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East Sussex Structure Plan
Land South East of Polegate,
Agricultural Land Classification
Reconnaissance Survey
ALC Map and Report
November 1995

Resource Planning Team
Guildford Statutory Group
ADAS Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT
RECONNAISSANCE SURVEY

EAST SUSSEX STRUCTURE PLAN
LAND SOUTH EAST OF POLEGATE

Introduction

1. This report presents the findings of a reconnaissance Agricultural Land Classification (ALC) survey of 121.5 ha of land to the south-east of Polegate, near Eastbourne, East Sussex. The survey was carried out during October 1995.

2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF), from its Land Use Planning Unit in Reading, in connection with the East Sussex Structure Plan. The results of this survey supersede any previous ALC information for this land.

3. The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I. The survey was completed at a reconnaissance level of detail, on a 'free' survey basis, as it was undertaken primarily to update the 1:63,360 scale provisional ALC maps for this area. Consequently the results are designed for strategic planning purposes only. For site specific proposals, further, more detailed surveys may be required.

4. At the time of survey the ground cover was mainly permanent grass, with a field to the east of the site in arable use. Non-agricultural land includes playing fields and tracks. Urban land in the 'area of search' includes housing, a building site and metalled tracks. The woodland shown is mature and deciduous.

Summary

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:50000. It is accurate at this scale, but any enlargement would be misleading.

6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1 overleaf.

7. The fieldwork was conducted at an average density of approximately 1 boring per 5 hectares. A total of 24 borings and three soil pits were described.

8. The agricultural land at this site has been classified as Subgrade 3a (good quality) and Subgrade 3b (moderate quality). Principal limitations to land quality include soil wetness and soil droughtiness. The majority of the site is affected by soil wetness, where gleyed and slowly permeable clayey subsoils underlie topsoils and upper subsoils which are commonly gleyed at shallow and moderate depths. Soil wetness affects plant growth and yield and reduces the

opportunities for cultivations and/or grazing without causing structural damage to the soil. Towards the west of the site soil droughtiness is the principal limiting factor where sandy soils occur. Soil droughtiness causes plant growth to be adversely affected as water supply is insufficient for growth during all or part of the growing season.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% agricultural area
3a	12.1	10.0	12.9
3b	82.0	67.4	87.1
Urban	13.1	10.8	
Non-Agricultural	6.3	5.2	
Woodland	8.0	6.6	
Total Survey Area	94.1		100.0
Total site area	121.5	100.0	

Climate

9. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

10. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values	Values	Values
Grid reference	N/A	TQ 588 046	TQ 597 037	TQ 588 041
Altitude	m, AOD	10	10	20
Accumulated Temperature	day°C	1522	1522	1511
Average Annual Rainfall	mm	826	824	828
Field Capacity	days	174	173	174
Moisture Deficit, Wheat	mm	115	115	114
Moisture Deficit, Potatoes	mm	111	111	109

11. The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

12. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.

13. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. Local climatic factors such as exposure and frost risk are believed not to affect the site. The site is climatically Grade 1.

Site

14. The site lies at an altitude in the range of 5-20 m AOD. The land is in the form of a shallow valley which runs from south west to north east. Land rises to the north west and south east from the centre of the site. Nowhere on the site does gradient, microrelief or flooding affect the agricultural land quality.

Geology and soils

15. The published geological information for the site (BGS, 1979), shows the solid geology to trend north west to south east across the area, with Weald Clay in the north, Lower Greensand in the middle and Gault Clay in the south. Head drift deposits overlie some of the Weald Clay in the north and some of the Lower Greensand towards the south. Alluvial drift deposits are mapped along the valley floor.

16. The most detailed published soils information for the site (SSEW, 1983 and 1984) shows the site to comprise soils of the Wickham 1 association. These are described as 'slowly permeable seasonally waterlogged fine silty over clayey, fine loamy over clayey and clayey soils.' (SSEW, 1983). Soils of this broad type were found across most of the site. Towards the west of the site, where Lower Greensand is mapped, fine loamy and sandy soils occur.

Agricultural Land Classification

17. The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1.

18. The location of the auger borings and pits is shown on the attached sample location map and details of the soils data are presented in Appendix III.

