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Wokingham District Local Plan
Sites WK01, WK02, WK23, WK24, WK25 - Wokingham
Agricultural Land Classification
Semi-detailed Survey
February 1996

Resource Planning Team
Guildford Statutory Group
ADAS Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

WOKINGHAM DISTRICT LOCAL PLAN
SITES WK01, WK02, WK23, WK24, WK25, WOKINGHAM

Introduction

1. This report presents the findings of a semi-detailed Agricultural Land Classification (ALC) survey of approximately 225 hectares of land to the north-east of Wokingham in Berkshire. The survey was carried out during February 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 Wokingham District Local Plan. Some of the land to the south-west of the site was surveyed in 1985 under the previous ALC guidelines, (MAFF, 1977). However, the results of the most recent survey supersede the 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 was mostly under arable cropping, with smaller areas of permanent pasture and some land in nursery trees. The areas shown as 'Other Land' include a number of farms and associated buildings, areas of woodland and scrub, roads, recreational land and a sewage works.

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 below.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% agricultural area	% total site area
3a	38.7	24.4	17.2
3b	119.6	75.6	53.2
Other land	66.4		29.6
Total agricultural area	158.3	100.0	
Total site area	224.7		100.0

7. The fieldwork was conducted at an average density of approximately 1 boring every 2 hectares. A total of 101 borings and 3 soil inspection pits were described.

8. Land across the site comprises soils derived from either London Clay, alluvium or plateau gravels. Consequently soils were found to be either clayey and poorly drained or stony over gravelly horizons.

9. Land quality on the site ranges from Subgrade 3a, good quality, to Subgrade 3b, moderate quality. The land is restricted in its agricultural use by soil wetness and/or soil droughtiness. Where soils are clayey and poorly drained, soil wetness limits land quality to Subgrade 3a or 3b depending upon the degree of impeded drainage. Across most of the site, topsoils rest directly upon clayey horizons which impede drainage and cause significant soil wetness restrictions, such that Subgrade 3b appropriate. Soil droughtiness is less common and occurs where soils are stony and rest upon gravelly horizons at varying depths e.g. south of Ashridgewood Farm and around Ashridgewood. The extent of droughtiness, and therefore the resultant ALC grade, is determined by the relative stone contents and depths of the soil profiles. The majority of such land is assigned to Subgrade 3a.

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 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	SU 805 705	SU 818 709
Altitude	m, AOD	45	60
Accumulated Temperature	day°C (Jan-June)	1471	1453
Average Annual Rainfall	mm	651	666
Field Capacity Days	days	136	139
Moisture Deficit, Wheat	mm	115	113
Moisture Deficit, Potatoes	mm	110	107

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.

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 affecting agricultural land quality. In addition, local climatic factors such as frost risk and exposure are not believed to affect the site. The site is climatically Grade 1. However, climatic factors do interact with soil factors to influence soil wetness and soil droughtiness. At this locality the climate is relatively warm and dry such that the likelihood of soil droughtiness problems is enhanced.

Site

15. The site is gently undulating, lying at an altitude of 45-70 m AOD, rising towards the north. Nowhere on the site do gradient, microrelief or flood risk affect agricultural land quality.

Geology and Soils

16. The most detailed published geological information for the site (BGS, 1946 & 1979) shows it to be underlain predominantly by London Clay with a small deposit of pebble gravel to the north of the site around Ashridgewood.

17. The most detailed published soils information (SSEW, 1983) shows the entire site to comprise soils of the Wickham 4 association. These are described as 'slowly permeable, seasonally waterlogged fine loamy over clayey and fine silty over clayey soils associated with similar clayey soils' (SSEW, 1983). Detailed field examination of the soils on the site found the majority to conform with those described by the Soil Survey, although localised areas of more gravelly soils were observed.

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, page 1.

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

Subgrade 3a.

20. Good quality land has been mapped as several discrete units across the site with the main limitation to agricultural use being either soil wetness or soil droughtiness, or a combination of the two.

21. Where soil wetness is the principal limitation, soil profiles typically comprise non-calcareous medium clay loam, or occasionally sandy clay loam or sandy loam topsoils which may contain 2-10% total flints by volume. Upper subsoils were found to be similarly textured or slightly heavier (i.e., heavy clay loams) and commonly mottled and gleyed. Slowly permeable horizons of heavy clay loam or clay were encountered at variable depths between about 37 and 66 cm. These impede drainage through the soil profile, thereby causing seasonal waterlogging and the resultant gley features. The extent of impeded drainage is consistent with Wetness Class III (see Appendix II). Given the prevailing climate and topsoil workability, such a drainage status gives rise to a land classification of Subgrade 3a. Soil pits

1 and 3 are representative of these soils (see Appendix III). Excessive soil wetness will adversely affect seed germination and root development, as well as restricting the flexibility of the land by reducing the number of days when the soil is in a suitable condition for cultivation or grazing by livestock.

22. Small areas of land within the 3a mapping units, most notably around Ashridgewood and south of Ashridgewood Farm, are affected by a soil droughtiness limitation. Soils have developed from gravel deposits and as such are typically shallow and/or stony. Profiles were found to comprise non-calcareous medium clay loam, sandy clay loam or sandy loam topsoils, containing 5-10% total flints by volume, (2-5% > 2cm in size). Similarly textured subsoils, which were often gleyed, were found to be increasing stony and many profiles were impenetrable (to the soil auger) at variable depths between 45 and 80 cm. Soil pit 2 (see Appendix III) confirmed that lower subsoils are very stony having 35-60% total flints. Moisture balance calculations indicate that, as a result of the combination of soil textures and stone contents with the relatively dry local climate, profile available water may be insufficient to meet the demands of a growing crop throughout the year. A soil droughtiness limitation therefore exists, the extent of which is consistent with Subgrade 3a. Soil droughtiness will affect the range of crops that can be grown and the yield potential of those crops which are grown.

Subgrade 3b.

23. The majority of the site has been assigned to Subgrade 3b, moderate quality agricultural land, the principal limitation being soil wetness, although localised areas are affected by soil droughtiness.

