

Project Name: SCEAM - Soil Condition Evaluation & Monitoring Project, Tasmania
Project Code: SCEAM **Site ID:** C16 **Observation ID:** 1
Agency Name: TAS Department of Primary Industries and Fisheries

Site Information

Desc. By:	R. Moreton	Locality:	Adrian Brown, Sassafras Orchards, Latrobe
Date Desc.:	14/11/05	Elevation:	109 metres
Map Ref.:	GPS S.A. Off	Rainfall:	927
Northing/Long.:	5431323 AMG zone: 55	Runoff:	Rapid
Easting/Lat.:	455666 Datum: GDA94	Drainage:	Poorly drained

Geology

ExposureType:	Soil pit	Conf. Sub. is Parent. Mat.:	No Data
Geol. Ref.:	Ts	Substrate Material:	Mudstone

Landform

Rel/Slope Class:	Rolling low hills 30-90m 10-32%	Pattern Type:	Low hills
Morph. Type:	Mid-slope	Relief:	No Data
Elem. Type:	Hillslope	Slope Category:	Gently inclined
Slope:	5 %	Aspect:	70 degrees

Surface Soil Condition Firm

Erosion

Soil Classification

Australian Soil Classification:	Mottled Mesotrophic Black Dermosol Thick Non-gravelly Loamy Clayey Deep	Mapping Unit:	N/A
ASC Confidence:	All necessary analytical data are available.	Principal Profile Form:	N/A
		Great Soil Group:	N/A

Site Disturbance

Vegetation

Surface Coarse Fragments 2-10%, medium gravelly, 6-20mm, ,

Profile Morphology

A11p 0 - 0.2 m Weak grade (>5 per Non-sticky; 0- pan, Weakly	Very dark grey (10YR3/1-Moist); Dark greyish brown (10YR4/2-Dry); , 0-0% ; Sandy loam; of structure, 2-5 mm, Polyhedral; Single grain grade of structure; Rough-ped fabric; Many 100mm2) Fine (1-2mm) macropores, Moderately moist; Weak consistence; Non-plastic; 2%, fine gravelly, 2-6mm, subrounded, dispersed, Quartz, coarse fragments; Cultivation cemented, Continuous, Massive; Few, fine (1-2mm) roots; Gradual, Smooth change to -
A12p 0.2 - 0.32 m loam; Massive Moist; Weak dispersed, Quartz, (1-2mm)	Very dark grey (10YR3/1-Moist); Mottles, 10YR44, 2-10% , 0-5mm, Faint; Fine sandy grade of structure; Rough-ped fabric; Few (<1 per 100mm2) Fine (1-2mm) macropores, consistence; Non-plastic; Non-sticky; 0-2%, medium gravelly, 6-20mm, subrounded, coarse fragments; Very few (0 - 2 %), Ferruginous, Medium (2 -6 mm), Nodules; Few, fine roots; Clear, Smooth change to -
B2 0.32 - 0.9 m Light clay; 10 mm, Moist; Firm roots; Gradual,	Very dark greyish brown (10YR3/2-Moist); Mottles, 10YR44, 10-20% , 5-15mm, Distinct; Moderate grade of structure, 10-20 mm, Angular blocky; Moderate grade of structure, 5-Polyhedral; Rough-ped fabric; Common (1-5 per 100mm2) Medium (2-5mm) macropores, consistence; Moderately plastic; Normal plasticity; Very sticky; Few, very fine (0-1mm) Smooth change to -
B3 0.9 - 1 m 10YR46, 2-10% Strong grade of plastic; Normal	Very dark grey (2.5Y3/1-Moist); Mottles, 10YR44, 10-20% , 15-30mm, Distinct; Mottles, , 5-15mm, Distinct; Medium clay; Strong grade of structure, 10-20 mm, Angular blocky; structure, 2-5 mm, Angular blocky; Smooth-ped fabric; Moist; Very firm consistence; Very

plasticity; Very sticky; Many cutans, >50% of ped faces or walls coated, distinct;

Morphological Notes

A12p Charcoal present at 20-50cm. A12p appears co compacted to produce pan, perhaps from cultivation.

B2 Charcoal present at 20-50cm.

Observation Notes

Vegetation: apple orchard, Substrate not reached but likely to be Mudstone,

Site Notes

Mode of geomorphic Activity: eroded or aggraded, Geomorphic agent Channelled stream, No inundation.

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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	6.6C 7.2A	0.117A	14.23A	0.86	0.83	0.07	0.055615D		16.04925B	
0.15 - 0.225	5.9C 6.8A	0.067A	10.45A	0.91	0.55	0.24	0G 0.05925A 0.1228675D 0G 0.1415A		12.2915B	
0.32 - 0.6	4.2C 5A	0.043A	2.13A	0.41	0.22	0.3	0.55D 1.87G 4.58A		7.64B	
0.6 - 0.9	4.1C 4.7A	0.06A	1.29A	0.68	0.16	0.33	0.91D 3.58G 6.59A		9.05B	
0.9 - 1	3.7C 4.7A	0.064A	1.02A	1.47	0.16	0.35	1.03D 5.03G 7.92A		10.92B	

Depth	CaCO3	Organic C Clay	Avail. P	Total P	Total N	Total K	Bulk Density	Particle GV	Size CS	Analysis FS	Silt
m	%	%	mg/kg	%	%	%	Mg/m3			%	
0 - 0.075		2.52B	162H 0I		0.17D						
0.15 - 0.225		1.54B	56H 0I		0.11D						
0.32 - 0.6		0.79B	3H 1.6I		0.13D						
0.6 - 0.9		0.47B	2H 1.2I		0.13D						
0.9 - 1		0.42B	2H 0.8I		0.12D						

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

15A1_K
for soluble

15A1_MG
for soluble

15A1_NA
for soluble

salts

Exchangeable bases (Ca²⁺,Mg²⁺,Na⁺,K⁺) - 1M ammonium chloride at pH 7.0, no pretreatment

salts

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salts

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15G_C_AL2	Exchangeable aluminium - meq per 100g of soil - Aluminium By KCl extraction and detremination
By AAS	
15G1	Exchange acidity (hydrogen and aluminium) by 1M potassium chloride
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