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Vale of White Horse Local Plan
Land at Chain Hill, Wantage,
Oxfordshire.
Agricultural Land Classification Survey
ALC Map and Report
December 1996.

Resource Planning Team
Guildford Statutory Group
ADAS Reading

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LUPU Commission: 02849

AGRICULTURAL LAND CLASSIFICATION REPORT

VALE OF WHITE HORSE LOCAL PLAN
LAND AT CHAIN HILL, WANTAGE, OXFORDSHIRE.

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 18.6 hectares of land located to the west of Chainhill Road and between Chainhill Road and Lark Hill to the south of Wantage, in Oxfordshire. The survey was carried out during October 1996.

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 Vale of White Horse Local 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.

4. At the time of survey the agricultural land on this site was either in stubble or had been drilled for the 1997 season. The areas shown as 'Other Land' include Chainhill Road, two dwellings with associated outbuildings and a track leading to a mobile communications mast in the south west of the site.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10,000. 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 below.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% site area	% surveyed area
3a	17.0	91.4	99.4
3b	0.1	0.5	0.6
Other Land	1.5	8.1	-
Total surveyed area	17.1	-	100.0
Total site area	18.6	100.0	-

7. The fieldwork was conducted at an average density of 1 boring per hectare. A total of 18 borings and one soil pit were described. In addition, information from an adjacent previous survey (ADAS job ref: 3304/230/94) was utilised in the grading of this site.

8. The agricultural land on this site has been classified as Subgrade 3a (good quality) and Subgrade 3b (moderate quality), the key limitations are soil droughtiness and slope respectively. Good quality land extends over the majority of the site. Soils are well drained silty clay loam and clay loams developed over Lower Chalk at shallow and moderate depths. The combination of soil characteristics and the local climate leads to a restriction in water availability for plants such that Subgrade 3a is appropriate on the basis of soil droughtiness.

9. Land of moderate quality is mapped over a small section of the site adjacent to Chainhill Road to the north of the site. In this area gradients were measured in excess of 7°. This causes a restriction in potential land utilisation as most farm machinery cannot be efficiently or safely operated on such gradients, therefore Subgrade 3b is appropriate.

FACTORS INFLUENCING ALC GRADE

Climate

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

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

12. 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.

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	SU 405 961
Altitude	m, AOD	130
Accumulated Temperature	day°C	1372
Average Annual Rainfall	mm	664
Field Capacity Days	days	136
Moisture Deficit, Wheat	mm	103
Moisture Deficit, Potatoes	mm	93

13. 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 (ATO, January to June), as a measure of the relative warmth of a locality.

14. 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 significantly affect this area. The site is climatically Grade 1.

Site

15. The site lies at altitudes in the range 105-135m AOD. The land rises from the north, where it borders the town of Wantage, towards the south. Towards the south west of the site the land becomes less sloping. Towards the north west of the site the slopes are of sufficient gradient to affect agricultural land quality.

Geology and soils

16. The published geological information for the site (BGS, 1971), shows the site to be underlain by Cretaceous Lower Chalk.

17. The most detailed published soils information for the site (SSGB, 1973) shows the site to comprise soils of the Wantage and Gore Series'. Wantage series soils are mapped over the majority of the site and are described as comprising 'well drained calcareous silty soils, in places shallow over chalk.' (SSGB, 1973). Relatively shallow soils over chalk were encountered throughout the site. Gore series soils are mapped along the northern boundary of this site and are described as comprising 'well drained commonly calcareous silty soils commonly located at the base of the Lower Chalk scarp slope.' (SSGB, 1973). Soils of this type were very occasionally encountered at this site.

Agricultural Land Classification

18. 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.

19. 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

20. Land of good quality extends across the majority of the agricultural land at this site in a single unit. The principal limitation is soil droughtiness.

