Proposed Cement Works
Snodland Kent

Agricultural Land Classification & Statement of Site Physical Characteristics

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Resource Planning Team
Eastern Region
FRCA Reading

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AGRICULTURAL LAND CLASSIFICATION & STATEMENT OF SITE PHYSICAL CHARACTERISTICS

PROPOSED CEMENT WORKS SNODLAND KENT

INTRODUCTION

1 This report presents the findings of a detailed Agricultural Land Classification (ALC) survey and assessment of site physical characteristics of approximately 182 hectares of land at Snodland to the north west of Maidstone in Kent The survey was carried out during March 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 work was carried out in order to determine the land quality and site physical characteristics of land affected by proposals for chalk extraction and the construction of a new cement factory Parts of the site will be subsequently restored to agriculture This survey supersedes any previous ALC information for this land

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 was in either winter cereals or oilseed rape Parts of the site mapped as Other land comprise farm buildings and tracks woodland and roads Holborough Quarry which is disused is mostly in non agricultural uses except for two parcels of restored land in arable use Permission to enter a small paddock at the east of the site was not obtained and it has therefore been shown as Not surveyed

SUMMARY

5 The findings of the survey are shown on the enclosed ALC map The map has been drawn at a scale of 1 10 000 It is accurate at this scale but any enlargement would be misleading

6 The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1 overleaf

[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)	% survey area	% site area
2	38 0	29 2	20 9
3a	59 6	45 7	32 8
3b	28 1	21 6	15 5
4	4 6	3 5	2 5
Other land	50 8		27 9
Land not surveyed	0 7		0 4
Total Survey Area	130 3	100 0	71 7
Total Site Area	181 8		100 0

7 The fieldwork was conducted at an average density of 1 boring per hectare of agricultural land In total 142 borings and 10 soil inspection pits were described

8 The agricultural land on this site has been classified in the range Grade 2 very good quality to Grade 4 poor quality with a high proportion of Subgrade 3a good quality The principal limitation is soil droughtiness with occasional gradient restrictions Fine silty soils derived from deposits of Middle and Lower Chalk or head drift deposits occur across the site

9 Much of the site comprises topsoils directly over the chalk substrate Limited soil depth and restricted rooting into the chalk in combination with the prevailing climate acts to restrict the amount of water available in the profile for crops As a result the level and consistency of yields may be adversely affected The relative depth of the soils and hardness of the chalk bedrock determines the severity of the soil droughtiness restriction and thereby the ALC grade Subgrades 3a and 3b are appropriate across most of such land At the base of the disused quarry the land has been restored such that very thin topsoils rest on hard chalk with very limited rooting Subgrade 3b and Grade 4 are mapped here

10 Grade 2 land is assigned where soils are deeper over the chalk in conjunction with drift deposits of head Deep well drained fine silty and clayey soils result in land which has only minor restrictions in terms of droughtiness arising from the interaction of soil properties and climatic conditions

11 Localised parts of the site notably towards the west and south west are affected by gradient restrictions where steep slopes restrict the safe and efficient use of farm machinery

FACTORS INFLUENCING ALC GRADE

Climate

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

13 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		TQ 700 630	TQ 689 629	TQ 680 624
Altitude	m AOD	15	55	90
Accumulated Temperature	day°C (Jan June)	1488	1443	1403
Average Annual Rainfall	mm	675	689	702
Field Capacity Days	days	138	140	142
Moisture Deficit Wheat	mm	120	114	109
Moisture Deficit Potatoes	*mm*	*116*	*109*	*102*
Overall climatic grade		Grade 1	Grade 1	Grade 1

13 The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions

14 The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR) as a measure of overall wetness and accumulated temperature (ATO January to June) as a measure of the relative warmth of a locality

15 The combination of rainfall and temperature at this site mean that there is no overall climatic limitation Other local climatic factors such as exposure and frost risk are not believed to have a significant effect on the site The site is climatically Grade 1

Site

16 The site lies at an altitude of 15–90m AOD with the land falling gently from the west towards the east Holborough Quarry which is disused lies below the existing ground level and two parcels of land on the quarry floor have been restored to an agricultural use The remainder has been abandoned and is reverting to scrub and woodland Across much of the site gradient microrelief and flood risk do not affect agricultural land quality However there are localised areas where steep slopes of between 7 and 10° preclude land from being classified any higher than Subgrade 3b

Geology and soils

17 The most detailed published geological information (BGS 1977) maps the entire site as being underlain predominantly by Lower Chalk with Middle Chalk outcropping on the higher land towards the west of the site Drift deposits of head occur on the lower lying land to the north of Ladds Lane and at the east of the site around Home Farm

18 The most detailed published soils information for this area (SSEW 1983) shows most of the site to comprise soils of the Coombe 2 association These soils are described as being well drained calcareous fine silty soils over chalk or chalk rubble (SSEW 1983) Soils of the Upton 1 association are mapped in conjunction with the deposits of Middle Chalk i e across the higher land to the west of the site These are described as shallow well drained calcareous silty soils over chalk Mainly on moderately steep sometimes very steep land (SSEW 1983)

19 Upon detailed field examination soils broadly consistent with the above descriptions were found across the site They were found to be well drained fine silty over chalk with the shallower soils being coincident with the deposits of Middle Chalk towards the west

AGRICULTURAL LAND CLASSIFICATION

20 The details of the classification of the site are shown on the attached ALC map and the are statistics for each grade are given in Table 1

21 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

Grade 2

22 Land of very good quality has been mapped across much of the northern part of the survey area in association with soils developed in head drift deposits The principal limitation is minor soil droughtiness

23 Within the Grade 2 mapping unit the topsoils consist of calcareous medium silty clay loams or very occasionally heavy silty clay loams These may contain up to 5% total flints or chalk stones Subsoils generally become heavier with depth such that upper subsoils comprise similar textures to the topsoils and pass to heavier textures such as heavy silty clay loam or clay in the lower subsoil Stone contents in the subsoil range from 2 30% total chalk and/or 2 10% flints Most profiles extend to at least 120cm but occasional observations were found to overlie chalk bedrock at depths below about 70cm or are impenetrable to the soil auger at depths between 80 and 100cm due to the presence of flints These soils are assessed as Wetness Class I Soil pits 1 and 8 are representative (see Appendix II) Moisture balance calculations which take account of these soil characteristics in relation to the local climatic regime indicate that these soils have slightly restricted reserves of available water As a result the land suffers a minor droughtiness limitation and crop growth and yield may be adversely affected

Subgrade 3a

24 Good quality land has been mapped across much of the site in association with land which experiences more significant soil droughtiness than land classified as Grade 2

25 Soils within the Subgrade 3a mapping units fall into two main variants All are well drained wetness class I The most common soil type comprises a topsoil and sometimes an upper subsoil resting directly over the chalk substrate which was found to be relatively deep rooting Soil pits 3 6 9 and 10 are typical (see Appendix II) of these soils Calcareous medium silty clay loam or very occasionally heavy silty clay loam topsoils contain 5 20% total chalk and/or 2 8% total flints (less than 5% > 2cm in diameter) These either directly overlie chalk at shallow depth or pass through a similarly textured upper subsoil and pass to chalk within 55cm These subsoil horizons may contain up to 60% chalk and 5% flints Evidence from the representative soil pits indicates that the chalk substrate is easily rootable to a depth of 82 95cm Given the local climatic regime such soils have inadequate reserves of available water such that the land experiences a droughtiness restriction Moisture balance calculations indicate that this restriction is consistent with land of Subgrade 3a quality