24. Where soil wetness is determining land quality, soil profiles typically comprise non-calcareous medium or heavy clay loam, or occasionally sandy clay loam, topsoils which are generally only very slightly stony (i.e., 2-5% total flints). These pass directly to gleyed and poorly structured heavy clay loam or clay horizons which significantly impede drainage. Wetness Class IV is appropriate for such soils, which given the prevailing climatic regime, results in the land being classified as Subgrade 3b on the basis of soil wetness/workability.

25. A soil droughtiness limitation consistent with Subgrade 3b affects a very few areas of the site where soils are similar to those described in paragraph 22 above, but more stony and/or shallower over gravelly horizons. The restriction on profile available water is therefore greater and the soil droughtiness limitation more severe.

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SOURCES OF REFERENCE

British Geological Survey (1946) *Sheet No. 268, Reading.*
BGS: London.

British Geological Survey (1979) *Sheet No. 269, Windsor.*
BGS: London.

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

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

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

Soil Survey of England and Wales (1984) *Soils and their Use in South East England*
SSEW: Harpenden

APPENDIX I

DESCRIPTION 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 that 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 (eg. 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 that restricts 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 sandston	**GS**:	gravel with porous (soft) stones
SI:	soft weathered igneous/metamorphic rock		

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

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

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

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

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

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

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

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

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

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

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

SOIL PIT DESCRIPTION

Site Name : WOKINGHAM LP, SITE WK23 Pit Number : 1P

Grid Reference: SU80376989 Average Annual Rainfall : 662 mm
Accumulated Temperature : 1471 degree days
Field Capacity Level : 138 days
Land Use : Cereals
Slope and Aspect : 01 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	MSL	10YR42 00	1	3	HR					
28- 40	MSL	10YR52 00	0	5	HR	C	MDVCAB	FR	M	
40- 50	HCL	10YR61 00	0	2	HR	M	WKCOAB	FR	M	
50- 65	C	10YR71 00	0	2	HR	M	MDCOAB	FM	P	
65-120	C	10YR71 00	0	0		M	WKCOAB	FM	P	

Wetness Grade : 2 Wetness Class : III
Gleying :028 cm
SPL :040 cm

Drought Grade : APW : 000mm MBW : 0 mm
APP : 000mm MBP : 0 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : WOKINGHAM LP, SITE WK23 Pit Number : 2P

Grid Reference: SU81807050 Average Annual Rainfall : 662 mm
Accumulated Temperature : 1471 degree days
Field Capacity Level : 138 days
Land Use : Ley
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 32	MCL	10YR41 00	2	5	HR					
32- 45	MSL	25Y 71 00	0	5	HR	C	MDCAB	FR	M	
45- 60	MSL	25Y 71 00	0	35	HR	C	WKCSAB	FR	G	
60- 80	SCL	10YR62 00	0	55	HR	M	WK	FR	M	
80-100	LMS	10YR68 00	0	60	HR				M	

Wetness Grade : 2 Wetness Class : II
Gleying :032 cm
SPL : No SPL

Drought Grade : 3A APW : 099mm MBW : -16 mm
APP : 095mm MBP : -15 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : WOKINGHAM LP, SITE WK23 Pit Number : 3P

Grid Reference: SU81507040 Average Annual Rainfall : 662 mm
Accumulated Temperature : 1471 degree days
Field Capacity Level : 138 days
Land Use : Ley
Slope and Aspect : 01 degrees E

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MCL	10YR42 00	1	5	HR					
30- 40	MCL	10YR42 00	0	5	HR	C	MDCSAB	FR	M	
40- 50	HCL	10YR63 00	0	10	HR	M	WKCSAB	FR	M	
50- 80	C	25 Y62 00	0	7	HR	M	WKCAB	FM	P	

Wetness Grade : 3A Wetness Class : III
Gleying :030 cm
SPL :040 cm

Drought Grade : 3A APW : 101mm MBW : -14 mm
APP : 106mm MBP : -4 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Wetness