Subgrade 3a

19. Land of good quality has been mapped towards the west and east of the site. Principal limitations include soil wetness and soil droughtiness.

20. The profiles of good quality which are primarily limited by soil wetness occur to both the east and west of the site. Soils in this category are of two distinct types. The first occurs to the east and extreme west of the site. These commonly comprise a stoneless medium clay loam topsoil passing to a gleyed stoneless medium clay loam or sandy clay loam upper subsoil, overlying a gleyed and slowly permeable stoneless clay or silty clay lower subsoil. Occasionally, a horizon of fine sandy loam occurs directly above the clay as in Pit 3 which is representative of this soil type overall.

21. The second soil type affected by soil wetness occurs to the east of Mornings Mill Farm towards the centre of the 'area of search'. Pit 1 is representative of this soil type. Soils in this area commonly comprise a stoneless silt loam or medium silty clay loam topsoil, passing to gleyed, stoneless medium and heavy silty clay loam upper subsoil horizons. These overlie a stoneless, gleyed and slowly permeable heavy clay loam or clay lower subsoil to depth (120cm). The slowly permeable clayey horizons have the effect of restricting water flow through the soil profile causing drainage to be impeded. The depth at which these horizons occur in the local climate leads to Wetness Class III being appropriately applied and subsequently Subgrade 3a given the medium workability status of the topsoil. Soil wetness affects plant growth and yield as well as restricting land utilisation in terms of the number of days when machinery cultivations and grazing by livestock can occur without causing structural damage to the soil..

22. Within the Subgrade 3a mapping unit towards the west of the site, there are also areas which are primarily restricted by soil droughtiness. These principally occur on the slopes in this area to the west of Mornings Mill Farm. The soils here comprise gleyed stoneless medium sandy loam topsoils over a similar upper subsoil. The lower subsoil horizons comprise stoneless, gleyed loamy medium sands and medium sands to depth (120cm). Sandy textured soils such as these restrict the amount of moisture which may be available to crops. Yield potential may thus be decreased and variable. In the local relatively wet climate, these sandy soils have reduced available water to the extent that Subgrade 3a is appropriate in this area.

Subgrade 3b

23. Land of moderate quality has been mapped over the majority of the site. The principal limitation to land quality is soil wetness.

24. Soils in this area comprise a stoneless, commonly gleyed medium / heavy clay loam, or medium / heavy silty clay loam topsoil. This commonly passes to a similarly textured gleyed and stoneless upper subsoil which, lies over gleyed and slowly permeable clay or silty clay. Pit 2 is representative of this soil type. The slowly permeable clay or silty clay horizons restrict water flow through the soil profile so causing drainage to be impeded to the extent that Wetness Class IV and Subgrade 3b has been appropriately applied in this area given the local climate. Soil wetness affects plant growth and yield as well as restricting land utilisation in terms of the number of days when machinery cultivations and grazing by livestock can occur without causing structural damage to the soil.

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SOURCES OF REFERENCE

British Geological Survey (1964) *Sheet 319, Lewes. Solid and Drift Edition. 1:50 000. Scale.* BGS: London.

Ministry of Agriculture, Fisheries and Food (1988) *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land.* MAFF: London.

Met. Office (1989) *Climatological Data for Agricultural Land Classification.* Met. Office: Bracknell.

Soil Survey of England and Wales (1983) *Soils of South East England. 1:250 000 Scale.* SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils of South East England. Bulletin No. 15.* SSEW: Harpenden.

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2: Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a: Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b: Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4: Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5: Very Poor Quality Agricultural Land

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

Agricultural Buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (e.g. polythene tunnels erected for lambing) may be ignored.

Open Water

Includes lakes, ponds and rivers as map scale permits.

Land Not Surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above, e.g. buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will be shown.

APPENDIX II

SOIL WETNESS CLASSIFICATION

Definitions of Soil Wetness Classes

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six soil wetness classes are identified and are defined in the table below.

