRA6-8obc	7	-7	0	0	0	0.0	0	0	0	0	0	0	0
FHRB0-2obc	7	-7	0	0	0	0.0	0	0	0	0	0	0	0
FHRB2-4obc	9	-9	0	0	0	0.0	0	0	0	0	0	0	0
FHRB4-6obc	11	-11	0	0	0	0.0	0	0	0	0	0	0	0
FHRB6-8obc	13	-13	0	0	0	0.0	0	0	0	0	0	0	0
FHRC0-2obc	31	-31	0	0	0	0.0	0	0	0	0	0	0	0
FHRC2-4obc	33	-33	0	0	0	0.0	0	0	0	0	0	0	0
FHRC4-6obc	35	-35	0	0	0	0.0	0	0	0	0	0	0	0
FHRC6-8obc	37	-37	0	0	0	0.0	0	0	0	0	0	0	0
FHRD0-2obc	48	-48	0	0	0	0.0	0	0	0	0	0	0	0
FHRD2-4obc	50	-50	0	0	0	0.0	0	0	0	0	0	0	0
FHRD4-6obc	52	-52	0	0	0	0.0	0	0	0	0	0	0	0
FHRD6-8obc	54	-54	0	0	0	0.0	0	0	0	0	0	0	0
FHRF0-2obc	28	-28	0	0	0	0.0	0	0	0	0	0	0	0
FHRF2-4obc	30	-30	0	0	0	0.0	0	0	0	0	0	0	0
FHRF4-6obc	32	-32	0	0	0	0.0	0	0	0	0	0	0	0
FHRF6-8obc	34	-34	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/110-2	123	122	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/112-4	125	120	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/114-6	127	118	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/116-8	129	116	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/90-2o	174	71	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/92-4o	176	69	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/94-6o	178	67	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/96-8o	180	65	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/10-2o	195	50	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/12-4f	197	48	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/14-6o	199	46	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/16-8o	201	44	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/20-2o	226	19	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/22-4o	228	17	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/24-6o	230	15	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/26-8o	232	13	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/40-2o	231	14	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/42-4o	233	12	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/44-6o	235	10	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/46-8o	237	8	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/50-2o	251	-6	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/52-4o	253	-8	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/54-6o	255	-10	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/56-8o	257	-12	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/60-2o	277	-32	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/62-4o	279	-34	0	0	0	0.0	0	0	0	0	0	0	0

SLIDE	DEPTH (cm)	DEPRFSO (cm)	PARTCOUN	AREAfrac	MEANAREA (um2)	SHAPEfac unitless	FERETMAX (um)	FERETMIN (um)	FERETORI (o)	DIAMMAX (um)	DIAMMEAN (um)	DIAMMIN (um)	CONVExiv unitless
FHB1/64-6o	281	-36	0	0	0	0.0	0	0	0	0	0	0	0
FHB1/66-8o	283	-38	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/10-2o	123	82	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/12-4o	125	80	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/14-6o	127	78	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/16-8o	129	76	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/20-2o	154	51	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/22-4o	156	49	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/24-6o	158	47	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/26-8o	160	45	4	0	1666	0.2	86	55	83	85	75	57	1
FHB2/30-2o	164	41	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/32-4o	166	39	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/34-6o	168	37	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/36-8o	170	35	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/40-2	190	15	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/42-4o	192	13	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/44-6o	194	11	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/46-8o	196	9	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/50-2o	200	5	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/52-4o	202	3	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/54-6o	204	1	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/56-8o	206	-1	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/60-2o	220	-15	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/62-4	222	-17	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/64-6o	224	-19	0	0	0	0.0	0	0	0	0	0	0	0
FHB2/66-8o	226	-21	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/10-2o	113	47	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/12-4o	115	45	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/14-6o	117	43	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/16-8o	119	41	5	0	1924	0.2	96	46	118	94	82	53	1
FHB3/20-2o	123	37	7	1	4968	0.1	143	75	83	142	123	77	1
FHB3/22-4o	125	35	5	0	2994	0.2	119	63	78	118	104	66	1
FHB3/24-6o	127	33	0	0	4143	0.1	165	57	149	163	139	69	1
FHB3/26-8o	129	31	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/30-2o	133	27	1	0	2549	0.2	131	55	155	129	114	64	0
FHB3/32-4o	135	25	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/34-6o	137	23	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/36-8o	139	21	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/40-2o	154	6	3	0	3177	0.1	115	66	38	115	99	67	1
FHB3/42-4o	156	4	17	3	4984	0.2	118	68	91	117	102	70	1
FHB3/44-6o	158	2	9	1	4961	0.2	137	70	77	137	119	76	1
FHB3/46-8o	160	0	10	1	4347	0.1	132	65	85	131	114	68	1
FHB3/50-2o	172	-12	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/52-4o	174	-14	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/54-6o	176	-16	0	0	0	0.0	0	0	0	0	0	0	0
FHB3/56-8o	178	-18	0	0	0	0.0	0	0	0	0	0	0	0

Appendix 5.4 Brown clay image analysis results

SLIDE DEPTH DEFRISO PARTICOUNT AREA:FAC MEANAREA MEANPERI SHAPE:FAC PARTICLAS FERETMAX FERETMIN FERETORI FERETORI DIAMMAX DIAMMEAN DIAMMIN CONVEXITY

(cm) (cm) (um²) (um) unitless (um) (um) (o) (um) (um) (um) unitless

FHR44-6obc	5	-5	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR46-8obc	7	-7	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR30-2obc	7	-7	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHRB3-4obc	9	-9	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHRB4-6obc	11	-11	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHRB6-8obc	13	-13	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHRC0-2obc	31	-31	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHRC2-4obc	33	-33	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHRC4-6obc	35	-35	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHRC6-8obc	37	-37	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHRD0-2obc	48	-48	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHRD2-4obc	50	-50	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHRD4-6obc	52	-52	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHRD6-8obc	54	-54	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHRF0-2obc	28	-28	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHRF2-4obc	30	-30	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHRF4-6obc	32	-32	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHRF6-8obc	34	-34	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/110-2	123	122	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/112-4	125	120	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/114-6	127	118	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/116-8	129	116	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/90-20	174	71	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/92-40	176	69	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/94-60	178	67	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/96-80	180	65	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/10-20	195	50	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/12-4f	197	48	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/14-60	199	46	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/16-80	201	44	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/20-20	226	19	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/22-40	228	17	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/24-60	230	15	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/26-80	232	13	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/40-20	231	14	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/42-40	233	12	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/44-60	235	10	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/46-80	237	8	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/50-20	251	-6	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/52-40	253	-8	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/54-60	255	-10	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/56-80	257	-12	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/60-20	277	-32	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/62-40	279	-34	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/64-60	281	-36	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR1/66-80	283	-38	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
FHR2/10-20	123	82	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0

SLIDE	DEPTH (cm)	DEPFRBSO (cm)	PARTCOUN	AREAFRAC	MEANAREA (um2)	MEANPERI (um)	SHAPEFAC unitless	PARTCLAS	FERETMAX (um)	FERETMIN (um)	FERETORI (o)	DIAMMAX (um)	DIAMMEAN (um)	DIAMMIN (um)	CONVEXIV unitless
FHB2/12-40	125	80	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/14-60	127	78	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/16-80	129	76	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/20-20	154	51	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/22-40	156	49	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/24-60	158	47	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/26-80	160	45	4	0	1666	334	0.2	4	86	55	83	85	75	57	1
FHB2/30-20	164	41	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/32-40	166	39	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/34-60	168	37	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/36-80	170	35	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/40-2	190	15	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/42-40	192	13	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/44-60	194	11	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/46-80	196	9	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/50-20	200	5	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/52-40	202	3	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/54-60	204	1	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/56-80	206	-1	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/60-20	220	-15	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/62-4	222	-17	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/64-60	224	-19	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB2/66-80	226	-21	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB3/10-20	113	47	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB3/12-40	115	45	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB3/14-60	117	43	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB3/16-80	119	41	5	0	1924	391	0.2	5	96	46	118	94	82	53	1
FHB3/20-20	123	37	7	1	4968	722	0.1	17	143	75	83	142	123	77	1
FHB3/22-40	125	35	5	0	2994	561	0.2	23	119	63	78	118	104	66	1
FHB3/24-60	127	33	0	0	4143	628	0.1	1	165	57	149	163	139	69	1
FHB3/26-80	129	31	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB3/30-20	133	27	1	0	2549	433	0.2	2	131	55	155	129	114	64	0
FHB3/32-40	135	25	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB3/34-60	137	23	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB3/36-80	139	21	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB3/40-20	154	6	3	0	3177	568	0.1	6	115	66	38	115	99	67	1
FHB3/42-40	156	4	17	3	4984	617	0.2	34	118	68	91	117	102	70	1
FHB3/44-60	158	2	9	1	4961	664	0.2	37	137	70	77	137	119	76	1
FHB3/46-80	160	0	10	1	4347	668	0.1	13	132	65	85	131	114	68	1
FHB3/50-20	172	-12	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB3/52-40	174	-14	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB3/54-60	176	-16	0	0	0	0	0.0	0	0	0	0	0	0	0	0
FHB3/56-80	178	-18	0	0	0	0	0.0	0	0	0	0	0	0	0	0

Appendix 6. Bulk chemical and physical data.

