FCS 3994

23/90

77/90/23

WHATLEY QUARRY EXTENSION, FROME, SOMERSET

Report of Survey

1. Introduction

In August 1990, members of the Resource Planning Group (South West Region) conducted a survey of the soil resources of 79.2 hectares adjacent to Finger Farm, north of Chantry near Frome in Somerset. The survey was requested in connection with the application to extend Whatley Quarry westwards and to extract hard rock. MAFF was consulted under the Town and Country Planning Act as the proposed after-use was non-agricultural; the RPG was therefore concerned to determine the quality of the land that would be taken out of agricultural use and to verify the volumes of soil materials identified in the planning application statement and Environmental Appraisal that would be used in landscaping and the creation of bunds.

The application area affects two agricultural blocks. The majority of the area is adjacent to Finger Farm, a second area, a possible reservoir site, is located to the north at Snatch Bottom. The latter area was not surveyed as this is predominantly non-agricultural and of little agricultural use. *The comments below relate to the Finger Farm site.*

2. Agricultural Land Classification (ALC)

2.1 A total of 65 auger borings and 4 soil pits were examined, and the distribution of the grades found is illustrated in the accompanying ALC map and detailed in Table 1 below. The location of the pits and auger borings is shown on the Auger Sample Point Map.

Table 1: Distribution of ALC Grades and Sub-grades

Grade	Area (ha)	% of Survey Area	% of Agricultural Area
3A	61.3	77.4	84.9
3B	10.9	13.8	15.1
Non-Agric	3.9	4.9	100% (72.2 ha)
Urban	1.6	2.0	
Farm Bldgs	1.5	1.9	
	79.2 (ha)	100%	

2.2 In determining the grade of land, emphasis has been placed on the information observed at each of the four soil pits as opposed to the auger borings. The timing of MAFF's survey meant that the site was examined under very dry soil conditions. The prolonged lack of rainfall in preceding weeks had resulted in drought conditions and made surveying by auger very difficult. Only limited information was therefore available by auger survey (mainly topsoil texture and depth); the presence of even low percentages of hard stone prevented auger penetration below 30-45 cm over much of the site.

2.3 **Climate:** detailed estimates of the prevailing climate were obtained by interpolation from a Met Office/MAFF 5-km grid database for two representative locations. These are shown in Table 2 below and reveal that an overall climatic limitation restricts the whole of the

site to Grade 2 at best. The two parameters used to assess overall climate are average annual rainfall (a measure of overall wetness) and accumulated temperature (a measure of the relative warmth of a locality); in combination they produce a climatic limitation for the site.

Table 2: Climatic Interpolations

Grid Reference	:	37121473	37161479
Altitude (m)	:	165	150
Average Annual Rainfall (mm)	:	1073	1065
Accumulated Temperature (^{O} days)	:	1370	1386
Field Capacity (days)	:	220	219
Moisture Deficit, Wheat (mm)	:	70	72
Moisture Deficit, Potatoes (mm)	:	53	55
Overall Climatic Grade	:	2	2

No additional local climatic factors such as exposure were noted.

2.4 **Sub-grade 3A:** the majority of the site has been placed in this grade, with three of the four soil pits showing 3A characteristics. The pits reveal a similar profile sequence, with medium silty clay loam topsoils and an increasing clay content down the profile, with the textures changing into clays or heavy clay loams below approximately 40 cm. The lower subsoils contain slowly permeable layers that restrict the drainage of excess rainfall through the profile and cause waterlogging in and above these horizons. These soils are consequently placed in Wetness Class III (ie the soil profile is wet within 70 cm depth for 3-6 months in most years). Wetness is the most limiting physical factor and restricts the soils to sub-grade 3A (see the attached general description of 3A land).

2.5 **Sub-grade 3B:** two areas of this sub-grade have been identified - all of the land to the north of Lime Kiln Lane, and a small map unit on a ridge on the south west boundary of the site. One soil pit has been described in the larger of the two areas and is typical of this 3B land. These soils have similar MZCL topsoil textures to the 3A land but have a significantly different subsoil - a red clay subsoil which shows no evidence of gleying in the top 70 cm but which has a slowly permeable layer with coarse prismatic structure that starts within 60 cm and extends to at least 100 cm. These soils are therefore one wetness class worse than the adjacent 3A land (ie WC IV) and are therefore downgraded to 3B (see the attached general description of 3B land).