Wetness Class	Duration of waterlogging[1]
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years.[2]
II	The soil profile is wet within 70 cm depth for 31-90 days in most years **or**, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 90 days, but only wet within 40 cm depth for 30 days in most years.
III	The soil profile is wet within 70 cm depth for 91-180 days in most years **or**, if there is no slowly permeable layer present within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31-90 days in most years.
IV	The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth for more than 210 days in most years **or**, if there is no slowly permeable layer present within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years.
V	The soil profile is wet within 40 cm depth for 211-335 days in most years.
VI	The soil profile is wet within 40 cm depth for more than 335 days in most years.

Assessment of Wetness Class

Soils have been allocated to wetness classes by the interpretation of soil profile characteristics and climatic factors using the methodology described in *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988).

[1] The number of days is not necessarily a continuous period.

[2] 'In most years' is defined as more than 10 out of 20 years.

APPENDIX III

SOIL DATA

Contents:

SOIL PROFILE DESCRIPTIONS: EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a computer database. This uses notations and abbreviations as set out below.

Boring Header Information

1. **GRID REF**: national 100 km grid square and 8 figure grid reference.

2. **USE**: Land use at the time of survey. The following abbreviations are used.

ARA:	Arable	**WHT:**	Wheat	**BAR**:	Barley
CER:	Cereals	**OAT**:	Oats	**MZE**:	Maize
OSR:	Oilseed rape	**BEN**:	Field Beans	**BRA**:	Brassicae
POT:	Potatoes	**SBT**:	Sugar Beet	**FCD**:	Fodder Crops
LIN:	Linseed	**FRT:**	Soft and Top Fruit	**FLW**:	Fallow
PGR:	Permanent Pasture	**LEY**:	Ley Grass	**RGR**:	Rough Grazing
SCR:	Scrub	**CFW**:	Coniferous Woodland	**DCW**:	Deciduous Wood
HTH:	Heathland	**BOG**:	Bog or Marsh	**FLW**:	Fallow
PLO:	Ploughed	**SAS**:	Set aside	**OTH**:	Other
HRT:	Horticultural Crops				

3. **GRDNT**: Gradient as estimated or measured by a hand-held optical clinometer.

4. **GLEY/SPL**: Depth in centimetres (cm) to gleying and/or slowly permeable layers.

5. **AP (WHEAT/POTS)**: Crop-adjusted available water capacity.

6. **MB (WHEAT/POTS)**: Moisture Balance. (Crop adjusted AP - crop adjusted MD)

7. **DRT**: Best grade according to soil droughtiness.

8. If any of the following factors are considered significant, 'Y' will be entered in the relevant column.

MREL:	Microrelief limitation	**FLOOD:**	Flood risk	**EROSN**:	Soil erosion risk
EXP:	Exposure limitation	**FROST**:	Frost prone	**DIST**:	Disturbed land
CHEM:	Chemical limitation				

9. **LIMIT**: The main limitation to land quality. The following abbreviations are used.

OC:	Overall Climate	**AE**:	Aspect	**EX**:	Exposure
FR:	Frost Risk	**GR**:	Gradient	**MR**:	Microrelief
FL:	Flood Risk	**TX**:	Topsoil Texture	**DP**:	Soil Depth
CH:	Chemical	**WE**:	Wetness	**WK**:	Workability
DR:	Drought	**ER**:	Erosion Risk	**WD**:	Soil Wetness/Droughtiness
ST:	Topsoil Stoniness				

Soil Pits and Auger Borings

1. **TEXTURE**: soil texture classes are denoted by the following abbreviations.

S:	Sand	**LS**:	Loamy Sand	**SL**:	Sandy Loam
SZL:	Sandy Silt Loam	**CL**:	Clay Loam	**ZCL**:	Silty Clay Loam
ZL:	Silt Loam	**SCL**:	Sandy Clay Loam	**C**:	Clay
SC:	Sandy Clay	**ZC**:	Silty Clay	**OL**:	Organic Loam
P:	Peat	**SP**:	Sandy Peat	**LP**:	Loamy Peat
PL:	Peaty Loam	**PS**:	Peaty Sand	**MZ**:	Marine Light Silts

For the sand, loamy sand, sandy loam and sandy silt loam classes, the predominant size of sand fraction will be indicated by the use of the following prefixes:

F: Fine (more than 66% of the sand less than 0.2mm)
M: Medium (less than 66% fine sand and less than 33% coarse sand)
C: Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content: **M:** Medium (<27% clay) **H**: Heavy (27-35% clay)

2. **MOTTLE COL**: Mottle colour using Munsell notation.

