Pedmore

Agricultural Land Classification

October 1999

Resource Planning Team
Bristol
FRCA Western Region

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PEDMORE

AGRICULTURAL LAND CLASSIFICATION SURVEY

CONTENTS

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INTRODUCTION

1 This report presents the findings of a reconnaissance Agricultural Land Classification (ALC) survey of 289 7 ha of land at Pedmore Dudley Field survey was based on 70 auger borings and 5 soil profile pits and was completed in April 1999 During the survey 9 samples were analysed for particle size distribution (PSD)

2 The survey was conducted by the Resource Planning Team of FRCA Western Region on behalf of MAFF in its statutory role in the preparation of Dudley Metropolitan Borough Plan

3 Information on climate geology and soils and from previous ALC surveys was considered and is presented in the relevant sections Apart from the published regional ALC map (MAFF 1977) which shows the site at a reconnaissance scale as Grade 3 west of the railway and in the far east of the site Grade 2 between the railway and Pedmore Hall and a small area of Grade 4 around Wychbury Hill the site was previously surveyed in 1978 at a scale of 1 25 000 (ADAS 1978) This survey showed Grade 2 around Racecourse Farm and Treherns Farm, Grade 3b and 4 around Wychbury Hill and Grade 3a elsewhere The current survey uses the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988) and supersedes any previous ALC survey Grade descriptions are summarised in Appendix I

4 At the time of survey land cover was mainly arable with grazing around Wychbury Hill Other land which was not surveyed included urban areas and communications

SUMMARY

5 The distribution of ALC grades is shown on the accompanying 1 15 000 scale ALC map The detail of information shown at this scale is appropriate to the intensity of field survey but could be misleading if enlarged or applied to small areas Areas are summarised in the Table 1

Table 1 Distribution of ALC grades Pedmore

Grade	Area (ha)	% Surveyed Area (249 9 ha)
1	73 6	29
3a	105 6	43
3b	58 7	23
4	8 7	4
5	3 3	1
Other land	39 8	
Total site area	289 7	

6 The majority of the site has been mapped as best and most versatile land Most of the site has sandy textured soils Around Racecourse Farm and Trehern s Farm these fine sandy loams do not have any limitation, whereas on the higher land the loamy medium sandy soils have moderate droughtiness limitations and the medium sand soils have a moderate limitation imposed by topsoil textures In the far east of the site the soils have moderate wetness limitations imposed by slowly permeable layers

CLIMATE

7 Estimates of climatic variables for this site were derived from the published agricultural climate dataset Climatological Data for Agricultural Land Classification (Meteorological Office 1989) using standard interpolation procedures Data for key points around the site are given in Table 2 below

8 Since the ALC grade of land is determined by the most limiting factor present overall climate is considered first because it can have an overriding influence by restricting land to a lower grade despite more favourable site and soil conditions Parameters used for assessing overall climate are accumulated temperature a measure of relative warmth and average annual rainfall a measure of overall wetness The results shown in Table 2 indicate that there is no overall climatic limitation

9 Climatic variables also affect the ALC grade through interactions with soil conditions The most important interactive variables are Field Capacity Days (FCD) which are used in assessing soil wetness and potential Moisture Deficits calculated for wheat and potatoes which are compared with the moisture available in each profile in assessing soil droughtiness limitations These are described in later sections A critical boundary of 175 FC Days was found west of Pedmore Hall and Pedmore Hall Farm To the east of this line the FCD are higher than 175

Table 2 Climatic Interpolations Pedmore

Grid Reference		SO 901817	SO 922819
Altitude (m)		120	210
Accumulated Temperature (day C)		1357	1254
Average Annual Rainfall (mm)		743	796
Overall Climatic Grade		1	2
Field Capacity Days		172	183
Moisture deficit (mm)	Wheat	91	78
	Potatoes	78	60

RELIEF

10 Altitude ranges from 90 metres at Racecourse Farm to 224 metres at Wychbury Hill with limiting slopes around Wychbury Hill sometimes exceeding 20 degrees and also steep slopes south of Racecourse Farm

GEOLOGY AND SOILS

11 The underlying geology of the site is shown on the published geology map (BGS 1975) as Lower Keuper Sandstone in the centre of the site with Upper Coal Measures to the east of Pedmore Hall In the west the higher land is sand and gravel with Bunter sandstone on the lower slopes There was fairly close links found with the underlying geology during the recent survey The soils developed on the Bunter sandstone were found to be fine sandy soils with few stones whereas those on the higher land developed on sand and gravel were much sandier and stonier The soils in the west were much more clayey and experienced wetness limitations The remaining soils were sandy but variable

