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HORSHAM DISTRICT LOCAL PLAN
Land at Broadbridge Heath, West Sussex
Semi-Detailed Survey

Agricultural Land Classification
ALC Map and Report

February 1998

Resource Planning Team
Eastern Region
FRCA Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

HORSHAM DISTRICT LOCAL PLAN
LAND AT BROADBRIDGE HEATH, WEST SUSSEX

SEMI-DETAILED SURVEY

INTRODUCTION

1. This report presents the findings of a semi-detailed Agricultural Land Classification (ALC) survey of 283.9 ha of land to the south and west of Broadbridge Heath, near Horsham in West Sussex. The survey was carried out during January and February 1998.

2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA)[1] on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF). The survey was carried out in connection with MAFF's statutory input to the First Review of the Horsham District Local Plan. This survey supersedes any previous ALC information for this land. Information from previous surveys to the south of this area (FRCA Refs: 4205/022/95 and 4205/151/95) has been used to assist in compiling this report and the accompanying ALC map.

3. The work was conducted by members of the Resource Planning Team in the Eastern Region of FRCA. 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 the site was in a mixture of permanent grassland, cereals and fodder crops, some of which was being grazed by sheep. In addition, some land was ploughed for the 1998 season. The areas mapped as 'Other land' include residential and farm buildings, a nursing home, a garden centre, sewage works, a landing strip, woodland and dense scrub, tracks and roads, ponds and a dismantled railway. The areas shown as 'Not Surveyed' comprise three areas where permission for access was not forthcoming.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:15,000. 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.

7. The fieldwork was conducted at an average density of 1 boring per 2 hectares of agricultural land. In total, 108 borings and eight soil pits were described.

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[1] FRCA is an executive agency of MAFF and the Welsh Office

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3a	9.0	4.7	3.2
3b	179.7	93.7	63.3
4	3.0	1.6	1.1
Not Surveyed	30.5	N/A	10.7
Other land	61.7	N/A	21.7
Total surveyed area	191.7	100	67.5
Total site area	283.9	-	100

8. The agricultural land on this site has been classified in the range Subgrade 3a (good quality) to Grade 4 (poor quality) with the majority shown as Subgrade 3b (moderate quality). Principal limitations to land quality include soil wetness, gradient and disturbance.

9. The majority of the agricultural land is principally limited by soil wetness. It has been mapped as Subgrade 3b, with Subgrade 3a in two small units towards the west and south of the site. The soils observed comprise fine loamy and silty topsoils overlying fine loamy, silty and clayey subsoils. The clayey horizons and some of the fine loamy subsoils impede soil drainage and occur at moderate and shallow depths in the profile. The relative depth determines the severity of the soil wetness problem and, in combination with topsoil texture, determines the ALC grade. Where the clayey horizons occur at shallow depths, Subgrade 3b is shown. In addition, the River Arun floods more than once every three years for medium (2-4 day) periods. As such the floodplain area is limited to Subgrade 3b at best, irrespective of soil conditions.

10. Soil wetness reduces the versatility of the land in terms of access by machinery (e.g. for cultivations or harvesting) and grazing by livestock if damage to the soil is to be avoided. Soil wetness will also adversely affect seed germination and root growth and will therefore reduce the level and consistency of yields.

11. In some areas towards the east of the site gradients were measured in excess of 7°. This is sufficient to restrict the safe and efficient use of certain farm machinery such that Subgrade 3b and Grade 4 are most appropriate.

12. Towards the west of the site, there is no topsoil present on the field shown as Grade 4. This causes a severe restriction in utilising the land for agricultural production.

FACTORS INFLUENCING ALC GRADE

Climate

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

14. 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	TQ 137 306	TQ 142 317	TQ 149 302
Altitude	m, AOD	30	30	58
Accumulated Temperature	day°C (Jan-June)	1498	1498	1466
Average Annual Rainfall	mm	782	779	799
Field Capacity Days	days	164	163	166
Moisture Deficit, Wheat	mm	111	111	106
Moisture Deficit, Potatoes	mm	106	106	101
Overall climatic grade	N/A	Grade 1	Grade 1	Grade 1

15. 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.

16. 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.

17. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. The site is climatically Grade 1. However, climatic factors do interact with soil properties to influence soil wetness and soil droughtiness. At this locality the climate is moist with average temperatures, in regional terms. The likelihood of soil wetness problems may therefore be enhanced.

Site

18. The site lies between approximately 30 and 58m AOD. The majority of the site is relatively flat. The higher ground lies towards the south near Baystone Farm and High Wood. To the east and north of High Wood the gradients are sufficient to adversely affect agricultural land quality, restricting the classification to Subgrade 3b and Grade 4. The lowest land lies on the floodplain of the River Arun which passes through the site from the south east to the west. According to the Environment Agency the river floods on a regular basis (more than one year in three) commonly for a medium duration (2-4 days). As such agricultural land quality on the floodplain of the River Arun is restricted to Subgrade 3b at best irrespective of other factors including soil quality. Other site restrictions such as microrelief do not affect the surveyed area of the site.

Geology and soils

19. The most detailed published geological information for the site (BGS, 1972) shows the majority of the survey area to be underlain by Weald Clay. To the south and on the higher land Horsham Stone is mapped. Alluvial drift deposits are shown along the margins of the River Arun. River terrace drift deposits occur to the west of the site flanking the alluvium.

20. The most detailed published soils information covering the area (SSEW, 1983) shows the site to comprise soils of the Wickham 1 and Curtisden associations. Wickham soils are mapped as covering the majority of the site. These are described as 'Slowly permeable seasonally waterlogged fine silty over clayey, fine loamy over clayey and clayey soils' (SSEW, 1983). Curtisden soils are mapped to the north east of the site, these are described as, 'Silty soils over siltstone with slowly permeable subsoils and slight seasonal waterlogging. Some similar well drained soils. Some well drained coarse loamy soils over sandstone. Slumping locally' (SSEW, 1983). Soils consistent with the description of the Wickham 1 association were encountered over the entire site. Curtisden type soils were not encountered.

AGRICULTURAL LAND CLASSIFICATION

21. 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.

22. 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 II.

Subgrade 3a

23. Land of good quality has been mapped in two separate units towards the south and west of the site. The principal limitation to land quality in these areas is soil wetness. The soils are characterised by the pit observations, P4, P8 (see Appendix II) and 2P from the previous survey (FRCA Ref: 4205/022/95).

24. Two soil types are described in this Subgrade at this site. The most extensive is typified by soil pit 4 (which is actually located in a Subgrade 3b unit due to a flooding limitation which overrides any soil limitation). The soils comprise a medium clay loam or medium silty clay loam topsoil overlying a similar or slightly heavier upper subsoil. These pass to clay or silty clay lower subsoils from between 45 and 72cm. Stone contents within the profiles were not significant, rarely exceeding 5% by volume of either flints or fine sandstone fragments. The pit proves that the clay horizons have poor structures and are slowly permeable thereby causing drainage to be impeded. The profiles were all gleyed within 40cm and contain significant quantities of manganese concretions. These factors represent evidence that the profiles are waterlogged for a proportion of most years. The depth to the slowly permeable clayey subsoils results in the soils being assigned to Wetness Class III. Within the local climate, the combination of imperfect soil drainage and the observed topsoil textures result in a Subgrade 3a classification.