3. **MOTTLE ABUN**: Mottle abundance, expressed as a percentage of the matrix or surface described.

F: few <2% **C:** common 2-20% **M**: many 20-40% **VM**: very many 40% +

4. **MOTTLE CONT:** Mottle contrast

F: faint - indistinct mottles, evident only on close inspection
D: distinct - mottles are readily seen
P: *prominent - mottling is conspicuous and one of the outstanding features of the* horizon

5. **PED. COL**: Ped face colour using Munsell notation.

6. **GLEY:** If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.

7. **STONE LITH**: Stone Lithology - One of the following is used.

HR:	all hard rocks and stones	**SLST**:	soft oolitic or dolimitic limestone
CH:	chalk	**FSST**:	soft, fine grained sandstone
ZR:	soft, argillaceous, or silty rocks	**GH**:	gravel with non-porous (hard) stones
MSST:	soft, medium grained sandstone	**GS**:	gravel with porous (soft) stones
SI:	soft weathered igneous/metamorphic rock		

Stone contents (>2cm, >6cm and total) are given in percentages (by volume).

8. **STRUCT**: the degree of development, size and shape of soil peds are described using the following notation:

degree of development	**WK**: weakly developed **ST**: strongly developed	**MD**: moderately developed
ped size	**F**: fine **C**: coarse	**M**: medium **VC**: very coarse
ped shape	**S** : single grain **GR**: granular **SAB**: sub-angular blocky **PL**: platy	**M**: massive **AB**: angular blocky **PR**: prismatic

9. **CONSIST**: Soil consistence is described using the following notation:

L: loose **VF**: very friable **FR**: friable **FM**: firm **VM**: very firm
EM: extremely firm **EH**: extremely hard

10. **SUBS STR**: Subsoil structural condition recorded for the purpose of calculating profile droughtiness: **G**: good **M**: moderate **P**: poor

11. **POR**: Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'Y' will appear in this column.

12. **IMP**: If the profile is impenetrable to rooting a 'Y' will appear in this column at the appropriate horizon.

13. **SPL**: Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.

14. **CALC**: If the soil horizon is calcareous, a 'Y' will appear in this column.

15. Other notations
APW: available water capacity (in mm) adjusted for wheat
APP: available water capacity (in mm) adjusted for potatoes
MBW: moisture balance, wheat
MBP: moisture balance, potatoes

SOIL PIT DESCRIPTION

Site Name : E SUSSEX STUCT POLEGATE Pit Number : 1P

Grid Reference: TQ59020405
Average Annual Rainfall : 828 mm
Accumulated Temperature : 1516 degree days
Field Capacity Level : 174 days
Land Use : Permanent Grass
Slope and Aspect : 2 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	ZL	25Y 41 00	0	0						
28- 52	MZCL	25Y 52 00	0	0		C	MDCSAB	FR	M	
52- 71	HZCL	25Y 53 52	0	0		M	WKCPR	FR	M	
71-120	HCL	25Y 61 00	0	0		M	MDCAB	FM	P	

Wetness Grade : 3A
Wetness Class : III
Gleying : 28 cm
SPL : 52 cm

Drought Grade :
APW : mm MBW : 0 mm
APP : mm MBP : 0 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : E SUSSEX STUCT POLEGATE Pit Number : 2P

Grid Reference: TQ59130424 Average Annual Rainfall : 828 mm
Accumulated Temperature : 1516 degree days
Field Capacity Level : 174 days
Land Use : Permanent Grass
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 14	MZCL	25Y 41 00	0	0		C				
14- 27	HZCL	25Y 52 00	0	0		M	WKCAB	FM	P	
27- 55	ZC	05Y 61 00	0	0		M	STCAB	VM	P	

