

Project Name: SCEAM - Soil Condition Evaluation & Monitoring Project, Tasmania
Project Code: SCEAM **Site ID:** S6 **Observation ID:** 1
Agency Name: TAS Department of Primary Industries and Fisheries

Site Information

Desc. By:	R. Moreton	Locality:	Chris Allwright. "Tarella" near Kempton
Date Desc.:	04/04/06	Elevation:	162 metres
Map Ref.:	GPS S.A. Off	Rainfall:	528
Northing/Long.:	5290634 AMG zone: 55	Runoff:	Moderately rapid
Easting/Lat.:	510711 Datum: GDA94	Drainage:	Imperfectly drained

Geology

ExposureType:	Soil pit	Conf. Sub. is Parent. Mat.:	Probable
Geol. Ref.:	Rq	Substrate Material:	Soil pit, Sandstone

Landform

Rel/Slope Class:	Rolling rises 9-30m 10-32%	Pattern Type:	Low hills
Morph. Type:	Lower-slope	Relief:	No Data
Elem. Type:	Hillslope	Slope Category:	Gently inclined
Slope:	9 %	Aspect:	295 degrees

Surface Soil Condition Soft

Erosion

Soil Classification

Australian Soil Classification:	Mapping Unit:	N/A
Sodic Brown Brown Dermosol Medium Non-gravelly Clay-loamy Clayey Deep	Principal Profile Form:	N/A
ASC Confidence:	Great Soil Group:	N/A
All necessary analytical data are available.		

Site Disturbance

Vegetation

Surface Coarse Fragments 2-10%, cobbly, 60-200mm, ,

Profile Morphology

Ap	0 - 0.18 m	Very dark greyish brown (10YR3/2-Moist); Dark greyish brown (10YR4/2-Dry); , 0-0% ; Sandy clay loam; Moderate grade of structure, 5-10 mm, Subangular blocky; Moderate grade of structure, 20-50 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Dry; Loose consistence; Non-plastic; Slightly sticky; 0-2%, medium gravelly, 6-20mm, subrounded, dispersed, coarse fragments; Common, fine (1-2mm) roots; Abrupt, Smooth change to -
A2	0.18 - 0.28 m	Very dark greyish brown (10YR3/2-Moist); Brown (10YR4/3-Dry); Mottles, 7.5YR31, 2-10% , 5-15mm, Distinct; Fine sandy clay loam; Massive grade of structure; Weak grade of structure, 2-5 mm, Polyhedral; Earthy fabric; Dry; Firm consistence; Non-plastic; Slightly sticky; 0-2%, coarse gravelly, 20-60mm, subangular, dispersed, coarse fragments; Few (2 - 10 %), Ferromanganiferous, Fine (0 - 2 mm), Nodules; Few, fine (1-2mm) roots; Abrupt, Wavy change to -
B1t	0.28 - 0.6 m	Very dark brown (10YR2/2-Moist); Mottles, 10YR34, 2-10% , 0-5mm, Distinct; Light medium clay; Strong grade of structure, 100-200 mm, Columnar; Strong grade of structure, 20-50 mm, Prismatic; Smooth-ped fabric; Medium, (5 - 10) mm crack; Moderately moist; Strong consistence; Very plastic; Normal plasticity; Very sticky; Common cutans, 10-50% of ped faces or walls coated, faint; Common, fine (1-2mm) roots; Gradual, Smooth change to -
B2t	0.6 - 0.85 m	Brown (7.5YR4/4-Moist); Mottles, 10YR32, 2-10% , 0-5mm, Distinct; Medium clay; Moderate grade of structure, 20-50 mm, Subangular blocky; Weak grade of structure, 10-20 mm, Subangular blocky; Smooth-ped fabric; Moderately moist; Very firm consistence; Very plastic; Normal

plasticity; Very sticky;

Few (2 - 10 %), Earthy, Coarse (6 - 20 mm), Veins; Clear, Smooth change to -

B3t 0.85 - 1.1 m Olive brown (2.5Y4/4-Moist); ; Light medium clay; Massive grade of structure; Smooth-
ped fabric;
Moderately moist; Firm consistence; Very plastic; Normal plasticity; Very sticky; Many
cutans, >50% of
ped faces or walls coated, distinct; Few (2 - 10 %), Other, Medium (2 -6 mm), Nodules;

Morphological Notes

Ap Penetration resistance: Firm
A2 Penetration resistance: Firm. A2 horizon has variable depth and thickness. Rnages from
17cm to
29cm at its thickest extent. A2 not sampled when the pit was described. This sample likely
taken
during transect sampling.
B1t Penetration resistance: Stiff. Sample S6C sampled 30-60cm
B2t Penetration resistance: Stiff. Sample S6D sampled 60-85cm
B3t Penetration resistance: Stiff. Sample S6C sampled 85-110cm

Observation Notes

Vegetation: Barley stubble. Substrate not reached, possibly sandstone.

