HARD LIGHT SANDY LOAM OVER RED PRISMATIC CLAY

General Description: *Hard setting loamy sand to light sandy loam with a bleached sub-surface layer, abruptly overlying a red clay with coarse prismatic to weak columnar structure, calcareous with depth*

Landform: Very gently sloping alluvial plain

Substrate: Fine grained alluvium, mantled by fine grained carbonate.

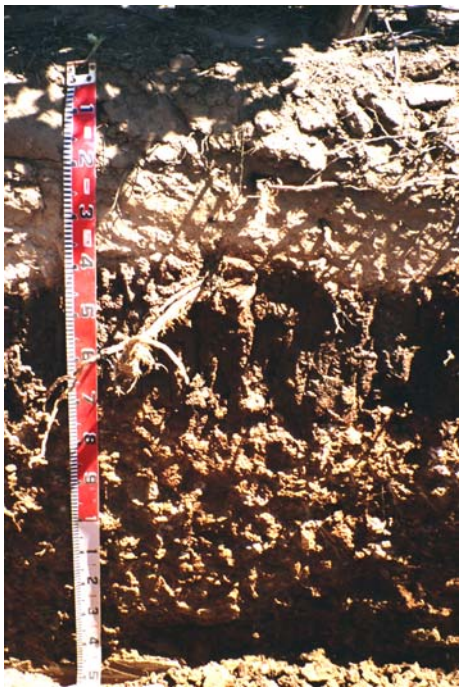
Vegetation:

Type Site: Site No.: CL046

1:50,000 sheet:	6729-3 (Truro)	Hundred:	Moorooroo
Annual rainfall:	510 mm	Sampling date:	06/11/06
Landform:	Alluvial flat, 0% slope.		
Surface:	Hard setting with no stones.		

Soil Description:

Depth (cm)	*Description*
0-10	Dark brown firm light fine sandy loam with weak fine granular structure. Abrupt to:
10-20	Brown firm massive loamy fine sand. Sharp to:
20-28	Brown firm massive light sandy loam. Clear to:
28-40	Pink (bleached) and yellowish red hard massive clayey sand. Abrupt to:
40-65	Dark reddish brown with dusky red clay skins, extremely hard medium clay with strong coarse prismatic structure. Clear to:
65-90	Red and yellowish red with dark reddish brown clay skins, very hard sandy light medium clay with moderate medium subangular blocky structure and 2-10% fine and nodular carbonate segregations. Gradual to:
90-130	Yellowish red and dark reddish brown very hard sandy light clay with weak coarse prismatic parting to subangular blocky structure, and 2-10% fine and nodular carbonate segregations. Gradual to:
130-160	Yellowish red, light olive brown, dark brown and yellowish brown mottled very hard fine sandy medium clay with 2-10% fine carbonate.



Classification: Calcic, Subnatric, Red Sodosol; thick, non-gravelly, loamy / clayey, deep

Summary of Properties

Drainage: Well to imperfectly drained. Water may perch on top of the clayey subsoil for a week to several weeks following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderate, as indicated by the exchangeable cation data. Subsurface layers with low total cations have marginal nutrient retention capacity. All tested nutrient at sampling site are in adequate supply. Note that high copper levels are probably caused by fungicide residues.

pH: Slightly alkaline at the surface, alkaline with depth.

Rooting depth: 130 cm in pit, but few roots below 65 cm.

Barriers to root growth:

Physical: The hard subsoil clay presents a barrier to even root distribution patterns.

Chemical: There are no apparent chemical barriers.

Water holding capacity: (Estimates for potential root zone of irrigated crops)

Total available: 100 mm
Readily available: 40 mm

Seedling emergence: Fair due to hard setting, sealing surface.

Workability: Fair. Surface soil tends to puddle if worked too wet, and shatter if worked too dry.

Erosion Potential

Water: Low. Erodibility is very high, but slope is negligible.

Wind: Moderately low.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	CO_3 %	EC 1:5 dS/m	ECe dS/m	Cl mg/kg	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4-S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
												Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-10	7.9	7.5	0	0.10	0.81	25	1.79	50	314	6.4	1.3	45.4	143	99.5	6.22	11.8	9.03	1.73	0.17	0.83	1.4
10-20	7.6	7.2	0	0.06	0.62	17	0.65	33	266	2.7	1.0	11.5	129	105	1.60	6.6	4.82	1.08	0.07	0.62	1.1
20-28	7.6	7.1	0	0.05	-	16	0.62	13	247	2.0	1.0	4.37	92	64.3	0.72	4.8	3.14	0.94	0.12	0.57	2.5
28-40	7.9	7.4	0	0.05	0.50	13	0.16	6	225	1.3	1.1	1.79	33	34.8	0.23	5.4	3.14	1.33	0.37	0.55	6.9
40-65	8.2	7.5	0	0.13	0.67	25	0.41	2	436	4.8	2.0	2.98	48	25.5	0.27	23.2	12.0	7.79	2.26	1.15	9.7
65-90	9.0	8.2	2.1	0.20	0.93	28	0.29	2	354	11.5	2.1	1.49	25	39.8	0.13	19.7	10.4	5.93	2.54	0.86	12.9
90-130	9.2	8.4	2.5	0.22	1.21	47	0.14	2	337	16.6	2.6	1.19	33	54.4	0.19	17.9	8.72	6.12	2.24	0.85	12.5
130-160	8.8	8.3	1.3	0.31	1.80	119	0.13	5	383	48.3	3.5	1.10	37	38.7	0.31	20.6	9.16	7.92	2.47	1.02	12.0

Note: Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), a measure of the soil's capacity to store and release major nutrient elements.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC, in this case estimated by the sum of cations.