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SU80707100	PGR	S	01	0	027	4	3B	000	0	000	0					WE	3B	
1P	SU80376989	CER	N	01	028	040	3	2	000	0	000	0					WE	2	At Boring 92
2	SU80907100	TRE			030	035	4	3B	000	0	000	0					WE	3B	
2P	SU81807050	LEY			032		2	2	099	-16	095	-15	3A				DR	3A	At Boring 48
3	SU81107100	TRE			020	030	4	3B	098	-17	103	-7	3A				WE	3B	
3P	SU81507040	LEY	E	01	030	040	3	3A	101	-14	106	-4	3A				WE	3A	At Boring 56
4	SU81507100	PGR	S	01	0	030	4	3A	000	0	000	0					WE	3A	
5	SU81707100	PLO	E	01	030	030	4	3B	000	0	000	0					WE	3B	
6	SU81807100	PLO	E	01	030	030	4	3B	000	0	000	0					WE	3B	
7	SU81907100	PLO			028	058	3	2	000	0	000	0					WE	2	PROB 2DR
8	SU80207090	PGR	SE	01	0	028	4	3B	000	0	000	0					WE	3B	
9	SU80407090	PGR	S	02	0	035	4	3B	000	0	000	0					WE	3B	
10	SU80607090	PGR	S	02	0	023	4	3B	000	0	000	0					WE	3B	
11	SU81007090	TRE			030	030	4	3B	000	0	000	0					WE	3B	
12	SU81207090	PGR			020	030	4	3B	091	-24	087	-23	3B				WE	3B	
13	SU81407090	PGR			0		2	1	058	-57	058	-52	4				DR	3B	IMP 40
14	SU81607090	PGR	S	01	030	030	4	3B	000	0	000	0					WE	3B	
15	SU81807090	PLO	E	01	035	035	4	3B	000	0	000	0					WE	3B	
16	SU81907090	PLO	E	01	035	035	4	3B	000	0	000	0					WE	3B	
17	SU80307080	PGR	SE	01	0	030	4	3B	000	0	000	0					WE	3B	
18	SU80507080	PGR	SE	02	0	020	4	3B	000	0	000	0					WE	3B	
19	SU80707080	PGR	S	02	0	020	4	3B	000	0	000	0					WE	3B	
20	SU80907080	PLO	S	03	0	035	4	3B	000	0	000	0					WE	3B	
21	SU81107080	PGR			0	050	3	3A	089	-26	094	-16	3B				WD	3A	
22	SU81307080	PGR			055		1	1	140	25	103	-7	2				DR	2	SL. GLEY 35
23	SU81507080	PGR			030	065	3	3A	124	9	114	4	2				WE	3A	BORDER 2
24	SU81707080	PLO	E	01	032	032	4	3B	000	0	000	0					WE	3B	
25	SU81907080	PLO	S	01	030	030	4	3B	000	0	000	0					WE	3B	
26	SU80407070	PGR	SE	01	0	035	4	3B	000	0	000	0					WE	3B	
27	SU80607070	PGR	SE	01	0	030	4	3B	000	0	000	0					WE	3B	
28	SU80807070	PLO	S	02	0	030	4	3B	000	0	000	0					WE	3B	
29	SU81007070	PLO	W	02	0	030	4	3B	000	0	000	0					WE	3B	
30	SU81207070	PGR	S	01	0	055	3	3A	000	0	000	0					WE	3A	Q SL TOP
31	SU81407070	PLO	E	01	020	050	3	3A	000	0	000	0					WE	3A	Q SL 30
32	SU81607070	PLO	E	01	035	035	4	3B	000	0	000	0					WE	3B	
33	SU81707070	PGR			030	030	4	3B	000	0	000	0					WE	3B	
34	SU80507060	PGR			0	020	4	3B	000	0	000	0					WE	3B	
35	SU80707060	PGR			0	025	4	3B	000	0	000	0					WE	3B	
36	SU80907060	PLO	W	01	0	030	4	3B	000	0	000	0					WE	3B	
37	SU81107060	PGR	W	03	0	028	4	3B	000	0	000	0					WE	3B	
38	SU81307060	PGR	S	02	0	060	3	3A	000	0	000	0					WE	3A	
39	SU81507060	PLO	E	01	030	030	4	3B	000	0	000	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
40	SU81707060	PLO			035	035	4	3B	000	0	000	0					WE	3B	
41	SU80607050	PGR			0		2	3A	068	-47	068	-42	3B			Y	DR	3B	DISTURBED
42	SU80807050	PLO	S	01	0	030	4	3B	000	0	000	0					WE	3B	
43	SU81007050	PGR	W	03	0	010	4	3B	000	0	000	0					WE	3B	CLAY TOPSOIL
44	SU81207050	BEN	S	02	030	030	4	3B	000	0	000	0					WE	3B	
45	SU81407050	PLO	E	02	030	045	3	3A	000	0	000	0					WE	3A	
46	SU81607050	PLO	E	02	030	058	3	3A	000	0	000	0					WE	3B	
47	SU81707050	PLO	E	02	030		2	2	000	0	000	0					DR	3A	IMP 50, SEE 2P
48	SU81807050	LEY			030		2	2	073	-42	073	-37	3B				DR	3A	IMP 50, SEE 2P
49	SU80107040	CER	N	04	028	028	4	3B	000	0	000	0					WE	3B	
50	SU80207040	CER	N	03	035	055	3	3A	000	0	000	0					WE	3A	
51	SU80307040	CER			030	030	4	3B	000	0	000	0					WE	3B	IMP 50
52	SU80507040	PGR			0	030	4	3B	000	0	000	0					WE	3B	
53	SU80707040	PGR			0	035	4	3B	000	0	000	0					WE	3B	
54	SU80907040	PGR			030	040	3	3A	103	-12	108	-2	3A				WE	3A	BORDER 3B
55	SU81307040	BEN	S	01	030	055	3	3A	000	0	000	0					WE	3A	BORDER 3B
56	SU81507040	LEY	E	01	030	048	3	3A	000	0	000	0					WE	3A	
57	SU81707040	PLO	E	02	030		2	2	089	-26	094	-16	3B				DR	3A	IP 60, SEE 2P
58	SU80207030	CER	N	03	030		2	1	089	-26	090	-20	3B				DR	3A	IP 80, SEE 2P
59	SU80407030	CER	N	02	030	030	4	3B	000	0	000	0					WE	3B	
60	SU80607030	PLO			035	035	4	3B	000	0	000	0					WE	3B	
61	SU80807030	PGR			030	030	4	3B	000	0	000	0					WE	3B	
62	SU81007030	PGR	S	02	0	020	4	3B	000	0	000	0					WE	3B	
63	SU81207030	CER	S	02	030	030	4	3B	000	0	000	0					WE	3B	
64	SU81407030	CER	S	02	030	030	4	3B	000	0	000	0					WE	3B	
65	SU81607030	OSR	S	01	030	030	4	3B	000	0	000	0					WE	3B	
66	SU81807030	LEY	N	01	025		2	2	067	-48	067	-43	3B				DR	3A	IP 45, SEE 2P
67	SU80307020	CER	N	01	030	030	4	3B	000	0	000	0					WE	3B	
68	SU80507020	CER	N	01	030	040	3	3A	000	0	000	0					WE	3A	
69	SU80707020	CER	N	01	035	050	3	3A	000	0	000	0					WE	3A	
70	SU80907020	PGR			030	030	4	3B	000	0	000	0					WE	3B	IMP 50
71	SU81107020	PGR			0	030	4	3B	000	0	000	0					WE	3B	
72	SU81307020	CER	S	02			1	1	104	-11	074	-36	3B				DR	3B	SANDY
73	SU81507020	OSR	S	01	025	060	3	3A	000	0	000	0					WE	3A	
74	SU81707020	OSR			030		2	2	075	-40	075	-35	3B				DR	3A	IMP 45, SEE 2P
75	SU81807020	OSR			030		2	2	152	37	109	-1	2				WD	2	SANDY
76	SU80207010	CER	N	02	028	028	4	3B	000	0	000	0					WE	3B	
77	SU80407010	CER	N	02	035	035	4	3B	000	0	000	0					WE	3B	
78	SU80607010	CER	N	02	040	080	1	1	117	2	110	0	3A				DR	3A	PROB 2DR
79	SU80807010	PGR			020	040	3	3A	000	0	000	0					WE	3A	POSS 3B, WET
80	SU81007010	PGR			0	030	4	3B	000	0	000	0					WE	3B	IMP 50
81	SU81207010	PGR	S	02	0	045	3	3A	000	0	000	0					WE	3A	QSPL-35

