

**Project Name:** SCEAM - Soil Condition Evaluation & Monitoring Project, Tasmania  
**Project Code:** SCEAM **Site ID:** C12 **Observation ID:** 1  
**Agency Name:** TAS Department of Primary Industries and Fisheries

**Site Information**

**Desc. By:** R. Moreton **Locality:** Property owner, Mike Walker. Property name, Borkeshire

**Date Desc.:** 10/10/05 **Elevation:** Downs.  
**Map Ref.:** GPS S.A. Off **Rainfall:** 172 metres  
**Northing/Long.:** 5434551 AMG zone: 55 **Runoff:** 1143  
**Easting/Lat.:** 431172 Datum: GDA94 **Drainage:** Rapid  
**Drainage:** Well drained

**Geology**

**Exposure Type:** Soil pit **Conf. Sub. is Parent. Mat.:** Probable  
**Geol. Ref.:** Tb **Substrate Material:** Soil pit, Basalt

**Landform**

**Rel/Slope Class:** Rolling low hills 30-90m 10-32% **Pattern Type:** Low hills  
**Morph. Type:** Lower-slope **Relief:** No Data  
**Elem. Type:** Hillslope **Slope Category:** Gently inclined  
**Slope:** 14 % **Aspect:** 270 degrees

**Surface Soil Condition** Cracking

**Erosion**

**Soil Classification**

**Australian Soil Classification:** Acidic Eutrophic Red Ferrosol Thick Non-gravelly Clay-loamy  
**Mapping Unit:** N/A  
**Principal Profile Form:** N/A  
**ASC Confidence:** All necessary analytical data are available.  
**Great Soil Group:** N/A

**Site Disturbance**

**Vegetation**

**Surface Coarse Fragments** No surface coarse fragments

**Profile Morphology**

Ap	0 - 0.3 m	Dark reddish brown (5YR3/3-Moist); Mottles, 2.5YR36, 0-2% , 0-5mm, Distinct; Clay loam; Strong grade
		of structure, 50-100 mm, Angular blocky; 10-20 mm, Angular blocky; Rough-ped fabric;
	Fine, (0 - 5) mm	crack; Few (<1 per 100mm <sup>2</sup> ) Fine (1-2mm) macropores, Moderately moist; Very strong
	consistence;	Slightly plastic; Normal plasticity; Very sticky; 0-2%, medium gravelly, 6-20mm,
	subrounded, dispersed,	Basalt, coarse fragments; Few, very fine (0-1mm) roots; Sharp, Smooth change to -
B1t	0.3 - 0.62 m	Dark reddish brown (2.5YR3/4-Moist); Biological mixing, 5YR33, 0-2% , 0-5mm, Faint;
	Clay loam;	Moderate grade of structure, 10-20 mm, Subangular blocky; Moderate grade of structure,
	5-10 mm,	Polyhedral; Rough-ped fabric; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores,
	Moist; Firm	consistence; Slightly plastic; Normal plasticity; Moderately sticky; Few (2 - 10 %),
	Ferromanganiferous,	Fine (0 - 2 mm), ; Few, very fine (0-1mm) roots; Gradual, Wavy change to -
B2t	0.62 - 0.96 m	Dark reddish brown (5YR3/4-Moist); , 0-0% ; Light clay; Moderate grade of structure, 5-10
	mm,	Polyhedral; Moderate grade of structure, 2-5 mm, Polyhedral; Rough-ped fabric; Moist;
	Weak	consistence; Slightly plastic; Normal plasticity; Moderately sticky; Few (2 - 10 %),
	Ferromanganiferous,	Fine (0 - 2 mm), ; Gradual, Wavy change to -
BCR	0.96 - 1.2 m	Strong brown (7.5YR4/6-Moist); Substrate influence, 10R48, 10-20% , 15-30mm,
	Prominent; Substrate	influence, 2.5YR36, 10-20% , 5-15mm, Prominent; Clay loam; Massive grade of structure;
	Wet; Weak	consistence; Slightly plastic; Normal plasticity; Moderately sticky; Common (10 - 20 %),
	Unidentified,	Fine (0 - 2 mm), ;

### **Morphological Notes**

Ap resistance:	Compact AP Horizon. 'Fluffy texture' possibly due to high Fe content? Penetration Hard
B1t Label	'Fluffy texture' possibly due to high Fe content? B1T Horizon sampled form .30 to .60m, C12C. Penetration resistance: Very stiff
B2t Label	'Fluffy texture' possibly due to high Fe content? B2T Horizon sampled form .65 to .90m, C12D. Penetration resistance: Stiff
BCR BCr	Weathered Vesicular Basalt Frags (sand size 0.06-2mm, crystalline with dark minerals) in indicates substrate not too much deeper. 'Fluffy texture' possibly due to high Fe content.
Sampled	1.0-1.2m, Label C12E Penetration resistance Firm

### **Observation Notes**

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Substrate of Basalt (BA) not reached during Soil Pit observation. Yolla Soil Class.

#### Site Notes

Element Slope Class: Gentle. Mode of Geomorphic activity: Eroded or Aggraded. Geomorphic Agent: Sheet Wash.

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#### Laboratory Test Results:

Depth	pH	1:5 EC	Ca	Exchangeable Mg	Cations K	Na	Exchangeable Acidity	CEC	ECEC	ESP
m		dS/m				Cmol (+)/kg				%
0 - 0.075	5.5C 6.2A	0.067A	14.32A	2.84	0.77	0.16	0.16D 0G 0.18A		18.27B	
0.2 - 0.275	5.5C 6.3A	0.054A	13.46A	2.32	0.45	0.13	0.12D 0G 0.14A		16.5B	
0.3 - 0.6	4.2C 4.9A	0.061A	6.42A	1.48	0.14	0.14	0.19D 2.15G 2.6A		10.78B	
0.65 - 0.9	4.2C 4.8A	0.061A	3.24A	1.37	0.1	0.11	3.55D 3.42G 8.53A		13.35B	
1 - 1.2	4.1C 4.5A	0.09A	2.43A	1.41	0.12	0.15	1.25D 7.21G 12.27A		16.38B	

Depth	CaCO3	Organic C Clay	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size Analysis
m	%	%	mg/kg	%	%	%	Mg/m3	GV CS FS Silt
0 - 0.075		3.38B	172H 48.1I		0.25D			
0.2 - 0.275		2.92B	116H 28.1I		0.23D			
0.3 - 0.6		0.95B	2H 0.6I		0.14D			
0.65 - 0.9		0.55B	2H 0.5I		0.11D			
1 - 1.2		0.51B	2H 0.3I		0.11D			

#### 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	Exchangeable bases (Ca2+,Mg2+,Na+,K+) - 1M ammonium chloride at pH 7.0, no pretreatment
for soluble	salts
15A1_K	Exchangeable bases (Ca2+,Mg2+,Na+,K+) - 1M ammonium chloride at pH 7.0, no pretreatment
for soluble	salts
15A1_MG	Exchangeable bases (Ca2+,Mg2+,Na+,K+) - 1M ammonium chloride at pH 7.0, no pretreatment
for soluble	

15A1_NA for soluble	salts Exchangeable bases (Ca <sup>2+</sup> ,Mg <sup>2+</sup> ,Na <sup>+</sup> ,K <sup>+</sup> ) - 1M ammonium chloride at pH 7.0, no pretreatment
15G_C_AL2 By AAS	salts 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