25. Excessive soil wetness may adversely affect crop growth and development. It can also limit the flexibility of the land by reducing the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock.

26. The second soil type is less extensive and has a profile which typically comprises medium or heavy clay loam (occasionally medium silty clay loam) topsoils. These overlie similar upper subsoils passing to a sandy clay loam lower subsoil. These were occasionally observed to pass to silty clay at depth. Stone contents within the topsoil and upper subsoil are typically slight, up to 10% small flints by volume, with up to 20% on occasion. In the sandy clay loam lower subsoils stone content increases to a measured maximum of 40% small flints by volume (as in P8). The subsoils exhibit the effects of seasonal waterlogging in the form of ochreous mottling. As further evidence of waterlogging there was a significant volume of manganese concretions within the subsoil. The pits proved that the highly manganiferous, sandy clay loam lower subsoils were slowly permeable between 45 and 78cm. These slowly permeable horizons significantly impede drainage in the profile and, as a result, these soils are placed in Wetness Classes III and II depending on the depth to the SPL. The combination of imperfect soil drainage, topsoil texture and climatic factors gives rise to a land classification of Subgrade 3a. The effects of soil wetness are described above in paragraph 25. Occasional observations within this soil type were of a slightly better quality, but these were too few and too scattered to be mapped as a separate unit.

Subgrade 3b

27. Land of moderate quality has been mapped across the majority of the site in two units separated by an area of 'Other land'. Principal limitations in these areas include soil wetness, flooding and gradient. The areas principally affected by flooding are discussed in paragraph 18 above. The soils are characterised by the pit observations P1, P2, P3, P5, P6 and P7 (see Appendix II).

28. The soils across this area are predominantly of a single type. They comprise medium/heavy clay loam or medium/heavy silty clay loam topsoils which may contain up to 5% total flints or fine sandstone fragments by volume. On occasion, these directly overlie a slowly permeable clay or silty clay subsoil. In the majority of cases there is an upper subsoil horizon of heavy clay loam/heavy silty clay loam which is commonly slowly permeable and lies over the clay or silty clay from between 35 and 70cm. These profiles all present evidence of seasonal waterlogging in the form of gleying within 40cm. Severely impeded drainage arises from the presence of slowly permeable horizons which commence in the range 20-44cm. The subsoils are mostly either stone free or contain up to 5% flints or fine/medium sandstone fragments by volume. Under the prevailing local climatic conditions the observed drainage characteristics equate to Wetness Class IV which, when considered alongside the topsoil textures, results in a Subgrade 3b classification. The effects of soil wetness are described in paragraph 25 above. Subgrade 3b land is less versatile than that classified as Subgrade 3a because the limitations are more severe; ie, access restrictions are greater and crop yields are more likely to be adversely affected.

29. At the margins of the areas mapped as Grade 4 (see below) some land is restricted to Subgrade 3b on the basis of gradient. Slopes in this areas were measured in the range 7.5° to 10.5°. These are sufficient to adversely affect agricultural land quality as some precision farm machinery cannot be safely operated in this area. Therefore Subgrade 3b has been applied because other factors, such as the soil conditions, are not more limiting.

Grade 4

30. Towards the south-east of the site, two small areas of poor quality land have been identified. The principal limitation here is gradient. Slopes were measured to be in excess of 11°. This is sufficient to restrict the safe and efficient use of most precision farm machinery. Grade 4 is therefore the most appropriate classification for this land.

31. Towards the west of the site, a single small field has also been classified as Grade 4. In the recent past the topsoil in this area has been removed which, in addition to a soil wetness limitation similar to that described above for Subgrade 3b, means that this area can be classified no higher than Grade 4.

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SOURCES OF REFERENCE

British Geological Survey (1972) *Sheet No. 302, Horsham, 1:63,360, Solid and Drift Ed.* BGS: London.

FRCA (1995) *Horsham District Local Plan. Land west of Railway, Christ's Hospital, Horsham, West Sussex.* Job No. 4205/022/95

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

Soil Survey of England and Wales (1983) *Sheet 6, Soils of South-East England, 1:250,000.* SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in South East England* 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 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	**OTH**	Other
DCW:	Deciduous woodland	**BOG:**	Bog or marsh	**SAS:**	Set-Aside
HTH:	Heathland	**HRT:**	Horticultural crops	**PLO:**	Ploughed

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	**ST**:	Topsoil Stoniness
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
EX:	Exposure				

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

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

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

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	TQ14103170	PGR	N	2	32	32	4	3B		0		0					WE		3B	
2	TQ14303170	CER	N	2	35	58	3	3A	128	17	119	13	2				WE		3A	
3	TQ14403170	CER	N	1	23	23	4	3B	75	-36	75	-31	3B				WE		3B	MNPAN50 IMP 50
4	TQ14003160	PGR			25	45	3	3A	144	33	122	16	1	Y			FL		3B	FLOOD RISK
5	TQ14203160	PGR			0	30	4	3B		0		0					WE		3B	
6	TQ14303160	CER	N	1	27	27	4	3B		0		0					WE		3B	
7	TQ14403160	CER	N	1	52	52	3	3A	140	29	115	9	2				WE		3A	
8	TQ14103150	PGR			30	30	4	3B		0		0					WE		3B	SEE P1
9	TQ14303130	CER			27	27	4	3B	144	33	123	17	1				WE		3B	
10	TQ14203140	PGR			0	50	3	3A	106	-5	111	5	3A				WE		3A	
11	TQ14103130	PGR			0	10	4	3B		0		0					WE		3B	
12	TQ14283128	PGR			28	28	4	3B		0		0					WE		3B	
13	TQ14203120	PGR			0	32	4	3B		0		0					WE		3B	
14	TQ14103110	PGR			28	28	4	3B		0		0					WE		3B	SEE P2
15	TQ14303110	CER			28	28	4	3B		0		0					WE		3B	
16	TQ14003100	RGR			0	0	4	4	92	-19	90	-16	3A			Y	DB		4	NO TOPSOIL
17	TQ14203100	PGR	S	1	25	35	4	3B		0		0					WE		3B	
18	TQ14413101	CER			25	25	4	3B		0		0					WE		3B	
19	TQ14603100	CER			25	35	4	3B		0		0					WE		3B	
20	TQ14803100	PGR			0	38	4	3B		0		0					WE		3B	
21	TQ15003100	PGR			35	35	4	3B		0		0					WE		3B	
22	TQ14303090	PGR	S	1	0	35	4	3B		0		0					WE		3B	
23	TQ14503090	PGR			30	30	4	3B		0		0					WE		3B	
24	TQ14703090	PGR			28	40	4	3B		0		0					WE		3B	
25	TQ14903088	PGR			28	38	4	3B		0		0					WE		3B	
26	TQ13863080	PGR			30	75	2	2	140	29	114	8	2				WD		2	
27	TQ13973082	PGR	N	2	28	50	3	3A	130	19	110	4	2				WE		3A	
28	TQ14013087	RGR			0	0	4	3B	35	-76	35	-71	4			Y	DS		4	I30 NO T/SOIL
29	TQ14253079	PGR			38	38	4	3B		0		0					WE		3B	
30	TQ14403079	PGR			35	35	4	3B		0		0					WE		3B	
31	TQ14603080	PGR			28	28	4	3B		0		0					WE		3B	
32	TQ14803080	PGR			0	35	4	3B		0		0					WE		3B	
33	TQ13903070	PGR			30	65	3	3A	146	35	122	16	1				WE		3A	SEEP8 MNPAN 65
34	TQ14103070	PGR			25	65	3	3A	150	39	124	18	1	Y			FL		3B	ON FLOODPLAIN
35	TQ14303070	PGR	NE	2	36	36	4	3B	131	20	108	2	2				WE		3B	
36	TQ14503070	PGR			38	38	4	3B	129	18	106	0	2				WE		3B	
37	TQ14703070	PGR			25	32	4	3B		0		0					WE		3B	
38	TQ14903070	PGR			0	28	4	3B		0		0					WE		3B	
39	TQ13863063	PGR			28	65	3	3A	142	31	118	12	1				WE		3A	
40	TQ13993062	PGR			26	50	3	3A	118	7	114	8	2				WE		3A	
41	TQ14233060	PGR			22	70	3	3A	139	28	123	17	2	Y			FL		3B	ON FLOODPLAIN
42	TQ14403060	PGR			35	44	4	3B	106	-5	115	9	3A				WE		3B	MNPAN44 IMP72