Table 1: Particle size distributions from Milsoms Corner and Weston Farm 479
determined using sedimentation methods.

Table 2: Particle size distributions and statistics for Angus and Somerset sites 480
determined using coulter counter methods.

Table 3: Bulk density, soil moisture and loss-on-ignition data from all sites. 482

Table 4: Soil pH, % pyrophosphate extractable iron, % dithionite extractable 486
iron and % dithionite extractable iron in pyrophosphate residue.

Table 1: Particle size distributions from Milsoms Corner and Weston Farm
determined using sedimentation methods.

Sample	>500 μ m (%)	500-213 μ m (%)	212-64 μ m (%)	63-2 μ m (%)	<2 μ m (%)
Wes/9-12	3.44	3.87	6.80	50.87	35.02
Cad/19-20	0.03	0.50	9.95	60.45	29.07
Cad/23-24	0.02	0.36	10.17	72.10	17.35

Appendix 6.2: Particle size statistics determined using Coulter Counter method

DEPTH	% sand	% silt	% clay	MEAN diam um	MEDIAN diam. Um	DSTAT	MODE um diam	SD um	CV	SKEW	KURTOSIS
Weston Farm											
W3	10.96	62.26	26.77	80.07	19.27	5.02	5.36	138.00	172.00	2.55	6.46
W6	11.76	57.73	30.51	71.35	18.47	4.41	5.36	115.00	161.00	2.61	7.98
W9	12.77	64.88	22.35	65.44	12.50	4.40	5.88	122.00	186.00	3.04	11.00
W12	21.50	69.81	8.70	19.75	7.08	3.00	4.88	25.80	131.00	1.64	1.66
W15	15.48	55.79	28.73	62.32	22.48	3.90	87.90	93.00	149.00	2.47	6.83
W18	18.00	58.96	23.04	44.44	13.98	3.34	4.88	71.30	160.00	3.44	17.90
W24	21.94	62.65	15.41	30.55	7.28	2.88	5.36	49.40	162.00	2.73	8.68
W27	20.67	62.45	16.88	32.75	8.26	2.98	5.36	51.20	156.00	2.63	8.06
Milsoms Corner											
Cad0	8.75	65.33	25.93	56.18	59.46	9.59	80.08	33.90	60.30	-.03	-.87
Cad3	9.12	61.94	28.94	45.10	42.84	6.33	80.08	34.70	77.00	.31	-1.10
Cad6	8.93	58.56	32.51	48.39	49.61	6.46	80.08	35.50	73.40	.20	-1.12
Cad9	9.81	62.12	28.07	44.07	39.95	5.87	80.08	35.00	79.30	.38	-1.06
Cad12	8.51	61.55	29.94	47.35	48.78	6.79	72.95	33.60	71.00	.17	-1.10
Cad15	11.47	63.31	25.21	41.61	35.74	5.36	80.08	34.40	82.70	.46	-.96
Cad16	11.73	61.88	26.39	45.15	37.36	5.09	72.95	43.30	96.00	1.87	6.97
Cad17	10.16	63.29	26.55	43.60	39.88	5.93	72.95	34.40	78.90	.40	-.97
Cad18	8.70	60.49	30.81	47.61	48.51	6.63	80.08	34.60	72.80	.21	-1.10
Cad19	8.47	69.47	22.06	42.15	38.43	6.73	72.95	31.50	74.80	.46	-.75
Cad20	8.29	65.89	25.82	44.86	43.54	7.05	72.95	32.90	73.40	.33	-.93
Cad21	12.07	69.12	18.82	36.10	26.68	4.79	72.95	32.40	89.70	.72	-.54
Cad22	8.87	74.00	17.13	36.66	29.68	6.20	66.44	30.40	83.10	.68	-.49
cad23	7.26	72.24	20.50	41.29	38.20	7.34	66.44	31.00	75.10	.47	-.69
Cad24	11.17	73.20	15.63	33.46	23.83	5.24	66.44	30.60	91.40	.86	-.30
Cad27	9.67	78.44	11.89	32.64	23.61	5.37	66.44	29.30	89.70	.85	-.23
Cad30	9.25	76.40	14.35	33.90	26.09	5.79	60.52	29.30	86.30	.78	-.29
Cad33				31.39	23.24	5.57	55.14	27.90	89.00	.92	.04
Fordhouse ref											
R-0	1.41	26.08	72.51	292.50	216.80	34.18	356.10	280.00	95.70	1.60	3.31
R-3	1.55	37.65	60.80	155.70	103.20	25.12	203.50	165.00	106.00	2.51	10.20
R-6	1.37	30.72	67.92	179.30	130.30	30.48	223.40	181.00	101.00	2.73	13.20
R-9	2.86	54.22	42.92	107.30	56.43	13.51	50.23	134.00	125.00	2.65	10.70
R-12	2.45	56.46	41.08	102.30	55.24	15.20	50.23	127.00	124.00	2.65	10.70
R-15	3.28	52.31	44.40	130.10	57.61	12.57	295.50	155.00	119.00	1.56	2.00
R-21	3.31	43.08	53.61	160.40	92.01	13.52	324.30	170.00	106.00	1.19	.72
R-24	3.63	38.45	57.92	165.90	111.90	12.52	295.50	168.00	101.00	1.25	1.67
R-30	4.45	32.58	62.96	184.90	148.00	11.71	295.50	172.00	92.90	1.02	1.20
R-33	4.58	37.49	57.93	162.30	111.30	10.92	295.50	162.00	99.90	1.12	.88
R-36	5.07	37.76	57.17	165.70	109.90	10.20	324.30	166.00	100.00	1.02	.36
R-39	5.11	39.06	55.83	154.90	99.04	10.12	295.50	160.00	103.00	1.14	.70
R-42	5.24	32.27	62.49	176.40	139.60	10.27	195.50	165.00	93.30	.92	.31
R-45	2.64	16.08	81.27	249.20	240.60	22.83	324.30	167.00	66.90	.38	-.45
R-48	4.97	32.19	62.84	176.00	137.10	10.67	295.50	167.00	95.10	1.14	1.58
R-51	3.55	21.07	75.39	250.04	238.20	17.48	356.10	189.00	75.30	.59	.31
Fordhouse 1											
1-0	69.35	25.56	5.09	161.70	99.26	4.90	324.30	170.00	105.00	1.26	1.66
1-6	58.03	35.04	6.93	132.20	62.92	4.11	295.50	161.00	122.00	1.84	5.07
1-12	54.67	37.74	7.58	120.40	48.33	4.28	295.50	154.00	128.00	1.64	2.34
1-18	65.52	29.09	5.39	154.40	90.38	4.86	324.30	163.00	105.00	1.20	.89
1-24	58.41	34.23	7.36	122.20	52.96	4.94	295.50	152.00	125.00	1.61	2.42
1-30	61.62	32.09	6.30	129.50	68.11	5.30	295.50	149.00	115.00	1.43	1.68
1-36	61.76	31.41	6.83	149.40	85.02	4.44	295.50	163.00	109.00	1.19	.81
1-42	67.79	27.01	5.20	153.80	96.63	4.77	295.50	161.00	104.00	1.19	.98
1-48	66.32	28.17	5.51	154.60	98.85	4.44	295.50	160.00	104.00	1.18	.89
1-54	61.50	31.90	6.60	131.60	69.31	3.93	295.50	153.00	116.00	1.51	2.08
1-60	67.72	26.62	5.66	171.00	111.20	4.74	356.10	173.00	101.00	1.05	.39
1-66	65.60	28.50	5.90	156.70	94.39	4.37	324.30	168.00	107.00	1.23	.98
1-72	55.61	37.90	6.49	101.90	63.21	5.28	96.49	119.00	117.00	2.09	5.85
1-78	62.05	31.60	6.35	151.90	83.57	4.14	324.30	173.00	114.00	1.43	2.46
1-84	61.64	31.78	6.58	136.20	65.61	4.16	324.30	161.00	118.00	1.35	1.24
1-90	61.53	32.19	6.28	126.50	60.82	4.41	295.50	153.00	121.00	1.62	3.21
1-96	54.33	37.58	8.09	108.70	34.54	3.72	295.50	144.00	133.00	1.60	2.09
1-102	53.72	38.04	8.23	117.30	38.74	3.70	295.50	154.00	131.00	1.72	3.52
Fordhouse 2											
2-6	35.16	56.57	11.41	35.14	13.57	3.12	16.40	55.10	157.00	2.90	9.39
2-12	58.48	34.57	6.96	122.70	57.50	3.83	295.50	148.00	120.00	1.51	1.89
2-18	58.01	34.86	7.13	121.10	54.96	3.84	295.50	148.00	122.00	1.54	2.04
2-24	55.84	36.74	7.43	125.50	54.24	3.67	295.50	164.00	131.00	2.17	7.01
2-30	57.60	35.16	7.24	119.80	56.94	4.19	295.50	145.00	121.00	1.59	2.43
2-42	62.50	31.26	6.23	112.80	44.16	3.94	324.30	146.00	130.00	1.66	2.33
2-48	59.66	33.90	6.44	159.10	102.10	5.02	295.50	163.00	103.00	1.05	.43
2-54	66.68	27.77	5.55	89.95	41.27	3.14	87.90	117.00	130.00	2.04	5.10
2-60	52.84	39.84	7.31	167.50	125.70	6.73	295.50	159.00	95.10	.90	.14
2-66	71.04	24.22	4.74	192.90	168.20	4.37	295.50	165.00	85.60	.81	.23
2-72	74.77	20.03	5.20	215.70	201.80	4.79	324.30	176.00	81.70	.71	.36
2-78	77.97	17.35	4.69	193.70	164.40	5.63	269.20	159.00	82.10	1.08	1.77
2-84	54.91	37.54	7.55	143.60	110.60	5.17	105.90	128.00	89.00	1.64	4.19
2-90	73.83	22.09	4.08	123.80	69.81	5.44	96.49	146.00	118.00	1.68	3.36