26 The second soil variant within the Subgrade 3a mapping units is largely confined to the north east of the survey area where soils are derived from deposits of flinty head Soil pits 2 and 4 represent these soils Medium or heavy silty clay loam topsoils contain 2 15% chalk and/or flints (less than 5% > 2cm in size) Similarly textured subsoils are variably stony having 2 40% flints and/or up to 60% chalk and either pass to chalk or clay in the lower subsoil A number of profiles were found to be impenetrable to the soil auger due to the presence of flints The combination of stony soils and a relatively dry climatic regime gives rise to soils with restricted available moisture reserves The level and consistency of yields may be affected especially in drier years such that Subgrade 3a is appropriate

Subgrade 3b

27 Moderate quality land has been mapped either where soils are shallow over chalk bedrock which is not easily rootable or where steep slopes restrict the land quality

28 Where soils rest over chalk which is not easily rootable the land is affected by significant soil droughtiness restrictions Profiles comprise calcareous medium silty clay loam topsoils which contain up to 15% chalk and/or 8% flints and rest on chalk bedrock within 30cm Occasional profiles have a thin upper subsoil horizon which is very chalky before passing to chalk Soil pits 5 and 7 are typical of these soils and indicate that the chalk is very shallow rooting across these parts of the site This is particularly notable on the parcel of land at the base of the quarry where thin topsoils rest on essentially unweathered chalk which only roots to 48cm Due to shallow soil depth and restricted rooting into the underlying chalk substrate available water is significantly restricted such that the level and consistency of crop yields are likely to be affected

29 Where gradients on the site are within the range 7 10° the safe and efficient use of conventional farm machinery is restricted The land cannot be classified any higher than Subgrade 3b

Grade 4

30 A small parcel of poor quality land has been mapped in the base of the quarry where soils are very shallow over the underlying unweathered chalk and thereby suffer severe soil droughtiness Medium silty clay loam topsoils contain between 10 and 20% chalk < 2cm in diameter and rest on chalk at 20 30cm depth The chalk substrate only roots 20cm which has the effect of severely restricting the volume of soil water The ensuing soil droughtiness problem will be severe and the land cannot be classified higher than Grade 4

SOIL RESOURCES

31 This section describes the soil resources identified on the site It should be emphasised that this is not intended as a prescription for soil stripping but merely as an illustration of the soil resources available for restoration on the site Due to the natural variability of soils the depths of topsoil and subsoil given should be treated with caution Soils were sampled to a maximum depth of 120cm where possible during survey work In some cases soil resources will extend below this depth Textures described relate predominantly to hand texturing incorporating the results of laboratory analysis (particle size distribution) where taken

Soil Units considerations for restoration

32 Three soil units have been identified across the site the extent and distribution of which are illustrated on the accompanying soil resources map

Soil Unit I

33 This unit covers an area of 65 2 hectares and generally comprises shallow soils over chalk Profiles are typically a calcareous medium silty clay loam or very occasionally heavy silty clay loam topsoil to a depth of 26–33cm (average 29cm) Many profiles directly overlie chalk bedrock below the topsoil Subsoils (where present) comprise similar textures to a depth of 35 55cm from the surface (average 10cm) and then pass to pure chalk Evidence from soil pits 3 6 9 and 10 suggests that the chalk substrate is weathered blocky and well rooted to a depth of 82 95cm (an average rooting of 55cm into the chalk) A description of a representative soil profile in this unit is given overleaf

Representative soil profile for Soil Unit I

Horizon	Average Depth (cm)	Description
Topsoil	0–29	calcareous medium silty clay loam greyish brown brown or light olive brown (10YR 5/2 5/3 or 2 5Y 5/2 5/3) very slightly to moderately stony (2 8% flints and/or 3 20% chalk) weakly developed coarse sub angular blocky structure friable
Subsoil	29–39	calcareous medium or heavy silty clay loam yellowish brown pale brown or light yellowish brown (10YR 5/4 or 6/3 6/4) very slightly to very stony (5 65% chalk and/or 5% flints) weakly developed coarse sub angular blocky structure friable
Subsoil	39–120	chalk weathered blocky 10YR 8/1 well rooted to 82 95cm (average rooting of 55cm into chalk) roots absent below this

Soil Unit II

34 This unit covers an area of 59 6 hectares and comprises deeper soils developed from drift deposits on the lower lying land on the site Medium silty clay loam or very occasionally heavy silty clay loam topsoils which may be calcareous or non calcareous extend to a depth of 25 35cm (average 29cm) Subsoils comprise similar textures or clay and generally become heavier with depth Many profiles extend to at least 120cm whilst some pass to chalk below 65cm or are impenetrable to the soil auger below 60cm due to the presence of flints Pits 1 2 and 4 are representative of this soil unit A description of a representative soil profile in this unit is given below

Representative soil profile for Soil Unit II

Horizon	Average Depth (cm)	Description
Topsoil	0–29	calcareous or non calcareous medium silty clay loam dark greyish brown brown or greyish brown (10YR 4/2 4/3 or 10YR 5/1 5/2) very slightly to slightly stony (1 8% flints and/or 2% chalk) weakly developed coarse sub angular blocky structure friable
Subsoil	29–120	calcareous or non calcareous medium or heavy silty clay loam or clay brown yellowish brown light yellowish brown or pale brown (10YR 5/3 5/4 or 6/3 6/4 and 7 5YR 5/6) very slightly to very stony (2 50% chalk and/or 2 20% flints) moderately or weakly developed coarse sub angular blocky structure friable

Soil Unit III

35 This unit covers an area of 12 2 hectares confined to the quarry floor where restored land comprises very shallow soils over unweathered chalk with restricted rooting Calcareous medium silty clay loam topsoils extend to a depth of 20 30cm (average 27cm) These directly overlie hard unweathered chalk which has very restricted rooting (i e only 20cm into the chalk) as observed in pit 5 which is typical of this s oil unit A description of a representative soil profile in this unit is given below

Representative soil profile for Soil Unit III

Horizon	Average Depth (cm)	Description
Topsoil	0–27	calcareous medium silty clay loam greyish brown or grey (10YR 5/2 6/1 or 2 5Y 5/2) very slightly to moderately stony (2 6% flints and/or 12 20% chalk) weakly developed coarse sub angular blocky structure friable
Subsoil	27 120	chalk unweathered hard 2 5Y 8/2 or 10YR 7/1 8/1 poorly rooted to 48cm (average rooting of 15 20cm into chalk) roots absent below this

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SOURCES OF REFERENCE

British Geological Survey (1977) *Sheet No 271 Dartford Solid & Drift Edition 1 50 000 scale* BGS London

British Geological Survey (1977) *Sheet No 272 Chatham Solid & Drift Edition 1 50 000 scale* BGS London

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

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

Soil Survey of England and Wales (1983) *Soils of England and Wales Sheet 6 Soils of South East England 1 250 000 scale and accompanying legend*
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 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 (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 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 grass	**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