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
82	SU81407010	PGR			0	020	4	3B	000	0	000	0					WE	3B	
83	SU81607010	OSR			045		1	1	084	-31	088	-22	3B				DR	3B	PROB A, SEE 2P
84	SU81807010	OSR			030	030	4	3B	000	0	000	0					WE	3B	
85	SU80107000	CER	W	05	020	040	3	3A	096	-19	100	-10	3A				WE	3A	
86	SU80307000	CER	N	04	030	030	4	3B	000	0	000	0					WE	3B	
87	SU80507000	CER	N	01	030	045	3	3A	000	0	000	0					WE	3A	
88	SU80707000	CER	N	01	030		2	1	076	-39	076	-34	3B				DR	3B	IMP 50, Q 3A
89	SU81107000	PGR			0	040	3	3A	000	0	000	0					WE	3A	
90	SU81507000	PGR			0	025	4	3B	067	-48	067	-43	3B				WD	3B	IMP 40
91	SU81707000	OSR			029	029	4	3B	000	0	000	0					WE	3B	
92	SU80406990	CER			035	050	3	2	128	13	103	-7	2				WD	2	
93	SU80606990	CER	N	01	030	050	3	3A	000	0	000	0					WE	3A	
94	SU80406990	PGR	S		043		2	2	128	13	110	0	2				WD	2	
95	SU80606990	PGR			0	025	4	3B	062	-53	062	-48	4				WD	3B	IMP 40
96	SU81806990	OSR			028	050	3	3A		0		0					WE	3A	
97	SU80506980	CER	N	01	035	055	3	3A	000	0	000	0					WE	3A	
98	SU80706980	CER	N	01	035	055	3	3A	000	0	000	0					WE	3A	
99	SU81306980	PGR			020	020	4	3B	000	0	000	0					WE	3B	
100	SU81506980	PGR			0	035	4	3B	000	0	000	0					WE	3B	
101	SU80606970	CER	N	01	040	040	3	3A	000	0	000	0					WE	3A	

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	0-27	mcl	10YR43 00	10YR58 00 C			Y	0	0		0						
	27-32	hcl	10YR52 00	75YR58 00 C			Y	0	0		0		M			Y	
	32-70	c	10YR61 00	75YR68 00 M			Y	0	0		0		P			Y	
1P	0-28	msl	10YR42 00					1	0	HR	3						
	28-40	msl	10YR52 00	75YR46 00 C		10YR62 00	Y	0	0	HR	5	MDVCAB	FR M				
	40-50	hcl	10YR61 00	75YR58 00 M			Y	0	0	HR	2	WKCOAB	FR M			Y	
	50-65	c	10YR71 00	75YR68 00 M			Y	0	0	HR	2	MDCOAB	FM P			Y	
	65-120	c	10YR71 00	75YR68 00 M			Y	0	0		0	WKCOAB	FM P			Y	
2	0-30	mcl	10YR42 00					2	0	HR	2						
	30-35	hcl	10YR63 00	10YR46 00 C			Y	0	0		0		M				
	35-80	c	10YR62 00	10YR78 00 M			Y	0	0		0		P			Y	
2P	0-32	mcl	10YR41 00					2	0	HR	5						
	32-45	msl	25Y 71 00	10YR56 00 C			Y	0	0	HR	5	MDCAB	FR M				
	45-60	msl	25Y 71 00	10YR56 00 C			Y	0	0	HR	35	WKCSAB	FR G				
	60-80	scl	10YR62 00	75YR68 00 M			Y	0	0	HR	55	WK	FR M				
	80-100	lms	10YR68 00				Y	0	0	HR	60		M				
3	0-20	mcl	10YR42 00					2	0	HR	2						
	20-30	mcl	10YR53 00	10YR46 00 C			Y	0	0		0		M				
	30-80	c	10YR62 00	10YR78 00 M			Y	0	0		0		P			Y	
3P	0-30	mcl	10YR42 00					1	0	HR	5						
	30-40	mcl	10YR42 00	10YR46 00 C			Y	0	0	HR	5	MDCSAB	FR M				
	40-50	hcl	10YR63 00	10YR58 00 M			Y	0	0	HR	10	WKCSAB	FR M			Y	
	50-80	c	25 Y62 00	75YR68 00 M			Y	0	0	HR	7	WKCAB	FM P			Y	
4	0-30	msl	10YR41 00	10YR58 00 C			Y	0	0	HR	10						
	30-70	c	10YR62 00	10YR58 00 M			Y	0	0	HR	2		P			Y	