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	--WETNESS-- GLEY	SPL	CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
43	TQ14603060	PGR			28	40	4	3B		0		0					WE	3B	
44	TQ14803060	PGR			35	35	4	3B		0		0					WE	3B	
45	TQ15003060	PGR			32	32	4	3B		0		0					WE	3B	
46	TQ15173060	PGR			25	25	4	3B		0		0					WE	3B	
47	TQ13703050	PLO			30	30	4	3B		0		0					WE	3B	IMP MNPAN 55
48	TQ13863050	PRL			26	65	3	3A	115	4	121	15	3A				WE	3A	MNPAN65 IMP75
49	TQ14103050	PGR			30	30	4	3B	107	-4	121	15	3A				WE	3B	IMP MNPAN 70
50	TQ14303050	PGR			35	50	3	3A	131	20	113	7	2	Y			FL	3B	ON FLOODPLAIN
51	TQ14503050	PGR			20	35	4	3B		0		0					WE	3B	
52	TQ14733050	PGR			0	20	4	3B		0		0					WE	3B	
53	TQ14903050	PGR	W	2	30	40	4	3B		0		0					WE	3B	SEE P6
54	TQ15103050	PGR	W	1	0	42	4	3B		0		0					WE	3B	
55	TQ13603040	PLO	NE	2	29	29	4	3B		0		0					WE	3B	
56	TQ13803040	PLO			33	33	4	3B		0		0					WE	3B	
57	TQ14003040	PLO			25	25	4	3B		0		0					WE	3B	
58	TQ14203040	PGR			28	28	4	3B	91	-20	95	-11	3A				WE	3B	SEE P7 IMP 55
59	TQ14303040	PGR			25	45	3	3A	148	37	124	18	1	Y			FL	3B	ON FLOODPLAIN
60	TQ14383040	PGR			0	35	4	3B		0		0					WE	3B	
61	TQ14603036	PGR	N	1	25	40	4	3B		0		0					WE	3B	
62	TQ14803040	PGR	NW	2	44	44	3	3A	139	28	114	8	2				WE	3A	SL GLEY 35
63	TQ15003040	PGR	N	3	25	60	3	3B		0		0					WE	3B	
64	TQ13703030	PLO	NE	2	28	28	4	3B		0		0					WE	3B	
65	TQ13903030	PLO	NE	2	38	38	4	3B		0		0					WE	3B	
66	TQ14103030	PGR			29	29	4	3B		0		0					WE	3B	MNPAN52 IMP65
67	TQ14273028	PGR			27	27	4	3B		0		0					WE	3B	
68	TQ14323029	PGR	N	1	27	36	4	3B	74	-37	74	-32	3B	Y			WE	3B	IMP MNPAN 47
69	TQ14503030	PGR			0	35	4	3B		0		0					WE	3B	
70	TQ14703030	PGR	N	1	20	40	4	3B		0		0					WE	3B	
71	TQ14903030	PGR	NW	6	25	35	4	3B		0		0					WE	3B	
72	TQ15103030	PGR	E	3	0	26	4	3B		0		0					WE	3B	
73	TQ13603020	PLO			26	26	4	3B		0		0					WE	3B	
74	TQ13803020	FCD	NE	1	27	27	4	3B		0		0					WE	3B	
75	TQ14003020	PLO	NE	2	24	24	4	3B		0		0					WE	3B	
76	TQ14223019	PGR	N	1	26	67	3	3A	138	27	115	9	2				WE	3A	
77	TQ14403020	PGR	NE	3	46	46	3	3B		0		0					WE	3B	SL GLEYED 25
78	TQ14603020	PGR	W	1	0	35	4	3B		0		0					WE	3B	
79	TQ14833016	PGR	NW	5	28	28	4	3B		0		0					WE	3B	
80	TQ15003020	PGR	E	6	0	25	4	3B		0		0					WE	3B	
81	TQ13503010	PGR			24	24	4	3B		0		0					WE	3B	
82	TQ13723010	FCD	NE	1	34	34	4	3B		0		0					WE	3B	
83	TQ13903010	FCD	N	2	30	30	4	3B		0		0					WE	3B	FODDER CROP
84	TQ14303010	PGR	NE	4	0	25	4	3B		0		0					WE	3B	

