

SITE NAME Newquay		PROFILE NO. Pit 1	SLOPE AND ASPECT Flat	LAND USE Turnips	Av Rainfall: 1005 mm ATO: 1557 day °C	PARENT MATERIAL Calcareous Slates + Limestones	
JOB NO. 38/93		DATE 8/9/93	GRID REFERENCE SW 8480 6050 ASP 320	DESCRIBED BY Nigel Done	FC Days: 198 Climatic Grade: 1 Exposure Grade: 2	SOIL SAMPLE REFERENCES NAD/39	

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	22	MCL	10YR54	5% HR (6-2mm)	None	None	-	-	-	-	Many fine	None	Clear/ smooth
2	80+	C	10YR64	30% ZR <2cm 10% ZR >2cm 2% HR Total 42% Total	Few Distinct 10YR58	None	Moderate coarse angular blocky	Friable	Moderate	Well fissured around stones	Few fine	None	-

Profile Gleyed From: Not gleyed

Depth to Slowly Permeable Horizon: No SPL

Wetness Class: I

Wetness Grade: 2

NL336h

Available Water Wheat: 120 mm

Potatoes: 98 mm

Moisture Deficit Wheat: 93 mm

Potatoes: 83 mm

Moisture Balance Wheat: 27 mm

Potatoes: 15 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 2

Main Limiting Factor(s): Workability
Droughtiness
Exposure

Remarks:

SITE NAME Newquay		PROFILE NO. Pit 2	SLOPE AND ASPECT 1° SW	LAND USE Cereals	Av Rainfall: 1005 mm ATO: 1557 day °C	PARENT MATERIAL Calcareous Slates + Limestones	
JOB NO. 38/93		DATE 7/9/93	GRID REFERENCE Near ASP 43 SW 8385 6175	DESCRIBED BY PRW	FC Days: 198 Climatic Grade: 1 Exposure Grade: 3A	SOIL SAMPLE REFERENCES None	

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	28	MCL	10YR43	1% Visual ZR	None	None	Moderate Medium SAB	Friable	Good	Many	Common Fine	Slight	Smooth distinct
2	50	HCL	10YR44	21% sieved ZR	None	None	Moderate Medium SAB	Friable	Good	Many	Few Fine	Calcareous	Smooth distinct
3	85	C	10YR46	35% sieved ZR	None	None	Moderate Coarse SAB	Friable	Moderate	Many	Few Fine	None	Smooth abrupt
4	100+	C	10YR64	27% sieved ZR	None	None	-	Friable	Moderate	Many	Not observed	Slight	-

Profile Gleyed From: Not gleyed

Depth to Slowly Permeable Horizon: No SPL

Wetness Class: 1

Wetness Grade: 2

NL336h

Available Water Wheat: 140 mm
Potatoes: 117 mm

Moisture Deficit Wheat: 93 mm
Potatoes: 83 mm

Moisture Balance Wheat: 47 mm
Potatoes: 34 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 3A

Main Limiting Factor(s): Exposure

Remarks:
Exposure to 3A indicated by wind pruned trees.

SITE NAME		PROFILE NO.		SLOPE AND ASPECT		LAND USE		Av Rainfall: 1005 mm		PARENT MATERIAL			
Newquay		Pit 3		2° North		Perm Grass		ATO: 1557 day °C		Calcareous slates and limestones			
JOB NO.		DATE		GRID REFERENCE		DESCRIBED BY		FC Days: 198		SOIL SAMPLE REFERENCES			
38/93		14/9/93		Near ASP 172 SW 8330 6110		PRW		Climatic Grade: 1		PRW/79			
Exposure Grade: 2													

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	25	MCL	10YR43	1% sieved ZR	Common rusty root channels in top 10 cm	None	Moderate Coarse SAB	Friable	Moderate	Many	Few medium + many fine	None	Smooth abrupt
2	50	C	2.5Y62	2% sieved ZR	Common Distinct 10YR66	None	Moderate Coarse Prismatic	Firm	Moderate	<0.5% Biopores	Common fine	None	Smooth clear
3	90+	C	2.5Y62	2% sieved ZR	Many Distinct 10YR56	None	Weak Coarse Prismatic tending to Moderate CAB	Friable	Moderate	<0.5%	Few fine	None	-

Profile Gleyed From: 25 cm
Depth to Slowly Permeable Horizon: 25 cm
Wetness Class: IV
Wetness Grade: 3B

NL336h

Available Water Wheat: 116 mm
Potatoes: 116 mm
Moisture Deficit Wheat: 93 mm
Potatoes: 83 mm
Moisture Balance Wheat: 23 mm
Potatoes: 33 mm
Droughtiness Grade: 2 (Calculated to 90 cm)

Final ALC Grade: 3B
Main Limiting Factor(s): Wetness

Remarks:
SPL representative of auger borings in valley depression.