5	0-30	mcl	10YR42 00					0	0	HR	2						
	30-80	c	10YR53 00	75YR58 00 M		10YR71 00	Y	0	0		0		P			Y	
6	0-30	mcl	10YR42 00					0	0	HR	2						
	30-80	c	10YR53 00	75YR58 00 M		10YR71 00	Y	0	0		0		P			Y	
7	0-28	msl	10YR43 00					0	0	HR	2						
	28-50	msl	10YR71 00	75YR58 00 C		00FE00 00	Y	0	0	HR	15		M				
	50-58	ms	25 Y74 00	10YR58 00 C			Y	0	0		0		M				
	58-90	sc	25 Y72 00	75YR68 00 M			Y	0	0		0		P			Y	
8	0-28	mcl	10YR41 00	75YR34 00 C			Y	0	0	HR	2						
	28-45	hcl	10YR51 00	75YR44 00 C			Y	0	0	HR	10		M			Y	
	45-80	c	25 Y52 00	75YR58 00 M		00MN00 00	Y	0	0		0		P			Y	
9	0-25	mcl	10YR51 00	75YR46 00 M			Y	0	0	HR	2						
	25-35	hcl	10YR61 00	75YR58 00 M			Y	0	0		0		M				
	35-80	c	10YR71 00	75YR68 00 M			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	
10	0-23	mcl	10YR42 00	10YR58 00	C			Y	0	0		0							
	23-32	hcl	10YR52 00	10YR58 00	C			Y	0	0	HR	2		M			Y		
	32-70	c	25 Y53 00	75YR58 00	M			Y	0	0		0		P			Y		
11	0-30	mcl	10YR43 00						2	0	HR	2							
	30-40	hcl	10YR72 00	10YR78 00	M			Y	0	0		0		M			Y		
	40-80	c	10YR62 00	10YR68 00	M			Y	0	0		0		P			Y		
12	0-20	scl	10YR43 00						4	0	HR	10							
	20-30	scl	10YR53 00	10YR46 00	C			Y	0	0	HR	10		M					
	30-60	hcl	10YR62 00	10YR68 00	C			Y	0	0	HR	20		M			Y		
	60-90	c	10YR62 00	10YR68 00	M			Y	0	0	HR	1		P			Y		
13	0-30	msl	10YR41 00	10YR58 00	C			Y	0	0	HR	10							
	30-40	msl	10YR51 00	75YR56 00	C			Y	0	0	HR	25		M					Imp 40, Gravelly
14	0-30	mcl	10YR42 00						0	0	HR	2							
	30-80	c	10YR71 00	75YR68 00	M			Y	0	0		0		P			Y		
15	0-35	hcl	10YR42 00						0	0	HR	2							
	35-70	c	10YR52 00	75YR58 00	C		10YR61 00	Y	0	0	HR	2		P			Y		
16	0-35	mcl	10YR42 00						0	0	HR	2							
	35-60	c	10YR61 00	75YR58 00	M			Y	0	0	HR	5		P			Y		
	60-80	c	10YR71 00	75YR68 00	M			Y	0	0		0		P			Y		
17	0-30	mcl	10YR41 00	75YR46 00	C			Y	0	0		0							
	30-40	hcl	10YR51 00	75YR58 00	M			Y	0	0	HR	2		M			Y		
	40-80	c	25Y 52 00	75YR58 00	M		00MN00 00	Y	0	0		0		P			Y		
18	0-20	mcl	10YR41 00	75YR46 00	C			Y	0	0		0							
	20-70	c	10YR51 00	75YR58 00	M			Y	0	0		0		P			Y		
19	0-20	hcl	10YR41 00	75YR46 00	C			Y	0	0		0							
	20-70	c	10YR61 00	75YR58 00	M			Y	0	0		0		P			Y		
20	0-35	mcl	10YR42 00	10YR56 00	C			Y	0	0	HR	5							
	35-45	hcl	25Y 62 00	10YR56 00	C			Y	0	0	HR	5		M			Y		
	45-60	c	10YR62 00	75YR56 00	M			Y	0	0		0		P			Y		
21	0-30	scl	10YR42 00	10YR46 00	C			Y	5	1	HR	10							
	30-50	scl	10YR52 00	10YR46 00	C			Y	0	0	HR	25		M					
	50-80	c	10YR62 00	10YR78 00	M			Y	0	0	HR	5		P			Y		
22	0-35	msl	10YR43 00						0	0	HR	7							
	35-55	msl	10YR43 00	10YR56 00	C			S	0	0	HR	10		M					
	55-120	scl	10YR52 00	10YR58 00	C			Y	0	0	HR	10		M					