Wetness Grade : 3B Wetness Class : IV
Gleying : 0 cm
SPL : 14 cm

Drought Grade : APW : mm MBW : 0 mm
APP : mm MBP : 0 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : E SUSSEX STUCT POLEGATE Pit Number : 3P

Grid Reference: TQ58650418 Average Annual Rainfall : 828 mm
Accumulated Temperature : 1516 degree days
Field Capacity Level : 174 days
Land Use : Permanent Grass
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	MCL	10YR42 00	0	0						
28- 50	SCL	25Y 53 00	0	0		M	MDCPR	FR	M	
50- 73	FSL	25Y 62 00	0	0		M	MDCAB	VM	M	
73-100	ZC	05Y 63 00	0	0		M	MDCAB	FM	P	
100-120	ZC	05Y 61 00	0	0		C			P	

Wetness Grade : 3A Wetness Class : III
Gleying : 28 cm
SPL : 73 cm

Drought Grade : 2 APW : 146mm MBW : 32 mm
APP : 119mm MBP : 9 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Wetness

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	TQ58960452	PGR	N	2	25	25	4	3B		0		0					WE	3B	SL GLEY 0
1P	TQ59020405	PGR	S	2	28	52	3	3A		0		0					WE	3A	PIT 90 AUG 120
2	TQ58810428	PGR			0	25	4	3B		0		0					WE	3B	
2P	TQ59130424	PGR			0	14	4	3B		0		0					WE	3B	PIT 50 AUG 70
3	TQ58740442	RGR	N	1	0	25	4	3B		0		0					WE	3B	
3P	TQ58650418	PGR			28	73	3	3A	146	32	119	9	2				WE	3A	PIT 90 AUG 120
4	TQ58640418	PGR			25		2	2	160	46	114	4	2				WD	2	SEE 3P
5	TQ58630404	PGR	S	2	30	70	3	3A		0		0					WE	3A	
6	TQ58630391	PGR			0	30	4	3B		0		0					WE	3B	
7	TQ58750408	PGR	N	2	0		2	1	119	5	105	-5	3A				DR	3A	
8	TQ58860392	PGR			0	40	4	3B		0		0					WE	3B	
9	TQ58840381	PGR			0	23	4	3B		0		0					WE	3B	
10	TQ58880363	PGR			15	15	4	3B		0		0					WE	3B	
11	TQ59240380	PGR			0	28	4	3B		0		0					WE	3B	
12	TQ59510348	PGR			0	23	4	3B		0		0					WE	3B	
13	TQ59690363	ARA			25	65	3	3A		0		0					WE	3A	
14	TQ59880375	PGR			0	40	4	3B		0		0					WE	3B	
15	TQ59600380	ARA	N	2	25	25	4	3B		0		0					WE	3B	
16	TQ59370380	ARA	NW	1	28	40	4	3B		0		0					WE	3B	
17	TQ59520400	PGR			20	20	4	3B		0		0					WE	3B	
18	TQ59380405	PGR	E	2	0	25	4	3B		0		0					WE	3B	
19	TQ59080392	PGR	S	3	0	30	4	3B		0		0					WE	3B	
20	TQ59020405	PGR	S	1	30	55	3	3A		0		0					WE	3A	SEE 1P
21	TQ59000420	PGR	E	3	0	28	4	3B		0		0					WE	3B	
22	TQ59130424	PGR	S	1	0	25	4	3B		0		0					WE	3B	SEE 2P
23	TQ59230434	PGR	E	2	0	40	4	3B		0		0					WE	3B	
24	TQ58880380	PGR	S	2	0	25	4	3B		0		0					WE	3B	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	PED GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	CALC
