

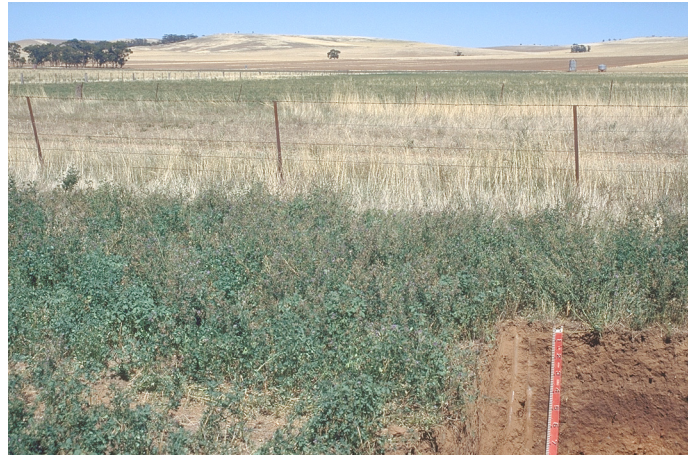
## HARD CLAY LOAM OVER SODIC RED CLAY

**General Description:** *Thick reddish brown massive clay loam overlying a dark reddish brown strongly structured clay, calcareous with depth*

**Landform:** Valley flats and outwash fans

**Substrate:** Alluvial clays (Pooraka Formation) with weak soft carbonate

**Vegetation:**

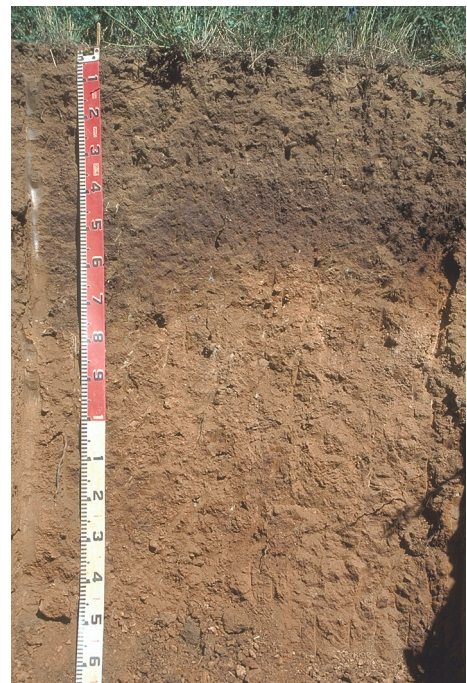


|                   |                |         |                    |                   |
|-------------------|----------------|---------|--------------------|-------------------|
| <b>Type Site:</b> | Site No.:      | CM086   | 1:50,000 mapsheet: | 6630-4 (Spalding) |
|                   | Hundred:       | Ayers   | Easting:           | 290600            |
|                   | Section:       | 803     | Northing:          | 6288450           |
|                   | Sampling date: | 27/2/97 | Annual rainfall:   | 440 mm average    |

Flat, 0% slope. Hard setting surface, no stone.

### Soil Description:

| Depth (cm) | Description  |
|------------|--|
| 0-13       | Dark reddish brown massive hard light clay loam with 2-10% siltstone gravel. Clear to:   |
| 13-35      | Dark reddish brown clay loam with moderate polyhedral structure and 2-10% siltstone gravel. Abrupt to:   |
| 35-70      | Dark reddish brown medium clay with strong polyhedral structure and 2-10% siltstone gravel. Clear to:  |
| 70-100     | Yellowish red very highly calcareous massive light clay with 2-10% soft carbonate segregations and 2-10% siltstone and quartzite gravel. Gradual to: |
| 100-150    | Red very highly calcareous light medium clay with moderate polyhedral structure and 2-10% siltstone gravel.  |



**Classification:** Calcic, Subnatric, Red Sodosol; thick, slightly gravelly, clay loamy / clayey, deep



## Summary of Properties

**Drainage:** Moderately well drained. Water will "perch" on top of the subsoil clay for periods of a week or so following prolonged rainfall.