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC
23	0-30	mzcl	10YR31 00						2	0	HR	2						
	30-40	mcl	10YR41 00	10YR46 00	C			Y	0	0	HR	2		M				
	40-65	mcl	10YR53 00	10YR56 00	C			Y	0	0	HR	10		M				
	65-100	c	10YR62 00	10YR78 00	M			Y	0	0	HR	1		P			Y	
24	0-32	mcl	10YR42 00						0	0		0						
	32-80	c	10YR53 00	75YR68 00	M		10YR61 00	Y	0	0		0		P			Y	
25	0-30	mcl	10YR42 00						0	0	HR	2						
	30-40	hcl	10YR51 00	10YR58 00	C		10YR61 00	Y	0	0	HR	2		M			Y	
	40-80	c	10YR71 00	75YR68 00	M			Y	0	0		0		P			Y	
26	0-27	mcl	10YR42 00	10YR58 00	C			Y	0	0	HR	2						
	27-35	hcl	10YR52 00	75YR58 00	C			Y	0	0		0		M				
	35-80	c	10YR61 00	75YR68 00	M			Y	0	0		0		P			Y	
27	0-30	mcl	10YR42 00	10YR58 00	C			Y	0	0		0						
	30-40	hcl	10YR51 00	75YR58 00	C			Y	0	0	HR	2		M			Y	
	40-70	c	10YR61 00	75YR68 00	M			Y	0	0		0		P			Y	
28	0-30	mcl	10YR42 00	10YR56 00	C			Y	1	0	HR	5						
	30-60	c	25Y 62 00	75YR56 00	M			Y	0	0	HR	5		P			Y	
29	0-30	mcl	10YR42 00	10YR56 00	C			Y	1	0	HR	5						
	30-48	hcl	10YR58 00	10YR58 00	C			Y	0	0	HR	2		M			Y	
	48-65	c	10YR62 00	10YR66 00	M			Y	0	0		0		P			Y	
30	0-30	scl	10YR42 00	10YR58 00	C			Y	0	0	HR	5						
	30-55	scl	10YR53 00	75YR58 00	C		10YR61 00	Y	0	0	HR	5		M				
	55-85	c	10YR71 00	75YR58 00	M			Y	0	0		0		P			Y	
31	0-20	mcl	10YR42 00						1	0	HR	1						
	20-30	mcl	10YR51 00	10YR46 00	C			Y	0	0	HR	1		M				
	30-50	hcl	25 Y64 00	10YR58 00	C			Y	0	0	HR	1		M				
	50-100	c	10YR62 00	10YR68 00	M			Y	0	0		0		P			Y	
32	0-35	mcl	10YR42 00						2	0	HR	2						
	35-80	c	10YR62 00	10YR78 00	M			Y	0	0	HR	1		P			Y	
33	0-30	hcl	10YR42 00						2	0	HR	2						
	30-90	c	10YR62 00	10YR78 00	M			Y	0	0	HR	1		P			Y	
34	0-20	mcl	10YR31 00	75YR46 00	C			Y	0	0	HR	2						
	20-70	c	25 Y52 00	10YR58 00	M			Y	0	0		0		P			Y	
35	0-25	mcl	10YR41 00	75YR46 00	C			Y	0	0		0						
	25-70	c	25 Y62 00	10YR68 00	M			Y	0	0		0		P			Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
36	0-30	mcl	10YR42 00	10YR56 00	C			Y	1	0	HR	5							
	30-45	hcl	25Y 52 00	10YR56 00	C			Y	0	0	HR	5		M			Y		
	45-70	c	10YR62 00	10YR66 00	M			Y	0	0		0		P			Y		
37	0-28	mcl	10YR42 00	10YR56 00	C			Y	0	0	HR	5							
	28-60	c	10YR62 00	10YR68 00	M			Y	0	0	HR	10		P			Y		
38	0-35	mcl	10YR41 00	75YR46 00	C			Y	0	0		0							
	35-60	hcl	10YR62 00	75YR58 00	C			Y	0	0	HR	2		M					
	60-100	c	10YR71 00	75YR68 00	M			Y	0	0		0		P			Y		Slightly Sandy
39	0-30	mcl	10YR42 00						1	0	HR	1							
	30-100	c	10YR62 00	10YR68 00	M			Y	0	0		0		P			Y		
40	0-35	mcl	10YR42 00						0	0	HR	1							
	35-60	c	10YR53 00	75YR58 00	C		10YR61 00	Y	0	0	HR	2		P			Y		
	60-80	c	10YR71 00	75YR68 00	M			Y	0	0		0		P			Y		
41	0-25	hcl	10YR52 00	10YR46 00	C			Y	5	0	HR	5							
	25-35	c	10YR52 00	10YR46 00	M			Y	0	0	HR	5		P					
	35-45	mcl	10YR52 00	10YR46 00	C			Y	0	0	HR	25		M					Imp, disturbed
42	0-30	mcl	10YR42 00	10YR56 00	C			Y	1	0	HR	5							
	30-45	hcl	25Y 52 00	75YR58 00	C			Y	0	0	HR	5		M			Y		
	45-70	c	10YR62 00	75YR66 00	M			Y	0	0	HR	10		P			Y		
43	0-10	mcl	10YR42 00	10YR56 00	C			Y	0	0	HR	1							
	10-60	c	10YR62 00	10YR56 00	M			Y	0	0		0		P			Y		
44	0-30	mcl	10YR42 00						0	0	HR	5							
	30-75	c	10YR71 00	75YR68 00	M			Y	0	0		0		P			Y		
45	0-30	mcl	10YR42 00						0	0	HR	3							
	30-45	mcl	10YR62 00	10YR58 00	C			Y	0	0	HR	2		M					
	45-70	c	10YR62 00	10YR68 00	M			Y	0	0		0		P			Y		
46	0-30	mcl	10YR42 00						1	0	HR	3							
	30-58	hcl	10YR72 00	10YR56 00	C			Y	0	0	HR	1		M			Y		
	58-85	c	10YR62 00	75YR56 00	M			Y	0	0		0		P			Y		
47	0-30	mcl	10YR42 00						2	0	HR	10							
	30-50	msl	10YR42 00	10YR56 00	C			Y	0	0	HR	20		M					Imp, gravelly
48	0-30	mcl	10YR42 00						2	0	HR	10							
	30-40	mcl	10YR42 00	10YR68 00	C			Y	0	0	HR	15		M					
	40-50	msl	10YR72 00	75YR68 00	M			Y	0	0	HR	35		M					Imp, gravelly
49	0-28	mcl	10YR42 00						2	0	HR	5							
	28-70	c	10YR62 00	75YR56 00	M			Y	0	0	HR	1		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	
50	0-35	mcl	10YR42 00						1	0	HR	3							
	35-55	mcl	10YR71 00	75YR56 00	C			Y	0	0	HR	1		M					