SITE NAME Newquay		PROFILE NO. Pit 4	SLOPE AND ASPECT Flat	LAND USE Cereals	Av Rainfall: 1005 mm ATO: 1557 day °C	PARENT MATERIAL Calcareous slates + limestones	
JOB NO. 38/93		DATE 15/9/93	GRID REFERENCE Between ASP 132 & 156 SW 8420 6125	DESCRIBED BY PB/PRW	FC Days: 198 Climatic Grade: 1 Exposure Grade: 2	SOIL SAMPLE REFERENCES PRW/75	

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	28	MCL	10YR4/4	14% <2cm sieved ZR	None	None	Moderate fine SAB	Friable	Good	Many	Common fine	Calcareous	Smooth clear
2	48	HCL	10YR3/4	40% >2cm 25% <2cm 65% sieved ZR	None	None	Moderate fine SAB	Friable	Good	Many	Few fine	Slight	Abrupt wavy
3	100 (assumed to 120 for AP)	C	2.5Y5/6	65% ZR visual comparison with horizon above	None	None	Difficult to determine. Probably moderate fine SAB	Friable	Good	Many	Very few fine	None	-

Profile Gleyed From: Not gleyed	Available Water	Wheat: 134 mm	Final ALC Grade: 2
Depth to Slowly Permeable Horizon: No SPL		Potatoes: 99 mm	Main Limiting Factor(s): Workability Exposure
Wetness Class: 1	Moisture Deficit	Wheat: 93 mm	
Wetness Grade: 2		Potatoes: 83 mm	Remarks:
	Moisture Balance	Wheat: 41 mm	
		Potatoes: 16 mm	
NL336h	Droughtiness Grade:	1 (Calculated to 120 cm)	

SITE NAME		PROFILE NO.	SLOPE AND ASPECT		LAND USE		Av Rainfall: 1005 mm		PARENT MATERIAL					
Newquay		Pit 5	1° North		Permenent Grass		ATO: 1557 day °C		Calcareous Slates + Limestones					
JOB NO.		DATE	GRID REFERENCE		DESCRIBED BY		FC Days: 198		SOIL SAMPLE REFERENCES					
38/93		15/9/93	Near ASP 242 SW 8450 6200		PRW/PB		Climatic Grade: 1		PRW/76					
Exposure Grade: 2														

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	10	MCL	10YR5/2	6% <2cm sieved ZR	Few (<2%) rusty root channels; not gleyed	None	Moderate fine subangular blocky	Friable	Moderate	Many	Many fine + v. fine	None	Clear smooth
2	21	HCL	10YR5/2	16% <2cm sieved ZR	Common ochreous mottles + rusty root channels; gleyed	None	Moderate medium angular blocky	Friable	Moderate	Many	Common fine	None	Abrupt smooth
3	110 (assumed 120 cm for AP)	C	2.5Y6/2	8% <2cm sieved ZR	Many ochreous 10YR6/8 - gleyed SPL	None	Very coarse moderate prismatic	Firm	Poor	<0.5% biopores >0.5 mm in ped. Exped fissures	Few fine following ped faces	None	-

Profile Gleyed From: 10 cm	Available Water	Wheat: 118 mm	Final ALC Grade: 3B
Depth to Slowly Permeable Horizon: 21 cm		Potatoes: 95 mm	Main Limiting Factor(s): Wetness
Wetness Class: IV	Moisture Deficit	Wheat: 93 mm	
Wetness Grade: 3B		Potatoes: 83 mm	
	Moisture Balance	Wheat: +25 mm	Remarks:
		Potatoes: +12 mm	Water in pit - from SPL/topsoil interface

