

**Berkshire Waste Local Plan  
Omission Site 9: Colnbrook**

**Agricultural Land Classification  
November 1995**

**Resource Planning Team  
Guildford Statutory Group  
ADAS Reading**

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# AGRICULTURAL LAND CLASSIFICATION REPORT

## BERKSHIRE WASTE LOCAL PLAN OMISSION SITE 9: COLNBROOK

### INTRODUCTION

1. This summary report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 11.3 hectares of land at Colnbrook, approximately 2.5 km west of Heathrow Airport. The survey was carried out in November 1995.

2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) from its Land Use Planning Unit in Reading, as an omission site for the Berkshire Waste Local Plan. This survey supersedes previous ALC surveys on this land. The land immediately to the south of this site was surveyed in 1991 as Site 19 (Horton) of the Berkshire Minerals Plan. Information from this survey was used in the grading of the current site.

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 north of the site was under cereals, the centre of the site had been recently ploughed and an area to the south was under cabbages. The eastern field was under permanent grass.

### SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10000. 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.

**Table 1: Area of grades and other land**

Grade/Other land	Area (hectares)	% surveyed area
2	5.4	47.8
3a	1.5	13.3
3b	4.4	38.9
Total site area	11.3	100.0

7. The fieldwork was conducted at an average density of one boring per hectare. A total of twelve borings and one soil pit were described.

8. Land quality on the site ranged from Grade 2 (very good quality) to Subgrade 3b (moderate quality). The availability of irrigation water was taken into consideration when grading this land, although it had no overall effect on the grade distribution as other limitations were overriding.

9. The soil textures and structures observed in the auger borings and in the inspection pit, indicate that in some areas, the crop would suffer from a lack of water in the summer months which could depress yields. Referred to as soil 'droughtiness', this can restrict the versatility of the land to varying degrees, depending on its severity.

10. Evidence of poorly drained profiles in some areas indicate that crop growth would be adversely affected, and the time available throughout the year for grazing or for tillage operations would be limited, imposing a restriction on land quality due to soil 'wetness'.

11. Grade 2 land was mapped on the basis of slight soil wetness and slight soil droughtiness limitations. The Subgrade 3a land in the west of the site was restricted to this grade by a more severe soil wetness limitation and slight soil droughtiness. Land in the easternmost field was mapped as Subgrade 3b. This land suffers an even more severe soil wetness restriction caused by a high water table, and poorly drained clayey soils.

### **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	N/A	TQ 025 769
Altitude	m, AOD	20
Accumulated Temperature	day°C	1492
Average Annual Rainfall	mm	663
Field Capacity Days	days	136
Moisture Deficit, Wheat	mm	118
Moisture Deficit, Potatoes	mm	114

14. 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.

15. 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 (AT0, January to June), as a measure of the relative warmth of a locality.

16. The combination of rainfall and temperature at this site mean that there is no climatic limitation to land quality. Neither exposure nor frost risk are believed to affect the site. The site is climatically Grade 1.

#### Site

17. Altitude varies between approximately 19m AOD in the south-west and 21m AOD in the north-east giving rise to an almost level site. There may be a risk of flooding in the easternmost field adjacent to the Colne Brook.

#### Geology and soils

18. The site is located on the flood plain of the River Thames and River Colne. The most detailed published geological information for the site (BGS, 1981) shows the solid geology of the site to be London Clay, overlain by flood plain gravels over the majority of the area, and by deposits of alluvium in the east.

19. The most detailed published soils information for the site (SSEW, 1983) shows the west of the site to have soils corresponding to the Waterstock association. Waterstock soils are described as 'deep, permeable mainly fine loamy soils, variably affected by groundwater' with 'some deep, well drained, fine and coarse loamy soils' (SSEW, 1983). The east of the site is mapped as having soils corresponding to the Fladbury 3 association. Fladbury 3 soils are described as; 'stoneless, clayey, fine silty and fine loamy soils, affected by groundwater' located on 'flat land' with a 'risk of flooding' (SSEW, 1983).