	55-70	c	10YR62 00	75YR68 00	M			Y	0	0	HR	1		P			Y		
51	0-30	hcl	10YR42 41						2	0	HR	3							
	30-50	c	10YR62 00	75YR58 00	C			Y	0	0		0		P			Y		Imp, gravelly
52	0-30	hcl	10YR52 00	10YR46 00	C			Y	2	0	HR	2							
	30-80	c	10YR71 00	10YR68 00	M			Y	0	0		0		P			Y		
53	0-35	hcl	10YR52 00	10YR46 00	C			Y	2	0	HR	2							
	35-80	c	10YR71 00	10YR68 00	M			Y	0	0		0		P			Y		
54	0-30	mcl	10YR42 00						1	0	HR	1							
	30-40	hcl	10YR42 00	10YR46 00	C			Y	0	0		0		M					
	40-80	c	10YR64 00	10YR68 71	M			Y	0	0		0		P			Y		
55	0-30	mcl	10YR42 00						0	0	HR	3							
	30-55	hcl	10YR53 00	10YR56 00	C		10YR61 00	Y	0	0	HR	2		M					
	55-80	c	10YR62 00	75YR58 00	M		10YR71 00	Y	0	0		0		P			Y		
56	0-30	mcl	10YR42 00						1	0	HR	5							
	30-40	mcl	10YR42 00	75YR58 00	C			Y	0	0	HR	5		M					
	40-48	mcl	10YR62 00	10YR56 00	C			Y	0	0	HR	5		M					
	48-80	c	10YR62 00	10YR68 00	M			Y	0	0	HR	10		P	Y		Y		
57	0-30	mcl	10YR42 00						1	0	HR	5							
	30-45	mcl	10YR53 00	10YR56 00	C			Y	0	0	HR	5		M					
	45-60	hcl	10YR62 63	10YR56 00	C			Y	0	0	HR	20		M					Imp, gravelly
58	0-30	msl	10YR42 00	10YR					3	0	HR	8							
	30-55	msl	10YR62 00	75YR46 00	C			Y	0	0	HR	8		M					
	55-70	lms	10YR72 00	75YR46 00	C			Y	0	0	HR	25		M					
	70-80	lms	10YR72 00	75YR68 00	M			Y	0	0	HR	40		M					Imp, gravelly
59	0-30	mcl	10YR42 00						2	0	HR	3							
	30-80	c	10YR62 00	75YR58 00	M			Y	0	0		0		P			Y		
60	0-35	mcl	10YR42 00						2	0	HR	5							
	35-45	c	10YR62 00	75YR58 00	C			Y	0	0	HR	3		P			Y		
	45-80	c	10YR62 00	75YR68 00	M			Y	0	0		0		P			Y		
61	0-30	mcl	10YR42 00						2	0	HR	2							
	30-50	c	10YR71 00	10YR68 00	M			Y	0	0		0		P			Y		
	50-60	c	10YR71 00	10YR68 00	M			Y	0	0	HR	30		P			Y		
62	0-20	mcl	10YR52 00	75YR46 00	C			Y	1	0	HR	3							
	20-35	hcl	10YR52 00	75YR56 00	C			Y	0	0	HR	2		M			Y		
	35-55	hcl	10YR62 00	75YR56 00	M			Y	0	0	HR	1		M			Y		
	55-70	c	10YR62 00	75YR68 00	M			Y	0	0	HR	1		P			Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	PED GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
63	0-30	hcl	10YR52 00						0	0	HR	1							
	30-70	c	25 Y62 00	75YR68 00	M			Y	0	0		0		P		Y			
64	0-30	hcl	10YR42 00						0	0	HR	2							
	30-70	c	10YR53 00	75YR58 00	M			Y	0	0		0		P		Y			
65	0-30	hcl	10YR52 00						0	0	HR	3							
	30-70	c	25 Y62 00	75YR58 00	M			Y	0	0		0		P		Y			
66	0-25	mcl	10YR42 00						2	0	HR	10							
	25-45	mcl	10YR42 52	75YR58 00	C			Y	0	0	HR	20		M					Imp, gravelly
67	0-30	mcl	10YR42 00	10YR56 00	F				2	0	HR	4							
	30-45	hcl	10YR62 00	75YR56 00	M			Y	0	0	HR	2		M		Y			
	45-70	c	10YR72 00	75YR68 00	M			Y	0	0	HR	1		P		Y			
68	0-30	mcl	10YR42 00						2	0	HR	5							
	30-40	mcl	10YR63 00	10YR58 00	C		10YR72 00	Y	0	0		0		M					
	40-80	c	10YR71 00	75YR68 00	M			Y	0	0		0		P		Y			
69	0-35	mcl	10YR42 00						2	0	HR	5							
	35-50	mcl	10YR72 00	10YR58 00	C			Y	0	0	HR	2		M					
	50-65	hcl	10YR62 00	75YR58 00	C			Y	0	0		0		M		Y			
	65-85	c	10YR71 00	75YR68 00	M			Y	0	0		0		P		Y			
70	0-30	mcl	10YR42 00						0	0		0							
	30-40	hcl	10YR52 00	75YR58 00	C			Y	0	0		0		M		Y			
	40-50	c	10YR62 00	75YR58 00	C			Y	0	0	HR	10		P		Y			Imp, gravelly
71	0-30	hcl	10YR52 00	75YR46 00	C			Y	1	0	HR	3							
	30-70	c	10YR62 72	75YR68 00	M			Y	0	0		0		P		Y			
72	0-30	msl	10YR42 00						3	0	HR	5							
	30-53	lms	10YR54 00						0	0	HR	5		M					
	53-100	ms	10YR68 00						0	0	HR	2		M					
	100-120	msl	75YR58 00						0	0		0		M					
73	0-25	mcl	10YR42 00						2	0	HR	5							
	25-60	hcl	10YR41 00	10YR58 00	C			Y	0	0	HR	2		M					
	60-70	hcl	25Y 62 00	10YR58 00	C			Y	0	0	HR	2		M		Y			
	70-90	c	10YR61 00	75YR58 00	M			Y	0	0	HR	0		P		Y			
74	0-30	mcl	10YR42 00						0	0	HR	2							
	30-45	hcl	10YR53 00	10YR46 00	C			Y	0	0	HR	10		M					Imp, gravelly
75	0-30	mcl	10YR42 00						0	0	HR	2							
	30-48	msl	10YR62 00	10YR58 00	C		00MN00 00	Y	0	0	HR	5		M					
	48-60	c	10YR61 00	75YR68 00	M			Y	0	0		0		P					
	60-80	scl	25 Y62 00	75YR68 00	M			Y	0	0		0		M					
	80-120	msl	25 Y62 00	75YR68 00	M			Y	0	0		0		M					