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
85	TQ14503010	PGR			0	45	3	3A	103	-8	108	2	3A	Y			FL	3B	SEE P4 FLOOD
86	TQ14943010	PGR	SE	6	0	26	4	3B		0		0					WE	3B	
87	TQ15103010	PGR	N	3	25	25	4	3B		0		0					WE	3B	
88	TQ13603000	PLO			40	40	4	3B	95	-16	106	0	3A				WE	3B	MNPAN40 IMP70
89	TQ13803000	FCD			30	30	4	3B		0		0					WE	3B	
90	TQ14003000	PLO			30	30	4	3B		0		0					WE	3B	
91	TQ14203000	PGR			0	25	4	3B		0		0					WE	3B	SEE P3
92	TQ14403000	PGR	SE	3	0	30	4	3B		0		0					WE	3B	
93	TQ14553000	PGR			0	35	4	3B		0		0		Y		Y	WE	3B	NO TOPSOIL
94	TQ14793004	PGR	NW	4	0	28	4	3B		0		0					WE	3B	
95	TQ15022996	PGR			20	40	4	3B	133	22	108	2	2	Y			WE	3B	ON FLOODPLAIN
96	TQ13702990	FCD	SW	1	29	29	4	3B		0		0					WE	3B	
97	TQ13892991	PLO	S	2	0	30	4	3B		0		0					WE	3B	
98	TQ14102990	PGR			30	30	4	3B		0		0					WE	3B	
99	TQ14302990	PGR	SE	2	0	25	4	3B		0		0					WE	3B	
100	TQ14922987	PGR			35	35	4	3B	110	-1	106	0	3A	Y			WE	3B	ON FLOODPLAIN
101	TQ13802980	PLO	SW	1	34	34	4	3B		0		0					WE	3B	.
102	TQ14002980	PLO	SW	1	35	35	4	3B		0		0					WE	3B	
103	TQ14562980	PGR			25	40	4	3B		0		0		Y			WE	3B	ON FLOODPLAIN
104	TQ14812977	PGR			28	28	4	3B	101	-10	104	-2	3A	Y			WE	3B	ON FLOODPLAIN
105	TQ13902970	PLO	SW	1	33	33	4	3B		0		0					WE	3B	SEE P5
106	TQ14442975	PGR			55	55	3	3B		0		0					WE	3B	
107	TQ14702970	PGR			0	65	3	3A	132	21	109	3	2	Y			FL	3B	ON FLOODPLAIN
108	TQ14602964	PGR			0	65	2	2	141	30	118	12	1	Y			WE	2	SLGLEYED 35-65
P1	TQ14103150	PGR	W	1	23	23	4	3B	123	12	98	-8	2				WE	3B	PIT 65 AUG 120
P2	TQ14103110	PGR			33	33	4	3B	103	-8	106	0	3A				WE	3B	PIT 65 AUG 80
P3	TQ14203000	PGR			0	27	4	3B	90	-21	101	-5	3B				WE	3B	PIT 70
P4	TQ14503010	PGR			23	61	3	3A	137	26	114	8	2				WE	3A	PIT 80 AUG 120
P5	TQ13902970	PLO	SE	3	26	26	4	3B	83	-28	89	-17	3B				WE	3B	PIT 60
P6	TQ14903050	PGR			29	43	4	3B	99	-12	109	3	3A				WE	3B	PIT 70
P7	TQ14203040	PGR			25	25	4	3B	99	-12	91	-15	3A				WE	3B	PIT 70 AUG 100
P8	TQ13903070	PGR			28	78	2	2	131	20	116	10	2				WD	2	PIT 85 AUG 120

