DARK GRADATIONAL LOAM

General Description: *Dark loam becoming more clayey with depth grading to a highly calcareous clay within 100 cm.*

Landform: Flats and terraces of major water courses

Substrate: Fine grained alluvium mantled by fine carbonate.

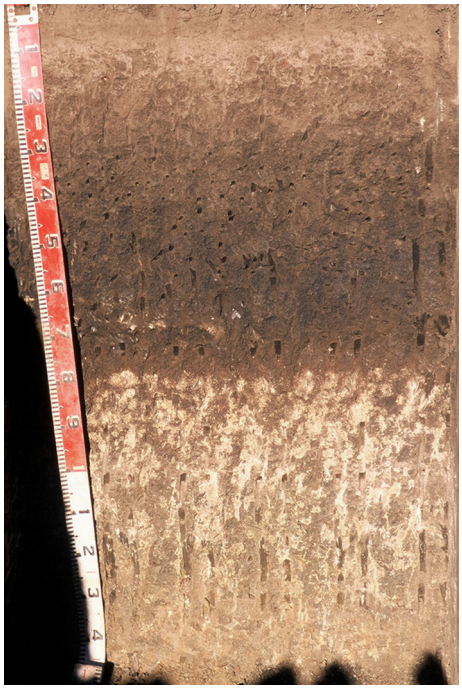
Vegetation:

Type Site:

Site No.:	CM104	1:50,000 mapsheet:	6629-4 (Halbury)
Hundred:	Upper Wakefield	Easting:	286850
Section:	277	Northing:	6229500
Sampling date:	12/05/2004	Annual rainfall:	490 mm average

Terrace of Wakefield River. Hard setting surface with no stones.

Soil Description:



Depth (cm)	*Description*
0-10	Dark brown firm loam with weak fine granular structure. Clear to:
10-20	Dark brown hard clay loam with weak fine polyhedral structure. Clear to:
20-40	Very dark grey hard light medium clay with moderate medium polyhedral structure. Diffuse to:
40-80	Very dark grey and dark brown mottled hard medium clay with weak coarse prismatic breaking to strong polyhedral structure. Clear to:
80-120	Very dark greyish brown and dark yellowish brown mottled hard highly calcareous medium clay with weak coarse prismatic breaking to strong medium polyhedral structure and 20-50% fine carbonate segregations. Gradual to:
120-145	Brown and yellowish brown mottled hard light clay with moderate coarse angular blocky structure and 2-10% fine carbonate segregations.

Classification: Sodic, Hypercalcic, Black Dermosol; medium, non-gravelly, loamy / clayey, deep

Summary of Properties

Drainage: Moderately well to imperfectly drained. The coarsely structured clayey subsoil has moderately low permeability, so the profile is not freely draining. Waterlogging may occur for periods of a week or more following heavy or prolonged rainfall.

Fertility: Inherent fertility is high. Apart from phosphorus and nitrogen, deficiencies of other nutrients will not occur routinely.

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

Rooting depth: 120 cm in pit but few roots below 80 cm.

Barriers to root growth:

Physical: The deep subsoil clay imposes a slight restriction on root growth.

Chemical: Elevated salt (EC) and chloride levels affect some sensitive plants. Clayey substrate material restricts salt leaching.

Waterholding capacity: Approximately 150 mm (total available) for annual crop and pasture plants. Approximately 50 mm (readily available) in potential grape vine rootzone of 80 cm.

Seedling emergence: Fair due to hard setting sealing surface. Gypsum should ameliorate this condition.

Workability: Fair. Soil tends to shatter if worked too dry and puddle if worked too wet. Gypsum will help.

Erosion Potential:

Water: Low

Wind: Low.

Laboratory Data

Depth cm	pH H_2O	pH $CaCl_2$	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 mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
												Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-10	7.7	7.1	0	0.32	1.703	86	2.53	27	685	97	1.0	-	-	-	-	19.1	13.7	3.49	0.34	1.64	1.8
10-20	7.7	7.0	0	0.22	0.871	65	1.76	10	504	80	0.8	-	-	-	-	19.4	14.6	3.31	0.27	1.20	1.4
20-40	7.8	7.2	0	0.28	0.551	64	1.35	7	323	235	0.9	-	-	-	-	27.2	21.7	4.29	0.44	0.83	1.6
40-80	8.0	7.5	1.2	0.81	1.355	307	1.10	8	349	680	1.1	-	-	-	-	34.2	23.1	9.12	1.08	0.88	3.2
80-120	8.2	7.8	7.9	1.47	4.34	845	0.35	7	408	1693	1.1	-	-	-	-	29.8	14.9	11.6	2.29	0.97	7.7
120-145	8.6	8.1	4.8	1.21	6.90	1123	0.24	3	457	142	1.6	-	-	-	-	25.9	8.47	13.1	3.35	1.06	12.9

Note: Sum of cations is an estimate of cation exchange capacity, a measure of the soil's capacity to store and release nutrient elements.
ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the sum of cations.

Further information: DEWNR Soil and Land Program