1	0-25	hzcl	10YR43 00	10YR56 00	C			S	0	0		0						Slightly gleyed
	25-55	hzcl	25Y 51 52	10YR68 00	M		00MN00 00	Y	0	0		0		M			Y	
	55-120	zc	25Y 63 62	10YR58 00	M		00MN00 00	Y	0	0		0		P			Y	
1P	0-28	zl	25Y 41 00						0	0		0						PSD-Border mzcl,1%
	28-52	mzcl	25Y 52 00	10YR58 00	C		25Y 53 00	Y	0	0		0	MDCSAB	FR M	Y			PSD-Border hzcl,1%
	52-71	hzcl	25Y 53 52	10YR58 00	M		25Y 53 00	Y	0	0		0	WKCPR	FR M	Y		Y	PSD-Border mzcl,1%
	71-120	hcl	25Y 61 00	10YR58 68	M		00MN00 00	Y	0	0		0	MDCAB	FM P	Y		Y	PSD-Border mcl, 2%
2	0-25	hcl	10YR51 00	10YR56 00	C			Y	0	0	HR	2						
	25-70	c	05Y 52 00	10YR68 58	M			Y	0	0		0		P			Y	
2P	0-14	mzcl	25Y 41 00	10YR46 00	C			Y	0	0		0						
	14-27	hzcl	25Y 52 00	10YR58 00	M			Y	0	0		0	WKCAB	FM P	Y		Y	
	27-55	zc	05Y 61 00	10YR58 68	M		05Y 62 00	Y	0	0		0	STCAB	VM P	Y		Y	PSD-Border (h)c,2%
3	0-25	mzcl	25Y 41 00	10YR66 00	C			Y	0	0		0						
	25-35	hzcl	25Y 52 00	10YR66 00	M			Y	0	0		0		M			Y	
	35-70	zc	25Y 52 53	10YR68 00	M		00MN00 00	Y	0	0		0		P			Y	
3P	0-28	mcl	10YR42 00						0	0		0						PSD-Border fszl,0%
	28-50	scl	25Y 53 00	10YR58 00	M		25Y 51 00	Y	0	0		0	MDCPR	FR M	Y			PSD
	50-73	fsl	25Y 62 00	10YR68 00	M		25Y 61 00	Y	0	0		0	MDCAB	VM M	Y			PSD-Border lfs,2%
	73-100	zc	05Y 63 00	10YR68 00	M		05Y 61 00	Y	0	0		0	MDCAB	FM P	Y		Y	PSD-Medium zc
	100-120	zc	05Y 61 00	10YR68 00	C			Y	0	0		0		P			Y	
4	0-25	mcl	10YR42 00						0	0		0						
	25-35	mcl	25Y 42 00	10YR56 00	C			Y	0	0		0		M				
	35-60	scl	25Y 53 00	75YR46 56	C			Y	0	0		0		M				
	60-80	msl	25Y 63 00	10YR68 00	M			Y	0	0		0		M				
	80-120	msl	25Y 61 00	10YR68 00	M			Y	0	0		0		M				
5	0-30	mcl	10YR42 41						0	0		0						
	30-50	mcl	10YR42 52	10YR56 00	C			Y	0	0		0		M				
	50-70	mszl	25Y 41 00	10YR46 56	M			Y	0	0		0		M				
	70-120	hcl	25Y 51 00	10YR58 00	M			Y	0	0		0		P			Y	
6	0-30	hcl	25Y 41 00	10YR56 00	C			Y	0	0		0						
	30-70	c	25Y 51 00	10YR68 00	M			Y	0	0		0		P			Y	
7	0-20	msl	10YR42 00	10YR46 00	C			Y	0	0		0						
	20-65	msl	25Y 52 00	10YR56 00	C			Y	0	0		0		M				
	65-80	lms	25Y 62 00	10YR58 00	M			Y	0	0		0		M				
	80-120	ms	25Y 61 00	10YR58 00	M			Y	0	0		0		M				
8	0-28	mzcl	10YR41 00	10YR46 00	C			Y	0	0		0						
	28-40	mzcl	10YR53 00	10YR58 00	C			Y	0	0		0		M				
	40-60	hzcl	25Y 53 00	10YR58 00	M			Y	0	0		0		M			Y	
	60-65	hcl	25Y 52 62	10YR58 00	M			Y	0	0	HR	5		M			Y	
	65-100	c	05Y 53 00	10YR58 00	M			Y	0	0		0		P			Y	
	100-120	scl	05Y 41 00	10YR58 00	M		00MN00 00	Y	0	0	HR	5		M				