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	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	
1	0 30	MZCL	10YR42						0	0	CH	2						Y	
	30 70	MZCL	10YR63						0	0	CH	2		M				Y	
	70 90	CH	10YR81						0	0		0		P				Y	
2	0 25	MCL	10YR43						1	0	HR	4							
	25 50	MCL	10YR44						0	0	HR	8		M					
	50 60	HCL	10YR44						0	0	HR	15		M					IMP FLINTS
3	0 30	MZCL	10YR42						0	0	CH	5						Y	
	30 40	MZCL	10YR6364						0	0	CH	5		M				Y	
	40 85	CH	10YR81						0	0		0		P				Y	
4	0 28	MZCL	10YR43						1	0	HR	3						Y	
	28 50	MZCL	10YR54						0	0	CH	10		M				Y	
	50 85	MZCL	10YR64						0	0	CH	20		M				Y	
	85 120	MZCL	10YR73						0	0	CH	30		M				Y	
5	0 28	MZCL	10YR43						1	0	HR	3						Y	
	28 65	MZCL	10YR54						0	0	HR	5		M				Y	
	65 120	MZCL	10YR7364						0	0	CH	30		M				Y	
6	0 25	HZCL	10YR43						1	0	HR	2							
	25 35	HZCL	10YR44						0	0	HR	5		M					
	35 60	C	10YR54						0	0	HR	8		M					IMP FLINTS
7	0 25	MZCL	10YR43						1	0	HR	2							
	25 35	MZCL	10YR4344						0	0	HR	2		M					
	35 120	MCL	10YR44						0	0	HR	8		M					
8	0 28	MZCL	25Y52						0	0	CH	15						Y	
	28 83	CH	10YR81						0	0		0		P				Y	
8A	0 30	MZCL	10YR51						1	0	HR	2						Y	
	30 85	CH	10YR81						0	0		0		P				Y	
9	0 29	MZCL	10YR4252						0	0	HR	2						Y	
	29 84	CH	10YR81						0	0		0		P				Y	
10	0 30	MZCL	10YR42						0	0	HR	2						Y	
	30 85	CH	10YR81						0	0		0		P				Y	
11	0-30	HZCL	10YR43						2	0	HR	4						Y	
	30 45	HZCL	10YR54						0	0	HR	5		M				Y	
	45 80	CH	10YR81						0	0		0		P					
12	0 30	HZCL	10YR43						3	0	HR	5						Y	
	30 60	C	75YR56						0	0	HR	5		M				S	
	60 80	C	75YR56						0	0	HR	10		M				S	
	80 120	C	75YR56						0	0	HR	5		M				S	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL	GLEY	STONES 2	STONES 6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
13	0 30	MZCL	10YR33						4	0	HR	7							
	30 60	HZCL	75YR56						0	0	HR	10		M				S	IMP FLINTS
14	0 30	MZCL	10YR33						2	0	HR	5							
	30 60	HCL	75YR56						0	0	HR	5		M					
	60 65	HCL	75YR56						0	0	HR	20		M					IMP FLINTS
15	0 30	MZCL	10YR5152						1	0	HR	2						Y	
	30 70	MZCL	10YR5363						0	0	HR	2		M				Y	
	70 80	MZCL	10YR63						0	0	CH	30		M				Y	
	80 90	CH	10YR81						0	0		0		P				Y	
16	0 30	MZCL	10YR5152						1	0	HR	2						Y	
	30 80	MZCL	10YR63						0	0	HR	2		M				Y	
	80-90	MZCL	10YR63						0	0	CH	25		M				Y	
	90 100	CH	10YR71						0	0		0		P				Y	
17	0 29	MZCL	10YR52						0	0	HR	2						Y	
	29 70	MZCL	10YR53						0	0	HR	2		M				Y	
	70 120	HZCL	10YR53						0	0	HR	2		M				Y	
18	0 32	MZCL	10YR52						0	0	HR	1						Y	
	32 60	MZCL	10YR63						0	0	HR	1		M				Y	
	60 80	MZCL	10YR72						0	0		0		M				Y	
	80 90	CH	10YR72						0	0		0		P				Y	
19	0 30	MZCL	10YR5152						0	0	CH	15						Y	
	30 85	CH	10YR81						0	0		0		P				Y	
20	0 30	MZCL	10YR5152						0	0	CH	8						Y	
	30 40	MZCL	10YR7172						0	0	CH	50		M				Y	
	40 85	CH	10YR81						0	0		0		P				Y	
21	0 30	MZCL	10YR42						0	0	HR	1						Y	
	30 55	MZCL	10YR5363						0	0	CH	2		M				Y	
	55 80	HZCL	10YR63						0	0	CH	5		M				Y	
	80 90	HZCL	10YR63						0	0	CH	50		M				Y	
	90 95	CH	10YR81						0	0		0		P				Y	
22	0 30	MZCL	10YR43						0	0	HR	2						Y	
	30 60	HCL	10YR56						0	0	HR	2		M				Y	
	60 120	HCL	75YR58						0	0	HR	5		M				Y	
23	0 30	MZCL	10YR33						3	0	HR	5						Y	
	30 60	MZCL	75YR46						0	0	HR	5		M				Y	
	60 120	ZC	75YR56						0	0	HR	3		M				S	
25	0 25	MZCL	25Y 52						0	0	CH	2						Y	
	25 80	CH	10YR81						0	0	HR	2		P				Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	-MOTTLES COL	ABUN	CONT	PED COL	GLEY	-STONES 2	6	LITH	STRUCT/ TOT	CONSIST	SUBS STR	POR	IMP	SPL	CALC	
26	0 30	MZCL	10YR52						0	0	CH	2						Y	
	30 60	MZCL	10YR62						0	0	CH	5		M				Y	
	60 85	CH	10YR81						0	0	HR	2		P				Y	
27	0 32	MZCL	10YR52						0	0	HR	1						Y	
	32 70	MZCL	10YR63						0	0	HR	2		M				Y	
	70 120	HZCL	10YR54						0	0	HR	2		M				Y	
28	0 30	MZCL	10YR5152						0	0	HR	1						Y	
	30 75	MZCL	10YR63						0	0	HR	2		M				Y	
	75 100	HZCL	10YR63						0	0	HR	2		M				Y	IMP FLINTS
29	0 30	MZCL	10YR53						2	0	HR	4						Y	
	30 40	HZCL	10YR54						0	0	HR	2		M				Y	
	40 65	HZCL	10YR54						0	0	HR	5		M				Y	
	65 85	CH	10YR81						0	0	HR	2		P				Y	
30	0 24	MZCL	10YR43						2	0	HR	4						Y	
	24 55	HZCL	10YR44						0	0	HR	2		M				Y	
	55 65	MZCL	10YR54						0	0	CH	10		M				Y	
	65 80	MZCL	10YR64						0	0	CH	40		M				Y	IMP FLINTS
31	0 30	MZCL	25Y 52						0	0	CH	10						Y	
	30 40	MZCL	10YR64						0	0	CH	25		M				Y	
	40 75	CH	25Y 82						0	0		0		P				Y	
32	0 27	MZCL	25Y 52						0	0	CH	10						Y	
	27 43	MZCL	25Y 72						0	0	CH	50		M				Y	
	43 88	CH	25Y 82						0	0		0		P				Y	
33	0 27	MZCL	25Y 52						1	0	HR	3						Y	
	27 82	CH	25Y 81						0	0		0		P				Y	
34	0 27	MZCL	10YR42						0	0	HR	5						Y	
	27 43	MZCL	10YR64						0	0	CH	40		M				Y	
	43 88	CH	25Y 72						0	0		0		P				Y	
35	0 30	MZCL	10YR43						1	0	HR	3						Y	
	30 55	HZCL	10YR54						0	0	HR	3		M				Y	
	55 120	HZCL	10YR64						0	0	CH	7		M				Y	
36	0 30	HZCL	10YR43						1	0	HR	3						Y	
	30 120	C	75YR56						0	0	HR	3		M				S	
37	0 35	MZCL	10YR43						3	0	HR	5						Y	
	35 55	HCL	75YR56						0	0	HR	5		M				S	
	55 65	HCL	75YR56						0	0	HR	15		M				S	IMP FLINTS