[a:RPG0060/JR]

DESCRIPTION OF THE GRADES AND SUBGRADES

The ALC grades and subgrades are described below in terms of the types of limitation which can occur, typical cropping range and the expected level and consistency of yield. In practice, the grades are defined by reference to physical characteristics and the grading guidance and cut-offs for limitation factors in Section 3 enable land to be ranked in accordance with these general descriptions. The most productive and flexible land falls into Grades 1 and 2 and Subgrade 3a and collectively comprises about one-third of the agricultural land in England and Wales. About half the land is of moderate quality in Subgrade 3b or poor quality in Grade 4. Although less significant on a national scale such land can be locally valuable to agriculture and the rural economy where poorer farmland predominates. The remainder is very poor quality land in Grade 5, which mostly occurs in the uplands.

Descriptions are also given of other land categories which may be used on ALC maps.

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 and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.

Grade 3 – good to moderate quality agricultural land

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

Subgrade 3a – good quality agricultural land

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

Subgrade 3b – moderate quality agricultural land

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

Grade 4 – poor quality agricultural land

Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (eg cereals and forage crops) the yields of which are variable. In 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 very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Descriptions of other land categories used on ALC maps

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: golf courses, private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

Agricultural buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg polythene tunnels erected for lambing) may be ignored.

Open water

Includes lakes, ponds and rivers as map scale permits.

Land not surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above land cover types, eg buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will usually be shown.

SOIL PROFILE DESCRIPTIONS: EXPLANATORY NOTE

(i) TEXTURE:-

Soil texture classes are denoted by the following abbreviations (all Upper case*):

S	Sand
LS	Loamy Sand
SL	Sandy Loam
SZL	Sand Silt Loam
ZL	Silt Loam
MZCL	Medium Silty Clay Loam
MCL	Medium Clay Loam
SCL	Sandy Clay Loam
HZCL	Heavy Silty Clay Loam
HCL	Heavy Clay Loam
SC	Sandy Clay
ZC	Silty Clay
C	Clay

For the sand, loamy sand, sandy loam and sandy silt loam classes the predominant size of sand fraction may be indicated by the use of prefixes, thus:

F	fine (more than $\frac{2}{3}$ of sand less than 0.2 mm)
C	coarse (more than $\frac{1}{3}$ of sand greater than 0.6 mm)
M	medium (less than $\frac{2}{3}$ fine sand and less than $\frac{1}{3}$ coarse sand)

The sub-divisions of clay loam and silty clay loam classes according to clay content are indicated as follows:-

M	medium (less than 27% clay):
H	heavy (27-35% clay)

Other possible texture classes include:

P	Peat
SP	Sandy Peat
LP	Loamy Peat
PL	Peaty Loam
PS	Peaty Sand
MZ	Marine Light Silts

* There are two exceptions to the Upper Case rule:-

- The prefix "**Calc**" is used to identify naturally calcareous soils containing more than 1% Calcium Carbonate
- For organic mineral soils, the texture of the mineral fraction is prefixed by "**Org**".

(ii) STRUCTURE:-

Nature and size of structural units are denoted by the following abbreviations:

SAB	*Subangular Blocky*
AB	Angular Blocky
P	Prismatic

(single grain, granular and platy are not abbreviated)

F	Fine
M	Medium
C	Coarse
VC	Very Coarse

eg Weak **MSAB** = Weakly developed medium subangular blocky

(iii) OTHER

f	= few	=	*less than 2% of the matrix or surface described*
c	= commom	=	2-20% of the matrix or surface described
m	= many	=	20-40% of the matrix or surface described
vm	= very many	=	+40% of the matrix or surface described

f	= faint	=	indistinct mottles, evident only on close examination
d	= disinct	=	although not striking, the mottles are readily seen
p	= prominent	=	the mottles are conspicuous, and the mottling is one of the outstanding features of the horizon

gm = grey mottling
om = ochreous mottling

eg **cdom** = common distinct ochreous mottles

ppf = pale ped faces
mn = manganese

st = stones 6 cm
sst = stones 2-6 cm
vsst= stones 2 cm

WC = Wetness Class (use Roman numerals, eg WC IV)
SPL = Slowly Permeable Layer
WT = Water Table
I = *Impenetrable if used in Depth Column*
IMP = Impenetrable if used in soil profile notes
(**IMP 2 x 40 cm** = 2 additional borings, both impenetrable at 40 cm)
ASP = Auger Sample Point