SITE NAME		PROFILE NO.		SLOPE AND ASPECT		LAND USE		Av Rainfall: 1005 mm		PARENT MATERIAL			
Newquay		Pit 6		3° North		Grass		ATO: 1557 day °C		Calcareous Slates + Limestones			
JOB NO.		DATE		GRID REFERENCE		DESCRIBED BY		FC Days: 198		SOIL SAMPLE REFERENCES			
38/93		15/9/93		ASP 334; SW 8385 6040		GMS		Climatic Grade: 1		GMS/255			
Exposure Grade: 3A													

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	30	MCL	10YR43	1% HR >2cm 11% ZR >2mm 12% Total Sieved + Displ	None	None	WCSAB	Friable	-	Good	Common fine + v. fine	None	Smooth clear
2	55	HCL	7.5YR34	31% HR/ZR >2mm (sieved + displ)	None	None	WCSAB	Friable	Moderate	Good	Common fine + v. fine	None	Wavy abrupt
3	80+	HCL	2.5Y64	46% ZR >2mm (sieved + displ)	None	None	Structure determined by horizontally bedded slate fragments ⇒ v. fine platy	-	Assumed moderate	Good	V. fine between stones	None	-

Profile Gleyed From: Not	Available Water	Wheat: 154 mm	Final ALC Grade: 3A
Depth to Slowly Permeable Horizon: None		Potatoes: 115 mm	
Wetness Class: I	Moisture Deficit	Wheat: 93 mm	Main Limiting Factor(s): Exposure
Wetness Grade: 2		Potatoes: 83 mm	
	Moisture Balance	Wheat: 61 mm	Remarks:
		Potatoes: 32 mm	
	Droughtiness Grade:	1 (Calculated to 120 cm)	ZR used in droughtiness calculation. Boundary between horizons 2 and 3 has pockets of HCL 10YR56.

SITE NAME Newquay		PROFILE NO. Pit 7	SLOPE AND ASPECT 5° East	LAND USE Ploughed	Av Rainfall: 1005 mm ATO: 1557 day °C	PARENT MATERIAL Calcareous slates + limestones
JOB NO. 38/93		DATE 16/9/9	GRID REFERENCE ASP 31; SW 8445 6180	DESCRIBED BY GMS	FC Days: 198 Climatic Grade: 1 Exposure Grade: 2	SOIL SAMPLE REFERENCES GMS/256 + GMS/257

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	25	MCL	10YR54	>1% >2cm 5% HR + ZR >2mm sieved/ displ	None	None	Recently ploughed	-	-	Good	Common fine	None	Smooth clear
2	38	HCL	10YR43	18% >2mm HR + ZR sieved/ displ	None	None	WCSAB	Friable	Moderate	Good	Common v. fine	None	Wavy abrupt
3	70+	CSZL	10YR66	36% >2mm ZR sieved/displ	None	None	MCSAB (shape determined by stones)	Friable	Moderate	Good	Few v. fine	None	-

Profile Gleyed From: Not

Depth to Slowly Permeable Horizon: None

Wetness Class: I

Wetness Grade: 2

NL336h

Available Water Wheat: 157 mm

Potatoes: 116 mm

Moisture Deficit Wheat: 93 mm

Potatoes: 83 mm

Moisture Balance Wheat: 64 mm

Potatoes: 33 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 2

Main Limiting Factor(s): Exposure
Workability

Remarks:

ZR used in droughtiness calculations

SITE NAME		PROFILE NO.	SLOPE AND ASPECT	LAND USE	Av Rainfall: 1005 mm	PARENT MATERIAL
Newquay		Pit 8	6° North East	Cereal Stubble	ATO: 1557 day °C	
JOB NO.		DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 198	SOIL SAMPLE REFERENCES
38/93		17/9/93	ASP 140; SW 8500 6130	GMS	Climatic Grade: 1	
					Exposure Grade: 2	

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	30	MCL	10YR43	<1% >2cm 14% ZR >2mm sieved/displ	None	None	WCSAB	Friable	-	Good	Many fine	None	Smooth abrupt
2	70+	CSL	10YR54	52% ZR >2mm sieved/displ	None	None	WCSAB Structure determined by fragments of stones which are irregularly distributed in horizon but become more horizontal with depth	Friable	Good	Good	Few observed into this horizon	None	-

Profile Gleyed From: Not

Depth to Slowly Permeable Horizon: None

Wetness Class: I

Wetness Grade: 2

NL336h

Available Water Wheat: 148 mm

Potatoes: 109 mm

Moisture Deficit Wheat: 93 mm

Potatoes: 83 mm

Moisture Balance Wheat: 55 mm

Potatoes: 26 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 2

Main Limiting Factor(s): Workability Exposure

Remarks:

Stone content in Horizon 2 measured as 50% at 40 cm and 54% at 70 cm.

