

**Chichester District Local Plan  
Objector Site OSH 49  
Land east of Chichester Road,  
Selsey, West Sussex  
Agricultural Land Classification  
August 1995**

**Resource Planning Team  
Guildford Statutory Group  
ADAS Reading**

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**AGRICULTURAL LAND CLASSIFICATION SUMMARY REPORT**  
**CHICHESTER DISTRICT LOCAL PLAN**  
**OBJECTOR SITE OSH 49: LAND EAST OF CHICHESTER ROAD, SELSEY**

**Introduction**

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 33.2 ha of land to the east of Chichester Road, at Selsey, West Sussex. The survey was carried out during August 1995.
2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF), Land Use Planning Unit, Reading in connection with the Chichester District Local Plan. The results of this survey supersede previous ALC information for this land.
3. The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group in 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.
4. At the time of survey the land use directly south of Park Lane was a mixture of permanent grass and recently ploughed land. The land in the south of the site comprised rough grazing. Land mapped as Urban comprises hard-surfaced roads and residential buildings.

**Summary**

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10000; 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.

**Table 1: Area of grades and other land**

Grade/Other land	Area (hectares)	% site area	% agricultural area
2	9.5	28.6	30.6
3a	21.5	64.8	69.4
Urban	2.2	6.6	
<hr/>			
Total survey area	31.0		100.0
Total site area	33.2	100.0	

7. The fieldwork was conducted at an average density of 1 boring per hectare. A total of 30 borings and two soil pits were described. The survey was undertaken when the soil conditions were extremely dry. Consequently, not all of the soil profiles could be sampled to full auger depth (120 cm). As a result, survey work during wetter soil conditions may reveal some land quality variation within the Grade 2 mapping unit.

8. Most of the land at this site has been classified as Subgrade 3a, good quality. Grade 2 land, very good quality, occurs in the west of the site. The principal limitation to land quality is soil wetness though, across parts of the site, soil droughtiness is equally restricting.

9. The soils in this area comprise very slightly stony or stoneless, light and medium silty topsoils over medium silty subsoils. Where slightly heavier lower subsoils occurred, these were found to be slowly permeable. Where the soil profiles are moderately well drained the land has been classified as Grade 2. Where the slowly permeable horizon occurs at shallower depths within the soil profile, the land has been classified as Subgrade 3a. This results in soil wetness limitations. Soil wetness affects plant growth and yield, and reduces the opportunities for cultivations and/or grazing without causing structural damage to the soil.

10. Soil droughtiness limitations also affect some of the land classified as Subgrade 3a and all of the land shown as Grade 2. The coastal proximity of this site in a southerly location means that the soil moisture deficits are relatively high, in a national context. The interaction between the soils and climate at this site may lead to the soil available water being insufficient to fully meet crop needs. Consequently this land will suffer from slightly lower and less consistent crop yields.

## Factors Influencing ALC Grade

### Climate

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

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

**Table 2: Climatic and altitude data**

Factor	Units	Values
Grid reference	N/A	SZ 866 940
Altitude	m, AOD	4
Accumulated Temperature	day°C	1550
Average Annual Rainfall	mm	701
Field Capacity Days	days	141
Moisture Deficit, Wheat	mm	125
Moisture Deficit, Potatoes	mm	123

13. 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.

14. 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.

15. 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 not believed to adversely affect the site. The site is climatically Grade 1. However, climatic factors do interact with soil factors to influence soil wetness and droughtiness limitations. The proximity to the south coast means that evapotranspiration rates will be relatively high. This fact, combined with the warm prevailing temperature, means that at this locality the soil moisture deficits are very high in a national context. High soil moisture deficits increase the likelihood of soil droughtiness limitations.

### **Site**

16. Most of the site is flat and lies at approximately 4 m AOD. Immediately east of Chichester Road, the land is slightly higher lying at 9 m AOD. Nowhere on the site do gradient or relief impose any limitation to the land quality.

### **Geology and soils**

17. The published geological information (BGS, 1975) shows most of the site to be underlain by drift deposits of brickearth, with valley gravel mapped along the western edge of the site.