DEPTH	% sand	% silt	% clay	MEAN	MEDIAN	DSTAT	MODE	SD	CV	SKEW	KURTOSIS
Fordhouse 3											
3-0	58.04	35.54	6.42	123.80	62.04	5.44	245.20	150.00	121.00	1.90	5.42
3-6	57.19	35.35	7.47	128.70	56.79	4.20	295.50	159.00	123.00	1.62	3.00
3-12	60.62	32.99	6.39	129.70	65.11	4.25	295.50	155.00	120.00	1.70	3.87
3-18	60.58	32.99	6.43	132.30	72.69	5.54	295.50	152.00	115.00	1.63	3.93
3-24	44.90	45.82	9.28	81.75	28.92	4.06	87.90	115.00	141.00	2.05	4.42
3-30	53.76	38.51	7.73	111.00	50.27	3.69	269.20	141.00	127.00	1.91	4.86
3-36	59.60	33.82	6.58	140.50	73.46	4.67	195.50	160.00	114.00	1.33	1.25
3-42	56.80	36.00	7.20	120.30	56.77	4.02	295.50	146.00	121.00	1.56	2.28
3-48	68.98	25.87	5.15	157.50	102.60	4.78	324.30	160.00	102.00	1.07	.52
3-66	65.37	28.73	5.90	156.20	91.67	4.30	324.30	168.00	108.00	1.17	.69
3-72	62.31	32.12	5.57	133.80	79.19	6.24	269.20	147.00	110.00	1.36	1.48
3-78	62.39	31.36	6.25	127.30	55.92	4.22	295.50	156.00	123.00	1.48	1.77
Slait farm											
SL0	3.24	45.55	51.20	144.40	82.73	13.78	96.49	199.00	138.00	2.69	7.90
SL3	4.59	49.10	46.30	80.72	70.43	10.13	96.49	93.70	116.00	4.25	25.80
SL6	4.31	45.70	49.99	103.30	77.53	11.21	96.49	143.00	138.00	4.18	22.30
SL9	4.56	47.16	48.28	106.90	77.58	10.61	96.49	140.00	131.00	2.99	10.20
SL12	5.93	48.82	45.26	67.05	69.18	8.22	96.49	52.00	77.60	1.09	3.53
SL18	4.68	43.59	51.73	73.49	76.45	10.46	96.49	50.90	69.30	.89	3.18
SL21	5.65	43.54	50.81	70.38	74.88	9.18	96.49	46.10	65.50	.28	.40
SL24	4.96	42.69	52.35	71.97	77.32	9.99	96.49	47.20	65.50	.31	.53
SL27	5.11	41.83	53.06	73.96	78.05	9.92	96.49	50.00	67.70	.64	1.96
SL30	5.82	39.99	54.19	73.59	78.24	9.48	96.49	46.50	63.20	.22	.39
SL33	4.56	39.51	55.92	75.42	79.03	11.60	96.49	45.40	60.20	.38	1.41
SL39	6.00	48.10	45.90	66.24	69.93	8.21	96.49	48.40	73.10	.55	.73
SL48	6.34	41.06	52.61	70.60	76.25	8.78	96.49	44.30	62.80	.04	-4.0
Sigwells											
SG90	4.91	28.49	66.60	86.85	88.27	12.31	105.90	51.90	59.80	.69	2.33
SG93	5.15	33.91	60.95	77.84	81.98	11.11	96.49	46.50	59.80	.10	-0.04
SG96	5.66	33.48	60.86	77.56	81.31	10.59	96.49	45.90	59.20	.20	.49
SG99	4.94	29.20	65.87	81.99	86.50	12.17	96.49	44.00	53.70	-.21	-.52
SG102	4.15	31.32	64.53	81.20	84.74	13.87	96.49	43.40	53.50	-.13	-.46
SG105	4.72	27.92	67.36	83.84	87.38	12.97	96.49	43.20	51.50	-.20	-.37
SG108	5.58	27.16	67.26	83.21	87.18	11.28	96.49	43.30	52.00	-.24	-.40
SG111	5.61	29.00	65.39	81.36	85.83	11.18	96.49	43.50	53.40	-.23	-.52
SG114	7.26	30.79	61.95	78.38	82.93	8.96	96.49	46.50	59.40	.10	.21
SG117	5.72	30.80	63.49	79.17	83.58	10.80	96.49	43.20	54.50	-.18	-.54
SG120	5.39	29.96	64.65	81.02	84.47	11.50	96.49	44.70	55.20	.17	.84
SG123	5.48	33.35	61.17	76.99	81.19	11.04	96.49	43.20	56.20	-.12	-.58
SG126	4.11	30.80	65.08	80.89	84.80	14.08	96.49	42.20	52.10	-.20	-.47
SG129	5.50	36.65	57.85	73.57	78.04	10.62	96.49	43.70	59.30	-.06	-.70
SG132	5.63	34.10	60.26	75.89	80.23	10.57	96.49	44.40	58.40	.10	.28
SG135	5.03	33.28	61.68	76.92	81.86	11.59	96.49	43.40	56.40	-.16	-.65
SG138	4.43	33.36	62.21	77.55	81.58	13.11	96.49	41.50	53.50	-.18	-.52
SG141	4.36	32.20	63.44	79.30	83.01	13.32	96.49	42.70	53.90	-.13	-.46
SG144	3.99	36.04	59.97	75.46	79.33	13.91	96.49	40.90	54.20	-.14	-.56
SG147	4.64	35.76	59.60	75.18	79.24	12.35	96.49	41.70	55.50	-.12	-.60
SG150	4.49	31.73	63.78	82.68	84.37	12.93	96.49	50.70	61.30	.81	2.75
SG153	5.22	31.59	63.19	79.13	83.66	11.50	96.49	43.90	55.40	-.16	-.59
SG156	6.38	30.43	63.19	79.31	84.18	9.83	96.49	44.60	56.30	-.16	-.62
SG159	6.40	26.75	66.85	82.58	87.19	10.19	96.49	45.10	54.60	-.10	-.05
SG162	5.10	29.86	65.04	82.95	85.61	11.43	96.49	48.80	58.90	.52	1.74
CHB2											
CO	6.06	35.97	57.97	79.83	80.64	9.13	105.90	61.40	76.90	1.21	3.41
C20	6.33	39.22	54.45	77.22	80.78	9.52	96.49	54.10	70.10	.81	2.53
C40	8.63	36.60	54.77	74.34	76.13	8.47	96.49	58.60	78.90	1.12	3.17
C60	4.55	36.11	59.34	71.83	75.96	8.07	96.49	52.10	72.50	.60	1.27
C70	3.36	31.01	65.63	76.11	81.51	11.09	105.90	48.50	63.80	.01	-.83
C90	3.63	35.52	60.85	87.68	87.21	16.20	96.49	52.60	60.00	.89	2.93
C100	3.33	33.17	63.50	79.78	81.51	14.80	96.49	46.70	58.50	.49	1.60
C103	6.99	34.04	58.97	87.07	85.03	15.73	96.49	55.70	64.00	1.09	3.17
C106	5.24	31.27	62.88	75.70	80.32	8.56	96.49	48.70	64.40	.34	.93
C109	4.08	29.97	65.95	93.46	89.60	14.03	105.90	63.50	67.90	1.22	3.11
C112	4.34	33.68	61.98	85.17	83.93	12.61	96.49	56.40	66.30	1.04	2.75
C115	3.29	29.02	67.69	86.42	88.78	16.35	105.90	46.60	53.90	.33	1.67
C121	3.94	30.73	65.33	82.92	86.26	14.38	96.49	44.70	53.90	-.10	-.48
C124	5.66	31.72	62.62	80.70	84.45	10.38	96.49	49.90	61.80	.39	1.29
C127	5.84	30.80	63.36	80.78	85.20	10.07	105.90	49.20	60.90	.29	.92
C130	5.15	31.04	63.82	81.26	85.47	11.29	105.90	46.40	57.10	-.04	-.35