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	0-32	MZCL	25Y 62	10YR58	C	D		Y	0	0		0							
	32-80	ZC	05Y 71	75YR68	M	D		Y	0	0		0		P			Y		
2	0-35	MZCL	25Y 53						0	0	HR	1							
	35-58	MZCL	25Y 63	10YR71 78	C	D	COM MN	Y	0	0		0		M			Y		
	58-70	HZCL	25Y 62	10YR68	M	D		Y	0	0		0		P			Y		
	70-100	ZC	25Y 72	10YR68	M	D		Y	0	0		0		P			Y		
3	0-23	MZCL	10YR43						0	0	HR	2							
	23-48	HZCL	25Y 72	75YR68	M	D	MANY MN	Y	0	0		0		P			Y		
	48-50	HCL	75YR46	75YR68	M	D	MANY MN	Y	0	0		0		P			Y		MN PAN 48 IMP 50
4	0-25	MZCL	10YR53	10YR58	F	F			0	0		0							OLD RIVER CHANNEL
	25-40	MZCL	10YR53	10YR68	C	F		Y	0	0		0		M					LIKELY TO FLOOD
	40-65	HZCL	25Y 53	10YR58	C	D		Y	0	0		0		M			Y		
	65-85	HCL	25Y 62	10YR46	C	D	COM MN	Y	0	0		0		P			Y		
	85-120	ZC	25Y 72	75YR68	M	D		Y	0	0		0		P			Y		
5	0-30	MZCL	25Y 52	10YR58	C	D		Y	0	0		0							
	30-55	HZCL	25Y 72	75YR58	M	D	COM MN	Y	0	0		0		P			Y		
	55-80	ZC	05Y 71	75YR68	M	D		Y	0	0		0		P			Y		
6	0-27	MZCL	10YR43 53						0	0		0							
	27-40	HZCL	25Y 72	10YR68	M	D		Y	0	0		0		P			Y		
	40-70	ZC	05Y 61	10YR68	M	D		Y	0	0		0		P			Y		
7	0-25	MZCL	10YR43						0	0		0							
	25-52	MZCL	10YR44	10YR56	C	F		S	0	0		0		M					
	52-120	ZC	25Y 72	10YR68	M	D		Y	0	0		0		P			Y		
8	0-30	MZCL	10YR53	10YR46	F	F			0	0		0							SEE P1
	30-60	HZCL	25Y 62	75YR68	C	D	COM MN	Y	0	0		0		P			Y		
	60-100	ZC	05Y 71 72	75YR68	M	D		Y	0	0		0		P			Y		
9	0-27	MZCL	10YR43						0	0	HR	2							
	27-55	HZCL	10YR53	10YR58 68	M	D	FEW MN	Y	0	0		0		P			Y		
	55-70	HZCL	25Y 51	75YR58	M	D	COM MN	Y	0	0		0		P			Y		
	70-120	ZC	25Y 72	10YR68	M	D		Y	0	0		0		P			Y		
10	0-30	MZCL	25Y 52	10YR46	C	D	COM MN	Y	0	0	MSST	5							
	30-50	HCL	25Y 53	10YR46	C	D	COM MN	Y	0	0	MSST	5		M					
	50-80	C	05Y 72	75YR58	M	D		Y	0	0		0		P			Y		
11	0-10	MZCL	10YR53	75YR68	C	D		Y	0	0	FSST	5							
	10-30	HZCL	25Y 62	75YR58	M	D	COM MN	Y	0	0	FSST	5		P			Y		
	30-60	C	05Y 72	75YR58	M	D	COM MN	Y	0	0	FSST	5		P			Y		
12	0-28	HZCL	10YR43	10YR56	F	D			0	0	HR	2							
	28-40	ZC	25Y 53 51	10YR68	C	D		Y	0	0		0		P			Y		
	40-70	C	25Y 72	10YR68	M	D		Y	0	0		0		P			Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
13	0-32	MZCL	25Y 53	10YR58	C	D		Y	0	0		0							
	32-60	ZC	25Y 62	75YR68	M	D		Y	0	0	FSST	5			P		Y		BORDER HZCL
	60-80	HZCL	25Y 71	75YR68	M	D		Y	0	0		0			P		Y		
14	0-28	MZCL	10YR53						0	0		0							SEE P2
	28-40	HZCL	25Y 53	10YR58	C	D	COM MN	Y	0	0	FSST	5			P		Y		
	40-70	ZC	05Y 71	75YR68	M	D		Y	0	0		0			P		Y		
15	0-28	HCL	10YR43 53						0	0		0							
	28-60	C	25Y 72	75YR58	M	D		Y	0	0		0			P		Y		
16	0-58	C	25Y 71	75YR58	M	D		Y	0	0		0			P		Y		NO TOPSOIL
	58-90	C	05Y 71	75YR68	M	D		Y	0	0	FSST	5			P		Y		DISTURBED
17	0-25	HCL	10YR43 53	10YR56	F	D			0	0		0							
	25-35	HCL	25Y 53	10YR56	C	D		Y	0	0		0			M				
	35-70	C	25Y 72	75YR58	M	D		Y	0	0		0			P		Y		
18	0-25	HCL	10YR43						0	0		0							
	25-70	C	25Y 72	10YR68	M	D		Y	0	0		0			P		Y		
19	0-25	MCL	10YR43						0	0		0							
	25-35	HCL	25Y 53	10YR56	C	D		Y	0	0		0							
	35-70	C	25Y 72	10YR68	M	D		Y	0	0		0			P		Y		
20	0-26	MZCL	10YR42 52	10YR56	C	F		Y	0	0		0							
	26-38	HZCL	25Y 62 63	10YR66	C	D		Y	0	0		0			M				
	38-80	ZC	25Y 72	10YR68	M	D		Y	0	0		0			P		Y		
21	0-35	MZCL	10YR43 53						0	0	HR	2							
	35-65	ZC	25Y 63 72	10YR58 68	M	D		Y	0	0		0			P		Y		
	65-75	HZCL	25Y 72	10YR68	M	D		Y	0	0		0			P		Y		
22	0-24	MZCL	10YR53	10YR56	C	D		Y	0	0	HR	2							
	24-35	HZCL	10YR62	10YR56	C	D		Y	0	0		0			M				
	35-55	ZC	25Y 72 73	10YR68	M	D		Y	0	0		0			P		Y		
	55-80	C	25Y 72	10YR68	M	D		Y	0	0		0			P		Y		
23	0-30	MZCL	10YR53						0	0		0							
	30-70	ZC	25Y 72	10YR68	M	D	FEW MN	Y	0	0		0			P		Y		
24	0-28	MZCL	10YR53						0	0		0							
	28-40	HZCL	25Y 63	10YR66	C	D	COM MN	Y	0	0		0			M				
	40-80	ZC	25Y 72	10YR68	M	D		Y	0	0		0			P		Y		
25	0-28	MZCL	10YR43 53				COM MN		0	0		0							
	28-38	HZCL	25Y 63	10YR58 68	C	D	COM MN	Y	0	0		0			M				
	38-70	ZC	25Y 62 72	10YR68	M	D		Y	0	0		0			P		Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
26	0-30	MCL	10YR43 53						0	0		0							
	30-55	MCL	10YR53	10YR56	C	D		Y	0	0	HR	5		M					
	55-75	SCL	25Y 62 63	10YR68	M	D	COM MN	Y	0	0	HR	5		M					
	75-120	ZC	25Y 72	10YR68	M	D	FEW MN	Y	0	0		0		P		Y			
27	0-28	MCL	10YR43						0	0		0							FLOODPLAIN EDGE
	28-50	MCL	10YR53	10YR56	C	F		Y	0	0		0		M					
	50-75	HCL	10YR53 63	10YR58	C	D	COM MN	Y	0	0		0		P		Y			
	75-120	HZCL	25Y 63	10YR58 68	M	D	COM MN	Y	0	0		0		P		Y			
28	0-30	C	25Y 71 72	75YR68	M	D		Y	0	0	HR	10		P		Y			NO T/SOIL IMP 30
29	0-20	MZCL	10YR42 52						0	0		0							
	20-38	HZCL	10YR53	10YR56	F	D		Y	0	0		0		M					
	38-70	ZC	25Y 72	10YR68	M	D		Y	0	0		0		P		Y			
30	0-27	MCL	10YR42	10YR56	F	D			0	0		0							
	27-35	MCL	10YR52	10YR56	F	D			0	0		0		M					
	35-70	C	25Y 62 63	10YR46 58	M	D	COM MN	Y	0	0		0		P		Y			
31	0-28	HZCL	10YR53						0	0		0							
	28-60	ZC	25Y 63 72	10YR68	M	D	COM MN	Y	0	0		0		P		Y			
	60-80	ZC	05Y 72	75YR58 68	M	D		Y	0	0		0		P		Y			
32	0-35	MZCL	10YR53	10YR56	C	D		Y	0	0		0							
	35-70	C	25Y 72 62	10YR68	M	D		Y	0	0		0		P		Y			
33	0-30	MZCL	10YR53						0	0		0							SEE P8
	30-65	MZCL	25Y 62	10YR58	M	D	COM MN	Y	0	0		0		M					
	65-90	SCL	25Y 62	10YR58	C	D	MANY MN	Y	0	0	HR	10		P		Y			MN/FE PAN
	90-120	SCL	25Y 62	75YR58	M	D	MANY MN	Y	0	0	HR	10		P		Y			
34	0-25	MZCL	10YR53	10YR56	C	F			0	0		0							ON FLOODPLAIN
	25-55	MZCL	10YR52	10YR56	C	D	COM MN	Y	0	0		0		M					
	55-65	HZCL	25Y 52	10YR56	C	D	COM MN	Y	0	0		0		M					
	65-95	HZCL	25Y 72 63	75YR58	M	D	MANY MN	Y	0	0		0		P		Y			
	95-120	HZCL	25Y 72 71	75YR58	M	D	COM MN	Y	0	0		0		P		Y			
35	0-36	MCL	10YR42						0	0	HR	2							
	36-120	C	25Y 62 72	10YR58	M	D		Y	0	0		0		P		Y			
36	0-28	MCL	10YR42 43						0	0		0							
	28-38	MZCL	10YR53 54	10YR56	F	D			0	0		0		M					
	38-80	ZC	25Y 63 73	10YR58	M	D		Y	0	0		0		P		Y			
	80-120	HCL	25Y 63 73	10YR58	M	D	MANY MN	Y	0	0	FSST	10		P		Y			
37	0-25	MZCL	10YR53						0	0		0							
	25-32	MZCL	25Y 53	10YR66	C	F	COM MN	Y	0	0		0		M					
	32-70	ZC	25Y 72	10YR68	M	D		Y	0	0		0		P		Y			