SITE NAME	PROFILE NUMBER	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Whatley Quarry Frome, Somerset 8FCS 3994	1 DATE 21/8/90	0° GRID REFERENCE 37131478	GRASS (Poor sward)	Av Rainfall :- 1065 ATO :- 1386 FC Days :- 219 Climatic grade:- 2	Limestone

Horizon Number	Lowest Av Depth	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
Topsoil	0-20	10YR43	MZCL	None	cdom	-	-	-	-	-	-	-	Clear
Subsoil	20-80+	5YR46 ped faces = 7.5YR54 (ie paler, but not "Pale") Clear ped skins	C	None (One large limestone left in situ in pit)	possible grey mottling but masked by matrix variation	Moderate CP	< 0.5%	Poor	Firm	Common through peds	-	v common	-

Pit dug to 81 cm; augering to 105 cm revealed continuation of subsoil

Red soil, not gleyed within 70 cm; SPL within 60 cm and extending to at least 100cm

Depth to Slowly Permeable Horizon :- 35 cm

Wetness Class :- IV

Wetness Grade :- 3B

RPG0023/WJC

Available Water Wheat :- N/A

Potatoes :-

Moisture Deficit Wheat :-

Potatoes :-

Moisture Balance Wheat :-

Potatoes :-

Droughtiness Grade :-

Final ALC Grade :- 3B

Main Limiting Factor(s) :- Wetness

Remarks :- Adjacent augerings could not penetrate deep into the subsoil (<45 cm) as a result of occasional hard stones; several borings <30 cm. Profile examined after prolonged summer drought; slight rain in previous two days; v dry conditions

SITE NAME	PROFILE NUMBER	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Whatley Quarry Frome, Somerset BFCS 3994	2	3° NE	Cereal Stubble	Av Rainfall :- 1073 ATO :- 1375 FC Days :- 220 Climatic grade:- 2	Limestone
	DATE 22/8/90	GRID REFERENCE			

Horizon Number	Lowest Av Depth	Matrix and Ped face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
Topsoil	0-23	10YR43	MZCL	Negligible	cdom	Not compacted				Common good penetration			Clear
Subsoil 1	23-42	10YR44	MZCL	-	not mottled	Moderate CSAB	<0.5%			Common through peds		Few	
Subsoil 2	42-55	10YR46	HCL	5-7% stone; +2 cm; sieve; hard	not mottled	Difficult to assess structure due to dry soil conditions and stone content; assumed non-SPL						Few	
Subsoil 3	55-80+	10YR54 (not pale, not red)	C	-	cdogm	CAB (Difficult to assess degree of development due to dry soil conditions; assumed moderate)	<0.5%			Few through peds		Abundant	

Depth to Slowly Permeable Horizon :- Slightly gleyed 40-70 cm SPL at 55 cm

Wetness Class :- WC III (using Fig 8)

Wetness Grade :- 3A

RPG0023/WJC

Available Water Wheat :- N/A

Potatoes :-

Moisture Deficit Wheat :-

Potatoes :-

Moisture Balance Wheat :-

Potatoes :-

Droughtiness Grade :-

Final ALC Grade :- 3A

Main Limiting Factor(s) :- Wetness

Remarks :- Using internal guidance on slightly gleyed horizons

SITE NAME	PROFILE NUMBER	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Whatley Quarry Frome, Somerset BFCS 3994	3	3° NNE	P Grass	Av Rainfall :- 1073 ATO :- 1370 FC Days :- 220 Climatic grade:- 2	Limestone
	DATE 22/8/90	GRID REFERENCE			

Horizon Number	Lowest Av Depth	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
Topsoil	0-23	10YR43	MZCL	Free	cdom	Not compacted				Common		Few	Clear
Subsoil 1	23-34	10YR44	MZCL	Negligible	Not mottled	-				Common good penetration		Few	
Subsoil 2	34-70	10YR66	HCL	12% stone; +2 cm; sieve (15 cm size) 12-25% range *in horizon*	vmdom	Moderate CAB	<0.5%		Firm			Abundant	
	+ 70 cm	= +70% hard rock											

Depth to Slowly Permeable Horizon :- Slightly gleyed <40 cm SPL at +35 cm

Wetness Class :- III (using Fig 8)