Appendix 6.3: Bulk physical data

Sample	Depth (cm)	Bulk density g/cm ³	Bulk density <2mm g/cm ³	Loss-on-ignition %w/w	Soil moisture %w/w
Fordhouse ref					
FHREFBD	4.00	0.51	0.47	47.84	29.29
FHREFBD	12.00	0.53	0.52	41.46	18.37
FHREFBD	22.00	1.03	0.66	15.34	5.62
FHREFBD	35.00	1.46	1.46	9.85	0.97
FHREFBD	45.00	1.60	1.52	2.07	1.30
Fordhouse Barrow					
FH1BD1	165.00	1.04	1.01	14.17	1.23
FH1BD2	175.00	1.25	1.18	16.99	1.32
FH1BD3	185.00	0.86	0.82	16.84	1.46
FH1BD4	195.00	1.23	1.14	17.55	1.96
FH1BD5	210.00	1.23	1.03	11.50	1.80
FH1BD6	230.00	1.01	1.00	15.24	0.74
FH1BD7	245.00	1.10	1.05	13.15	0.52
FH2BD1	110.00	1.31	1.27	14.72	4.44
FH2BD2	130.00	1.20	1.09	15.85	1.37
FH2BD3	150.00	1.17	0.96	11.96	1.90
FH2BD4	175.00	1.48	1.48	12.81	1.16
FH2BD5	200.00	1.43	1.42	15.28	0.54
FH3BD1	85.00	1.14	1.07	18.41	3.20
FH3BD2	110.00	1.21	1.13	13.29	1.75
FH3BD3	125.00	1.20	1.03	20.36	2.40
FH3BD4	150.00	1.28	1.25	13.01	0.76
Gallows Hill					
GAL/1/97	5.00	0.69	0.69	32.12	16.25
GAL/1/97	15.00	0.78	0.76	31.27	13.80
GAL/1/97	30.00	0.81	0.55	25.23	11.02
Roos Loch					
ROO/1/97	95.00	0.80	0.70	36.38	17.82
ROO/1/97	115.00	0.76	0.75	31.31	6.10
ROO/1/97	135.00	1.05	0.98	24.62	2.38
ROO/2/97	72.00	0.64	0.64	38.17	14.95
ROO/2/97	85.00	0.72	0.60	36.21	14.03
ROO/2/97	95.00	0.97	0.91	20.96	9.02
ROO/2/97	105.00	0.73	0.68	29.18	5.45
ROO/3/97	5				14.38
ROO/3/97	27.00	1.30	1.29	17.55	5.59
ROO/3/97	35.00	0.87	0.87	28.45	3.12
Seater					
SEA/1/97	15.00	0.80	0.77	29.69	9.76
SEA/1/97	45.00	0.74	0.73	26.12	3.38
SEA/1/97	56.00	0.89	0.87	27.30	5.15
SEA/1/97	66.00	0.99	0.99	24.94	5.12
SEA/2/97	5.00				
SEA/2/97	15.00	0.57	0.54	26.46	8.84
SEA/2/97	30.00	0.73	0.72	26.94	5.62
SEA/2/97	45.00	0.91	0.90	33.15	5.70
SEA/2/97	53.00	0.80	0.79	32.29	3.97

Sample	Depth (cm)	Bulk density g/cm ³	Bulk density <2mm g/cm ³	Loss-on-ignition %w/w	Soil moisture %w/w
SEA/2/97	58.00	0.80	0.73	29.24	5.83
Woo					
WOO/1/97	8.00	0.65	0.65	15.08	
WOO/1/97	25.00	0.86	0.86	17.06	4.48
WOO/1/97	40.00	0.74	0.74	22.43	3.99
WOO/1/97	50.00	0.72	0.72	15.91	3.66
WOO/1/97	60.00	0.90	0.90	18.68	4.79
WOO/1/97	65.00	0.79	0.77	15.85	1.94
WOO/1/97	74.00	0.86	0.86	20.99	5.39
WOO/1/97	88.00	0.63	0.63	19.98	
WOO/1/97	98.00	0.61	0.61	17.30	2.31
WOO/1/97	108.00	0.81	0.81	11.59	3.32
WOO/1/97	118.00	0.65	0.65	15.01	
WOO/1/97	128.00	0.77	0.77	15.14	4.16
WOO/1/97	138.00	0.76	0.76	15.72	1.61
WOO/1/97	148.00	0.89	0.89	15.38	2.22
WOO/2/97					
WOO/2/97	6.00	0.76	0.76	17.42	8.57
WOO/2/97	54.00	0.61	0.61	18.54	
WOO/2/97	66.00	0.71	0.71	20.33	4.37
WOO/2/97	74.00	0.65	0.65	18.27	
WOO/2/97	82.00	1.13	1.13	20.31	4.36
WOO/2/97	80.00	0.84	0.84	19.80	
WOO/2/97	87.00	0.74	0.74	20.82	
WOO/2/97	97.00	0.84	0.84	18.69	3.58
WOO/2/97	107.00				
WOO/2/97	117.00	0.49	0.49	14.85	2.75
WOO/2/97	127.00	0.77	0.77	10.62	
WOO/2/97	137.00	1.19	1.19	14.46	
Pool					
POO/1/97	215.00	1.10	1.09	23.49	3.58
POO/1/97	250.00	0.86	0.81	22.98	3.52
POO/1/97	265.00	0.87	0.87	26.09	4.57
POO/1/97	272.00	0.82	0.79	25.27	4.60
POO/1/97	277.00	0.97	0.95	16.18	1.87
POO/2/97	215.00	0.81	0.76	25.46	4.13
POO/2/97	250.00	1.33	0.77	27.70	3.18
POO/2/97	250.00	0.82	1.22	18.44	281.90
Plantation Camp					
BIFREF	5.00	0.28	0.28	37.27	14.59
BIFREF	14.00	0.64	0.64	33.18	
BIFREF	28.00	0.70	0.70	22.07	13.64
Wether Hill					
WEA/1/97	5.00	0.25	0.25	44.25	52.08
WEA/1/97	15.00	0.49	0.49	24.74	22.66
WEA/1/97	45.00	0.45	0.45	37.82	19.18
WEA/1/97	55.00	0.49	0.49	39.26	17.26
WEA/2/97	5.00	0.22	0.22	69.08	50.41
WEA/2/97	15.00	0.58	0.58	19.65	
WEA/2/97	35.00	0.58	0.58	19.50	10.02
WEA/2/97	45.00	0.65	0.65	27.31	12.95

Sample	Depth (cm)	Bulk density g/cm ³	Bulk density <2mm g/cm ³	Loss-on-ignition %w/w	Soil moisture %w/w
WEA/2/97	55.00	0.43	0.43	47.99	
WEA/3/97	5.00	0.47	0.47	35.50	
WEA/3/97	15.00	1.04	1.04	19.64	17.19
WEA/3/97	25.00	1.42	1.42	18.18	10.32
WEA/3/97	35.00	0.49	0.49	34.83	19.79
WEA/3/97	45.00	0.43	0.43	38.97	15.80
Turf Knowe					
A11B1(1)	9.00	0.52	0.52	15.23	24.35
A11B1(2)	19.50	0.58	0.58	14.45	
A11B1(3)	33.00	0.68	0.68	16.62	7.00
A11B1(4)	39.00	0.69	0.69	17.35	7.20
A11B1	64.00	0.62	0.62	24.44	7.19
A11B1	74.00	0.87	0.87	18.91	
A11B2	7.00	0.51	0.51	13.85	21.65
A11B2	22.50	0.78	0.78	21.23	8.90
A11B2	42.00	0.83	0.83	18.87	8.66
A11B2	51.00	0.92	0.92	15.55	
A11B2	62.00	1.23	1.23	15.51	
Slait Farm					
SLA/1/97	5.00	0.81	0.81	30.17	2.60
SLA/1/97	15.00	0.89	0.89	26.47	3.00
SLA/1/97	25.00	0.98	0.98	20.49	
SLA/1/97	35.00	0.81	0.81	16.36	3.11
SLA/1/97	45.00	0.89	0.89	14.25	3.50
SLA/1/97	55.00	0.95	0.95	14.41	3.52
SLA/1/97	65.00	1.11	1.10	15.56	3.57
CHB2					
CHB2/1/97	10.00	0.97	0.97	21.02	4.65
CHB2/1/97	30.00	0.97	0.93	19.91	
CHB2/1/97	50.00	0.90	0.88	17.61	3.48
CHB2/1/97	70.00	1.13	1.02	16.44	2.10
CHB2/1/97		1.10	1.05	20.10	1.71
CHB2/1/97	85.00	1.09	0.91	16.19	1.79
CHB2/1/97	95.00	1.17	0.97	16.42	1.24
CHB2/1/97	105.00	1.08	1.08	17.06	1.92
CHB2/1/97	115.00	1.23	1.21	19.44	
CHB2/2/97	75.00	0.95	0.88	18.32	2.06
CHB2/2/97	105.00	0.96	0.84	17.19	2.08
CHB2/2/97	115.00	1.02	1.01	17.81	1.92
CHB2/2/97	125.00	1.29	1.28	19.32	2.24
CHB2/2/97	135.00	1.02	1.02	20.02	
Sigwells					
SIG	95.00			15.71	1.00
SIG	105.00			18.10	0.60
SIG	115.00			16.77	1.64
SIG	125.00			15.26	0.40
SIG	135.00			17.75	0.56
SIG	145.00			19.11	0.37
SIG	155.00			19.04	1.09
SIG	165.00			19.17	1.48