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
38	0-28	HZCL	10YR53	10YR56	C	D		Y	0	0		0							
	28-70	ZC	25Y 62 72	10YR68	M	D		Y	0	0		0		P			Y		
39	0-28	MZCL	10YR53						0	0		0							
	28-65	HCL	25Y 53 61	10YR58 68	M	D	COM MN	Y	0	0		0		P			Y		
	65-120	ZC	25Y 72	10YR68	M	D		Y	0	0		0		P			Y		
40	0-26	MZCL	10YR43						0	0		0							
	26-50	HZCL	25Y 53 62	10YR66	C	D		Y	0	0		0		M					
	50-90	ZC	25Y 72	10YR68	M	D		Y	0	0		0		P			Y		
41	0-22	MZCL	10YR43						0	0		0							ON FLOODPLAIN
	22-55	MZCL	10YR53	10YR56	C	F		Y	0	0		0		M					
	55-70	MZCL	10YR52	10YR56	C	F	FEW MN	Y	0	0		0		M					
	70-120	HZCL	25Y 72	75YR58	M	D	MANY MN	Y	0	0		0		P			Y		
42	0-35	MCL	10YR42				COM MN		0	0		0							
	35-44	HCL	25Y 53 63	10YR46 56	C	D	COM MN	Y	0	0	FSST	5		M					
	44-72	HCL	25Y 62 64	10YR46 58	M	D	MANY MN	Y	0	0	HR	10		M			Y		MN PAN 44 IMP 72
43	0-28	MZCL	10YR43 53						0	0	HR	2							
	28-40	HZCL	25Y 63	10YR46 58	M	D	COM MN	Y	0	0		0		M					
	40-65	ZC	25Y 63 72	10YR58 68	M	D	MANY MN	Y	0	0		0		P			Y		
	65-80	HZCL	25Y 71 72	10YR68	M	D	MANY MN	Y	0	0	HR	5		P			Y		
44	0-35	MZCL	10YR53						0	0		0							
	35-70	ZC	25Y 63 72	10YR58 68	M	D	COM MN	Y	0	0		0		P			Y		
45	0-32	HZCL	25Y 52 53	10YR56	F	D			0	0		0							
	32-70	ZC	25Y 62 72	10YR68	M	D	MANY MN	Y	0	0	FSST	5		P			Y		
	70-90	HZCL	25Y 72	10YR68	M	D	FEW MN	Y	0	0	FSST	5		P			Y		
46	0-25	HZCL	25Y 42 52	10YR56	F	D	FEW MN		0	0		0							
	25-72	ZC	25Y 72	10YR68	M	D	FEW MN	Y	0	0		0		P			Y		
47	0-30	MCL	25Y53						0	0	FSST	3							
	30-55	C	25Y63	10YR58	M	D	FEW MN	Y	0	0	FSST	5		P			Y		MN PAN IMP 55
48	0-26	MZCL	10YR43						0	0		0							
	26-50	HZCL	25Y 63	10YR68	M	D		Y	0	0		0		M					
	50-65	HCL	25Y 62 63	10YR58 68	M	D	COM MN	Y	0	0	HR	5		M					
	65-75	SCL	25Y 63 62	10YR66	M	D	MANY MN	Y	0	0	HR	10		P			Y		MN PAN 65 IMP 75
49	0-30	MZCL	10YR42						0	0	HR	2							
	30-70	HZCL	25Y 63	10YR56 68	M	D	COM MN	Y	0	0	HR	5		P			Y		
50	0-35	MCL	25Y 42 43						0	0		0							ON FLOODPLAIN
	35-50	HZCL	25Y 54 74	10YR56	C	D	FEW MN	Y	0	0		0		M					
	50-120	HZCL	25Y 72 73	10YR56 58	M	D	MANY MN	Y	0	0		0		P			Y		MN PAN