**Fertility:** Natural fertility is high. Test results indicate no nutrient deficiencies. Organic carbon levels are satisfactory.

**Ph:** Slightly alkaline at the surface (possibly caused by road dust), alkaline with depth.

**Rooting depth:** 150 cm in pit.

### Barriers to root growth:

**Physical:** None, apart from moderate soil strength.

**Chemical:** None apparent, although manganese may become toxic if soil acidity increases.

**Waterholding capacity:** More than 150 mm in rootzone.

**Seedling emergence:** Fair, due to hard setting surface. Gypsum response is likely.

**Workability:** Fair. Surface structure is easily destroyed by compaction or working too wet or too dry.

### Erosion Potential:

**Water:** Low.

**Wind:** Low.

## Laboratory Data

| Depth<br>cm | pH<br>H <sub>2</sub> O | pH<br>CaCl <sub>2</sub> | CO <sub>3</sub><br>% | EC1:5<br>dS/m | ECe<br>dS/m | Org.C<br>% | Avail.<br>P<br>mg/kg | Avail.<br>K<br>mg/kg | SO <sub>4</sub><br>mg/kg | Boron<br>mg/kg | Trace Elements mg/kg<br>(EDTA) |     |     |     | CEC<br>cmol<br>(+)/kg | Exchangeable Cations<br>cmol(+)/kg |     |      |      | ESP  |
|-------------|------------------------|-------------------------|----------------------|---------------|-------------|------------|----------------------|----------------------|--------------------------|----------------|--------------------------------|-----|-----|-----|-----------------------|------------------------------------|-----|------|------|------|
|             |                        |                         |                      |               |             |            |                      |                      |                          |                | Cu                             | Fe  | Mn  | Zn  |                       | Ca                                 | Mg  | Na   | K    |      |
| Paddock     | 7.8                    | 7.0                     | 0                    | 0.20          | -           | 1.9        | 58                   | 858                  | 13                       | 1.8            | 3.1                            | 164 | 301 | 3.4 | 16.0                  | 6.8                                | 3.3 | 0.36 | 1.82 | 2.3  |
| 0-13        | 7.3                    | 6.7                     | 0                    | 0.19          | -           | 1.7        | 35                   | 734                  | 12                       | 1.9            | 3.3                            | 170 | 330 | 2.9 | 15.0                  | 6.9                                | 3.5 | 0.38 | 1.40 | 2.5  |
| 13-35       | 7.7                    | 6.9                     | 0                    | 0.07          | -           | 0.5        | 20                   | 448                  | 5.6                      | 1.4            | 4.7                            | 166 | 432 | 1.4 | 11.8                  | 6.1                                | 2.7 | 0.75 | 0.79 | 6.4  |
| 35-70       | 8.1                    | 7.3                     | 0                    | 0.13          | -           | 0.4        | 20                   | 514                  | 12                       | 2.9            | 4.1                            | 112 | 398 | 1.9 | 18.6                  | 6.6                                | 7.7 | 1.24 | 1.16 | 6.7  |
| 70-100      | 8.7                    | 8.2                     | 10.9                 | 0.33          | -           | 0.1        | 31                   | 464                  | 26                       | 2.6            | 1.3                            | 5.5 | 8.8 | 3.5 | 12.6                  | 4.6                                | 7.5 | 0.84 | 0.94 | 6.7  |
| 100-150     | 8.7                    | 8.1                     | 3.0                  | 0.48          | -           | 0.1        | 19                   | 496                  | 39                       | 2.4            | 1.4                            | 14  | 34  | 3.4 | 12.8                  | 4.3                                | 6.6 | 1.53 | 0.96 | 12.0 |

**Note:** Paddock sample bulked from cores (0-10 cm) taken around the pit.

CEC (cation exchange capacity) is 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.

**Further information:** [DEWNR Soil and Land Program](#)