Sample	Depth (cm)	Bulk density g/cm ³	Bulk density <2mm g/cm ³	Loss-on-ignition %w/w	Soil moisture %w/w
Milsoms Corner					
CAD/1/97	22.00	1.18	1.17	18.40	21.42
CAD/1/97	28.00	1.11	1.11	17.40	
CAD/1/97	40.00	1.33	1.33	17.09	9.20
Little Weston Farm					
WES/1/97	5.00	0.77	0.76	26.87	3.99
WES/1/97	15.00	0.72	0.72	20.92	4.65
WES/1/97	25.00	0.82	0.82	19.86	4.53

Appendix 6.4: Bulk chemical data

Sample depth (cm)	% Pyrophosphate extractable iron	% Dithionite extractable iron	% Dithionite extractable iron in residue	Soil pH (H ₂ O)	Soil pH (CaCl ₂)
Fordhouse reference					
0	0.32	0.55	0.27	4.2	3.3
3		0.71	0.31	4.1	3.3
6	0.43	0.74	0.32	4.3	3.2
9	0.33	0.66	0.40	4.4	3.3
12	0.26	0.74	0.36	4.5	3.4
15	0.28	0.85	0.52	4.5	3.5
18	0.16	0.80	0.62	4.8	3.7
21	0.11	1.04	0.98	4.6	3.7
24		0.93		4.7	3.8
27	0.07	0.90	0.88	4.8	3.8
30	0.06	0.90	0.82	4.5	3.8
33	0.04	0.96	0.66	4.9	3.8
36	0.06	1.14	0.90	4.8	3.7
39	0.03	1.14	1.10	4.8	3.7
42	0.03	0.85	0.75	4.9	3.7
45	0.02	0.76	0.82	4.9	3.8
48	0.02	0.82	0.48	4.9	3.7
51	0.03	0.71	0.61	5.2	3.8
Fordhouse Barrow Profile 1					
166	0.42	1.24468	1.00	5.6	4.1
172	0.30	1.04699	0.96	5.5	4.1
178	0.27	0.96406	0.75	5.7	4.1
184	0.31	1.07354	0.94	5.6	4.2
190	0.24	1.12336	0.94	5.1	4.1
196	0.17	1.08357	0.94	5.4	4.1
202	0.31	1.08619	0.89	5.6	4.1
208	0.08	0.99442	0.86	5.6	4.3
214	0.08	0.90303	0.41	5.9	4.3
220	0.07	0.94247	0.94	5.8	4.1
226	0.18	1.0021	0.99	5.4	4.1
232	0.11	1.08665	0.97	5.6	4.3
238	0.15	1.11073	1.04	5.3	4.3
244	0.07	1.03032	1.04	5.5	4.4
250	0.08	1.01883	1.13	5.4	4.4
256		1.08712	1.32	5.5	4.3
264	0.03	1.16341	1.15	5.5	4.5
270	0.03	1.07693	1.09	5.3	4.3
Profile 2					
118	0.43	1.01671		5.5	4.2
124		1.0711	0.64	5.5	4.1
130	0.25	1.13887	0.73	5.6	4.1
136	0.32	1.04756	0.45	5.5	4.2
142	0.40	1.06352	0.85	5.4	4.2
148	0.36	1.25808	0.85	5.4	4.1
154	0.18	1.22604	0.93	5.4	4.2

Sample depth (cm)	% Pyrophosphate extractable iron	% Dithionite extractable iron	% Dithionite extractable iron in residue	Soil pH (H2O)	Soil pH (CaCl2)
160	0.20	1.04453	1.02	5.5	4.2
166	0.13	1.06211	0.90	5.5	4.3
172	0.11	1.03297	1.07	5.7	4.5
178	0.12	1.21334	1.04	5.4	4.4
184	0.03	1.09778	1.06	5.4	4.4
190	0.07	1.01303	1.09	6.0	4.5
196	0.07	0.85334	0.80	5.5	4.6
202		0.81221	0.99	5.5	4.3
208		1.03366	0.53	5.7	4.7
214		1.04795		5.2	4.5
Profile 3					
88	0.31	0.99986		4.9	4.0
94	0.33	1.2163	0.73	4.9	4.1
100	0.27	1.02414	0.80	4.8	3.9
106	0.30	1.14901	0.89	5.0	3.9
112	0.59	1.2079	0.88	4.9	3.8
118	0.37	1.00786	0.83	5.0	3.9
124	0.43	1.21195	0.82	5.2	4.0
130	0.38	1.1909	0.63	5.2	3.9
136	0.14	1.12127	0.88	5.1	4.1
142			0.93		
148					
154	0.08	0.94669		5.2	4.0
160		0.9761	0.95	5.4	4.1
166		1.19267	1.10	6.2	4.2
Gallows Hill					
0	0.26	1.03	0.85	5.1	4.0
3	0.33	1.08	0.85	4.7	3.8
6	0.43	1.14	0.83	5.2	4.0
9	0.31	1.15	0.78	5.6	4.2
12	0.34	1.07	0.88	5.4	4.2
15	0.37	1.12	0.80	5.4	4.1
18	0.33	1.23	0.84	5.3	4.1
21	0.39	1.21	0.95	5.3	4.1
24	0.30	1.13	0.77	5.7	4.2
27	0.41	1.44	1.12	5.6	4.2
30	0.13	1.13	0.97	5.7	4.4
35	0.04	1.18	1.08	5.6	4.3
Roos Loch Profile 1					
mound top	0.20	1.52	1.50	7.8	7.2
mound middl	0.11	1.82	1.57	8.2	7.7
mound botto	0.21	1.62	1.22	7.4	6.9
0	0.16	0.92	0.89	7.8	7.2
3	0.22	1.20		6.8	6.4
6	0.37	1.09	0.54	5.7	5.4
9	0.28	0.80	0.46	5.0	4.6
12	0.45	1.30	0.74	5.2	4.8
15	0.46	1.92	1.41	5.2	4.7
18	0.59	1.99	1.51	5.2	4.8
21	0.26	1.02	0.50	5.4	4.8
24	0.06	0.44	0.36	5.4	4.9

Sample depth (cm)	% Pyrophosphate extractable iron	% Dithionite extractable iron	% Dithionite extractable iron in residue	Soil pH (H2O)	Soil pH (CaCl2)
27	0.01	0.04	0.03	5.6	5.0
30	0.05	0.34	0.23	5.6	4.9
33	0.38	2.01	1.51	5.6	5.0
Profile 3					
0	0.17	1.33	1.11	7.8	7.2
3	0.20	1.33	0.97	7.6	7.0
6	0.22	1.08	0.81	7.4	6.6
9	0.13	0.67	0.50	6.8	6.2
12	0.10	0.50	0.38	7.0	6.4
15	0.27	0.90	0.68	6.8	6.2
18	0.11	0.42	0.29	6.7	6.1
21	0.23	0.73	0.65	6.6	6.4
24	0.01	0.09	0.07	6.6	6.3
27	0.03	0.28	0.22	6.6	6.2
30	0.22	1.26	0.91	6.4	6.1
33	0.27	1.81	1.48	6.1	6.0
Seater					
0	0.16	1.44	1.35	7.6	6.9
3	0.20	1.40	1.23	8.0	7.0
6	0.15	1.34	1.26	8.0	7.0
9	0.21	1.26	1.22	8.0	7.2
12	0.20	1.25	1.11	8.0	7.2
15	0.25	1.27	1.02	8.0	7.2
18	0.23	1.15	0.96	8.2	7.4
21	0.25	1.17	0.97	8.3	7.4
24	0.24	1.19	0.96	8.2	7.3
27	0.25	1.05	1.01	8.2	7.3
30	0.28	1.39	1.11	8.3	7.2
33	0.29	1.24	0.85	8.4	7.4
36	0.33	1.15	1.07	8.0	7.4
Woo					
con1	0.13	0.53	0.29	7.9	7.2
con2	0.15	0.54		8.2	7.2
con3		0.62		8.6	7.4
con4	0.25	0.68	0.34	8.4	7.3
con9		0.65		8.4	7.3
86	0.08	0.42	0.31	8.4	7.2
89	0.16	0.70	0.46	8.3	7.3
92	0.10	0.61		8.4	7.4
95	0.10	0.76	0.78	8.4	7.4
99	0.07	0.80	0.68	8.4	7.4
102	0.18	0.72	0.46	8.4	7.4
105	0.21	0.56	0.33	8.1	7.4
108	0.07	0.44	0.35	8.1	7.3
111	0.09	0.11		8.6	7.6
114	0.05	0.19	0.05	8.5	7.6
117	0.06	0.45	0.04	8.4	7.4
120	0.13	0.25	0.08	8.4	7.4
123	0.15	0.38	0.12	8.4	7.3
126	0.20	0.33	0.10	8.6	7.4
129	0.17	0.26	0.01	8.4	7.4
132	0.13	0.31	0.14	8.6	7.4