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
9	0-23	c	25Y 41 00	10YR58 00	C			Y	0	0		0						
	23-70	c	25Y 52 00	10YR58 00	M			Y	0	0		0		P			Y	
10	0-15	c	10YR41 00						0	0		0						
	15-70	c	05Y 61 00	10YR58 00	C			Y	0	0		0		P			Y	
11	0-28	mzcl	10YR41 00	10YR46 00	C			Y	0	0		0						
	28-40	hzcl	25Y 53 00	10YR58 00	M			Y	0	0		0		M			Y	
	40-70	c	25Y 61 00	10YR58 00	M			Y	0	0		0		P			Y	
	70-90	c	25Y 61 00	10YR58 00	M			Y	0	0	HR	10		P			Y	
	90-120	c	25Y 61 00	10YR58 00	M			Y	0	0		0		P			Y	
12	0-23	c	25Y 41 00	10YR56 00	C			Y	0	0		0						
	23-70	c	05BG51 00	10YR58 00	M			Y	0	0		0		P			Y	
13	0-25	mcl	10YR42 00						0	0		0						
	25-65	mcl	25Y 51 00	10YR56 00	C			Y	0	0		0		M				
	65-100	c	05Y 51 00	10YR58 00	M			Y	0	0		0		P			Y	
14	0-25	mcl	10YR42 52	10YR56 00	C			Y	0	0		0						
	25-40	hcl	25Y 52 00	10YR58 00	C			Y	0	0		0		M			Y	
	40-80	c	25Y 52 00	10YR58 00	M	00MN00	00	Y	0	0		0		P			Y	
15	0-25	mcl	10YR42 00						0	0		0						
	25-70	c	05Y 51 00	10YR58 00	M			Y	0	0		0		P			Y	
16	0-28	hcl	25Y 41 00						0	0		0						
	28-40	hcl	25Y 52 00	10YR58 00	M			Y	0	0		0		M			Y	
	40-70	c	25Y 51 52	10YR58 00	M			Y	0	0		0		P			Y	
17	0-20	c	25Y 41 00						0	0		0						
	20-60	c	05Y 51 00	10YR58 00	C			Y	0	0		0		P			Y	
18	0-25	mcl	25Y 41 00	10YR46 00	C			Y	0	0		0						
	25-35	c	25Y 52 00	10YR56 00	C			Y	0	0		0		P			Y	
	35-70	c	05Y 52 00	10YR58 00	M	00MN00	00	Y	0	0	HR	15		P			Y	
19	0-30	mzcl	10YR41 00	10YR46 00	C			Y	0	0		0						
	30-70	hzcl	25Y 52 00	10YR68 00	M			Y	0	0		0		M			Y	
	70-100	zc	05Y 71 00	10YR58 00	M	00MN00	00	Y	0	0		0		P			Y	
20	0-30	mzcl	10YR41 00						0	0		0						
	30-55	mzcl	10YR53 00	10YR56 00	C			Y	0	0		0		M				
	55-70	hzcl	25Y 52 00	10YR58 00	M			Y	0	0		0		M			Y	
	70-120	zc	25Y 61 00	10YR58 00	M			Y	0	0		0		P			Y	
21	0-28	mcl	10YR41 00	10YR46 00	C			Y	0	0		0						
	28-60	c	25Y 52 00	10YR58 00	M			Y	0	0		0		P			Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
22	0-25	mzcl	10YR51 00	10YR56 00	C			Y	0	0		0						
	25-30	hzcl	25Y 51 00	10YR58 00	C			Y	0	0		0		M			Y	
	30-70	zc	25Y 61 00	10YR58 00	M			Y	0	0		0		P			Y	
23	0-25	mzcl	10YR41 00	10YR46 00	C			Y	0	0		0						
	25-40	mzcl	25Y 53 00	10YR56 00	C			Y	0	0		0		M				
	40-100	hzcl	25Y 52 00	10YR58 00	M		00MN00 00	Y	0	0		0		M			Y	
24	0-25	hcl	25Y 41 00	10YR58 00	C			Y	0	0		0						
	25-70	c	05Y 53 00	10YR58 00	M			Y	0	0		0		P			Y	