## **Agricultural Land Classification**

20. 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.

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 III.

### *Grade 2*

22. Very good quality land was mapped in the centre of the site, where slight soil wetness and/or soil droughtiness limitations exist.

23. Soils in this area typically have non-calcareous medium clay loam topsoils overlying heavy clay loam subsoils which were found to be gleyed though not slowly permeable. Some profiles are underlain by gravelly horizons, impenetrable to the soil auger at 80-90 cm depth. This land is limited to Grade 2 primarily due to a tendency to slight soil wetness, which limits crop growth and the workability of the land. The land is equally restricted to this grade by slight soil droughtiness, as the soil water available to the crop would not fully meet the crop's requirements during the summer months.

24. Other profiles in the area mapped as Grade 2 have slowly permeable clay lower subsoils occurring at approximately 70 cm depth, and often pass into sandy lower horizons which are typically calcareous. Slight soil wetness limits these areas to Grade 2.

25. Pit 1 was described in this mapping unit. It is representative of the Grade 2 land and also displays the range of textures found within other grades on the site. The pit confirms the structure of the clay horizon, which is slowly permeable, and enables extrapolation to other borings on the site. All land in this grade falls in Wetness Class II (see Appendix II for definition of Wetness Classes). Soil horizons typically have a total of 1-2% flints above the gravelly layer, which, from a previous ALC survey of land to the south of this site, contains approximately 30% hard flints. (Previous survey no. 0200/006/91).

### *Subgrade 3a*

26. Good quality land was mapped in the west of the site, restricted to this grade by slight soil droughtiness and moderate soil wetness limitations.

27. Soils have medium clay loam topsoils overlying heavy clay loam or slowly permeable clay subsoils. Profiles pass into gravels at approximately 80 cm depth and the land falls into Wetness Classes II and IV. In the north of this mapping unit soils are poorly drained, restricting crop growth and soil workability. In the south, profiles appear slightly disturbed and Subgrade 3a was considered an appropriate grade considering the variability in this area.

*Subgrade 3b*

28. Moderate quality land was mapped in the east, where quite severe soil wetness limits the number of days available for agricultural use and cultivations.

29. Organic heavy clay loam topsoils overlie slowly permeable clay subsoils which pass to gravel at approximately 80 cm depth. Profiles are poorly drained, falling in Wetness Class IV, with subsoils impeding the downward movement of water in the profile. More severe drainage problems are caused by high groundwater levels in this area adjacent to the Colne Brook, resulting in waterlogged profiles.

30. There is a strong possibility of standing surface water on this land in the wetter months. Flooding from the Colne Brook is possible, as the water level is close to field level, although the river banks have been raised with bunds. There are limited opportunities for field drainage because of insufficient outfalls, and with poor drainage through the profile standing water is possible. Although this was not observed at the time of survey, the previous summer and autumn were very dry. The land could, therefore, fall into Wetness Class V and be classified as Grade 4. On the evidence of the survey the land is mapped as Subgrade 3b.

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## SOURCES OF REFERENCE

British Geological Survey (1981) Sheet 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

### DESCRIPTIONS OF THE GRADES AND SUBGRADES

#### **Grade 1: Excellent Quality Agricultural Land**

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

#### **Grade 2: Very Good Quality Agricultural Land**

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

#### **Grade 3: Good to Moderate Quality Land**

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

#### **Subgrade 3a: Good Quality Agricultural Land**

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

#### **Subgrade 3b: Moderate Quality Agricultural Land**

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

#### **Grade 4: Poor Quality Agricultural Land**

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

#### **Grade 5: Very Poor Quality Agricultural Land**

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

## APPENDIX II

### SOIL WETNESS CLASSIFICATION

#### Definitions of Soil Wetness Classes

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six soil wetness classes are identified and are defined in the table below.

Wetness Class	Duration of waterlogging <sup>1</sup>
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years. <sup>2</sup>
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).

<sup>1</sup> The number of days is not necessarily a continuous period.

<sup>2</sup> 'In most years' is defined as more than 10 out of 20 years.

