

<b>Site code<sup>1</sup></b>	<b>MM170</b>
<b>Location</b>	<b>Enfield (Singer Lane), Ballarat district, south-west Victoria</b>
<b>Landform</b>	Gently undulating sedimentary plains
<b>Geology</b>	Quaternary alluvium: <i>fluvial gravel, sand, silt</i>
<b>Element</b>	Side slopes

### Profile morphology

Horizon	Depth (cm)	Description
A1	0–20	Dark greyish brown (10YR4/2); fine sandy clay loam; apedal massive structure; weak consistence (dry); clear boundary to:
A2	20–60	Brownish yellow (10YR6/6), very pale brown (10YR7/3 dry) conspicuously bleached; fine sandy clay loam; apedal massive structure; firm consistence (dry); sharp boundary to:
B21	60+	Yellowish brown (10YR5/4 moist) with red (2.5YR4/6) mottles; medium clay; moderate fine blocky structure; firm consistence (moderately moist).

**ASC:** Magnesian, Mottled-mesonatric, Brown Sodosol

### Analytical data<sup>2</sup>

Site MM170 Horizon	Sample depth cm	pH		EC	NaCl	Ex Ca	Ex Mg	Ex K	Ex Na	Ex Al	Ex acidity
		H <sub>2</sub> O	CaCl <sub>2</sub>	dS/m	%	cmol <sub>c</sub> /kg	cmol <sub>c</sub> /kg	cmol <sub>c</sub> /kg	cmol <sub>c</sub> /kg	mg/kg	cmol <sub>c</sub> /kg
A1	0–20	5.7	N/R	0.03	N/R	1.1	1.1	0	0.2	N/R	4.1
A2	20–60	5.8	N/R	0.03	N/R	0.9	0.9	0	0.3	N/R	3.2
B21	60+	5.8	N/R	0.04	N/R	0.2	0.2	0.2	0.7	N/R	0.8

Site MM170 Horizon	Sample depth cm	FC (-10kPa) %	PWP (-1500kPa) %	KS %	FS %	Z %	C %	Org C %	Bulk density t m <sup>-3</sup>
A1	0–20	24.1	10.2	17	47	24	11	2.1	1.09
A2	20–60	N/R	N/R	13	40	20	27	0.5	N/R
B21	60+	36.8	23.7	7	18	10	64	N/R	1.29

### Management considerations

These soils have hardsetting topsoils and exhibit a strong texture contrast between the surface soil and the subsoil with a bleached A2 horizon. The bleached A2 horizon is an indication of restricted drainage, poor soil structure (often massive) and low organic matter and nutrients.

Sodic and mottled subsoils are other key features of this soil and are an indication of periodic waterlogging. Improvement of soil structure through increased organic matter would be useful while management options include reduced tillage, improving organic matter content and altering the subsoil through artificial drainage (ripping, mole drainage) and/or chemical amelioration (gypsum) to improve structure.

<sup>1</sup> Source: Maher JM, Martin JJ 1987 Soils and landforms of south-western Victoria. Department of Agriculture and Rural Affairs. Research Report No. 40.

<sup>2</sup> Source: Government of Victoria, State Chemistry Laboratory.