Project Name: **SCEAM - Soil Condition Evaluation & Monitoring Project, Tasmania**
Project Code: **SCEAM** **Site ID:** **S65** **Observation ID:** **1**
Agency Name: **TAS Department of Primary Industries and Fisheries**

Site Information

Desc. By:	H. Hawkins	**Locality:**	Glenburn Orchard, Cygnet
Date Desc.:	13/09/06	**Elevation:**	12 metres
Map Ref.:	GPS S.A. Off	**Rainfall:**	793
Northing/Long.:	5220261 AMG zone: 55	**Runoff:**	Very slow
Easting/Lat.:	508685 Datum: GDA94	**Drainage:**	Imperfectly drained

Geology

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

Landform

Rel/Slope Class: Gently undulating plains <9m 1-3% **Pattern Type:** Alluvial plain

Morph. Type:	Flat	**Relief:**	No Data
Elem. Type:	Valley flat	**Slope Category:**	Very gently sloped
Slope:	3 %	**Aspect:**	No Data

Surface Soil Condition

Firm

Erosion

Soil Classification

Australian Soil Classification: **Mapping Unit:** N/A
Mottled Eutrophic Grey 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

No surface coarse fragments

Profile Morphology

A1 0 - 0.18 m Dark grey (2.5Y4/1-Moist); , 0-0% ; Clay loam; Moderate grade of structure, 20-50 mm, Angular blocky; Moderate grade of structure, 5-10 mm, Angular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Very plastic; Normal plasticity; Slightly sticky; Many, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Abrupt, Wavy change to -

A2 0.18 - 0.26 m Light grey (2.5Y7/1-Moist); Mottles, 2.5Y62, 0-2% , 0-5mm, Faint; Mottles, 5YR34, 2-10% , 5-15mm, Distinct; Clay loam; Moderate grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) macropores, Moderately moist; Weak consistence; Moderately plastic; Normal plasticity; Slightly sticky; Common cutans, 10-50% of ped faces or walls coated, distinct; Few (2 - 10 %), Ferromanganiferous, Very coarse (20 - 60 mm), Concretions; Common (10 - 20 %), Ferromanganiferous, Coarse (6 - 20 mm), Concretions; Common, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Few, coarse (>5mm) roots; Clear, Wavy change to -

A3 0.26 - 0.48 m Greyish brown (2.5Y5/2-Moist); Mottles, 10YR58, 2-10% , 15-30mm, Distinct; Medium clay; Strong grade of structure, 20-50 mm, Angular blocky; Moderate grade of structure, 10-20 mm, Angular blocky; Rough-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Very plastic; Normal plasticity; Slightly sticky; Common cutans, 10-50% of ped faces or walls coated, distinct; Very few (0 - 2 %), Ferromanganiferous, Medium (2 -6 mm), Concretions; Common, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Few, coarse

(>5mm) roots; Clear, Wavy change to -

B21 0.48 - 0.85 m Grey (2.5Y6/1-Moist); Mottles, 10YR58, 20-50% , 30-mm, Distinct; Medium heavy clay; Strong grade of structure, 50-100 mm, Angular blocky; Moderate grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Very plastic; Normal plasticity; Non-sticky; Many cutans, >50% of ped faces or walls coated, distinct; Few (2 - 10 %), Ferromanganiferous, Medium (2 -6 mm), Concretions; Few, very fine (0-1mm) roots; Clear, Wavy change to -

B22 0.85 - 1 m Grey (5Y6/1-Moist); Mottles, 10YR68, 10-20% , 15-30mm, Distinct; Mottles, 7.5YR46, 0-2% , 0-5mm, Distinct; Medium heavy clay; Moderate grade of structure, 100-200 mm, Angular blocky; Weak grade of structure, 5-10 mm, Angular blocky; Rough-ped fabric; Fine, (0 - 5) mm crack; Firm consistence; Very plastic; Normal plasticity; Non-sticky; Many cutans, >50% of ped faces or walls coated, distinct; Very few (0 - 2 %), Ferromanganiferous, Medium (2 -6 mm), Concretions;

Morphological Notes

A1 S65A sampled 0-75mm

A2 Colour of Clay skins coating ped faces 2.5Y 5/2. Charcoal at the base of A2 working up into A1.

S65B sampled 180-250mm

A3 Colour of clay skins coating ped faces10YR 5/3. S65C sampled 260-460

B21 Colour of Clay skins coating ped faces 2.5Y 5/2. S65D sampled 480-680mm, S65E sampled 680-850mm

B22 Colour of Clay skins coating ped faces2.5Y 6/2. S65F sampled 850-1000mm.

Observation Notes

Apple Orchard. Rain splash Erosion evident on row mounds but none between rows where pit was dug. Substrate - alluvial sediments.

Site Notes

Mode of Geomorphic Activity: Aggraded, Agent: Sheet wash, Over bank stream. Inundation frequency: < once per 100 years, <1 day duration, <50mm depth.

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations Ca	Mg	K	Na	Exchangeable Acidity	CEC	ECEC	ESP
m		dS/m				Cmol (+)/kg				%
0 - 0.075	4.4C 5.4A	0.048A	2.31A	0.49	0.07	0.12	0.07D 0.37G 1.08A		4.07B	
0.16 - 0.235	6.4C 7.2A	0.181A	30.2A	22.94	0.84	3.15	0D 0.04G 0.11A		57.24B	
0.26 - 0.46	3.9C 4.8A	0.036A	0.46A	0.52	0.25	0.18	1.38D 5.98G 11.9A		13.31B	
0.48 - 0.68	5.7C 6.7A	0.186A	28.55A	21.79	1.11	2.2	0.02D 0.05G 0.07A		53.72B	
0.68 - 0.85	7.9C 8A	0.181A	30.04A	13.12	0.56	1.06	0.02D 0.07G 0.05A		44.83B	
0.85 - 1	4.3C 5.3A	0.067A	2.63A	8.87	0.21	1.44	0.54D 1.89G 2.64A		15.79B	

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	GV	Particle CS	Size FS	Analysis Silt
		Clay									
m	%	%	mg/kg	%	%	%	Mg/m3			%	
0 - 0.075		2.42B	20H		0.16D						
			11.7I								
0.16 - 0.235		3.68B	92H		0.33D						
			34.7I								
0.26 - 0.46		1.59B	2H		0.14D						
			0.3I								
0.48 - 0.68		4.78B	153H		0.42D						
			52.8I								
0.68 - 0.85		3.56B	42H		0.31D						
			21.2I								
0.85 - 1		0.06B	2H		0.03D						
			0.8I								

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 salts

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15A1_NA	Exchangeable bases (Ca2+,Mg2+,Na+,K+) - 1M ammonium chloride at pH 7.0, no pretreatment for soluble salts
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