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL	GLEY	STONES 2	STONES 6	STONES LITH	STRUCT/ TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	CALC	
39	0 28	MZCL	10YR52						0	0	CH	2						Y	
	28 50	MZCL	10YR53						0	0	CH	5			M			Y	
	50 70	MZCL	10YR54						0	0	CH	15			M			Y	
	70 120	MZCL	10YR44						0	0	CH	25			M			Y	
40	0 28	MZCL	10YR52						0	0	CH	5						Y	
	28 50	MZCL	10YR53						0	0	CH	50			M			Y	IMP CHALK
41	0 28	MZCL	25Y 53						0	0	CH	10						Y	
	28 83	CH	10YR81						0	0	HR	2			P			Y	
42	0 28	MZCL	25Y 53						0	0	CH	5						Y	
	28 68	CH	10YR81						0	0	HR	2			P			Y	IMP CHALK
43	0 25	MZCL	10YR53						3	0	HR	5						Y	
	25 45	MZCL	10YR63						0	0	CH	15			M			Y	
	45 55	MZCL	10YR6362						0	0	CH	35			M			Y	
	55 75	CH	25Y 81						0	0	HR	2			P			Y	
44	0 28	MZCL	10YR53						3	0	HR	5						Y	
	28 33	MZCL	10YR62						0	0	CH	50			M			Y	
	33 38	MZCL	10YR71						0	0	CH	65			M			Y	IMP FLINTS
45	0 30	MZCL	10YR53						3	0	HR	5						Y	
	30 45	MZCL	10YR54						0	0	HR	10			M			Y	
	45 75	MZCL	10YR54						0	0	CH	15			M			Y	
	75 120	MZCL	10YR54						0	0	CH	30			M			Y	
46	0 25	MZCL	10YR43						2	0	HR	4						Y	
	25 65	HZCL	10YR44						0	0	HR	2			M			Y	
	65 120	MZCL	10YR54						0	0	CH	5			M			Y	
47	0 28	MZCL	10YR43						3	0	HR	6						Y	
	28 35	HZCL	10YR44						0	0	CH	10			M			Y	
	35 80	CH	25Y 81						0	0		0			P			Y	
48	0 27	MZCL	10YR53						0	0	HR	5						Y	
	27 45	MZCL	10YR64						0	0	HR	5			M			Y	
	45 80	CH	25Y 82						0	0		0			M			Y	
49	0 30	MZCL	10YR43						0	0	HR	5						Y	
	30 85	CH	25Y 72						0	0		0			P			Y	
50	0 30	MZCL	10YR43						1	0	HR	5						Y	
	30 45	HZCL	10YR5464						0	0	CH	15			M			Y	
	45 80	CH	25Y 7382						0	0	HR	2			P			Y	
51	0 30	MZCL	10YR33						1	0	HR	3						Y	
	30 40	HZCL	10YR54						0	0	CH	5			M			Y	
	40 75	CH	25Y81						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	
52	0 28	MZCL	10YR33						1	0	HR	3					S		
	28 45	HZCL	75YR55						0	0	HR	5		M			S		
	45 60	HCL	75YR56						0	0	HR	10		M			S		IMP FLINTS
53	0 30	MZCL	10YR33						1	0	HR	3					S		
	30 50	HCL	75YR56						0	0	HR	5		M			S		
	50 80	SCL	75YR56						0	0	HR	10		M			S		IMP FLINTS
54	0 30	MZCL	10YR32						1	0	HR	3					Y		
	30 70	HZCL	75YR55						0	0	HR	5		M			Y		
	70-120	HZCL	75YR56						0	0	HR	3		M			Y		
55	0 32	MZCL	10YR52						0	0	CH	10					Y		
	32 87	CH	10YR81						0	0		0		P			Y		
56	0 30	MZCL	10YR52						0	0	CH	10					Y		
	30 85	CH	10YR81						0	0		0		P			Y		
57	0 30	MZCL	10YR52						0	0	CH	10					Y		
	30 35	MZCL	10YR63						0	0	CH	25		M			Y		
	35 40	MZCL	10YR63						0	0	CH	50		M			Y		
	40 85	CH	10YR81						0	0		0		P			Y		
59	0 30	MZCL	25Y 53						0	0	CH	10					Y		
	30 85	CH	10YR81						0	0	HR	10		P			Y		
60	0 29	MZCL	10YR42						4	0	HR	8					Y		
	29 84	CH	10YR81						0	0	HR	8		P			Y		
61	0 25	MZCL	10YR42						4	0	HR	8					Y		
	25 80	CH	10YR81						0	0	HR	8		P			Y		
62	0 25	MZCL	10YR42						2	0	HR	4					Y		
	25 40	MZCL	10YR5344						0	0	CH	5		M			Y		
	40 68	MZCL	10YR56						0	0	HR	5		M			Y		
	68 75	MZCL	10YR6481						0	0	CH	60		M			Y		IMP CHALK
63	0 28	MZCL	10YR42						2	0	HR	4					Y		
	28 35	MZCL	10YR44						0	0	HR	10		M			Y		
	35 50	MZCL	10YR54						0	0	HR	10		M			Y		
	50 65	MZCL	10YR64						0	0	CH	20		M			Y		
	65 70	MZCL	10YR64						0	0	CH	50		M			Y		IMP CHALK
64	0 28	MZCL	10YR43						1	0	HR	5					Y		
	28 65	HZCL	10YR4454						0	0	HR	5		M			Y		
	65 120	MZCL	10YR5464						0	0	CH	10		M			Y		
65	0 30	MZCL	10YR43						1	0	HR	5					Y		
	30 60	HZCL	10YR4454						0	0	HR	5		M			Y		
	60 90	HZCL	10YR54						0	0	HR	5		M			Y		
	90 120	MZCL	10YR64						0	0	CH	20		M			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	IMP	SPL	CALC	
66	0 30	HZCL	10YR4243						1	0	HR	5						Y	
	30 65	HZCL	10YR54						0	0	CH	8			M			Y	
	65 85	HZCL	25Y 64						0	0	CH	25			M			Y	
	85 120	CH	25Y 72						0	0		0			P			Y	
67	0 30	MZCL	10YR4252						0	0	HR	5						Y	
	30 55	MZCL	10YR54						0	0	HR	5			M			Y	
	55 70	MZCL	10YR5464						0	0	CH	10			M			Y	
	70 85	MZCL	10YR6482						0	0	CH	40			M			Y	
	85 120	CH	25Y 7282						0	0		0			P			Y	
68	0 30	HZCL	10YR33						1	0	HR	3						Y	
	30 70	HZCL	10YR54						0	0	HR	4			M			Y	
	70 90	HZCL	10YR73						0	0	CH	10			P			Y	
	90 100	CH	25Y82						0	0		0			P			Y	IMP CHALK
69	0 30	MZCL	10YR33						0	0	HR	2						Y	
	30 50	HZCL	10YR55						0	0	HR	3			M			Y	
	50 70	HZCL	25Y82						0	0	HR	2			M			Y	
	70 100	CH	25Y82						0	0		0			P			Y	IMP CHALK
70	0 30	MZCL	10YR33						0	0	HR	3						S	
	30 90	HZCL	10YR56						0	0	HR	5			M			Y	IMP FLINTS
72	0 30	MZCL	10YR52						0	0	CH	5						Y	
	30 40	MZCL	10YR63						0	0	CH	50			M			Y	
	40 85	CH	10YR81						0	0		0			P			Y	
73	0 32	MZCL	10YR52						2	0	CH	5						Y	
	32 87	CH	10YR81						0	0		0			P			Y	
74	0 32	MZCL	10YR52						0	0	HR	5						Y	
	32 87	CH	10YR81						0	0		0			P			Y	
75	0 30	MZCL	10YR42						2	0	HR	4						Y	
	30 45	MZCL	10YR43						0	0	HR	5			M			Y	
	45 55	MZCL	10YR54						0	0	HR	10			M			Y	
	55 80	CH	25Y 81						0	0	HR	2			P			Y	
76	0 28	MZCL	10YR42						3	0	HR	8						Y	
	28 60	HZCL	10YR4454						0	0	HR	15			M			Y	
	60 70	MZCL	10YR64						0	0	HR	15			M			Y	IMP FLINTS
77	0 30	MZCL	10YR43						3	0	HR	8						Y	
	30 85	CH	25Y 82						0	0	HR	3			P			Y	
78	0 30	MZCL	10YR42						1	0	HR	5						Y	
	30 55	HZCL	10YR54						0	0	CH	5			M			Y	
	55 120	MZCL	10YR64						0	0	CH	15			M			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	
79	0 30	MZCL	10YR42						0	0	HR	5						Y	
	30 50	HZCL	10YR54						0	0	HR	5		M				Y	
	50-75	HZCL	10YR54						0	0	HR	5		M				Y	IMP FLINTS
80	0 30	MZCL	10YR42						0	0	HR	2						Y	
	30 45	HZCL	10YR54						0	0	HR	3		M				Y	
	45 60	HZCL	25Y63						0	0	CH	10		M				Y	
	60 85	CH	25Y73						0	0		0		P				Y	
81	0 30	MZCL	10YR43						1	0	HR	3						Y	
	30 70	HZCL	10YR54						0	0	CH	7		M				Y	
	70 100	CH	25Y82						0	0		0		P				Y	
82	0-32	MZCL	10YR52						0	0	CH	5						Y	
	32 87	CH	10YR81						0	0		0		P				Y	
83	0 32	MZCL	10YR5253						0	0		0						Y	
	32 87	CH	10YR81						0	0		0		P				Y	
84	0 30	MZCL	10YR52						0	0	CH	5						Y	
	30 85	CH	10YR81						0	0		0		P				Y	
85	0 30	MZCL	10YR52						0	0	CH	3						Y	
	30 50	MZCL	10YR5354						0	0	CH	15		M				Y	
	50 85	CH	10YR81						0	0		0		P				Y	
86	0 27	MZCL	25Y 52						0	0	CH	20						Y	
	27 47	CH	25Y 82						0	0		0		P				Y	
87	0 30	MZCL	10YR52						3	0	CH	15						Y	
	30 50	CH	10YR71						0	0		0		P				Y	
88	0 30	MZCL	10YR61						5	0	CH	15						Y	
	30 50	CH	10YR7181						0	0		0		P				Y	
89	0 25	MZCL	10YR42						1	0	HR	5						Y	
	25 38	MZCL	10YR64						0	0	CH	20		M				Y	
	38 65	MZCL	10YR7281						0	0	CH	65		P				Y	
	65 85	CH	10YR8182						0	0	HR	5		P				Y	
90	0 25	HZCL	10YR4353						1	0	HR	5						Y	
	25 35	HZCL	10YR54						0	0	HR	5		M				Y	
	35 50	HZCL	25Y 64						0	0	CH	25		M				Y	
	50 65	MZCL	25Y 7274						0	0	CH	60		P				Y	
	65 85	CH	25Y 72						0	0		0		P				Y	
91	0 28	HZCL	10YR43						0	0	HR	1						Y	
	28 60	HZCL	10YR54						0	0	HR	1		M				Y	
	60 120	HZCL	10YR53						0	0	HR	2		M				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
92	0 30	MZCL	10YR42						0	0	HR	2						Y
	30 60	HZCL	10YR54						0	0	HR	3		M				Y
	60 120	HZCL	10YR53						0	0	CH	5		M				Y
93	0 30	MZCL	10YR43						0	0	HR	2						Y
	30 120	HZCL	10YR54						0	0	HR	3		M				Y
94	0 30	MZCL	10YR53						0	0	CH	2						Y
	30 40	HZCL	10YR53						0	0	CH	12		M				Y
	40 85	CH	10YR81						0	0		0		P				Y
95	0 27	MZCL	10YR52						0	0	CH	10						Y
	27 35	MZCL	10YR64						0	0	CH	30		M				Y
	35 45	MZCL	10YR6482						0	0	CH	60		P				Y
	45 80	CH	10YR81						0	0		0		P				Y
96	0 28	MZCL	10YR4353						0	0	CH	15						Y
	28 35	MZCL	10YR5481						0	0	CH	50		M				Y
	35 75	CH	10YR8174						0	0		0		P				Y
	75 95	MZCL	10YR64						0	0	CH	20		M				Y
	95 100	CH	10YR81						0	0		0		P				Y
97	0 28	MZCL	10YR43						0	0	CH	15						Y
	28 50	HZCL	10YR54						0	0	CH	25		M				Y
	50 70	HZCL	10YR4454						0	0	CH	35		M				Y
	70 90	CH	10YR8481						0	0		0		P				Y
98	0 28	MZCL	10YR43						0	0	CH	15						Y
	28 83	CH	10YR82						0	0		0		P				Y
99	0 25	MZCL	25Y 52						1	0	HR	5						Y
	25 45	CH	25Y 82						0	0		0		P				Y
100	0 27	MZCL	25Y 52						0	0	HR	5						Y
	27 47	CH	25Y 82						0	0		0		P				Y
101	0 35	MZCL	10YR52						4	0	CH	15						Y
	35 55	CH	10YR71						0	0		0		P				Y
102	0 30	MZCL	10YR52						3	0	CH	12						Y
	30 50	CH	10YR71						0	0		0		P				Y
103	0 28	MZCL	10YR53						2	0	HR	5						Y
	28 40	MZCL	10YR54						0	0	CH	30		M				Y
	40 85	CH	10YR81						0	0	HR	2		P				Y
104	0 25	MZCL	10YR53						2	0	HR	5						Y
	25 40	MZCL	10YR64						0	0	CH	35		M				Y
	40 47	MZCL	10YR6468						0	0		0		M				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
105	0 28	MZCL	10YR53						2	0	HR	5						Y
	28 83	CH	10YR81						0	0	HR	2		P				Y
106	0 28	MZCL	10YR53						2	0	HR	5						Y
	28 45	MZCL	10YR54						0	0	CH	20		M				Y
	45 50	MZCL	10YR64						0	0	CH	50		M				Y
	50 85	CH	10YR81						0	0	HR	2		P				Y
107	0 25	MZCL	10YR53						0	0	CH	20						Y
	25 80	CH	10YR83						0	0		0		P				Y
108	0 30	MZCL	10YR4353						0	0	CH	10						Y
	30 75	MZCL	10YR64						0	0	CH	25		M				Y
	75 95	CH	10YR7481						0	0		0		P				Y
109	0 25	MZCL	25Y 52						1	0	CH	18						Y
	25 45	CH	25Y 82						0	0		0		P				Y
110	0 30	MZCL	25Y 52						2	1	HR	6						Y
	30 50	CH	25Y 82						0	0		0		P				Y
111	0 29	MZCL	10YR52						2	0	CH	10						Y
	29 45	MZCL	25Y 52						0	0	CH	10		M				Y
	45 65	CH	10YR7172						0	0		0		P				Y
112	0 29	MZCL	10YR52						2	0	HR	2						Y
	29 49	CH	25Y 72						0	0		0		P				Y
113	0 30	MZCL	10YR52						0	0	HR	3						Y
	30 45	MZCL	10YR74						0	0	CH	25		M				Y
	45 65	CH	10YR7481						0	0		0		P				Y
	65 80	HZCL	10YR56						0	0	CH	5		M				Y
	80 100	CH	10YR8174						0	0		0		P				Y
114	0 25	MZCL	10YR52						1	0	HR	5						Y
	25 40	MZCL	10YR64						0	0	CH	25		M				Y
	40 55	MZCL	10YR6481						0	0	CH	65		P				Y
	55 75	CH	10YR81						0	0		0		P				Y
115	0 30	MZCL	10YR52						0	0	CH	15						Y
	30 55	MZCL	10YR64						0	0	CH	25		M				Y
	55 75	CH	10YR81						0	0		0		P				Y
116	0 25	MZCL	10YR52						2	0	HR	8						Y
	25 35	MZCL	10YR6481						0	0	CH	40		M				Y
	35 80	CH	10YR8174						0	0		0		P				Y
117	0 30	MZCL	10YR5352						1	0	CH	20						Y
	30 85	CH	10YR81						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
118	0 25	MZCL	25Y 52						0	0	CH	20						Y
	25 80	CH	25Y 82						0	0		0			P			Y
119	0-25	MZCL	25Y 52						0	0	CH	15						Y
	25 65	MZCL	10YR64						0	0	CH	25			M			Y
	65 85	CH	25Y 82						0	0		0			P			Y
120	0 28	MZCL	10YR5262						4	0	CH	15						Y
	28 48	CH	25Y 7172						0	0		0			P			Y
121	0-29	MZCL	10YR5262						5	0	CH	20						Y
	29 49	CH	25Y 7172						0	0		0			P			Y
122	0 25	MZCL	10YR52						0	0	CH	10						Y
	25-45	CH	25Y 7172						0	0		0			P			Y
123	0 27	HZCL	10YR53						4	0	CH	12						Y
	27 82	CH	10YR81						0	0		0			P			Y
124	0 33	MZCL	10YR53						4	0	CH	8						Y
	33 45	HZCL	10YR64						0	0	CH	15			M			Y
	45 80	CH	10YR81						0	0		0			P			
125	0 38	MZCL	10YR52						0	0	HR	3						Y
	38 120	MZCL	10YR64						0	0	CH	25			M			Y
126	0 30	MZCL	10YR52						0	0	HR	2						Y
	30 85	CH	10YR82						0	0		0			P			Y
127	0 26	MZCL	10YR62						1	0	HR	5						Y
	26 81	CH	10YR8183						0	0		0			P			Y
128	0 28	MZCL	10YR5262						1	0	HR	3						Y
	28 70	MZCL	10YR64						0	0	CH	25			M			Y
	70 90	CH	10YR8183						0	0		0			P			Y
129	0-30	MZCL	10YR62						0	0	CH	12						Y
	30 85	CH	10YR8182						0	0		0			P			Y
130	0 24	MZCL	10YR62						0	0	CH	15						Y
	24 79	CH	10YR8182						0	0		0			P			Y
131	0 32	MZCL	10YR5363						0	0	CH	10						Y
	32 87	CH	10YR8174						0	0		0			P			Y
132	0 20	MZCL	10YR6162						0	0	CH	20						Y
	20 40	CH	25Y 71						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
133	0 25	MZCL	10YR6162						0	0	CH	20						Y
	25 45	CH	25Y 71						0	0		0		P				Y
134	0 28	HZCL	25Y62						5	0	CH	20						Y
	28 83	CH	10YR81						0	0		0		P				
135	0 30	HZCL	10YR53						3	0	CH	10						Y
	30 70	HZCL	10YR73						0	0	CH	20		M				Y
	70 90	CH	10YR81						0	0		0		P				Y
136	0 30	HZCL	10YR53						3	0	CH	5						Y
	30 45	HZCL	10YR64						0	0	CH	10		M				Y
	45 80	CH	10YR73						0	0		0		P				Y
137	0 30	HZCL	10YR62						3	0	CH	5						Y
	30 45	MZCL	10YR53						0	0	CH	5		M				Y
	45 80	CH	10YR81						0	0		0		P				Y
138	0 30	MZCL	25Y53						3	0	CH	3						Y
	30 35	HZCL	10YR53						0	0	CH	5		M				Y
	35 80	CH	10YR81						0	0		0		P				Y
139	0 28	MZCL	10YR62						0	0	HR	2						Y
	28 83	CH	10YR8183						0	0		0		P				Y
140	0 30	HZCL	10YR63						3	0	CH	5						Y
	30 85	CH	10YR81						0	0		0		P				Y
141	0 26	MZCL	25Y62						10	3	CH	15						Y
	26 81	CH	10YR81						0	0		0		P				Y
142	0 20	MZCL	10YR6162						4	0	HR	20						Y
	20 40	CH	25Y 71						0	0		0		P				Y
143	0 30	HZCL	10YR53						4	0	HR	4						Y
	30 50	HZCL	10YR64						0	0	CH	15		M				Y
	50 85	CH	10YR81						0	0		0		P				Y
144	0 30	MZCL	10YR53						1	0	CH	3						Y
	30 75	HZCL	10YR64						0	0	CH	10		M				Y
	75 90	CH	10YR81						0	0		0		P				Y
145	0 27	MZCL	10YR52						1	0	HR	3						Y
	27 65	MZCL	10YR64						0	0	CH	20		M				Y
	65 85	CH	10YR8174						0	0		0		P				Y
P1	0 30	MZCL	10YR5242						0	0	CH	2	WKCSAB	FR				Y
	30 65	HZCL	10YR53						0	0	CH	3	MDCSAB	FR	M			Y
	65 120	HZCL	10YR52						0	0	CH	3	MDCSAB	FR	M			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	CALC
P10	0 30	MZCL	25Y 52						0	0	CH	15	WDCSAB	FR				Y
	30 82	CH	10YR8183						0	0		0			P			Y
P2	0 28	MZCL	10YR32						1	0	HR	3	WKCSAB	FR				Y
	28 46	HZCL	10YR53						0	0	HR	10	MDCSAB	FR	M			Y
	46 72	HZCL	10YR44						0	0	HR	10	MDCSAB	FR	M			Y
	72 90	CH	10YR8172						0	0	HR	5			P			Y
P3	0 30	MZCL	10YR52						2	0	HR	5	WKCSAB	FR				Y
	30 95	CH	10YR81						0	0		0			P			Y
P4	0 32	MZCL	10YR42						9	4	HR	15	WKCSAB	FR				Y
	32 57	HCL	75YR56						0	0	HR	25	WKCSAB	FR	M			Y
	57 77	HCL	10YR5456						0	0	HR	41			M			Y
	77 120	C	75YR56						0	0	HR	15	WKCSAB	FM	M	Y		
P5	0 26	MZCL	25Y 52						1	0	HR	5	WKCSAB	FR				Y
	26 33	MZCL	25Y 5282						0	0	CH	50	WKCSAB	FR	M			Y
	33 48	CH	25Y 82	00FE	F				0	0		0		HD	P	Y		Y
P6	0 34	MZCL	10YR52						0	0	CH	2	WKCSAB	FR				Y
	34 90	CH	10YR81						0	0		0			P			Y
P7	0 26	MZCL	10YR53						0	0	CH	15	WKCSAB	FR				Y
	26 43	MZCL	10YR44						0	0	CH	25	WKCSAB	FR	M			Y
	43 63	CH	10YR8184						0	0		0			P			Y
P8	0 26	MZCL	10YR52						1	0	HR	2	WKCSAB	FR				Y
	26 50	MZCL	10YR53						0	0	CH	8	WKCSAB	FR	M			Y
	50 66	HZCL	10YR43						0	0	CH	10	WKCSAB	FR	M			Y
	66 120	CH	25Y 81						0	0		0	WKCSAB	FR	M			Y
P9	0 30	MZCL	10YR43						3	0	CH	5						Y
	30 70	CH	25Y81						0	0		0			M	Y		Y
	70 95	CH	25Y81						0	0		0			P	Y		Y