Site Notes

Mode of Geomorphic Activity: Eroded or aggraded, Agent: Sheet Wash. No inundation

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Laboratory Test Results:

Depth m	pH	1:5 EC dS/m	Ca	Exchangeable Mg	Cations K	Na Cmol (+)/kg	Exchangeable Acidity	CEC	ECEC	ESP %
0 - 0.075	4.9C 5.6A	0.203A	6.13A	4.38	0.59	0.38	0.09D 0.02G 0.16A		11.64B	
0.2 - 0.275	5.7C 6.9A	0.083A	9.17A	15.53	0.39	1.99	0.1D 0G 0.11A		27.19B	
0.3 - 0.6	7.1C 8A	0.203A	6.45A	25.87	0.45	3.79	0.03D 0G 0.04A		36.6B	
0.6 - 0.85	8C 9A	0.301A	5.01A	23.48	0.44	4.76	0.01D 0G 0.01A		33.7B	
0.85 - 1.1	8.4C 9.2A	0.714A	5.07A	24.78	0.46	6.03	0D 0G 0A		36.34B	

Depth m	CaCO3 %	Organic C Clay %	Avail. P mg/kg	Total P %	Total N %	Total K %	Bulk Density Mg/m3	Particle GV CS	Size FS	Analysis Silt
0 - 0.075		1.83B	71H 15I		0.16D					
0.2 - 0.275		1.09B	13H 3.2I		0.08D					
0.3 - 0.6		0.97B	5H 1.9I		0.09D					
0.6 - 0.85		0.26B	4H 1.7I		0.04D					
0.85 - 1.1		0.07B	5H 1.7I		0.02D					

Laboratory Analyses Completed for this profile

10B_NR	Extractable sulfur (mg/kg) - Not recorded
12_NR_FE	Total element - Fe(%) - Not recorded
12A1_CU	DTPA - extractable copper, zinc, manganese and iron
12A1_FE	DTPA - extractable copper, zinc, manganese and iron
12A1_MN	DTPA - extractable copper, zinc, manganese and iron
12A1_ZN	DTPA - extractable copper, zinc, manganese and iron
12C1	Calcium chloride extractable boron - manual colour
15_NR_AL	Aluminium Cation - meq per 100g of soil - Not recorded
15_NR_H	Hydrogen Cation - meq per 100g of soil - Not recorded
15A1_CA for soluble	Exchangeable bases (Ca ²⁺ ,Mg ²⁺ ,Na ⁺ ,K ⁺) - 1M ammonium chloride at pH 7.0, no pretreatment salts
15A1_K for soluble	Exchangeable bases (Ca ²⁺ ,Mg ²⁺ ,Na ⁺ ,K ⁺) - 1M ammonium chloride at pH 7.0, no pretreatment salts
15A1_MG for soluble	Exchangeable bases (Ca ²⁺ ,Mg ²⁺ ,Na ⁺ ,K ⁺) - 1M ammonium chloride at pH 7.0, no pretreatment salts
15A1_NA for soluble	Exchangeable bases (Ca ²⁺ ,Mg ²⁺ ,Na ⁺ ,K ⁺) - 1M ammonium chloride at pH 7.0, no pretreatment salts
15G_C_AL2 By AAS	Exchangeable aluminium - meq per 100g of soil - Aluminium By KCl extraction and determination
15G1	Exchange acidity (hydrogen and aluminium) by 1M potassium chloride

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15J_H	Sum of Ex. cations + Ex. acidity - Sum of basic exch. cations and exch. (Hydrogen)
15N1	Exchangeable sodium percentage (ESP)
18A1	Bicarbonate-extractable potassium
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
4B2	pH of 1:5 soil/0.01M calcium chloride extract - following Method 4A1
6B2	Total organic carbon - high frequency induction furnace, volumetric
7A5	Total nitrogen - high frequency induction furnace, thermal conductivity
7C1a	Ammonium-N, in presence or absence of nitrite
7C1b	(Nitrate+nitrite)-N, in presence of nitrite
9B2_COL	Bicarbonate-extractable phosphorus - automated colour. Based on Colwell (1965). Method no
longer	
	recommended
9C2	Olsen-extractable phosphorus - automated colour