12 Soils were mapped by the Soil Survey of England and Wales at a reconnaissance scale of 1 250 000 (SSEW 1983) as Bromsgrove Association in the centre of the site closely matching the underlying Lower Keuper sandstone with Hodnet and Crediton to the east of Pedmore Hall again linked to the underlying Coal Measures In the west Bridgnorth Association matches the Bunter Sandstone and Newport Association, the sand and gravel on the top of the hill

13 Bromsgrove Association is described as well drained reddish coarse loamy soils mainly over soft sandstone but deep in places Bridgnorth soils are described as well drained sandy and coarse loamy soils over sandstone Newport soils are also well drained sandy soils Crediton soils are well drained gritty reddish soils over breccia whereas Hodnet soils are reddish fine and coarse loamy soils with slowly permeable subsoils and slight seasonal waterlogging

14 As indicated above the soils found in the survey are closely linked to the underlying geology and resultant soil associations

AGRICULTURAL LAND CLASSIFICATION

15 The distribution of ALC grades found by the current survey is shown on the accompanying 1 15 000 scale map and areas are summarised in Table 1 The detail of information shown at this scale is appropriate to the intensity of field survey but could be misleading if enlarged or applied to small areas

Grade 1

16 Two areas of Grade 1 excellent quality land have been mapped The soils in these areas are well drained Wetness Class I (see Appendix II) The soils are mainly fine sandy loams which hold adequate moisture reserve for growing crops and allow the soils to be Grade 1 without any droughtiness limitations Soil textures were confirmed by PSD analysis at a soil pit dug near Racecourse Farm The soil profiles have very few stones present The area around Treherns s Farm is more variable than that in the east which is closely linked to the extent of the underlying geology of Triassic Bunter Upper Mottled Sandstone The Treherns Farm area is over Triassic Lower Keuper Sandstone

Subgrade 3a

17 Two areas of Subgrade 3a have been mapped within the survey area The main block has lighter textures than the Grade 1 described above and is more droughty The loamy medium sands cannot be Grade 1 because of the topsoil texture restriction However the sandier nature of the soil also imposes a droughtiness limitation on these soils The western part of the main block is also stony as shown by soil profile pit 1 which further limits the available moisture in the profile These stony soils are found on the higher land On the lower slopes the soils are less stony as shown by pit 4 which untypically has a MSL upper subsoil Most soils in this area were LMS to depth To the east of the railway the soils became more variable These profiles are Wetness Class I

18 The second area mapped as Subgrade 3a is around Pedmore Hall Here the soils are sandy around the Hall itself on the Keuper Sandstone but eastwards on the Breccia Group (red marls breccia and sandstones) of the Upper Coal Measures the soils are generally medium clay loams over heavier material which is slowly permeable at depth These soils have a moderate wetness limitation Wetness Class III Subgrade 3a The extent of these soils is closely related to the underlying geology

Subgrade 3b

19 The area of Subgrade 3b mapped in the west of the site has a topsoil texture limitation The topsoils here are medium sands and these are not eligible for Grades 1 2 or Subgrade 3a The texture was confirmed by PSD analysis at soil profile pit 2 These soils have a moderate droughtiness limitation These sandiest soils found on the site are part of the area of soils developed on Sand and Gravel The remaining part of this is less sandy but more stony and is mapped as Subgrade 3a, described above All these soils are Wetness Class I

20 In the east of the site over the Red Marls of the Upper Coal Measures poorly drained soils are mapped as Subgrade 3b Here MCL topsoils overlie slowly permeable clays which are assessed as Wetness Class IV

21 The remaining areas mapped as Subgrade 3b are limited by gradient These are found in the west above Racecourse Farm and in the east around Wychbury Hill

Grades 4 and 5

22 Small areas have been mapped as Grades 4 and 5 where the gradient of slopes exceed 11 and 18 degrees respectively These are found above Racecourse Farm and around Wychbury Hill

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October 1999

REFERENCES

ADAS RESOURCE PLANNING TEAM, (1978) Agricultural Land Classification Survey of Hagley Scale 1 25 000 Reference 16 ADAS Bristol