18. The published soils information (SSGB, 1967) maps the majority of soils on the site as the Park Gate Series (deep phase and shallow phase over loamy pebbly drift). These soils are described as 'a range of gley soils in brickearth' (SSGB, 1967). Along the western edge of the site, soils of the Hook Series (deep phase) and Hamble Series (shallow phase over loamy pebbly drift) are mapped. These soils are respectively described as 'brown earths with gleying' (SSGB, 1967), and 'well drained brown earths developed in silty drift, which is stoneless, or nearly so' (SSGB, 1967). Detailed field examination found soils similar to those described above.

### **Agricultural Land Classification**

19. 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, page 1.

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

## *Grade 2*

21. Most of the land classified as Grade 2, very good quality, is limited by both soil wetness and soil droughtiness. Some of the land is limited by soil droughtiness solely. This land occurs where the site rises gently in the west. Topsoils comprise non-calcareous medium clay loams and medium silty clay loams. These overlie similarly textured permeable upper subsoils. Where the land is limited by soil droughtiness, the profiles pass into permeable lower subsoils of variable texture (ranging from medium silty clay loams to clays). These profiles are well drained and so are assigned to Wetness Class I (see Appendix II). The interaction of these soil properties with the very dry prevailing climate means that the profile available water is not quite sufficient to fully meet crop demands. Consequently there is a minor risk of drought stress, resulting in slightly lower yield potential and less consistent crop yields.

22. Where soil droughtiness and wetness are equally restricting, soil profiles pass into poorly structured heavier textured subsoils (heavy silty clay loams, heavy clay loams, clays) at about 55 to 60 cm depth. The lower subsoils are slowly permeable, resulting in moderately well drained soil profiles. This drainage impedance is indicated by gleying within the lower subsoils. Consequently, these profiles have been assigned to Wetness Class II. Such profiles are represented by Pit 2. The interaction between the medium textured topsoils and impeded soil drainage with the prevailing climate means that this land is subject to slightly restricted flexibility of cropping, stocking and cultivations.

23. Due to the very dry subsoil conditions at the time of survey, some of the auger borings within this mapping unit could not be penetrated below the topsoil or upper subsoil. However, these borings are proximate to those which were able to be augured to depth within the Grade 2 mapping unit, and also occur on the gently sloping land. It has thus been assumed that these auger borings would be consistent with those elsewhere in the mapping unit.

## *Subgrade 3a*

24. Land classified as Subgrade 3a, good quality, is limited by soil wetness and, in parts, also by soil droughtiness. Topsoils comprise non-calcareous medium silty clay loams, medium clay loams and, occasionally, silt loams. These overlie similarly textured permeable upper subsoils. At approximately 40 to 60 cm depth these profiles pass into poorly structured heavy silty clay loam and heavy clay loam lower subsoils, which occasionally pass into clay at depth. Due to the very dry subsoil conditions at the time of survey, not all of the profiles could be sampled to full auger depth (120 cm). These profiles are stoneless or very slightly stony, containing 0-5% total flints > 2 mm by volume.

25. The lower subsoils are slowly permeable and act to cause imperfect soil drainage conditions, as indicated by gleying from the surface. Consequently, these profiles have been assigned to Wetness Class III (see Appendix II). Such profiles are represented by Pit 1. The interaction between the medium textured topsoils and impeded soil drainage with the prevailing climate acts to restrict the flexibility of cropping, stocking and cultivations.

26. In comparison to better structured subsoils of identical texture, poorly structured subsoils retain less soil water available for uptake by crop roots. Within some of the soil profiles, the poorly structured lower subsoils occur at approximately 40 to 45 cm. These profiles contain less available water when likened to profiles where the poorly structured subsoils are present from approximately 50 cm depth. The high soil moisture deficits at this site means that such profiles give rise to land which is subject to moderate soil droughtiness limitations, which may reduce the level and consistency of crop yields.

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## SOURCES OF REFERENCE

British Geological Survey (1975) *Sheet No. 332, Bognor, 1:50,000 (drift edition)*.  
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 (1967) *Sheets SZ79 and SZ89, Selsey Bill, 1:25,000 and accompanying bulletin 'Soils of the West Sussex Coastal Plain'*.  
SSGB: 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.