21. Soils in this area comprise calcareous, slightly chalky (up to 15% v/v chalk fragments), heavy, occasionally medium silty clay loam or heavy clay loam topsoils, passing to similar though more chalky (up to 50% v/v chalk fragments) upper subsoil horizons. These were observed to pass to solid chalk at shallow to moderate depths (c. 25-70cm). The presence of solid chalk causes plant rooting depth to be restricted. In the pit observation (1P, see Appendix III) roots were observed to penetrate 36cm into the chalk. In the local climate this rooting restriction leads to a restriction in water availability for plants. Subgrade 3a is therefore appropriate, on the basis of a soil droughtiness limitation.

Subgrade 3b

22. A small area to the north of the site has been mapped as being of moderate quality. The principal limitation in this area is slope. Gradients were measured to be in excess of 7°. This causes a restriction in potential land utilisation as most farm machinery cannot be efficiently or safely operated on such gradients.

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SOURCES OF REFERENCE

British Geological Survey (1971) *Sheet 253, Abingdon. Solid and Drift Edition. 1:63 360. 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.

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

Soil Survey of Great Britain (1973) *Soils of the Wantage and Abingdon District. 1:63 360 Scale.*
SSEW: Harpenden.

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.

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	**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 : VOWH LP CHAIN HILL WNTGE Pit Number : 1P

Grid Reference: SU40708750 Average Annual Rainfall : 664 mm
Accumulated Temperature : 1372 degree days
Field Capacity Level : 136 days
Land Use :
Slope and Aspect : 5 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 26	HZCL	10YR41 00	3	12	HR					Y
26- 37	HZCL	10YR42 52	0	30	CH		MDCSAB	FR	M	Y
37- 73	CH	10YR72 00	0	0					P	Y

Wetness Grade : 2 Wetness Class : I
Gleying : cm
SPL : cm

Drought Grade : 3A APW : 89 mm MBW : -12 mm
APP : 93 mm MBP : 1 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	--WETNESS-- SPL	CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SU40708760	STB	N	5		1	2		90	-13	96	3	3A				DR	3A	IMP CHALK 50
1P	SU40708750	STB	N	5		1	2		89	-12	93	1	3A				DR	3A	IMP75 ROOT73
2	SU40808760	STB	N	5		1	1		107	5	108	16	3A				DR	3A	IMPDRY80 BDR2
3	SU40908760	STB	N	4		1	2		93	-8	96	4	3A				DR	3A	IMP CHALK 55
4	SU41008760	STB	N	4		1	2		76	-25	79	-13	3B				DR	3B	IMP CHALK 40
5	SU40508750	ARA	NW	5		1	2		79	-24	83	-10	3B				DR	3B	IMP CHALK 40
6	SU40608750	STB	NW	6		1	2		94	-8	97	5	3A				DR	3A	IMP CHALK 50
7	SU40708750	STB	NW	5		1	2		89	-12	95	3	3A				DR	3A	IMP CHALK 45
8	SU40808750	STB	N	4		1	2		88	-13	94	2	3A				DR	3A	IMP CHALK 45
9	SU40108740	ARA	NW	6		1	2		99	-4	102	8	3A				DR	3A	IMP CHALK 80
10	SU40208740	ARA	NW	5		1	2		94	-9	96	3	3A				DR	3A	IMP CHALK 55
11	SU40908752	STB	N	3		1	2		82	-19	86	-5	3A				DR	3A	IMPCH45 BDR3B
12	SU40408740	STB	NW	5		1	2		89	-12	95	4	3A				DR	3A	IMP CHALK 40
13	SU40508740	STB	NW	5		1	2		99	-2	102	11	3A				DR	3A	IMP CHALK 55
14	SU40108730	ARA	N	6		1	2		78	-24	81	-11	3B				DR	3B	IMP CHALK 40
15	SU40208730	ARA	NW	5		1	2		87	-14	93	2	3A				DR	3A	IMP CHALK 45
16	SU40308730	STB	NW	4		1	2		83	-18	87	-4	3A				DR	3A	IMP CHALK 45
17	SU40208720	ARA	NW	4		1	2		115	14	112	21	2				DR	2	IMP CHALK 80
18	SU40308720	ARA	NW	3		1	2		76	-24	80	-10	3B				DR	3B	IMP CHALK 30