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS- CLASS	WHEAT- GRADE	AP	MB	POTS- AP	MB	M REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	TQ69906370	CER	E	2			1	1	124	7	124	12					DR	2	
2	TQ70306370	CER	S	2			1	1	89	30	94	-22					DR	3A	IMP60 SEE 4P
3	TQ69906360	CER	E	2			1	1	107	10	102	-10					DR	3A	
4	TQ70006360	CER	NE	1			1	1	152	35	119	7					DR	2	
5	TQ70106360	CER	NE	2			1	1	152	34	119	5					DR	2	
6	TQ70206360	CER	NE	2			1	1	92	26	100	14					DR	3A	SEE 4P
7	TQ70306360	CER	NE	2			1	1	150	31	115	-1					DR	2	SANDY 35 PLUS
8	TQ69606352	CER	E	3			1	1	95	18	91	17					DR	3A	BORDER 3B
9	TQ69706345	CER	E	3			1	1	81	39	84	32					DR	3B	
10	TQ69906350	CER	E	2			1	1	100	17	96	16					DR	3A	
11	TQ70006350	CER		0			1	2	105	12	104	8					DR	3A	
12	TQ70106350	CER	E	3			1	2	137	19	115	1					WD	2	
13	TQ70206350	CER	E	3			1	1	93	25	99	-15					DR	3A	SEE 4P
14	TQ70306350	PGR	E	3			1	1	98	-20	107	-7					DR	3A	SEE 4P
15	TQ68906340	CER		0			1	1	125	10	123	13					DR	2	
16	TQ69006340	CER	E	1			1	1	135	19	123	12					DR	2	
17	TQ69106340	CER	E	1			1	1	157	40	122	10					DR	2	
18	TQ69206340	CER	E	1			1	1	127	10	124	12					DR	2	
19	TQ69806340	CER	E	4			1	1	80	40	83	-33					DR	3A	SEE 3P
20	TQ69906340	CER	E	4			1	1	103	14	98	-14					DR	3A	
21	TQ70006340	CER	SE	1			1	1	132	15	123	11					DR	2	
22	TQ70106340	CER	E	2			1	1	154	36	118	4					DR	2	
23	TQ70206340	CER	E	3			1	1	143	25	117	3					DR	2	
25	TQ68906330	WHT	E	3			1	1	92	23	91	-19					DR	3B	
26	TQ69006330	WHT	E	3			1	1	116	0	115	4					DR	3A	
27	TQ69106330	CER	NE	1			1	1	158	42	123	12						1	
28	TQ69206330	CER	N	2			1	1	137	21	122	11					DR	2	
29	TQ69306330	OSR	NE	2			1	1	116	-1	117	3					DR	3A	
30	TQ69406330	OSR	NE	2			1	1	129	12	119	7					DR	2	
31	TQ69606330	OSR					1	1	97	-21	100	-14					DR	3B	ALMOST 3A
32	TQ69706330	OSR					1	1	104	-14	976	17					DR	3A	
33	TQ69806330	OSR	S	4			1	1	95	-23	930	21					DR	3B	
34	TQ69906330	OSR	S	3			1	1	105	13	99	15					DR	3A	
35	TQ70006330	CER		0			1	1	154	36	120	6					DR	2	
36	TQ70106330	CER	S	1			1	2	141	23	118	4					DR	2	
37	TQ70206330	CER	E	3			1	1	100	18	108	6					DR	3A	SEE 4P
39	TQ68806320	WHT	NW	6			1	1	155	40	121	11						1	
40	TQ68906320	WHT	NW	9			1	1	106	10	102	9					GR	3B	
41	TQ69006320	WHT	NW	9			1	1	85	35	90	26					GR	3B	3B DR ALSO
42	TQ69106320	WHT	NW	5			1	1	86	34	91	25					DR	3A	SEE 9P
43	TQ69206320	OSR	NE	4			1	1	103	12	106	4					DR	3A	
44	TQ69306320	OSR	NE	4			1	1	99	16	96	14					DR	3A	