SITE NAME		PROFILE NO.	SLOPE AND ASPECT		LAND USE		Av Rainfall: 1005 mm		PARENT MATERIAL					
Newquay		Pit 9	Flat		Stubble		ATO: 1557 day °C		Calc. slates and limestones					
JOB NO.		DATE	GRID REFERENCE		DESCRIBED BY		FC Days: 198		SOIL SAMPLE REFERENCES					
38/93		21/9/93	SW 8320 6030 ASP 342		PRW		Climatic Grade: 1		NAD/47					
Exposure Grade: 3A														

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	32	MCL	10YR4/4	10% <2cm ZR visual	None	None	Moderately Developed Medium SAB	Friable	Moderate	Many	Common fine + v. fine	Slight	Smooth/clear
2	55	HCL	10YR5/4	18% <2cm ZR 12% >2cm HR 30% Total sieved	None	None	Moderately Developed Medium SAB	Friable	Moderate	Many	Few fine	None	Smooth/Abrupt
3	95	C	10YR6/6	3% >2cm 15% <2cm 18% ZR sieved	None	None	Moderately Developed Coarse SAB	Friable	Moderate	Common	Few Fine	None	-

Profile Gleyed From: Not gleyed

Depth to Slowly Permeable Horizon: No SPL

Wetness Class: 1

Wetness Grade: 2

NL336h

Available Water Wheat: 132 mm

Potatoes: 108 mm

Moisture Deficit Wheat: 93 mm

Potatoes: 83 mm

Moisture Balance Wheat: 39 mm

Potatoes: 25 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 3A

Main Limiting Factor(s): Exposure

Remarks:

ZR used in droughtiness calculation; clay assumed to 120 cm.

SITE NAME		PROFILE NO.	SLOPE AND ASPECT		LAND USE		Av Rainfall: 1005 mm		PARENT MATERIAL			
Newquay		Pit 10	2° East		Perm Grass		ATO: 1557 day °C		Calcareous Slates + Limestones			
JOB NO.		DATE	GRID REFERENCE		DESCRIBED BY		FC Days: 198		SOIL SAMPLE REFERENCES			
38/93		22/9/93	SW8308 6172 Near ASP 36		PRW		Climatic Grade: 1		NAD/48			
Exposure Grade: 2												

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	28	MCL	10YR4/4	16% <2cm ZR sieved	None	None	Moderately Developed Medium SAB	Friable	Moderate	Many	Many fine + v. fine	Strongly calcareous	Smooth abrupt
2	41	HCL	10YR5/4	3% >2cm 16% <2cm 19% ZR sieved	None	None	Moderately Developed Medium SAB	Friable	Moderate	Many	Common fine	Yes (slight)	Smooth abrupt
3	53	C	2.5Y6/4	25% ZR sieved	Common 10YR6/6 gleyed	None	Moderately Developed Coarse SAB	Friable	Moderate	Few	Few fine	Yes strongly	Smooth abrupt
4	85	C	2.5Y6/0	8% <2cm ZR sieved	Many 10YR6/8 gleyed SPL	None	Moderately Developed Coarse ABK	Firm	Poor	<0.5% biopores	Few fine	Yes strongly	-

Profile Gleyed From: 41
Depth to Slowly Permeable Horizon: 53
Wetness Class: III
Wetness Grade: 3A

Available Water Wheat: 125 mm
Potatoes: 103 mm
Moisture Deficit Wheat: 93 mm
Potatoes: 83 mm
Moisture Balance Wheat: 32 mm
Potatoes: 20 mm
Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 3A
Main Limiting Factor(s): Wetness

Remarks:
Clay assumed to 120 cm for AP calculation.