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
1	0-28	hzcl	10YR41 00						1	0	CH	8						Y	
	28-35	hzcl	10YR52 72						0	0	CH	50		M				Y	
	35-70	ch	10YR72 00						0	0		0		P				Y	
1P	0-26	hzcl	10YR41 00						3	0	HR	12						Y	
	26-37	hzcl	10YR42 52						0	0	CH	30	MDCSAB FR	M				Y	TENDING MSAB
	37-73	ch	10YR72 00						0	0		0		P				Y	VISIBLE ROOT DEPTH
2	0-28	mzcl	10YR41 00						2	0	CH	10						Y	
	28-65	hzcl	10YR62 72						0	0	CH	50		M				Y	
	65-80	hzcl	25Y 52 72						0	0	CH	30		M				Y	
3	0-25	hzcl	10YR41 00						2	0	CH	10						Y	
	25-40	hzcl	10YR52 72						0	0	CH	50		M				Y	
	40-75	ch	10YR72 00						0	0		0		P				Y	
4	0-25	hzcl	10YR41 00						2	0	CH	15						Y	
	25-60	ch	10YR72 00						0	0		0		P				Y	
5	0-26	hzcl	10YR41 51						2	0	CH	8						Y	
	26-61	ch	10YR72 00						0	0		0		P				Y	
6	0-25	hzcl	10YR41 00						2	0	CH	10						Y	
	25-40	hzcl	10YR62 72						0	0	CH	40		M				Y	
	40-75	ch	10YR72 00						0	0		0		P				Y	
7	0-25	hzcl	10YR41 00						2	0	CH	10						Y	
	25-35	hzcl	10YR52 72						0	0	CH	30		M				Y	
	35-70	ch	10YR72 00						0	0		0		P				Y	
8	0-25	hzcl	10YR41 00						2	0	CH	10						Y	
	25-35	hzcl	10YR52 72						0	0	CH	40		M				Y	
	35-70	ch	10YR72 00						0	0		0		P				Y	
9	0-28	hzcl	25Y 41 00						2	0	CH	10						Y	
	28-45	hzcl	25Y 52 00						0	0	CH	25		M				Y	
	45-75	ch	10YR72 00						0	0		0		P				Y	
10	0-28	hcl	25Y 41 00						4	0	CH	10						Y	
	28-45	hzcl	25Y 52 72						0	0	CH	50		M				Y	
	45-75	ch	10YR72 00						0	0		0		P				Y	
11	0-23	hzcl	10YR41 00						2	0	CH	15							
	23-30	hzcl	10YR52 72						0	0	CH	30		M				Y	
	30-65	ch	10YR72 00						0	0		0		P				Y	
12	0-28	hzcl	10YR41 00						2	0	CH	10						Y	
	28-35	hzcl	10YR52 72						0	0	CH	50		M				Y	
	35-70	ch	10YR72 00						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
13	0-26	hzcl	10YR41 00						1	0	CH	5						Y
	26-45	hzcl	10YR52 62						0	0	CH	30		M				Y
	45-75	ch	10YR72 00						0	0		0		P				Y
14	0-26	hzcl	10YR41 00						4	0	CH	15						Y
	26-61	ch	10YR72 00						0	0		0		P				Y
15	0-28	hcl	10YR52 00						3	0	CH	10						Y
	28-35	hzcl	10YR52 72						0	0	CH	50		M				Y
	35-70	ch	10YR72 00						0	0		0		P				Y
16	0-28	hzcl	10YR41 00						1	0	CH	5						Y
	28-63	ch	10YR72 00						0	0		0		P				Y
17	0-25	mzcl	10YR42 41						3	0	CH	10						Y
	25-70	hzcl	10YR52 72						0	0	CH	30		M				Y
	70-90	ch	10YR72 00						0	0		0		P				Y
18	0-26	hcl	10YR52 00						4	0	CH	8						Y
	26-61	ch	10YR72 00						0	0	HR	2		P				Y