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS CLASS	WHEAT GRADE	WHEAT AP	WHEAT MB	POTS AP	POTS MB	M REL DRT	FLOOD	EXP	EROSN DIST	FROST LIMIT	CHEM	ALC	COMMENTS
45	TQ69406320	OSR	NE	2			1	1	148	32	115	4					DR		2	
46	TQ69506320	OSR					1	1	156	39	121	9					DR		2	
47	TQ69606320	OSR					1	1	98	20	97	17					DR		3B	BORDER 3A
48	TQ69706320	OSR	E	1			1	1	104	14	103	11					DR		3A	
49	TQ69806320	OSR	E	1			1	1	99	19	94	20					DR		3A	
50	TQ69906320	OSR	S	2			1	1	104	16	103	-13					DR		3A	
51	TQ69996320	OSR	S	4			1	1	100	18	102	12					DR		3A	
52	TQ70106320	OSR	S	3			1	1	96	22	101	13					DR		3A	SEE 2P + 4P
53	TQ70206318	OSR	S	3			1	1	113	6	113	-3					DR		3A	SEE 2P + 4P
54	TQ70306320	PGR	E	1			1	1	155	36	120	4					DR		2	
55	TQ68706310	CER	N	2			1	1	102	11	96	12					DR		3A	
56	TQ68806310	CER	E	2			1	1	99	14	94	14					DR		3A	
57	TQ68906310	CER	N	1			1	1	103	10	99	-9					DR		3A	
59	TQ69106312	WHT					1	1	99	16	94	-16					DR		3A	
60	TQ69206310	OSR					1	1	92	23	89	-21					DR		3B	
61	TQ69306310	OSR	NE	4			1	1	90	25	89	-21					DR		3B	
62	TQ69406310	OSR	NE	4			1	1	123	7	118	7					DR		2	
63	TQ69506310	OSR	NE	3			1	1	117	0	115	3					DR		3A	
64	TQ69606310	OSR	E	3			1	1	151	33	118	4					DR		2	
65	TQ69706310	OSR	E	1			1	1	150	32	117	3					DR		2	
66	TQ69806310	OSR	E	1			1	2	142	23	116	0					WD		2	
67	TQ69906310	OSR					1	1	142	23	118	0					DR		2	
68	TQ70036310	OSR	S	1			1	2	126	7	121	5					DR		2	
69	TQ70106310	OSR	S	2			1	1	129	10	122	6					DR		3A	SEE 2P
70	TQ70206310	OSR	SE	2			1	1	126	7	120	4					DR		2	
72	TQ68706300	CER	E	2			1	1	104	9	99	-8					DR		3A	
73	TQ68806300	CER	E	2			1	1	103	10	97	-11					DR		3A	
74	TQ68906300	CER	E	1			1	1	102	11	96	-12					DR		3A	
75	TQ69506300	OSR	E	3			1	1	111	6	111	-1					DR		3A	
76	TQ69606300	OSR	NE	4			1	1	98	20	108	-6					DR		3A	SEE 2P + 4P
77	TQ69706300	OSR	NE	3			1	1	96	22	92	22					DR		3B	
78	TQ69806300	OSR	SE	1			1	1	152	33	118	2					DR		2	
79	TQ69906300	OSR	NW	1			1	1	110	9	118	2					DR		2	
80	TQ70006300	OSR	S	1			1	1	116	4	115	-1					DR		3A	
81	TQ70106300	OSR	S	2			1	1	127	7	119	3					DR		2	
82	TQ68606290	CER	E	2			1	1	103	9	97	-9					DR		3A	
83	TQ68706290	CER	E	2			1	1	105	8	99	-8					DR		3A	SEE 6P
84	TQ68806290	CER	E	2			1	1	100	13	96	12					DR		3A	
85	TQ68906290	CER	S	1			1	1	113	1	108	-1					DR		3A	
86	TQ69306290	PLO					1	1	74	46	77	39					DR		3B	RESTORED
87	TQ69406290	PLO					1	1	79	-41	82	-34					DR		3B	RESTORED
88	TQ69506290	PLO					1	1	80	40	83	-33					DR		3B	RESTORED