BRITISH GEOLOGICAL SURVEY (1975) Sheet 167 Dudley 1 50 000 series Solid and Drift edition BGS London

HODGSON J M (Ed) (1997) Soil Survey Field Handbook Soil Survey Technical Monograph No 5 Silsoe

MAFF (1977) 1 250 000 series Agricultural Land Classification, West and East Midlands Regions MAFF Publications Alnwick

MAFF (1988) Agricultural Land Classification of England and Wales Revised Guidelines and Criteria for grading the quality of agricultural land MAFF Publications Alnwick

METEOROLOGICAL OFFICE (1989) Climatological Data for Agricultural Land Classification Meteorological Office Bracknell

SOIL SURVEY OF ENGLAND AND WALES (1983) Sheet 3 Soils of Midland and Western England 1 250 000 scale SSEW Harpenden

SOIL SURVEY OF ENGLAND AND WALES (1984) Soils and Their Use in Midland and Western England Bulletin No 12 SSEW Harpenden

APPENDIX I

DESCRIPTION OF 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 include 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 and horticultural crops can usually be grown but on some land in the 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

Grade 3 - good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops timing and type of cultivation, harvesting or the level of yield Where 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 level of yields It is mainly suited to grass with occasional arable crops (eg cereals and forage crops) the yields of which are variable In most 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 very severe limitations which restrict use to permanent pasture or rough grazing except for occasional pioneer forage crops

Source MAFF (1988) Agricultural Land Classification of England and Wales Revised Guidelines and Criteria for Grading the Quality of Agricultural Land MAFF Publications Alnwick

APPENDIX II

DEFINITION OF SOIL WETNESS CLASSES

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile

Wetness Class I

The soil profile is not wet within 70 cm depth for more than 30 days in most years

Wetness Class 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 not wet within 40 cm depth for more than 30 days in most years

Wetness Class 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 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 and 90 days in most years

Wetness Class IV

The soil profile is wet within 70 cm depth for more than 180 days but not within 40 cm depth for more than 210 days in most years or if there is no slowly permeable layer within 80 cm depth, it is wet within 40 cm depth for 91 210 days in most years

Wetness Class V

The soil profile is wet within 40 cm depth for 211 335 days in most years

Wetness Class VI

The soil profile is wet within 40 cm depth for more than 335 days in most years

Notes The number of days specified is not necessarily a continuous period

In most years is defined as more than 10 out of 20 years

Source Hodgson, J M (Ed) (1997) Soil Survey Field Handbook Soil Survey Technical Monograph No 5 Silsoe

APPENDIX III

ABBREVIATIONS AND TERMS USED IN SURVEY DATA

Soil pit and auger boring information collected during ALC survey is held on a computer database and is reproduced in this report Terms used and abbreviations are set out below These conform to definitions contained in the Soil Survey Field Handbook (Hodgson, 1997)

1 Terms used on computer database, in order of occurrence

GRID REF National 100 km grid square and 8 figure grid reference

LAND USE At the time of survey

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

GRDNT Gradient as estimated or measured by hand held optical clinometer

GLEY SPL Depth in centimetres to gleying or slowly permeable layer

AP (WHEAT/POTS) Crop adjusted available water capacity

MB (WHEAT/POTS) Moisture Balance (Crop adjusted AP crop potential MD)

DRT Best grade according to soil droughtiness

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				

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				

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)

MOTTLE COL Mottle colour using Munsell notation

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%+

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

PED COL Ped face colour using Munsell notation

GLEY If the soil horizon is gleyed a Y will appear in this column If slightly gleyed an S will appear

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 or metamorphic rock

Stone contents are given in % by volume for sizes >2cm >6cm and total stone >2mm

STRUCT The degree of development size and shape of soil peds are described using the following notation

Degree of development	**WA**	Weakly developed Adherent	**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		

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		

SUBS STR Subsoil structural condition recorded for the purpose of calculating profile droughtiness **G** Good **M** Moderate **P** Poor

POR Soil porosity If a soil horizon has poor porosity with less than 0 5% biopores >0 5mm a Y will appear in this column

IMP If the profile is impenetrable to rooting a Y will appear in this column at the appropriate horizon

SPL Slowly permeable layer If the soil horizon is slowly permeable a Y will appear in this column

CALC If the soil horizon is calcareous with naturally occurring calcium carbonate exceeding 1% a Y will appear this column