Sample depth (cm)	% Pyrophosphate extractable iron	% Dithionite extractable iron	% Dithionite extractable iron in residue	Soil pH (H2O)	Soil pH (CaCl2)
135	0.09	0.22	0.09	8.6	7.6
138	0.11	0.27	0.13	8.6	7.6
141	0.13	0.40	0.28	8.6	7.6
Pool					
con1	0.20	1.37	1.08	8.4	7.9
con2	0.09	1.25	1.03	8.2	7.0
con4	0.09	0.53	0.40	7.8	7.5
con6	0.10	0.89	0.77	7.8	7.6
con7	0.23	1.22	1.07	7.7	7.6
0	0.03	1.28		8.2	7.8
3	0.10	1.42	0.53	8.0	7.4
6	0.07	1.20	1.00	8.3	7.8
9	0.10	0.99	0.80	8.2	7.7
12	0.16	0.83	0.65	8.2	7.7
15	0.12	0.76	0.69	8.2	7.7
18	0.10		0.77	8.0	7.6
21	0.08	1.36	0.64	7.8	7.3
24	0.10	1.27	1.07	7.9	7.4
27	0.08	1.40		7.9	7.6
30	0.03	1.40	0.73	7.8	7.6
33	0.03	1.50	1.35	7.6	7.3
con11low	0.01	1.60	1.65		
Plantation camp					
3	0.37	1.20	0.62	4.1	3.3
6	0.65	1.51	0.94	4.4	3.3
9	0.64	1.70	0.93	4.3	3.4
12	0.63	1.99		4.4	3.4
15	0.62	1.73		4.6	3.5
18		1.74		4.6	3.5
21	0.61	1.76	0.96	4.5	3.6
24		1.46		4.6	3.6
27	0.61	1.74	0.80	4.3	3.7
30	0.66	1.69	1.00	4.8	3.6
33	0.60	1.76		4.6	3.7
36		1.64		4.7	3.8
39	0.59	1.82	0.83	4.8	3.8
42	0.48	1.56	0.55	4.8	3.8
45	0.34	1.47	0.73	4.9	4.0
Wether Hill					
3	0.11	0.29	0.13	4.5	3.6
6	0.58	0.70	0.10	4.2	3.5
9	0.49	0.65	0.16	4.4	3.4
12	0.53	0.70	0.12	3.8	3.1
15	0.45	0.74	0.26	4.2	3.3
18	0.40		0.26	4.3	3.3
21	0.36	1.40	0.78	4.4	3.5
24	0.27	1.39	0.84	5.0	3.6
27	0.17	1.37	0.91	4.4	3.6
30	0.14	1.43	1.03	4.6	3.6
33	0.19	1.49	0.99	4.5	3.6
36	0.14	1.19	0.90	4.9	3.8
39	0.16	1.03	0.94	4.9	3.8

Sample depth (cm)	% Pyrophosphate extractable iron	% Dithionite extractable iron	% Dithionite extractable iron in residue	Soil pH (H ₂ O)	Soil pH (CaCl ₂)
42	0.16	0.77	0.53	5.0	3.9
45	0.16	0.76	0.43	4.9	3.8
48	0.23	0.65	0.20	5.1	4.0
51	0.39	0.83	0.18	5.2	3.9
54	0.64	0.90	0.13	5.2	3.9
57	0.60	1.17	0.13	5.0	3.8
60	0.56	1.05	0.12	5.0	3.9
63	0.18			5.0	3.8
Turf Knowe					
3	0.20	0.59	0.21		
6	0.49	1.24	0.57	4.3	3.2
9	0.54	1.32	0.27	4.4	3.3
12	0.44	1.22	0.34	4.5	3.2
15	0.48	1.31	0.87	4.4	3.4
18	0.43	1.30	0.74	4.3	3.4
21	0.38	1.29	0.74	4.2	3.5
24	0.42	1.21	0.79	4.4	3.6
27	0.40	1.38		4.0	3.5
30	0.40	1.40	0.68	4.0	3.5
33	0.40	1.33	0.81	3.8	3.5
36	0.41	1.26	0.73	3.8	3.6
39	0.39	1.36	0.73	3.8	3.7
42	0.37	1.40	0.60	3.7	3.7
45	0.47	1.39	0.67	3.7	3.9
48	0.56	1.62	0.69	3.9	4.0
51	0.35	1.39	0.66	3.8	3.8
54		1.51		3.8	3.8
57	0.38	1.44	0.69	4.1	3.8
60	0.48	1.48	0.78	3.9	3.9
63	0.65		0.96	4.0	3.8
66		1.55		4.2	3.8
69	0.45	1.41	0.77	3.8	3.8
72	0.36	1.46	0.90	3.8	3.8
75	0.46	1.47	0.89	3.8	3.8
78	0.48	1.54		3.8	3.8
BBCX	0.13	1.06	0.94	5.0	4.0
BPC	0.01	1.61	1.45	4.2	4.2
BSBSS	0.10	1.27		5.5	4.5
Slait farm					
0	0.21	1.28	0.91	4.3	3.8
3	0.27	1.26	0.95	4.4	3.8
6	0.29	1.21	1.01	4.4	3.9
9	0.25	1.24	1.01	6.1	5.2
12	0.38	1.73	1.32	4.6	3.7
15	0.28	1.28	0.98	4.4	3.8
18	0.29	1.28	1.03	4.4	3.7
21	0.27	1.24		4.2	3.6
24	0.27	1.35	1.17	4.6	3.7
27	0.24	1.34	1.16	4.6	3.7
30	0.22	1.36	1.12	4.7	3.7
33	0.22	1.59	1.24	4.4	3.6
39	0.25	1.53	1.37	4.8	3.8

Sample depth (cm)	% Pyrophosphate extractable iron	% Dithionite extractable iron	% Dithionite extractable iron in residue	Soil pH (H2O)	Soil pH (CaCl2)
Sigwells					
90	0.26	1.09	0.97	6.1	5.0
93	0.15	0.99	0.80	6.2	4.9
96	0.18	0.76	0.50	6.6	5.0
99	0.17	0.66	0.52	6.1	5.0
102	0.14	0.56	0.41	6.2	5.0
105	0.24	0.79	0.49	6.2	5.0
108	0.41	1.34	0.94	6.2	4.9
111	0.43	1.38	0.93	6.2	4.9
114	0.45	1.54	0.95	6.0	4.8
117	0.38	1.67	1.03	6.0	4.8
120	0.36	1.41	0.97	6.2	5.0
123	0.29	0.94	0.67	5.9	4.8
126	0.19	0.46	0.38	5.9	4.9
129	0.20	0.60	0.33	6.2	5.0
132	0.28	0.68	0.34	6.2	5.0
135	0.40	0.52	0.34	6.2	5.0
138	0.30	0.63	0.34	6.2	5.0
141	0.23	0.54	0.22	6.3	5.0
144	0.20	0.43	0.24	5.9	5.0
147	0.34	0.56	0.30	6.0	5.0
150	0.27	0.49	0.40	6.0	5.0
153	0.17	0.64	0.34	6.0	5.0
156	0.27	0.97	0.62	6.0	5.0
159	0.30	0.98	0.69	6.2	5.0
162	0.30	1.04	0.73	5.7	4.9
CHB2					
3	0.30	1.44	1.11	6.2	5.3
9	0.28	1.53	1.13	6.4	5.3
15	0.27	1.52	1.16	6.5	5.8
25	0.33	1.84	1.22	4.4	3.8
35	0.29	1.43	1.09	4.4	3.5
60	0.13		1.29	5.5	4.3
65	0.04	1.56	1.37	5.1	4.2
68	0.04	1.47	1.27	5.4	4.2
71	0.37	1.57	1.09	5.2	4.0
74	0.05	1.97	1.81	5.5	4.2
77	0.06	1.79	1.77	5.4	4.2
80	0.16	1.80		5.6	4.2
83		3.69		5.4	4.2
86	0.16	0.99	0.71	5.1	4.2
89	0.24	1.11	0.80	4.8	4.2
92	0.32	1.58	1.15	5.3	4.2
95	0.26	1.60	1.29	5.4	4.2
Little Weston Farm					
0	0.32	1.24	1.16	5.6	5.0
3	0.51	2.09	1.40	6.0	5.2
6	0.30	1.96	1.74	6.2	5.2
9	0.13	2.23	2.19	5.7	4.7
12	0.24	2.50	2.08	6.1	5.2
15	0.19	2.16	1.92	5.9	5.1
18	0.29	2.36	2.01	5.8	4.8