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
76	0-28	mcl	10YR42 00	10					1	0	HR	3							
	28-40	hcl	10YR62 00	75YR58 00	C			Y	0	0	HR	3		M			Y		
	40-70	c	10YR62 00	75YR56 00	M			Y	0	0	HR	1		P			Y		
77	0-35	mcl	10YR42 00	10YR46 00	F				1	0	HR	3							
	35-50	hcl	10YR62 00	75YR56 00	M		00MN00 00	Y	0	0	HR	5		M			Y		
	50-80	c	10YR62 00	75YR56 00	M		00MN00 00	Y	0	0	HR	5		P			Y		
78	0-40	scl	10YR42 00						0	0	HR	3							
	40-60	scl	10YR52 00	10YR58 00	C		10YR41 00	Y	0	0	HR	2		M					
	60-80	scl	10YR73 00	10YR58 00	C			Y	0	0	HR	2		M					
	80-90	c	10YR71 00	75YR68 00	M			Y	0	0		0		P			Y		
79	0-20	mcl	10YR42 00	75YR46 00	F				0	0		0							
	20-40	mcl	10YR62 00	75YR58 00	C			Y	0	0		0		M					
	40-50	hcl	10YR61 00	75YR58 00	C			Y	0	0		0		M			Y		
	50-80	c	10YR71 00	75YR68 00	M			Y	0	0		0		P			Y		
80	0-20	mcl	10YR41 00	75YR46 00	C			Y	0	0		0							
	20-30	mcl	10YR51 00	75YR46 00	C			Y	0	0		0		M					
	30-50	c	10YR62 00	75YR58 00	C			Y	0	0	HR	20		P			Y		Imp, gravelly
81	0-35	mcl	10YR42 00	75YR46 00	C			Y	2	0	HR	5							
	35-45	hcl	10YR52 00	10YY56 00	C			Y	0	0	HR	5		M					
	45-70	hcl	10YR62 72	75YR56 00	M			Y	0	0	HR	10		P			Y		
82	0-20	mcl	10YR41 00	10YR58 00	C			Y	0	0		0							
	20-25	hcl	10YR52 00	10YR58 00	C			Y	0	0		0		M			Y		
83	0-30	mcl	10YR42 00						0	0	HR	5							
	30-45	hcl	10YR54 00						0	0	HR	20		M					
	45-60	scl	10YR53 00	75YR58 00	C			Y	0	0	HR	25		M					Imp, gravelly
84	0-30	mcl	10YR32 00						0	0	HR	2							
	30-70	c	10YR61 00	75YR68 00	M			Y	0	0	HR	5		P			Y		
85	0-20	mcl	10YR42 00	10YR46 00	F				1	0	HR	3							
	20-40	mcl	10YR42 00	10YR46 00	C			Y	0	0	HR	5		M					
	40-60	hcl	10YR62 00	75YR56 00	M			Y	0	0	HR	5		M			Y		
	60-80	c	10YR62 00	75YR56 00	M			Y	0	0	HR	10		P			Y		
86	0-30	mcl	10YR42 00	10YR46 00	F				1	0	HR	3							
	30-70	c	10YR62 00	75YR56 00	M			Y	0	0	HR	1		P			Y		
87	0-30	scl	10YR42 00						3	0	HR	5							
	30-45	scl	10YR52 00	10YR58 00	C		10YR71 00	Y	0	0	HR	8		M					
	45-80	c	10YR71 00	75YR68 00	M			Y	0	0		0		P			Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	PED GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
88	0-30	msl	10YR42 00						0	0	HR	5							
	30-50	msl	10YR52 00	75YR46 00	C		10YR61 00	Y	0	0	HR	10		M					Imp, gravelly
89	0-30	mcl	10YR41 42	75YR56 00	C			Y	0	0		0							
	30-40	mcl	10YR51 00	75YR58 00	C			Y	0	0		0		M					
	40-80	c	10YR71 00	75YR68 00	M			Y	0	0		0		P		Y			
90	0-25	mcl	10YR42 00	10YR58 00	C			Y	0	0	HR	2							
	25-40	hcl	10YR52 00	75YR58 00	M			Y	0	0	HR	5		M		Y			Imp, gravelly
91	0-29	mcl	10YR42 00						0	0	HR	2							
	29-34	hcl	10YR53 00	10YR46 00	C			Y	0	0	HR	2		M		Y			
	34-80	c	10YR61 00	75YR58 00	M			Y	0	0		0		P		Y			
92	0-35	msl	10YR42 00	10YR46 00	F				1	0	HR	3							
	35-50	msl	10YR52 53	75YR56 00	C			Y	0	0	HR	3		M					
	50-75	hcl	10YR62 72	75YR56 00	M			Y	0	0	HR	3		M		Y			
	75-120	c	10YR62 72	75YR56 00	M			Y	0	0	HR	1		P		Y			
93	0-30	mcl	10YR42 00						0	0	HR	5							
	30-50	mcl	10YR62 00	10YR58 00	C		10YR72 00	Y	0	0	HR	2		M					
	50-80	c	10YR71 00	75YR68 00	M			Y	0	0		0		P		Y			
94	0-37	mcl	10YR42 00	75YR46 00	C				0	0	HR	2							
	37-43	mcl	10YR43 00						0	0		0		M					
	43-70	scl	10YR53 00	75YR58 00	C		10YR61 00	Y	0	0	HR	15		M					
	70-85	msl	10YR64 00	75YR58 00	C			Y	0	0	HR	15		M					
	85-100	msl	10YR64 00	75YR58 00	C			Y	0	0	HR	25		M					Imp, gravelly
95	0-25	hcl	10YR41 00	10YR58 00	C			Y	0	0	HR	2							
	25-40	c	10YR51 00	75YR58 00	M			Y	0	0	HR	10		P		Y			Imp, gravelly
96	0-28	mcl	10YR42-00						0	0	HR	2							
	28-50	scl	10YR53-00	10YR58-00	C			Y	0	0	HR	25		M					
	50-70	c	10YR42-00	75YR56-00	M			Y	0	0	HR	10		P		Y			SANDY
	70-120	c	10YR61-00	75YR68-00	M			Y	0	0		0		P		Y			
97	0-35	mcl	10YR42 00	75YR46 00	F				0	0	HR	5							
	35-55	mcl	10YR61 00	75YR56 00	M			Y	0	0	HR	2		M					
	55-80	c	10YR61 00	75YR68 00	M			Y	0	0		0		P		Y			
98	0-35	mcl	10YR42 00						0	0	HR	5							
	35-55	mcl	10YR52 00	10YR58 00	C		10YR61 00	Y	0	0		0		M					
	55-80	c	10YR71 00	75YR68 00	M			Y	0	0		0		P		Y			
99	0-20	mcl	10YR42 00						0	0	HR	2							
	20-70	c	10YR52 00	75YR58 00	M			Y	0	0	HR	15		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
100	0-35	hcl	10YR41 00	10YR58 00	C			Y	0	0	HR	2						
	35-70	c	10YR61 00	75YR58 00	M			Y	0	0		0		P			Y	
101	0-40	mcl	10YR42 00						0	0	HR	5						
	40-80	c	10YR71 00	75YR68 00	M			Y	0	0		0		P			Y	