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS CLASS	WHEAT GRADE	POTS AP	POTS MB	M REL DRT	EROSN FLOOD	FROST EXP	CHEM DIST	ALC LIMIT		COMMENTS
89	TQ69706290	OSR	E	3			1	1	102	16 99 15					DR	3A	
90	TQ69806290	OSR	E	1			1	2	108	11 106 10					DR	3A	
91	TQ69906290	OSR					1	2	158	39 123 7					DR	2	
92	TQ70006290	OSR					1	1	156	36 122 6					DR	2	SEE 1P
93	TQ70106290	OSR					1	1	156	36 121 5					DR	2	
94	TQ70156280	OSR	E	2			1	1	107	13 103 13					DR	3A	
95	TQ68606280	CER	NE	4			1	1	98	14 97 9					DR	3A	
96	TQ68706280	CER	NE	4			1	1	114	1 94 13					DR	3A	
97	TQ68806280	CER	E	2			1	1	110	4 106 3					DR	2	SEE 8P
98	TQ68906280	CER	S	3			1	1	95	19 91 18					DR	3A	
99	TQ69206280	PLO					1	1	73	47 76 40					DR	3B	RESTORED
100	TQ69306280	PLO					1	1	74	46 77 39					DR	3B	RESTORED
101	TQ69406280	PLO					1	1	77	43 77 -39					DR	3B	RESTORED
102	TQ69506280	PLO					1	1	81	39 84 32					DR	3B	RESTORED
103	TQ68406270	CER	E	2			1	1	103	8 99 6					DR	3A	
104	TQ68506270	CER	NE	2			1	1	94	26 93 -23					DR	3B	SEE 7P
105	TQ68606270	CER	N	1			1	1	95	17 92 -14					DR	3A	IMP40 HARD CH
106	TQ68706270	CER					1	1	108	5 104 3					DR	3A	
107	TQ68806270	CER	N	6			1	1	89	24 88 19					DR	3B	
108	TQ68906270	CER	E	3			1	1	122	24 115 5					DR	2	
109	TQ69206270	PLO					1	1	74	46 77 39					DR	3B	RESTORED
110	TQ69306270	PLO					1	1	77	43 80 36					DR	3B	RESTORED
111	TQ69406270	PLO					1	1	98	22 104 -12					DR	3B	RESTORED
112	TQ69506270	PLO					1	1	79	41 82 34					DR	3B	RESTORED
113	TQ68306260	CER	SE	4			1	1	118	6 103 313					DR	2	
114	TQ68406260	CER	S	3			1	1	96	16 99 -7					DR	3A	
115	TQ68506260	CER	W	5			1	1	102	10 106 0					DR	3A	
116	TQ68606260	CER	S	7			1	1	94	18 93 -13					DR	3A	
117	TQ68706260	CER	SE	6			1	1	96	17 92 15					DR	3A	
118	TQ68806260	CER	E	4			1	1	89	25 88 -21					DR	3B	
119	TQ68906260	CER					1	1	110	-5 110 0					DR	3A	
120	TQ69506260	PLO					1	1	78	42 81 35					DR	4	RESTORED
121	TQ69606260	PLO					1	1	77	43 80 36					DR	4	RESTORED
122	TQ69706260	PLO					1	1	76	44 79 37					DR	4	RESTORED
123	TQ68206250	CER	SE	6			1	1	94	17 91 14					DR	3A	
124	TQ68306250	CER	SE	5			1	1	105	-7 104 2					DR	3A	
125	TQ68406250	CER	S	9			1	1	148	35 114 7					GR	3B	
126	TQ68506250	CER	S	8			1	1	100	20 92 24					GR	3B	
127	TQ68606250	CER	S	10			1	1	86	34 85 31					GR	3B	
128	TQ68706250	CER	SE	10			1	1	107	13 112 4					GR	3B	
129	TQ68806250	CER	SE	3			1	1	98	17 94 -16					DR	3A	
130	TQ68906250	CER	S	2			1	1	88	32 87 29					DR	3B	