**APPENDIX III**

**SOIL DATA**

**Contents:**

**Sample location map**

**Soil abbreviations - Explanatory Note**

**Soil Pit Descriptions**

**Soil boring descriptions (boring and horizon levels)**

**Database Printout - Horizon Level Information**

## 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.

<b>ARA:</b> Arable	<b>WHT:</b> Wheat	<b>BAR:</b> Barley
<b>CER:</b> Cereals	<b>OAT:</b> Oats	<b>MZE:</b> Maize
<b>OSR:</b> Oilseed rape	<b>BEN:</b> Field Beans	<b>BRA:</b> Brassicae
<b>POT:</b> Potatoes	<b>SBT:</b> Sugar Beet	<b>FCD:</b> Fodder Crops
<b>LIN:</b> Linseed	<b>FRT:</b> Soft and Top Fruit	<b>FLW:</b> Fallow
<b>PGR:</b> Permanent Pasture	<b>LEY:</b> Ley Grass	<b>RGR:</b> Rough Grazing
<b>SCR:</b> Scrub	<b>CFW:</b> Coniferous Woodland	<b>DCW:</b> Deciduous Wood
<b>HTH:</b> Heathland	<b>BOG:</b> Bog or Marsh	<b>FLW:</b> Fallow
<b>PLO:</b> Ploughed	<b>SAS:</b> Set aside	<b>OTH:</b> Other
<b>HRT:</b> Horticultural Crops		

3. **GRDNT:** Gradient as estimated or measured by a hand-held optical clinometer.
4. **GLEYSPL:** 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.

<b>OC:</b> Overall Climate	<b>AE:</b> Aspect	<b>EX:</b> Exposure
<b>FR:</b> Frost Risk	<b>GR:</b> Gradient	<b>MR:</b> Microrelief
<b>FL:</b> Flood Risk	<b>TX:</b> Topsoil Texture	<b>DP:</b> Soil Depth
<b>CH:</b> Chemical	<b>WE:</b> Wetness	<b>WK:</b> Workability
<b>DR:</b> Drought	<b>ER:</b> Erosion Risk	<b>WD:</b> Soil Wetness/Droughtiness
<b>ST:</b> Topsoil Stoniness		

## Soil Pits and Auger Borings

1. **TEXTURE:** soil texture classes are denoted by the following abbreviations.

<b>S:</b> Sand	<b>LS:</b> Loamy Sand	<b>SL:</b> Sandy Loam
<b>SZL:</b> Sandy Silt Loam	<b>CL:</b> Clay Loam	<b>ZCL:</b> Silty Clay Loam
<b>ZL:</b> Silt Loam	<b>SCL:</b> Sandy Clay Loam	<b>C:</b> Clay
<b>SC:</b> Sandy Clay	<b>ZC:</b> Silty Clay	<b>OL:</b> Organic Loam
<b>P:</b> Peat	<b>SP:</b> Sandy Peat	<b>LP:</b> Loamy Peat
<b>PL:</b> Peaty Loam	<b>PS:</b> Peaty Sand	<b>MZ:</b> 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:

<b>F:</b> Fine (more than 66% of the sand less than 0.2mm)
<b>M:</b> Medium (less than 66% fine sand and less than 33% coarse sand)
<b>C:</b> 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. **GLEYS:** 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.

<b>HR:</b> all hard rocks and stones	<b>SLST:</b> soft oolitic or dolimitic limestone
<b>CH:</b> chalk	<b>FSST:</b> soft, fine grained sandstone
<b>ZR:</b> soft, argillaceous, or silty rocks	<b>GH:</b> gravel with non-porous (hard) stones
<b>MSST:</b> soft, medium grained sandstone	<b>GS:</b> gravel with porous (soft) stones
<b>SI:</b> soft weathered igneous/metamorphic rock	

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

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

degree of development    **WK**: weakly developed            **MD**: moderately developed  
   **ST**: strongly developed

ped size                            **F**: fine                                    **M**: medium  
   **C**: coarse                                **VC**: very coarse

ped shape                        **S** : single grain                        **M**: massive  
   **GR**: granular                            **AB**: angular blocky  
   **SAB**: sub-angular blocky        **PR**: prismatic  
   **PL**: platy