2 Additional terms and abbreviations used mainly in soil pit descriptions

STONE ASSESSMENT

V	Visual	**S**	Sieved	**D**	Displacement

MOTTLE SIZE

EF	Extremely fine <1mm	**M**	Medium 5 15mm
VF	Very fine 1 2mm>	**C**	Coarse >15mm
F	Fine 2 5mm		

MOTTLE COLOUR May be described by Munsell notation or as ochreous (OM) or grey (GM)

ROOT CHANNELS In topsoil the presence of rusty root channels might be noted as RRC

MANGANESE CONCRETIONS Assessed by volume

N	None		**M**	Many	20-40%
F	Few	<2%	**VM**	Very Many	>40%
C	Common	2 20%			

POROSITY

P	Poor	less than 0 5% biopores at least 0 5mm in diameter
G	Good	more than 0 5% biopores at least 0 5mm in diameter

ROOT ABUNDANCE

The number of roots per 100cm^2		Very Fine and Fine	Medium and Coarse
F	Few	1 10	1 or 2
C	Common	10 25	2 5
M	Many	25 200	>5
A	Abundant	>200	

ROOT SIZE

VF	Very fine	<1mm	**M**	Medium	2 5mm
F	Fine	1 2mm	**C**	Coarse	>5mm

HORIZON BOUNDARY DISTINCTNESS

Sharp	<0 5cm	**Gradual**	6 13cm
Abrupt	0 5 2 5cm	**Diffuse**	>13cm
Clear	2 5 6cm		

HORIZON BOUNDARY FORM Smooth, wavy irregular or broken *

* See Soil Survey Field Handbook (Hodgson, 1997) for details

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Pedmore	Pit 1 Asp 51	0	Cereal	Av Rainfall 743 mm ATO 1357 day C	Sand & Gravel
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days 172 Climatic Grade 1 Exposure Grade 1	PSD SAMPLES TAKEN
21 99	22/4/99	SO89608140	GMS+GN		0 25 LMS CS4 MS 51 FS28 Z12 C5 32 65 LMS CS 3 MS 50 FS28 Z14 C5

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	32	LMS	7.5YR2.5/1	4% HR( )	None	None					CVF		Sharp Abrupt
2	65	LMS	7 5YR4/3	30% HR ( )	None	None	WKCAB	VF	M	G	CVF		Grad Smooth
3	85	LMS	7 5YR4/4	20%HR ( )	None	None	WKCAB	VF	M	G	CVF		Clear Smooth
4	95	LMS	5YR4/4	0%	None	None	MDCAB	VF	G	G	0		Clear Smooth
5	110+	MS	7 5YR64	0%	None	F	MDCAB	VF	G	G	0		

Profile Gleyed From Not gleyed

Slowly Permeable Horizon From No SPL

Wetness Class I

Wetness Grade 1

Available Water	Wheat	80 mm
	Potatoes	60 mm
Moisture Deficit	Wheat	91 mm
	Potatoes	78 mm
Moisture Balance	Wheat	11 mm
	Potatoes	18 mm

Droughtiness Grade 3a (Calculated to 120 cm)

Final ALC Grade 3a

Main Limiting Factor(s) Droughtiness

Remarks

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Pedmore	Pit 2 (Asp 15)	1 SW	Ploughed	Av Rainfall 743 mm ATO 1357 day C FC Days 172 Climatic Grade 1 Exposure Grade 1	Sand & Gravel
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY		PSD SAMPLES TAKEN
21/99	22/4/99	SO89008200	GMS & GN		0 25 MS CS7 MS57 FS23 Z9 C4 39 64 MS CS5 MS52 FS30 Z9 C4

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	39	MS	7.5YR2.5/1	1% HR ( )	None	None					CVF		Clear Smooth
2	64	MS	7 5YR4/3	2% Hr> 2 m ( ) 0% HR 2mm ( )	None	None	MDCAB	VF	G	G	CVF		Clear Smooth
3	120	MS	7 5YR56	N	None	None	MDCAB	VF	G	G	FVF		

Profile Gleyed From	Not gleyed
Slowly Permeable Horizon From	No SPL
Wetness Class	I
Wetness Grade	1

Available Water	Wheat	80 mm
	Potatoes	63 mm
Moisture Deficit	Wheat	91 mm
	Potatoes	78 mm
Moisture Balance	Wheat	11 mm
	Potatoes	15 mm
Droughtiness Grade	3a	(Calculated to 120 cm)