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
131	TQ69006250	CER	S	2			1	1	102	13	96	141					DR	3A	
132	TQ69606250	PLO					1	1	59	61	59	-57					DR	4	RESTORED
133	TQ69706250	PLO					1	1	66	-54	69	-47					DR	4	RESTORED
134	TQ68006240	CER	SE	9			1	2	76	-44	79	-37					GR	3B	
135	TQ68106240	CER	SE	8			1	2	115	5	113	3					GR	3B	
136	TQ68206240	CER	SE	5			1	2	106	6	105	1					DR	3A	
137	TQ68906240	CER	SE	3			1	2	107	9	106	-5					DR	3A	
138	TQ69006240	CER	SE	3			1	1	101	-15	100	11					DR	3A	
139	TQ69106248	CER	W	2			1	1	97	-18	94	16					DR	3A	
140	TQ69106240	CER	SW	4			1	2	100	16	96	15					DR	3A	
141	TQ69206240	CER	SW	5			1	1	92	24	90	-21					DR	3B	
142	TQ69706240	PLO					1	1	64	56	67	-49					DR	4	RESTORED
143	TQ67906230	CER	SE	5			1	2	111	1	107	3					DR	3A	
144	TQ69056232	CER	SW	2			1	1	122	2	120	4					DR	3A	
145	TQ62356843	CER	S	3			1	1	115	5	112	4					DR	3A	
8A	TQ69366355	CER	SW	8			1	1	85	35	91	-25					DR	3B	
P1	TQ70006290	OSR					1	1	154	34	120	4					DR	2	
P10	TQ69106312	CER					1	1	94	20	91	18					DR	3A	
P2	TQ70106310	OSR	S	4			1	1	114	-6	111	-5					DR	3A	
P3	TQ69806340	BAR	E	3			1	1	103	13	92	19					DR	3A	
P4	TQ70206330	BAR	E	2			1	1	121	3	95	18					DR	3A	
P5	TQ69406290	CER					1	1	67	53	67	49					DR	3B	
P6	TQ68706290	CER	E	2			1	1	107	-6	99	8					DR	3A	
P7	TQ68506270	WHT	S	2			1	1	87	24	91	14					DR	3B	
P8	TQ68806280	WHT	S	1			1	1	139	25	116	7					DR	2	
P9	TQ69106320	CER	N	5			1	1	106	-9	94	-16					DR	3A	