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

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

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

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

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

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

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

15. Other notations

**APW**: available water capacity (in mm) adjusted for wheat

**APP**: available water capacity (in mm) adjusted for potatoes

**MBW**: moisture balance, wheat

**MBP**: moisture balance, potatoes

SOIL PIT DESCRIPTION

Site Name : BERKS WASTE LP-COLNBROOK Pit Number : 1P

Grid Reference: TQ02507700 Average Annual Rainfall : 663 mm  
 Accumulated Temperature : 0 degree days  
 Field Capacity Level : 136 days  
 Land Use : Cereals  
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 35	MCL	10YR32 00	1	2	HR					
35- 38	HCL	10YR42 00	0	1	HR	F	MDCSAB	FR	M	
38- 56	HCL	10YR42 00	0	1	HR	C	MDCSAB	FR	M	
56- 70	HCL	10YR41 00	0	1	HR	C	MDCOAB	FM	P	
70- 90	C	10YR52 00	0	1	HR	M	WKCOAB	FM	P	
90-120	SCL	10YR62 00	0	1	HR	C	MDVCPR	FM	P	Y

Wetness Grade : 2 Wetness Class : II  
 Gleying : 038 cm  
 SPL : 070 cm

Drought Grade : 2 APW : 139mm MBW : 21 mm  
 APP : 112mm MBP : -2 mm

FINAL ALC GRADE : 2  
 MAIN LIMITATION : Soil Wetness/Droughtiness

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS	
			GRDNT	GLEY SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST		LIMIT
1	TQ02307700	CER	035	035	4	3B	000	0	000	0				WE	3B	
1P	TQ02507700	CER	038	070	2	2	139	21	112	-2	2			WD	2	PIT AT 3
2	TQ02407700	CER	035		2	2	116	-2	118	4	3A			DR	3A	2 IRRIGATION
3	TQ02507700	CER	030	070	2	2	148	30	116	2	2			WD	2	2 IRRIGATION
4	TQ02207690	PLO	045		1	1	117	-1	119	5	3A			DR	3A	POSS DISTURBED
5	TQ02307690	PLO	050		1	1	126	8	115	1	2			DR	2	SL GLEY AT 25
6	TQ02407690	PLO	030	030	4	3B	100	-18	105	-9	3A			WE	3B	
7	TQ02507690	CER	035	070	2	2	154	36	117	3	2			WD	2	
8	TQ02607690	PGR	020	020	4	3B	089	-29	089	-25	3B			WE	3B	HIGH GR WATER
9	TQ02307680	PLO	030		2	2	115	-3	117	3	3A			DR	3A	2 IRRIGATION
10	TQ02407680	PLO	030	030	4	3B	145	27	105	-9	2			WE	3B	
11	TQ02507680	PGR	035	035	4	3B	000	0	000	0				WE	3B	HIGH GR WATER
12	TQ02507670	PGR	040	040	4	3B	000	0	000	0				WE	3B	HIGH GR WATER