Wetness Grade :- 3A

RPG0023/WJC

Available Water Wheat :- N/A

Potatoes :-

Moisture Deficit Wheat :-

Potatoes :-

Moisture Balance Wheat :-

Potatoes :-

Droughtiness Grade :-

Final ALC Grade :- 3A

Main Limiting Factor(s) :- Wetness

Remarks :- Using internal guidelines on slightly gleyed horizons

SITE NAME	PROFILE NUMBER	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Whatley Quarry Frome, Somerset BFCS 3994	4	0°	Grass	Av Rainfall :- 1065 ATO :- 1386 FC Days :- 219 Climatic grade:- 2	Limestone
	DATE 23/8/90	GRID REFERENCE			

Horizon Number	Lowest Av Depth	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
Topsoil	0-25	10YR43	MZCL	Free	Not mottled	Not compacted	-	-	-	Good common penetration		None	Clear
Subsoil 1	25-40	10YR44	MZCL	Occasional stone which stops auger (<5%)	Not mottled	Moderate CSAB	<0.5%			Good common penetration			
Subsoil 2	40-68	7.5YR56	C	Free	cdgm; poss cdom but masked by ochreous matrix	Moderate CAB	>0.5% Common earthworm channels			Common		Few	
Subsoil 3	68-85+	7.5YR56	C	Free	cdgm; poss cdom but masked by ochreous matrix	Moderate CAB	<0.5%			Few		Few	

Depth to Slowly Permeable Horizon :- Slightly gleyed 40-70 cm SPL at 68 cm

Wetness Class :- III (using Fig 8)

Wetness Grade :- 3A

RPG0023/WJC

Available Water Wheat :- N/A

Potatoes :-

Moisture Deficit Wheat :-

Potatoes :-

Moisture Balance Wheat :-

Potatoes :-

Droughtiness Grade :-

Final ALC Grade :- 3A

Main Limiting Factor(s) :- Wetness

Remarks :- Using internal guidance on slightly gleyed horizons

Whatley Quarry; additional fieldwork (5.11.90)

ASP No.	Texture	Colour	Depth	Notes
66	MZCL	10YR43	0-20	fdom; 5% vsst; towards 7.5YR
	MCL	7.5YR54	20-40	slight greying of matrix with cfom and cmn; cdogm from 35 cm
	HCL	7.5YR54	40-55	cdogm; cmn; 5YR variation in matrix colour
	C	7.5YR54	55-75+	reddening of matrix; 5YR56 from 60 cdogm, cmn; SPL form 60 5% vsst but not connected, low pores WC III
67	MZCL	10YR43	0-20	cfom
	MCL	7.5YR54	20-50	slight greying of matrix colour cmn; 10YR64 on ped face from 40 cm
	MCL	7.5YR54	50-65	cdogm; cmn
	HCL	7.5YR54	65-70	cdogm; cmn; poss SPL
	C	7.5YR54	70-85+	cdogm; cmn; SPL WC III
68	FSZL	10YR53	0-30	ffom; fm
	MCL	10YR54	30-45	cdgm
	HCL	10YR54	45-55	cdogm; cmn
	HCL	7.5YR56	55-85+	vmdogm; cmn; SPL from 70 cm 5YR variation from 70 cm WC III
69	FSZL	10YR53	0-30	grey matrix variation
	MCL	10YR54	30-45	grey mottles or ppf
	MCL	7.5YR54	45-70	cdogm; cmn
	HCL	7.5YR54	70-90+	ditto; no SPL WC II
70	FSZL	10YR43	0-25	fdom; grey matrix variation
	MCL	10YR43	25-60	slight colour change; towards 7.5YR; cmn
	C	7.5YR54	60-85+	cdom; cmn; SPL; 5YR patches in matrix WC III
71	MCL	10YR54	0-25	cdogm; cmn
	MCL	7.5YR54	25-70	cdogm; cmn; HCL from 40 cm
	C	2.5Y64	70-85+	abundant mn; cdogm, SPL WC III
72	FSZL	10YR54	0-25	
	MCL	7.5YR56	25-50	cdom; cmn; 5% vsst
	HCL	7.5YR56	50-60	cdom; cmn; 5% vsst
	C	10YR53	60-75+	cdgm, cmn; SPL WC III