Sample depth (cm)	% Pyrophosphate extractable iron	% Dithionite extracatable iron	% Dithionite extractable iron in residue	Soil pH (H2O)	Soil pH (CaCl2)
24	0.12	2.64	2.24	6.0	5.0
27	0.10	2.62	2.32	5.6	4.9
Milsoms Corner					
0	0.05	2.76	2.50	8.3	7.2
3	0.02	2.71	2.37	8.0	7.0
6	0.03	2.46	2.20	8.2	7.2
9	0.02	2.33	2.46	8.2	7.2
12	0.03	5.59	2.63	8.0	7.0
15	0.04	2.73	2.63	8.0	7.0
16		3.18	2.76	8.0	7.0
17	0.03	3.62	3.18	8.0	7.0
18	0.03	2.91	3.09	8.0	7.0
19	0.03	3.73	2.93	8.0	7.0
20	0.02	3.11	2.87	8.0	7.0
21	0.03	3.23	2.87	8.2	7.1
22	0.02	2.73	2.66	8.2	7.0
23	0.02	2.71	2.59	8.0	7.0
24	0.01	3.22	3.25	8.0	7.0
27	0.02	2.86	2.44	8.0	7.0
30	0.02	2.58	2.28	8.0	7.0
33	0.02	2.46	2.41	8.0	7.0

Appendix 7: General log-linear hierarchical model scores for models incorporating burial factors, organic materials, iron nodules and post-burial cutans.

Table 7.1: General log-linear models of burial factors and post-burial cutans

MODEL	Likelihood ratio (L ²)	Degrees of Freedom	Significance (P)
{R}{A}{D}{O}{C}	1704.9445	1182	1.E-21
{R}{A}{D}{O}{C}{RA}	1410.7681	1162	6.E-07
{R}{A}{D}{O}{C}{RD}	1492.4148	1170	4.E-10
{R}{A}{D}{O}{C}{RO}	1280.1581	1166	.0106
{R}{A}{D}{O}{C}{AD}	1424.6354	1167	3.E-07
{R}{A}{D}{O}{C}{AO}	1215.7309	1162	.1332
{R}{A}{D}{C}	1039.2346	226	2.E-104
{R}{A}{D}{C}{RA}	745.0602	206	4.E-62
{R}{A}{D}{C}{RD}	826.7075	214	8.E-73
{R}{A}{D}{C}{AD}	758.9278	211	7.E-73
{RA}{AD}{C}	469.0761	191	2.E-25
{RA}{AD}{RC}	282.5199	187	8.E-06
{RA}{AD}{AC}	276.5919	186	2.E-05
{RA}{AD}{DC}	379.1909	188	5.E-15
{RA}{AD}{RC}{AC}	236.3575	182	.0041
{RA}{AD}{RC}{DC}	193.6026	184	.2992*
{RA}{AD}{RC}{AC}{DC}	193.6057	179	.2157*
{RA}{AD}{AC}{DC}	215.8359	183	.0066
{RA}{AD}{AC}{RC}	236.3572	182	.0041
{RAD}{C}	242.0531	119	6.E-10
{RAD}{RC}	80.9610	115	.9932
{RAD}{AC}	49.5658	114	1.0000
{RAD}{DC}	152.1614	116	.0137
{RADC}	.0000	0	1.0000

R=REGION, A=AGE, D=DEPTH OF BURIAL, O=OVERBURDEN, C=CUTANS (POST-BURIAL, MINERAL)

Table 7.2: General log-linear model incorporating burial factors, soil texture and post-burial cutans

MODEL	Likelihood ratio (L ²)	Degrees of Freedom	Significance (P)
{A} {D} {T} {C}	642.4836	132	4.E-68
{AD} {T} {C}	362.1739	117	7.E-27
{AT} {D} {C}	601.3105	122	2.E-64
{DT} {A} {C}	581.9823	126	1.E-89
{AD} {AT} {C}	320.9984	107	3.E-23
{AD} {DT} {C}	301.6726	111	2. E-19
{AD} {AT} {DT} {C}	268.8029	101	4.E-17
{AD} {DT} {AC}	77.9598	106	.9813
{AD} {DT} {DC}	250.8909	108	2.E-13
{AD} {DT} {TC}	294.0793	109	6. E-19
{AD} {AC} {T}	138.4609	112	.0456*
{AD} {AC}	7.1919	18	.9884
{ADT} {C}	239.7149	71	4.E-20
{ADT} {AC}	15.9956	66	1.0000
{ADT} {DC}	188.9265	68	3.E-13
{ADT} {TC}	232.1125	69	2.E-19
{ADTC}	.0000	0	1.0000

A=AGE, D=DEPTH OF BURIAL, T=C:F RATIO (TEXTURE), C=CUTANS (POST-BURIAL)

Table 7.3: General log-linear models incorporating burial factors, fungal spores and post-burial cutans.

MODEL	Likelihood ratio (L ²)	Degrees of Freedom	Significance (P)
{R} {A} {D} {F} {C}	1193.7232	465	2.E-65
{R} {A} {D} {F} {C} {RA}	898.9971	445	6.E-33
{R} {A} {D} {F} {C} {RD}	980.6441	453	6.E-41
{R} {A} {D} {F} {C} {RF}	1114.2399	461	6.E-56
{R} {A} {D} {F} {C} {AD}	912.8645	450	1.E-33
{R} {A} {D} {F} {C} {AF}	1095.4683	460	9.E-54
{R} {A} {D} {F} {C} {DF}	1112.5914	462	1.E-55
{R} {A} {D} {F} {C} {RC}	1036.4162	461	3.E-46
{R} {A} {D} {F} {C} {AC}	969.4578	460	2.E-38
{R} {A} {D} {F} {C} {DC}	1142.3911	462	2.E-59
{R} {A} {D} {F} {C} {FC}	1114.4013	464	2.E-55
{RA} {AD} {F} {C}	618.6838	430	6.E-09
{RA} {AD} {AC} {F}	394.9686	425	.8491
{RA} {AC} {D} {F}	675.2781	440	3.E-12
{RA} {RD} {AC} {F}	462.7484	428	.1191*
{RD} {AD} {F} {C}	700.3313	438	2.E-14
{RD} {AD} {AC} {F}	476.6156	433	.0725
{RD} {AD} {AC} {RC} {F}	308.0310	429	1.0000
{RAD} {F} {C}	391.6613	358	.1065
{RAD} {AC} {F}	167.9501	353	1.0000
{RADF} {C}	241.0344	239	.4509
{RADFC}	.0000	0	1.0000

R=REGION, A=AGE, D=DEPTH OF BURIAL, F=FUNGAL SPORES, C=CUTANS (POST-BURIAL)

Table 7.4: General log-linear models incorporating burial factors, yellow amorphous organic material and post-burial cutans.

MODEL	Likelihood ratio (L^2)	Degrees of Freedom	Significance (P)
{R}{A}{D}{Y}{C}	1145.9795	465	3.E-59
{R}{A}{D}{Y}{C}{RA}	851.8034	445	7.E-28
{R}{A}{D}{Y}{C}{RD}	933.4504	453	2.E-35
{R}{A}{D}{Y}{C}{RY}	1084.4023	461	4.E-52
{R}{A}{D}{Y}{C}{AD}	865.6707	450	1.E-28
{R}{A}{D}{Y}{C}{AY}	1084.4023	461	4.E-52
{R}{A}{D}{Y}{C}{DY}	1126.0598	462	3.E-57
{R}{A}{D}{Y}{C}{RC}	989.2225	461	1.E-40
{R}{A}{D}{Y}{C}{AC}	922.2461	460	3.E-33
{R}{A}{D}{Y}{C}{DC}	1095.1973	462	2.E-53
{R}{A}{D}{Y}{C}{YC}	1091.0680	464	2.E-52
{AD}{RD}{Y}{C}	653.1375	438	1.E-10
{AD}{RA}{Y}{C}	571.4900	430	5.E-06
{RA}{RD}{Y}{C}	639.2705	433	4.E-10
{AD}{RA}{AC}{Y}	347.7747	425	.9975
{RA}{AC}{D}{Y}	628.0904	440	9.E-09
{AD}{RD}{AC}{Y}	429.4217	443	.5395
{RD}{RA}{AC}{Y}	415.5546	428	.6579
{RADY}{C}	241.4846	239	.4429
{RADYC}	.0000	0	1.0000

R=REGION, A=AGE, D=BURIAL DEPTH, C=POST-BURIAL CUTANS, Y=YELLOW AMORPHOUS ORGANICS.

Table 7.5: General log-linear models incorporating burial factors, parenchymatic tissues and post-burial cutans.