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES-----			STRUCT/ CONSIST	SUBS			CALC		
				COL	ABUN	CONT	COL.	GLEYS	>2	>6	LITH		TOT	STR	POR		IMP	SPL
1	0-35	hc1	10YR32 00						2	1	HR	2						
	35-80	c	10YR53 00	75YR58	00	C		Y	0	0	HR	1	P		Y		IMP GRAVELLY	
1P	0-35	mc1	10YR32 00						1	0	HR	2						
	35-38	hc1	10YR42 00	75YR56	00	F			0	0	HR	1	MDCSAB	FR	M			
	38-56	hc1	10YR42 00	75YR56	00	C		Y	0	0	HR	1	MDCSAB	FR	M			
	56-70	hc1	10YR41 00	10YR58	00	C	10YR52	00	Y	0	0	HR	1	MDCOAB	FM	P		
	70-90	c	10YR52 00	75YR58	00	M			Y	0	0	HR	1	WKCOAB	FM	P	Y	
	90-120	sc1	10YR62 00	10YR58	00	C			Y	0	0	HR	1	MDVCPR	FM	P	Y	
																Y	Y	
2	0-35	mc1	10YR32 00						1	0	HR	1						
	35-80	hc1	10YR53 00	75YR58	00	C		Y	0	0		0	M				IMP GRAVELLY	
3	0-30	mc1	10YR32 00						2	1	HR	2						
	30-55	hc1	10YR42 00	75YR56	00	C		Y	0	0	HR	2	M					
	55-70	hc1	10YR41 00	75YR56	00	C		Y	0	0	HR	2	M					
	70-90	c	10YR52 00	75YR58	00	M		Y	0	0		0	P		Y	Y		
	90-120	sc1	10YR62 00	10YR58	00	C		Y	0	0		0	P		Y	Y		
4	0-45	mc1	10YR32 00						2	1	HR	2						
	45-50	hc1	10YR53 00	75YR58	00	C	10YR72	00	Y	0	0	HR	2	M				
	50-70	hc1	10YR53 00	75YR58	00	C	10YR72	00	Y	0	0	HR	2	M			Y	
	70-80	sc1	10YR43 00			C	00MN00-00	Y	0	0	HR	2	P		Y		IMP GRAVELLY	
5	0-25	mc1	10YR32 00						1	0	HR	1						
	25-50	hc1	10YR43 00	75YR58	00	C		S	0	0		0	M					
	50-75	sc1	10YR53 00	75YR58	00	C	10YR72	00	Y	0	0		0	M			Y	
	75-90	ms1	10YR53 00	75YR58	00	C	10YR72	00	Y	1	0	HR	1	M			IMP GRAVELLY	
6	0-30	mc1	10YR32 00						0	0	HR	1					Y	
	30-70	c	10YR53 00	75YR58	00	C	10YR71	00	Y	0	0		0	P		Y	Y	
	70-80	c	10YR62 00	75YR58	00	C			Y	0	0		0	P		Y	Y	
																	IMP GRAVELLY	
7	0-30	mc1	10YR32 00						1	0	HR	1						
	30-35	hc1	10YR43 00						0	0		0	M					
	35-70	hc1	10YR42 00	75YR46	56	C	00MN00	Y	0	0		0	M					
	70-75	c	10YR52 00	75YR58	00	C			Y	0	0		0	P		Y	Y	
	75-120	sc1	10YR62 00	75YR58	00	C			Y	0	0		0	P		Y	Y	
8	0-20	omc1	10YR31 00						0	0		0					Y	
	20-45	c	10YR41 00	75YR58	00	C			Y	0	0		0	P		Y	Y	
																	IMP GRAVELLY	
9	0-30	mc1	10YR32 00						1	0	HR	1						
	30-80	hc1	10YR53 00	75YR58	00	C	00MN00	00	Y	0	0		0	M			IMP GRAVELLY	
10	0-30	mc1	10YR32 00						1	0	HR	1						
	30-70	c	10YR52 00	75YR58	00	C	10YR72	00	Y	0	0		0	P		Y		
	70-90	hc1	10YR63 00	75YR58	00	C			Y	0	0	HR	1	M		Y		
	90-100	sc1	10YR63 00	75YR58	00	C			Y	0	0	HR	1	P		Y	Y	
	100-120	ms1	10YR63 00	75YR58	00	C			Y	0	0	HR	1	M			Y	

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SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED COL.	----STONES----			STRUCT/ CONSIST	SUBS			CALC		
				COL	ABUN	CONT		GLEY	>2	>6		LITH	TOT	STR		POR	IMP
11	0-35	ohc1	10YR31 00														
	35-70	c	05 Y25 01	75YR56	00	C		Y	0	0	0		P		Y		IMP GRAVELLY
12	0-40	hc1	10YR32 00														Y
	40-90	c	10YR62 00	75YR58	00	C		Y	0	0	0		P		Y	Y	IMP GRAVELLY