## 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.

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Wetness Class	Duration of waterlogging <sup>1</sup>
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years. <sup>2</sup>
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.

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#### 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).

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<sup>1</sup> The number of days is not necessarily a continuous period.

<sup>2</sup> 'In most years' is defined as more than 10 out of 20 years.

## **APPENDIX III**

### **SOIL DATA**

#### **Contents:**

**Sample location map**

**Soil abbreviations - Explanatory Note**

**Soil Pit Descriptions**

**Soil boring descriptions (boring and horizon levels)**

**Database Printout - Horizon Level Information**

## 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.

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

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

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

## Soil Pits and Auger Borings

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

<b>S:</b> Sand	<b>LS:</b> Loamy Sand	<b>SL:</b> Sandy Loam
<b>SZL:</b> Sandy Silt Loam	<b>CL:</b> Clay Loam	<b>ZCL:</b> Silty Clay Loam
<b>ZL:</b> Silty Loam	<b>SCL:</b> Sandy Clay Loam	<b>C:</b> Clay
<b>SC:</b> Sandy Clay	<b>ZC:</b> Silty Clay	<b>OL:</b> Organic Loam
<b>P:</b> Peat	<b>SP:</b> Sandy Peat	<b>LP:</b> Loamy Peat
<b>PL:</b> Peaty Loam	<b>PS:</b> Peaty Sand	<b>MZ:</b> 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:

<b>F:</b> Fine (more than 66% of the sand less than 0.2mm)
<b>M:</b> Medium (less than 66% fine sand and less than 33% coarse sand)
<b>C:</b> 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. **GLEYS:** 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.

<b>HR:</b> all hard rocks and stones	<b>SLST:</b> soft oolitic or dolimitic limestone
<b>CH:</b> chalk	<b>FSST:</b> soft, fine grained sandstone
<b>ZR:</b> soft, argillaceous, or silty rocks	<b>GH:</b> gravel with non-porous (hard) stones
<b>MSST:</b> soft, medium grained sandstone	<b>GS:</b> gravel with porous (soft) stones
<b>SI:</b> 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            **MD**: moderately developed  
   **ST**: strongly developed

ped size                            **F**: fine                                    **M**: medium  
   **C**: coarse                                **VC**: very coarse

ped shape                            **S** : single grain                        **M**: massive  
   **GR**: granular                            **AB**: angular blocky  
   **SAB**: sub-angular blocky        **PR**: prismatic "  
   **PL**: platy

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 : CHICHESTER DLP OSH49 Pit Number : 1P

Grid Reference: SZ68509410 Average Annual Rainfall : 704 mm  
 Accumulated Temperature : 1549 degree days  
 Field Capacity Level : 142 days  
 Land Use : Permanent Grass  
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MZCL	10YR52 00	0	0		C				
30- 47	MZCL	10YR53 00	0	0		C	MDCSAB	FM	M	
47- 95	HZCL	75YR52 00	0	0		C	MDCPR	FM	P	
95-120	ZC	10YR53 00	0	0		C			P	

Wetness Grade : 3A Wetness Class : III  
 Gleying : 0 cm  
 SPL : 47 cm

Drought Grade : 2 APW : 134mm MBW : 9 mm  
 APP : 114mm MBP : -9 mm

FINAL ALC GRADE : 3A  
 MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : CHICHESTER DLP OSH49 Pit Number : 2P

Grid Reference: SZB6009420 Average Annual Rainfall : 704 mm  
 Accumulated Temperature : 1549 degree days  
 Field Capacity Level : 142 days  
 Land Use : Ploughed  
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MZCL	10YR54 00	0	0						
30- 56	MZCL	10YR54 00	0	0		F			M	
56-120	HZCL	75YR53 00	0	0		C	MDCPR	FM	P	