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
51	0-20	MCL	10YR43 53	10YR56	F	D			0	0		0							
	20-35	HCL	25Y 53	10YR58	C	D	FEW MN	Y	0	0		0		M					
	35-70	C	25Y 72	10YR68	M	D		Y	0	0		0		P			Y		
52	0-20	HZCL	10YR43 53	10YR46	C	D		Y	0	0		0							
	20-70	ZC	25Y 63 72	10YR58 68	M	D		Y	0	0		0		P			Y		
53	0-30	MZCL	25Y 42 43						0	0		0							SEE P6
	30-40	HZCL	25Y 63	10YR56 58	C	D	FEW MN	Y	0	0		0		M					
	40-85	ZC	25Y 72	10YR58	M	D		Y	0	0		0		P			Y		
54	0-30	HZCL	10YR42 52	10YR56	C	D			0	0		0							
	30-42	HZCL	25Y 62	10YR56	C	D	COM MN	Y	0	0		0		M					
	42-75	ZC	25Y 62 72	10YR58 68	M	D	COM MN	Y	0	0		0		P			Y		
55	0-29	MCL	25Y 53						0	0	FSST	5							
	29-60	C	25Y 64	10YR58	M	D		Y	0	0	FSST	5		P			Y		
56	0-33	MCL	25Y 53						0	0	FSST	3							
	33-60	C	25Y 63	10YR58	M	D	FEW MN	Y	0	0	FSST	5		P			Y		
57	0-25	MCL	25Y 53						0	0	FSST	2							
	25-60	C	25Y 63	10YR58	M	D		Y	0	0	FSST	5		P			Y		
58	0-28	MZCL	10YR53				FEW MN		0	0	HR	3							SEE P7
	28-55	HZCL	25Y 63 72	10YR58 68	M	D	MANY MN	Y	0	0	HR	10		P			Y		MN PAN 55 IMP 55
59	0-25	MZCL	10YR53	10YR56	F	F	FEW MN		0	0		0							ON FLOODPLAIN
	25-45	MZCL	10YR52	10YR56	C	F	COM MN	Y	0	0		0		M					
	45-90	HZCL	10YR62	10YR58	C	D	MANY MN	Y	0	0		0		P			Y		
	90-120	HZCL	25Y 62 72	75YR58	M	D	MANY MN	Y	0	0		0		P			Y		
60	0-35	MCL	25Y 53	10YR58	C	D	COM MN	Y	0	0		0							ON FLOODPLAIN
	35-80	C	25Y 72	75YR58	M	D	COM MN	Y	0	0		0		P			Y		
61	0-25	MCL	25Y 53				COM MN		0	0	FSST	5							
	25-40	HCL	25Y 63 53	75YR58	C	D	COM MN	Y	0	0	FSST	20		M					
	40-80	C	25Y 72	75YR58	M	D	COM MN	Y	0	0	FSST	5		P			Y		
62	0-38	MZCL	25Y 52	10YR56	F	D	FEW MN		0	0		0							
	38-44	HZCL	25Y 43	10YR56 58	M	D	COM MN	S	0	0		0		M					SLIGHTLY GLEYED
	44-120	ZC	25Y 72	10YR58	M	D		Y	0	0		0		P			Y		
63	0-25	HCL	10YR43 53	10YR56	F	D			0	0		0							
	25-40	HCL	10YR53	10YR58	C	D	COM MN	Y	0	0		0		M					
	40-60	HCL	25Y 52	10YR58 68	M	D		Y	0	0		0		M					
	60-90	C	25Y 72	10YR68	M	D		Y	0	0		0		P			Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
64	0-28	MCL	25Y 53						0	0	FSST	5							
	28-55	C	25Y 63	10YR58	M	D	FEW MN	Y	0	0	FSST	15			P		Y		
	55-75	C	05Y 71	10YR68	M	D		Y	0	0	FSST	10			P		Y		
65	0-28	MCL	25Y 53						0	0	FSST	2							
	28-38	HCL	25Y 54				MANY MN		0	0	FSST	15			M				
	38-60	C	25Y 81	10YR58	M	D		Y	0	0	FSST	5			P		Y		
66	0-29	MZCL	10YR53						0	0	HR	2							
	29-52	HZCL	25Y 62 63	10YR58 68	C	D	MANY MN	Y	0	0		0			P		Y		
	52-65	HZCL	25Y 72 63	10YR46 68	M	D	COM MN	Y	0	0	HR	5			P		Y		MN PAN 52 IMP 65
67	0-27	MZCL	10YR43 53						0	0		0							
	27-38	ZC	25Y 63 72	10YR68	M	D	FEW MN	Y	0	0		0			P		Y		
	38-70	HZCL	25Y 72	10YR68	M	D	FEW MN	Y	0	0		0			P		Y		
68	0-27	HCL	25Y 53						0	0	FSST	2							
	27-36	HCL	25Y 63	10YR56	M	D	MANY MN	Y	0	0	FSST	5			M				
	36-47	HCL	10YR53	10YR56	C	D		Y	0	0	HR	20			P		Y		IMP MN PAN 47
69	0-35	MCL	25Y 53	10YR58	C	D	COM MN	Y	0	0		0							FLOODPLAIN EDGE
	35-70	C	25Y 72	75YR58	M	D	COM MN	Y	0	0		0			P		Y		
70	0-20	MCL	10YR53	10YR56	F	D			0	0		0							
	20-40	HCL	25Y 53	10YR66	C	D		Y	0	0		0			M				
	40-80	C	25Y 72	10YR68	M	D		Y	0	0		0			P		Y		
71	0-25	MCL	10YR42 52						0	0		0							
	25-35	HCL	10YR52	10YR56	C	D	FEW MN	Y	0	0		0			M				
	35-120	C	25Y 62 63	10YR58	C	D	COM MN	Y	0	0		0			P		Y		
72	0-26	MZCL	10YR41 51	10YR56	C	D		Y	0	0		0							
	26-70	ZC	25Y 72 73	10YR68	M	D		Y	0	0		0			P		Y		
73	0-26	MCL	25Y 53						0	0	FSST	3							
	26-60	C	05Y 62	10YR58	M	D	COM MN	Y	0	0	FSST	5			P		Y		
74	0-27	HCL	25Y 53						0	0	FSST	2							
	27-70	C	25Y 63	10YR58	M	D	FEW MN	Y	0	0	FSST	10			P		Y		
75	0-24	MCL	25Y 53						0	0	FSST	2							
	24-60	C	25Y 72	10YR58	M	D	MANY MN	Y	0	0	FSST	2			P		Y		
76	0-26	MCL	25Y 53						0	0	FSST	2							
	26-67	HCL	25Y 63	10YR46	C	D	COM MN	Y	0	0	FSST	2			M				
	67-120	C	25Y 72	10YR58	M	D	FEW MN	Y	0	0		0			P		Y		
77	0-25	HCL	25Y 53						0	0	FSST	2							FLOODPLAIN EDGE
	25-46	HCL	25Y 54	10YR56	C	D	FEW MN	S	0	0	FSST	2			M				SLIGHTLY GLEYED
	46-70	C	25Y 72	10YR56	M	D	MANY MN	Y	0	0		0			P		Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
78	0-25	HCL	10YR53 52	10YR56	C	D		Y	0	0	FSST	2							
	25-35	HCL	25Y 52	10YR66	C	D		Y	0	0		0		M					
	35-70	C	25Y 72	10YR68	M	D		Y	0	0		0		P		Y			
79	0-28	HCL	25Y 42 52	10YR56	C	D	COM MN	Y	0	0	FSST	5							
	28-70	C	25Y 63 72	10YR58	M	D	FEW MN	Y	0	0	FSST	5		P		Y			
80	0-25	HCL	10YR52	10YR66	C	D	FEW MN	Y	0	0		0							
	25-70	C	25Y 62	10YR68	M	D		Y	0	0		0		P		Y			
81	0-24	MCL	25Y 53						0	0	FSST	3							
	24-52	C	05Y 62	10YR58	M	D	MANY MN	Y	0	0	FSST	20		P		Y			
	52-80	C	05Y 71	10YR68	M	D		Y	0	0	FSST	10		P		Y			
82	0-34	HCL	25Y 53						0	0	FSST	2							
	34-70	C	25Y 63	10YR58	M	D		Y	0	0	FSST	5		P		Y			
83	0-30	MCL	10YR53						0	0		0							
	30-55	C	25Y 63	10YR58	M	D		Y	0	0		0		P		Y			
84	0-25	HCL	10YR53	10YR56	C	D		Y	0	0		0							
	25-52	C	25Y 63	10YR58	M	D		Y	0	0	FSST	10		P		Y			
85	0-35	MCL	25Y 53	10YR58	C	D	COM MN	Y	0	0		0							SEE P4 FLOODPLAIN
	35-45	HCL	25Y 62	75YR58	C	D	MANY MN	Y	0	0		0		M					
	45-80	C	25Y 72	75YR58	M	D	MANY MN	Y	0	0		0		P		Y			
86	0-26	HCL	25Y 52	10YR58	C	D		Y	0	0		0							
	26-70	C	25Y 63 72	75YR58	M	D	FEW MN	Y	0	0	FSST	5		P		Y			
87	0-25	MCL	10YR52	10YR56	F	F			0	0		0							
	25-70	C	25Y 52 61	10YR58	M	D	COM MN	Y	0	0		0		P		Y			
88	0-30	MZCL	25Y 53						0	0	FSST	3							
	30-40	HCL	25Y 63				COM MN		0	0	FSST	20		M					
	40-58	SCL	25Y 73				MANY MN		0	0	FSST	35		P		Y			MN PAN 40-58
	58-70	C	05Y 71	10YR56	M	D		Y	0	0	FSST	15		P		Y			IMP 70
89	0-30	MCL	10YR53						0	0		0							
	30-55	C	25Y 63	10YR58	M	D		Y	0	0		0		P		Y			
90	0-30	MCL	25Y 53						0	0	FSST	2							
	30-60	C	25Y 72	10YR58	M	D	MANY MN	Y	0	0		0		P		Y			
91	0-25	HCL	10YR52	10YR56	C	D		Y	0	0		0							SEE P3
	25-55	C	25Y 62	10YR58	M	D		Y	0	0	FSST	10		P		Y			
92	0-30	HCL	10YR53	10YR56	C	D		Y	0	0		0							
	30-55	C	25Y 63	10YR58	M	D		Y	0	0		0		P		Y			