ASP No.	Texture	Colour	Depth	Notes
73	FSZL	10YR53	0-25	fdogm
	MCL	7.5YR54	25-50	cdgm; cmn
	HCl	7.5YR54	50-70	cdgm; 10% vsst
			I	(3 Imp less than 70 cm)
				WC II (at best)
74	FSZL	10YR53	0-25	fdom; greying of matrix
	MCL	10YR54	25-50	cdom; cmn
	C	10YR56	50-70+	cdogm; 2.5Y62 mottles
				cmn; SPL
				WC III
75	FSZL	10YR53	0-20	cdom; greying of matrix
	MZCL	10YR54	20-40	cmn
	HCL	10YR54	40-50	poss grey ppf; cmn; poss cdom
	C	10YR56	50-70+	cmn; grey ppf; cdom
				SPL; red matrix variation
				WC III
76	FSZL	10YR53	0-25	cdom; greying of matrix
	MZCL	10YR54	25-42	cmn
	HCL	10YR54	42-60	cmn; common feint mottles
	C	7.5YR56	60-80+	cmn; poss grey ppf; poorly developed cdom; 5YR matrix variation; SPL from 65 cm
				WC III

[NOV-5]SJ

Whatley Quarry; additional fieldwork (5.11.90)

ASP No.	Texture	Colour	Depth	Notes
66	MZCL	10YR43	0-20	fdom; 5% vsst; towards 7.5YR
	MCL	7.5YR54	20-40	slight greying of matrix with cfom and cmn; cdogm from 35 cm
	HCL	7.5YR54	40-55	cdogm; cmn; 5YR variation in matrix colour
	C	7.5YR54	55-75+	reddening of matrix; 5YR56 from 60 cdogm, cmn; SPL form 60 5% vsst but not connected, low pores WC III
67	MZCL	10YR43	0-20	cfom
	MCL	7.5YR54	20-50	slight greying of matrix colour cmn; 10YR64 on ped face from 40 cm
	MCL	7.5YR54	50-65	cdogm; cmn
	HCL	7.5YR54	65-70	cdogm; cmn; poss SPL
	C	7.5YR54	70-85+	cdogm; cmn; SPL WC III
68	FSZL	10YR53	0-30	ffom; fm
	MCL	10YR54	30-45	cdgm
	HCL	10YR54	45-55	cdogm; cmn
	HCL	7.5YR56	55-85+	vmdogm; cmn; SPL from 70 cm 5YR variation from 70 cm WC III
69	FSZL	10YR53	0-30	grey matrix variation
	MCL	10YR54	30-45	grey mottles or ppf
	MCL	7.5YR54	45-70	cdogm; cmn
	HCL	7.5YR54	70-90+	ditto; no SPL WC II
70	FSZL	10YR43	0-25	fdom; grey matrix variation
	MCL	10YR43	25-60	slight colour change; towards 7.5YR; cmn
	C	7.5YR54	60-85+	cdom; cmn; SPL; 5YR patches in matrix WC III
71	MCL	10YR54	0-25	cdogm; cmn
	MCL	7.5YR54	25-70	cdogm; cmn; HCL from 40 cm
	C	2.5Y64	70-85+	abundant mn; cdogm, SPL WC III
72	FSZL	10YR54	0-25	
	MCL	7.5YR56	25-50	cdom; cmn; 5% vsst
	HCL	7.5YR56	50-60	cdom; cmn; 5% vsst
	C	10YR53	60-75+	cdgm, cmn; SPL WC III

ASP No.	Texture	Colour	Depth	Notes
73	FSZL	10YR53	0-25	fdogm
	MCL	7.5YR54	25-50	cdgm; cmn
	HCl	7.5YR54	50-70	cdgm; 10% vsst
			I	(3 Imp less than 70 cm)
				WC II (at best)
74	FSZL	10YR53	0-25	fdom; greying of matrix
	MCL	10YR54	25-50	cdom; cmn
	C	10YR56	50-70+	cdogm; 2.5Y62 mottles
				cmn; SPL
				WC III
75	FSZL	10YR53	0-20	cdom; greying of matrix
	MZCL	10YR54	20-40	cmn
	HCL	10YR54	40-50	poss grey ppf; cmn; poss cdom
	C	10YR56	50-70+	cmn; grey ppf; cdom
				SPL; red matrix variation
				WC III
76	FSZL	10YR53	0-25	cdom; greying of matrix
	MZCL	10YR54	25-42	cmn
	HCL	10YR54	42-60	cmn; common feint mottles
	C	7.5YR56	60-80+	cmn; poss grey ppf; poorly developed cdom; 5YR matrix variation; SPL from 65 cm
				WC III

[NOV-5]SJ