Wetness Grade : 2 Wetness Class : II  
 Gleying : 56 cm  
 SPL : 56 cm

Drought Grade : 2 APW : 135mm MBW : 10 mm  
 APP : 118mm MBP : -5 mm

FINAL ALC GRADE : 2  
 MAIN LIMITATION : Soil Wetness/Droughtiness

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--				-WHEAT-		-POTS-		M.REL DRT	EROSN FLOOD	FROST EXP	FROST DIST	CHEM LIMIT	ALC COMMENTS
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP						
1	SZ86109440	PLO				1	1	131	6	123	0	2			DR 2	
1P	SZ68509410	PGR			0	47	3	3A	134	9	114	-9	2		WE 3A	
2	SZ86109430	PLO			45	60	2	2	133	8	114	-9	2		WD 2	
2P	SZ86009420	PLO			56	56	2	2	135	10	118	-5	2		WD 2	Pit at asp 5
3	SZ86209430	PLO			28	60	3	3A	136	11	119	-4	2		WE 3A	Impen 90 dry
4	SZ86309430	PLO			30	60	3	3A	136	11	119	-4	2		WE 3A	Impen 85 dry
5	SZ86009420	PLO			45	60	2	2	113	-12	120	-3	3A		WD 2	Impen 80 Re2P
6	SZ86109420	PLO			30	60	3	3A	135	10	118	-5	2		WE 3A	
7	SZ86209420	PLO			25	45	3	3A	129	4	111	-12	3A		WD 3A	Impen 75 dry
8	SZ86309420	PLO			28	60	3	3A	136	11	119	-4	2		WE 3A	
9	SZ86409420	PLO			25	45	3	3A	128	3	110	-13	3A		WD 3A	
11	SZ85909410	RGR	SE	01			1	1	156	31	120	-3	2		DR 2	Imp90 s1 stony
12	SZ86009410	RGR			60	60	2	2	141	16	118	-5	2		WD 2	
13	SZ86109410	RGR			30	50	3	3A	137	12	113	-10	2		WE 3A	
15	SZ86309410	PLO			25	55	3	3A	132	7	115	-8	2		WE 3A	Impen 70 dry
16	SZ86409410	PGR			0					0	0				WE 3A	Impen20 Re1P
17	SZ86509410	PGR			0	50	3	3A	133	8	115	-8	2		WE 3A	
18	SZ86609410	PGR			0	45	3	3A	139	14	121	-2	2		WE 3A	
19	SZ85809400	RGR	SE	01						0	0				WE 3A	Impen 30 dry
20	SZ85909400	RGR	SE	01						0	0				WD 2	Imp42dry Re2P
21	SZ86009400	RGR			55	55	2	2	143	18	122	-1	2		WD 2	Deeper
22	SZ86109400	RGR			30	30	3	3A	90	-35	90	-33	3B		WE 3A	
23	SZ86209400	RGR								0	0				WE 3A	Imp30dry Re1P
24	SZ86309400	RGR			35	50	3	3A	140	15	115	-8	2		WE 3A	
25	SZ86509400	PGR			0	40	3	3A	131	6	108	-15	3A		WD 3A	
26	SZ86609400	PGR			0	53	3	3A	159	34	140	17	1		WE 3A	
27	SZ86709400	PGR			0	60	3	3A	137	12	120	-3	2		WE 3A	
28	SZ85909390	RGR								0	0				WD 2	Imp30dry Re2P
29	SZ86009390	RGR			40	40	3	3A	144	19	116	-7	2		WE 3A	Deeper
30	SZ86109390	RGR								0	0				WE 3A	Impen 38 dry
31	SZ86209390	RGR			30	30	4	3B	110	-15	114	-9	3A		WE 3B	
32	SZ86609390	PGR			0					0	0				WE 3A	Impen 25 Re1P