MODEL	Likelihood ratio (L^2)	Degrees of Freedom	Significance (P)
{R}{A}{D}{P}{C}	1190.9625	465	4.E-65
{R}{A}{D}{P}{C}{RA}	896.7864	445	1.E-32
{R}{A}{D}{P}{C}{RD}	978.4333	453	1.E-40
{R}{A}{D}{P}{C}{RP}	1148.0857	461	2.E-60
{R}{A}{D}{P}{C}{AD}	910.6537	450	2.E-33
{R}{A}{D}{P}{C}{AP}	1133.7509	460	1.E-58
{R}{A}{D}{P}{C}{DP}	1147.9648	462	6.E-56
{R}{A}{D}{P}{C}{RC}	1034.2054	461	5.E-46
{R}{A}{D}{P}{C}{AC}	967.2471	460	3.E-38
{R}{A}{D}{P}{C}{DC}	1140.1803	462	4.E-59
{R}{A}{D}{P}{C}{PC}	1177.5593	464	1.E-63
{RA}{AD}{P}{C}	616.4731	430	8.E-09
{RA}{AC}{D}{P}	673.0675	440	5.E-12
{RA}{AD}{AC}{P}	392.7579	425	.8670
{RA}{RD}{AC}{P}	460.5376	428	.1340
{RD}{AD}{AC}{P}	474.4048	433	.0827
{RADP}{C}	238.2812	239	.5010
{RADPC}	.0000	0	1.0000

R=REGION, A=AGE, D=BURIAL DEPTH, P=PARENCHYMATIC TISSUE, C=POST-BURIAL CUTANS.

Table 7.6: General log-linear models incorporating burial factors and iron nodules.

MODEL	Likelihood ratio (L ²)	Degrees of Freedom	Significance (P)
{R}{A}{D}{N}			
{R}{A}{D}{N}{RA}	567.0098	206	2.E-35
{R}{A}{D}{N}{RD}	648.6563	214	3.E-45
{R}{A}{D}{N}{AD}	580.8777	211	3.E-36
{R}{A}{D}{N}{RN}	829.1184	222	7.E-71
{R}{A}{D}{N}{AN}	828.4942	221	4.E-71
{R}{A}{D}{N}{DN}	845.8696	223	3.E-73
{RA}{AD}{N}	286.6971	191	9.E-06
{RA}{RD}{N}	354.4768	194	2.E-11
{AD}{RD}{N}	368.3441	199	3.E12
{RA}{AD}{AN}	254.0081	186	.0007
{RA}{AD}{AN}{RN}	242.0854	182	.0019
{RA}{AD}{AN}{RN}{DN}	229.9346	179	.0061
{RA}{RD}{RD}{N}	59.6699	179	1.0000
{RAD}{N}	59.6747	119	1.0000
{RADN}	.0000	0	1.0000

R=REGION, A=AGE, D=BURIAL DEPTH, N=IRON NODULES

Table 7.7: General log-linear models incorporating burial factors, fungal spores and iron nodules.

MODEL	Likelihood ratio (L ²)	Degrees of Freedom	Significance (P)
{R}{A}{D}{F}{N}	1042.5075	465	3.E-46
{R}{A}{D}{F}{N}{RA}	748.3318	445	9.E-18
{R}{A}{D}{F}{N}{RD}	829.9785	453	2.E-24
{R}{A}{D}{F}{N}{RF}	963.5742	461	1.E-37
{R}{A}{D}{F}{N}{AD}	762.1993	450	2.E-18
{R}{A}{D}{F}{N}{AF}	944.8026	460	1.E-35
{R}{A}{D}{F}{N}{DF}	961.9257	462	2.E-37
{R}{A}{D}{F}{N}{RN}	1010.4408	461	4.E-43
{R}{A}{D}{F}{N}{AN}	1009.8182	460	3.E-43
{R}{A}{D}{F}{N}{DN}	1027.1936	462	6.E-45
{R}{A}{D}{F}{N}{FN}	1034.4484	464	2.E-45
{AD}{RA}{F}{N}	468.0183	445	.0998
{AD}{AN}{R}{F}	729.5103	425	4.E-16
{AD}{RA}{AN}{F}	435.3292	430	.3541
{AD}{RA}{RN}{F}	435.9495	426	.3590
{RADF}{N}	90.3698	239	1.0000
{RADFN}	.0000	0	1.0000

R=REGION, A=AGE, D=BURIAL DEPTH, F=FUNGAL SPORE, N=IRON NODULE

Table 7.8: General log-linear models incorporating burial factors, void space and iron nodules.

MODEL	Likelihood ratio (L ²)	Degrees of Freedom	Significance (P)
{R}{A}{D}{V}{N}	975.0028	704	5.E-11
{R}{A}{D}{V}{N}{RA}	680.8299	684	.5270
{R}{A}{D}{V}{N}{RD}	762.4756	692	.0321
{R}{A}{D}{V}{N}{RV}	928.2402	696	8.E-09
{R}{A}{D}{V}{N}{AD}	694.6922	689	.4322
{R}{A}{D}{V}{N}{AV}	945.6964	694	5.E-10
{R}{A}{D}{V}{N}{DV}	971.4095	698	3.E-11
{R}{A}{D}{V}{N}{RN}	942.9374	700	2.E-09
{R}{A}{D}{V}{N}{AN}	942.3135	699	2.E-09
{R}{A}{D}{V}{N}{DN}	959.6889	701	2.E-10
{R}{A}{D}{V}{N}{VN}	959.7236	702	3.E-10
{RADV}{N}	82.3401	359	1.0000
{RADVN}	.0000	0	1.0000

R=REGION, A=AGE, D=BURIAL DEPTH, V=VOID SPACE, N=IRON NODULES

Table 7.9: General log-linear models incorporating burial factors, yellow amorphous organic material and iron nodules.

MODEL	Likelihood ratio (L ²)	Degrees of Freedom	Significance (P)
{R}{A}{D}{Y}{N}	987.0108	465	1.E-39
{R}{A}{D}{Y}{N}{RA}	692.8351	445	4.E-13
{R}{A}{D}{Y}{N}{RD}	774.4818	453	3.E-19
{R}{A}{D}{Y}{N}{RY}	925.4337	461	2.E-33
{R}{A}{D}{Y}{N}{AD}	706.7025	450	1.E-13
{R}{A}{D}{Y}{N}{AY}	908.3574	460	1.E-31
{R}{A}{D}{Y}{N}{DY}	967.0911	462	6.E-38
{R}{A}{D}{Y}{N}{RN}	954.9441	461	1.E-36
{R}{A}{D}{Y}{N}{AN}	954.3215	460	9.E-37
{R}{A}{D}{Y}{N}{DN}	971.6969	462	2.E-38
{R}{A}{D}{Y}{N}{YN}	972.7277	464	3.E-38
{AD}{RA}{Y}{N}	412.5216	430	.7195
{AD}{RN}{Y}	674.6347	446	1.E-11
{RADY}{N}	82.5171	239	1.0000
{RADYN}	.0000	0	1.0000

R=REGION, A=AGE, D=BURIAL DEPTH, Y=YELLOW AMORPHOUS ORGANIC, N=IRON NODULE

Table 7.10: General log-linear models incorporating burial factors, post-burial cutans and iron nodules.

MODEL	Likelihood ratio (L ²)	Degrees of Freedom	Significance (P)
{R}{A}{D}{N}{C}	1101.7249	465	1.E-53
{R}{A}{D}{N}{C}{RA}	807.5494	445	2.E-23
{R}{A}{D}{N}{C}{RD}	889.1962	453	1.E-30
{R}{A}{D}{N}{C}{AD}	821.4167	462	5.E-24
{R}{A}{D}{N}{C}{RN}	1069.6858	450	2.E-50
{R}{A}{D}{N}{C}{AN}	1069.0356	464	2.E-50
{R}{A}{D}{N}{C}{DN}	1086.4110	461	3.E-52
{R}{A}{D}{N}{C}{RC}	944.9682	460	1.E-35
{R}{A}{D}{N}{C}{AC}	878.0098	462	2.E-28
{R}{A}{D}{N}{C}{DC}	1050.9429	461	8.E-48
{R}{A}{D}{N}{C}{NC}	1083.3677	460	2.E-51
{RA}{AD}{N}{C}	527.2359	430	.0009
{RA}{AD}{AC}{N}	303.5206	425	1.0000
{RA}{AC}{D}{N}	583.8366	440	5.E-06
{RA}{AC}{RN}{D}	551.7611	436	.0001
{RA}{AC}{RN}{AN}{D}	539.2177	431	.0003
{RA}{AC}{RC}{AN}{D}	546.4712	431	.0001
{RA}{RD}{AC}{AN}	338.6112	423	.9990
{AD}{RD}{AC}{AN}	352.4783	428	.9968
{RA}{RD}{AC}{N}	371.3003	428	.9977
{RAD}{N}{C}	300.5610	358	.9882
{RADC}{N}	62.5119	239	1.0000
{RADN}{C}	240.5610	239	.4595
{RADCN}	.0000	0	1.0000

R=REGION, A=AGE, D=BURIAL DEPTH, N=IRON NODULES, C=POST-BURIAL CUTANS