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
93	0-35	HCL	25Y 62	75YR58	M	D	COM MN	Y	0	0		0		P			Y		ON FLOODPLAIN
	35-50	C	25Y 72	75YR58	M	D	COM MN	Y	0	0		0		P			Y		
	50-68	HCL	25Y 53	10YR58	C	D	MANY MN	Y	0	0		0		P			Y		
	68-90	HCL	25Y 62	75YR58	M	D	MANY MN	Y	0	0		0		P			Y		
	90-120	C	25Y 72	75YR58	M	D	MANY MN	Y	0	0		0		P			Y		
94	0-28	HCL	25Y 53 52	10YR58	C	D		Y	0	0		0							
	28-70	C	25Y 72	10YR68	M	D		Y	0	0	FSST	5		P			Y		
95	0-20	HZCL	25Y 53 63	10YR56	F	D			0	0		0							ON FLOODPLAIN
	20-40	HZCL	25Y 62	10YR66	C	D		Y	0	0		0		M					
	40-120	ZC	25Y 63	75YR58	M	D	MANY MN	Y	0	0		0		P			Y		BORDER HZCL
96	0-29	MCL	25Y 53						0	0	FSST	2							
	29-60	C	25Y 72	10YR58	M	D	MANY MN	Y	0	0	FSST	5		P			Y		
97	0-30	HCL	25Y 63	10YR56	C	D		Y	0	0	FSST	2							
	30-55	C	25Y 63	10YR58	M	D		Y	0	0		0		P			Y		
98	0-30	MCL	10YR53						0	0		0							
	30-55	C	25Y 63	10YR58	M	D		Y	0	0	FSST	25		P			Y		
99	0-25	HCL	10YR53	10YR56	C	D		Y	0	0		0							
	25-55	C	25Y 63	10YR58	M	D		Y	0	0		0		P			Y		
100	0-20	HZCL	10YR53						0	0		0							ON FLOODPLAIN
	20-35	HZCL	25Y 53				FEW MN		0	0		0		M					
	35-90	ZC	25Y 63 62	10YR58	M	D	MANY MN	Y	0	0		0		P			Y		BORDER HZCL
101	0-34	MCL	25Y 53						0	0	FSST	5							
	34-55	C	25Y 72 63	10YR58	M	D	MANY MN	Y	0	0	FSST	20		P			Y		
	55-75	C	25Y 71 63	10YR58	M	D		Y	0	0	FSST	5		P			Y		
102	0-35	HCL	25Y 53						0	0	FSST	2							
	35-65	C	25Y 63	10YR58	M	D		Y	0	0	FSST	10		P			Y		
103	0-25	MCL	25Y 53	10YR58	C	D	COM MN	Y	0	0		0							ON FLOODPLAIN
	25-40	HCL	25Y 62	75YR58	M	D	COM MN	Y	0	0		0		M					
	40-70	C	25Y 72	75YR58	M	D	COM MN	Y	0	0		0		P			Y		
104	0-28	HZCL	25Y 53				COM MN		0	0		0							ON FLOODPLAIN
	28-80	ZC	25Y 63 62	10YR58	M	D	MANY MN	Y	0	0		0		P			Y		
105	0-33	MCL	25Y 53						0	0	FSST	5							SEE P5
	33-43	C	25Y 63	10YR58	M	D	MANY MN	Y	0	0	FSST	20		P			Y		
	43-70	C	05Y 61	10YR66	M	D	COM MN	Y	0	0	FSST	5		P			Y		
106	0-25	HCL	10YR53						0	0		0							
	25-55	C	10YR53				COM MN		0	0		0		M					
	55-70	C	25Y 53	10YR58	C	D		Y	0	0		0		P			Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
107	0-35	MZCL	25Y 53	10YR58	C	D	FEW MN	Y	0	0		0							ON FLOODPLAIN
	35-65	HZCL	25Y 63	75YR58	M	D	MANY MN	Y	0	0		0		M					
	65-120	C	25Y 63 73	75YR58	M	D	MANY MN	Y	0	0		0		P		Y			
108	0-35	MCL	25Y 52	10YR58	C	D	COM MN	Y	0	0		0							ON FLOODPLAIN
	35-65	MCL	10YR54	10YR58	C	D	COM MN	S	0	0		0		M					SLIGHTLY GLEYED
	65-120	C	25Y 72	75YR58	M	D	COM MN	Y	0	0		0		P		Y			
P1	0-23	MZCL	10YR43						0	0	FSST	2							PIT @ BOR 8
	23-48	HZCL	25Y 63	10YR68	M	D	25Y 62	Y	0	0	FSST	5	WKCAB	FM	P	Y		Y	FEW MN
	48-120	ZC	25Y 72	10YR68	M	D	25Y 71	Y	0	0		0	MDVCAB	FM	P	Y		Y	
P2	0-33	MZCL	10YR43 53						0	0		0							PIT @ BOR 14
	33-44	HZCL	25Y 61 62	10YR58	M	D	25Y 63	Y	0	0	FSST	5	MDCAB	FM	P	Y		Y	COM MN
	44-80	ZC	25Y 72	10YR68	M	D	25Y 63	Y	0	0	FSST	5	WKVCPL	FM	P	Y		Y	PIT 60 AUG 80
P3	0-27	HCL	25Y 52	10YR46	C	D		Y	0	0	FSST	2							PIT @ BOR 91
	27-39	C	05Y 62	10YR68	M	D	COM MN	Y	0	0		0	STCPR	FM	P	Y		Y	COM MN
	39-70	C	05Y 62	10YR68	M	D	COM MN	Y	0	0	FSST	10	MDCPL	FM	P	Y		Y	COM MN
P4	0-23	MCL	10YR42						0	0		0							PIT@ 85 FPLAIN
	23-41	HCL	25Y 62	10YR66	M	D	25Y 63	Y	0	0		0	MDCSAB	FR	M	N			MANY MN
	41-61	HCL	25Y 71	10YR68	M	D	25Y 62	Y	0	0		0	MDCSAB	FR	M	N			MANY MN
	61-120	C	25Y 71	10YR58	M	D	25Y 72	Y	0	0		0	MDCAB	FM	P	Y		Y	MANY MN
P5	0-26	MZCL	25Y 53						0	0	FSST	3							PIT @ BOR 105
	26-41	C	25Y 63	10YR56	M	D	MANY MN	Y	0	0	FSST	25	MDCPL	FM	P	Y		Y	MANY MN
	41-60	C	05Y 62	10YR68	M	D	MANY MN	Y	0	0		0	MDCAB	FM	P	Y		Y	PIT 60 COM MN
P6	0-29	MZCL	10YR53						0	0	HR	4							PIT @ BOR 53
	29-43	HZCL	25Y 62	10YR56	C	D	25Y 63	Y	0	0		0	MDCSAB	FR	M	N			
	43-55	ZC	25Y 62	10YR68	M	D	25Y 62	Y	0	0		0	WKCAB	FM	P	Y		Y	
	55-70	ZC	25Y 72	10YR58 68	M	D		Y	0	0		0	WKVCPL	FM	P	Y		Y	
P7	0-25	MZCL	10YR53						0	0	HR	2							PIT @ BOR 58
	25-57	HZCL	25Y 63	10YR46 68	M	D	COM MN	Y	0	0	HR	20	WKCPL	FM	P	Y		Y	MN/FE PAN
	57-70	ZC	25Y 63 62	10YR46 58	M	D	MANY MN	Y	0	0	HR	20	WKCAB	FM	P	Y		Y	
	70-100	ZC	25Y 63 62	10YR46 58	M	D	COM MN	Y	0	0	HR	20			P			Y	
P8	0-28	MZCL	10YR53						0	0	HR	2							PIT @ BOR 33
	28-59	MZCL	10YR53 62	10YR66	C	D	COM MN	Y	0	0	HR	8	MDCSAB	FR	M	N			
	59-78	MZCL	25Y 62	10YR68	M	D	MANY MN	Y	0	0	HR	20	WKCSAB	FR	M	N			SIEVED STONES
	78-120	SCL	10YR63	10YR68	M	D	MANY MN	Y	0	0	HR	40	WKCPL	FM	P	Y		Y	SIEVED STONES