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES----			STRUCT/	SUBS	SPL	CALC			
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT			CONSIST	STR	POR
1	0-30	mzc1	10YR54 00					0	0	0							
	30-50	hzc1	10YR44 00					0	0	0		M					
	50-100	c	10YR43 00 75YR46 00 F					0	0	0		M					
1P	0-30	mzc1	10YR52 00 10YR58 00 C					Y	0	0	0						
	30-47	mzc1	10YR53 00 10YR58 62 C					Y	0	0	0	MDCSAB	FM	M			
	47-95	hzc1	75YR52 00 10YR68 62 C				00MN00	00	Y	0	0	0	MDCPR	FM	P	Y	Y
	95-120	zc	10YR53 00 10YR68 71 C					Y	0	0	0		P	Y	Y		
2	0-30	mc1	10YR44 00						0	0	HR	2					
	30-45	mc1	10YR43 00						0	0		0	M				
	45-60	hzc1	10YR42 43 10YR58 00 C					Y	0	0	0	0	M				
	60-100	mzc1	10YR53 00 10YR58 00 C				00MN00	00	Y	0	0	0	P		Y		
	100-120	c	75YR53 00 10YR68 00 C				00MN00	00	Y	0	0	0	P		Y		
2P	0-30	mzc1	10YR54 00						0	0	0						
	30-56	mzc1	10YR54 00 10YR58 00 F						0	0	0		M		Too dry to assess		
	56-120	hzc1	75YR53 00 75YR58 00 C				00MN00	00	Y	0	0	0	MDCPR	FM	P	Y	u/subsoil structure
3	0-28	mzc1	10YR43 00						0	0	HR	2					
	28-60	mzc1	10YR63 53 10YR58 00 M					Y	0	0	0	0	M				
	60-120	hzc1	10YR52 00 10YR58 61 M				00MN00	00	Y	0	0	0	P		Y	Impen 90 dry	
4	0-30	mzc1	10YR43 00						0	0	HR	2					
	30-60	mzc1	10YR53 00 10YR58 00 C				00MN00	00	Y	0	0	0	M				
	60-120	hzc1	10YR53 00 75YR58 51 M				00MN00	00	Y	0	0	0	P		Y	Impen 85 dry	
5	0-30	mzc1	10YR44 00						0	0	0						
	30-45	mzc1	10YR43 00						0	0	0		M				
	45-60	mzc1	10YR42 43 10YR58 00 C					Y	0	0	0	0	M				
	60-80	hzc1	10YR53 00 10YR68 00 C				00MN00	00	Y	0	0	0	P		Y	Impen 80 Re 2P	
6	0-30	mzc1	10YR43 00						0	0	HR	2					
	30-60	mzc1	10YR53 00 10YR56 52 C					Y	0	0	HR	2	M				
	60-120	hzc1	10YR53 00 10YR58 61 M				00MN00	00	Y	0	0	0	P		Y		
7	0-25	mzc1	10YR43 00						0	0	HR	2					
	25-45	mzc1	10YR53 00 10YR56 51 M					Y	0	0	0	0	M				
	45-120	hzc1	10YR52 00 10YR58 61 M				00MN00	00	Y	0	0	0	P		Y	Impen 75 dry	
8	0-28	mzc1	10YR43 00						0	0	HR	1					
	28-60	mzc1	10YR53 00 10YR58 51 M					Y	0	0	0	0	M				
	60-120	hzc1	10YR52 00 10YR58 51 M				00MN00	00	Y	0	0	0	P		Y		
9	0-25	mzc1	10YR43 00						0	0	HR	3					
	25-45	mzc1	10YR53 00 10YR58 51 M					Y	0	0	0	0	M				
	45-120	hzc1	10YR53 00 10YR58 51 M				00MN00	00	Y	0	0	0	P		Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED		-----STONES-----			STRUCT/ CONSIST	SUBS			CALC	
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR		IMP
11	0-30	mc1	10YR44 00						0	0	HR	2					
	30-85	mzc1	75YR44 00						0	0	HR	2	M				
	85-120	mzc1	75YR44 00	75YR58 00	C			S	0	0		0	M				Imp90 sl. stony
12	0-30	mzc1	10YR43 00						0	0	HR	2					
	30-60	mzc1	10YR56 00						0	0	HR	2	M				
	60-120	hc1	10YR53 00	75YR58 00	M		00MN00 00	Y	0	0		0	P			Y	
13	0-30	mzc1	10YR53 00	10YR68 00	F				0	0	HR	2					
	30-50	mc1	10YR64 00	10YR68 00	C			Y	0	0		0	M				
	50-60	hc1	10YR63 00	75YR58 00	M		00MN00 00	Y	0	0		0	P			Y	
	60-120	c	10YR63 00	75YR58 00	M		00MN00 00	Y	0	0		0	P			Y	
15	0-25	mzc1	10YR43 00						0	0	HR	2					
	25-55	mzc1	10YR53 00	10YR56 00	M			Y	0	0	HR	2	M				
	55-120	hzc1	10YR53 00	10YR58 61	M		00MN00 00	Y	0	0		0	P			Y	
16	0-20	mzc1	10YR53 00	10YR58 00	C				Y	0		0					
17	0-30	mzc1	10YR53 00	10YR58 00	C				Y	0		0					
	30-50	mzc1	10YR52 00	10YR58 61	C				Y	0		0	M				
	50-120	hzc1	10YR53 00	10YR68 52	C				Y	0		0	P			Y	Impen 70 dry
18	0-26	z1	10YR52 00	10YR58 00	C				Y	0	0	HR	2				
	26-45	mzc1	10YR53 00	10YR58 61	C				Y	0		0	M				
	45-120	hzc1	75YR52 54	10YR68 71	C				Y	0		0	P			Y	
19	0-30	mzc1	10YR44 00						0	0	HR	5					Impen 30 dry
20	0-30	mzc1	10YR44 00						0	0	HR	2					
	30-42	mzc1	75YR44 00						0	0	HR	2	M				Impen 42 dry
21	0-30	mzc1	10YR43 00	10YR58 00	F				0	0	HR	1					
	30-48	mzc1	10YR54 00	10YR58 00	F				0	0		0	M				
	48-55	hc1	10YR54 00	10YR58 00	F				0	0		0	M				
	55-75	c	10YR64 00	10YR58 00	C		00MN00 00	Y	0	0		0	P			Y	
	75-120	c	10YR63 00	10YR58 00	C		00MN00 00	Y	0	0		0	P			Y	
22	0-30	mzc1	10YR53 00	10YR68 00	F				0	0	HR	1					
	30-50	hzc1	10YR63 00	10YR68 00	C			Y	0	0		0	P			Y	Impen 50 dry
23	0-30	mc1	25Y 54 00	10YR58 00	F				0	0	HR	2					Impen 30 dry
24	0-35	mzc1	25Y 54 00	10YR58 00	F				0	0	HR	1					
	35-50	mzc1	25Y 53 00	10YR58 61	C			Y	0	0		0	M				
	50-70	hc1	10YR63 00	75YR58 00	M			Y	0	0		0	P			Y	
	70-120	hc1	10YR62 00	75YR58 00	M		00MN00 00	Y	0	0		0	P			Y	



SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--				-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
			GRONT	GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT	
1	SZ86109440	PLO				1	1	131	6	123	0	2			DR	2	
2	SZ86109430	PLO		45	60	2	2	133	8	114	-9	2			WD	2	
3	SZ86209430	PLO		28	60	3	3A	136	11	119	-4	2			WE	3A	Impen 90 dry
4	SZ86309430	PLO		30	60	3	3A	136	11	119	-4	2			WE	3A	Impen 85 dry
5	SZ86009420	PLO		45	60	2	2	113	-12	120	-3	3A			WD	2	Impen 80 Re2P
6	SZ86109420	PLO		30	60	3	3A	135	10	118	-5	2			WE	3A	
7	SZ86209420	PLO		25	45	3	3A	129	4	111	-12	3A			WD	3A	Impen 75 dry
8	SZ86309420	PLO		28	60	3	3A	136	11	119	-4	2			WE	3A	
9	SZ86409420	PLO		25	45	3	3A	128	3	110	-13	3A			WD	3A	
11	SZ85909410	RGR	SE	01			1	1	156	31	120	-3	2		DR	2	Imp90 s1 stony
12	SZ86009410	RGR			60	60	2	2	141	16	118	-5	2		WD	2	
13	SZ86109410	RGR			30	50	3	3A	137	12	113	-10	2		WE	3A	
15	SZ86309410	PLO			25	55	3	3A	132	7	115	-8	2		WE	3A	Impen 70 dry
16	SZ86409410	PGR			0				0	0					WE	3A	Impen20 Re1P
17	SZ86509410	PGR			0	50	3	3A	133	8	115	-8	2		WE	3A	
18	SZ86609410	PGR			0	45	3	3A	139	14	121	-2	2		WE	3A	
19	SZ85809400	RGR	SE	01					0	0					WE	3A	Impen 30 dry
20	SZ85909400	RGR	SE	01					0	0					WD	2	Imp42dry Re2P
21	SZ86009400	RGR			55	55	2	2	143	18	122	-1	2		WD	2	Deeper
22	SZ86109400	RGR			30	30	3	3A	90	-35	90	-33	3B		WE	3A	
23	SZ86209400	RGR							0	0					WE	3A	Imp30dry Re1P
24	SZ86309400	RGR			35	50	3	3A	140	15	115	-8	2		WE	3A	
25	SZ86509400	PGR			0	40	3	3A	131	6	108	-15	3A		WD	3A	
26	SZ86609400	PGR			0	53	3	3A	159	34	140	17	1		WE	3A	
27	SZ86709400	PGR			0	60	3	3A	137	12	120	-3	2		WE	3A	
28	SZ85909390	RGR							0	0					WD	2	Imp30dry Re2P
29	SZ86009390	RGR			40	40	3	3A	144	19	116	-7	2		WE	3A	Deeper
30	SZ86109390	RGR							0	0					WE	3A	Impen 38 dry
31	SZ86209390	RGR			30	30	4	3B	110	-15	114	-9	3A		WE	3B	
32	SZ86609390	PGR			0				0	0					WE	3A	Impen 25 Re1P