Final ALC Grade	3b
Main Limiting Factor(s)	Topsoil texture

Remarks

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Pedmore	Pit 3	1 N	Cereal	Av Rainfall 743 mm ATO 1357 day C	Triassic Bunter Upper Mottled sandstone
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days 172 Climatic Grade 1 Exposure Grade 1	PSD SAMPLES TAKEN 0 12 cm FSL CS2 MS16 FS59 Z16 C7 38-73 cm FLS/FSL CS1 MS10 FS65 Z20 C4 73-120 cm FS CS0 MS11 FS80 Z3 C6
21/99	29/4/99	SO89758213	GMS		

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	38	FSL	2 5Y3/1	1%HR>2 m ( )	None	None					CVF		Clear Smooth
2	73	FSL/FLS	5YR5/4	N ( )	None	None	MDCAB	VF	M	Good	FVF		Clear Smooth
3	120+	FS	2 5YR4/6	No e ( )	None	None	WKCPL	VF	M	Good	None observed		

Profile Gleyed From Not gleyed

Slowly Permeable Horizon From No SPL

Wetness Class I

Wetness Grade 1

Available Water	Wheat	176 mm
	Potatoes	125 mm
Moisture Deficit	Wheat	91 mm
	Potatoes	78 mm
Moisture Balance	Wheat	85 mm
	Potatoes	47 mm

Droughtiness Grade 1 (Calculated to 120 cm)

Final ALC Grade 1

Main Limiting Factor(s) None

Remarks negligible stones <2 cm throughout profile

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Pedmore	Pit 4	1 E	Ley	Av Rainfall 743 mm ATO 1357 day C	Triassic Keuper Lower Keuper Sandstone
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days 172 Climatic Grade 1 Exposure Grade 1	PSD SAMPLES TAKEN
21/99	29/4/99	SO90108155	GMS		0-25 cm LMS CS5 MS39 FS36 Z13 C7 32 100 MSL CS4 MS33,FS39 Z19 C7

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	32	LMS	7 5YR3/2	1% HR>2 cm ( )	None	None					MVF		Abrupt Smooth
2	100	MSL	5YR4/4 becoming 5YR4/3	2%HR>2cm (s)	None	None	MDCAB	FR	Mod	Good	CVF		Gradual Smooth
3	120+	LMS	2 5YR4/3	No e ( )	None	None	MDCAB	VF	Good	Poor	FVF		

Profile Gleyed From	Not Gleyed
Slowly Permeable Horizon From	No SPL
Wetness Class	I
Wetness Grade	1

Available Water	Wheat	149 mm
	Potatoes	105 mm
Moisture Deficit	Wheat	91 mm
	Potatoes	78 mm
Moisture Balance	Wheat	58 mm
	Potatoes	27 mm
Droughtiness Grade	1	(Calculated to 120 cm)

Final ALC Grade	2
Main Limiting Factor(s)	Top texture
Remarks	Negligible stones < 2 cm

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Pedmore	Pit 5	0	Ploughed	Av Rainfall 743 mm ATO 1357 day C FC Days 172 Climatic Grade 1 Exposure Grade 1	Triassic Keuper Lower Keuper Sandsotne
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY		PSD SAMPLES TAKEN
21/99	29/4/99	SO90958117	GMS		None

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	35	FSL	5YR4/2	2% HR 2 m (s)	None	None					FVF		Abrupt Smooth
2	50	MSL	2 5YR4/3	1% HR 2 m( )	None	None	MDCAB	FR	Mod	Good	FVF		Clear Irregular
3	120	C	10R4/4	N ( )	None	Few	MDCSAB	FM	Mod	Poor	FVF		

Profile Gleyed From Not gleyed

Slowly Permeable Horizon From No SPL

Wetness Class I

Wetness Grade 1

Available Water	Wheat	133 mm
	Potatoes	110 mm
Moisture Deficit	Wheat	91mm
	Potatoes	78 mm
Moisture Balance	Wheat	42 mm
	Potatoes	32 mm

Droughtiness Grade 1 (Calculated to 120 cm)

Final ALC Grade 1

Main Limiting Factor(s) None

Remarks
H2 bottom varies from 40 cm to 65 cm
Boring 50 cm from Pit and not encounter clay
H3 LMS to 90 cm then to SCL to 120 cm
Structure of H3 difficult may be SPL