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED		-----STONES-----			STRUCT/	SUBS	SPL	CALC	
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH					TOT
1	0-30	mzc1	10YR54 00						0	0	0					
	30-50	hzc1	10YR44 00						0	0	0		M			
	50-100	c	10YR43 00	75YR46	00	F			0	0	0		M			
2	0-30	mc1	10YR44 00						0	0	HR	2				
	30-45	mc1	10YR43 00						0	0		0		M		
	45-60	hzc1	10YR42 43	10YR58	00	C		Y	0	0		0		M		
	60-100	mzc1	10YR53 00	10YR58	00	C	00MN00	00	Y	0	0		0		P	Y
	100-120	c	75YR53 00	10YR68	00	C	00MN00	00	Y	0	0		0		P	Y
3	0-28	mzc1	10YR43 00						0	0	HR	2				
	28-60	mzc1	10YR63 53	10YR58	00	M		Y	0	0		0		M		
	60-120	hzc1	10YR52 00	10YR58	61	M	00MN00	00	Y	0	0		0		P	Y
4	0-30	mzc1	10YR43 00						0	0	HR	2				
	30-60	mzc1	10YR53 00	10YR58	00	C	00MN00	00	Y	0	0		0		M	
	60-120	hzc1	10YR53 00	75YR58	51	M	00MN00	00	Y	0	0		0		P	Y
5	0-30	mzc1	10YR44 00						0	0		0				
	30-45	mzc1	10YR43 00						0	0		0		M		
	45-60	mzc1	10YR42 43	10YR58	00	C		Y	0	0		0		M		
	60-80	hzc1	10YR53 00	10YR68	00	C	00MN00	00	Y	0	0		0		P	Y
6	0-30	mzc1	10YR43 00						0	0	HR	2				
	30-60	mzc1	10YR53 00	10YR56	52	C		Y	0	0	HR	2		M		
	60-120	hzc1	10YR53 00	10YR58	61	M	00MN00	00	Y	0	0		0		P	Y
7	0-25	mzc1	10YR43 00						0	0	HR	2				
	25-45	mzc1	10YR53 00	10YR56	51	M		Y	0	0		0		M		
	45-120	hzc1	10YR52 00	10YR58	61	M	00MN00	00	Y	0	0		0		P	Y
8	0-28	mzc1	10YR43 00						0	0	HR	1				
	28-60	mzc1	10YR53 00	10YR58	51	M		Y	0	0		0		M		
	60-120	hzc1	10YR52 00	10YR58	51	M	00MN00	00	Y	0	0		0		P	Y
9	0-25	mzc1	10YR43 00						0	0	HR	3				
	25-45	mzc1	10YR53 00	10YR58	51	M		Y	0	0		0		M		
	45-120	hzc1	10YR53 00	10YR58	51	M	00MN00	00	Y	0	0		0		P	Y

Impen 90 dry

Impen 85 dry

Impen 80 Re 2P

Impen 75 dry