

Project Name: SCEAM - Soil Condition Evaluation & Monitoring Project, Tasmania
Project Code: SCEAM **Site ID:** N40 **Observation ID:** 1
Agency Name: TAS Department of Primary Industries and Fisheries

Site Information

Desc. By: H. Hawkins **Locality:** Quorn Hall, Lake Leak Rd, Campbell Town.

Date Desc.: 29/08/06 **Elevation:** 209 metres
Map Ref.: GPS S.A. Off **Rainfall:** 547
Northing/Long.: 5356710 AMG zone: 55 **Runoff:** Very slow
Easting/Lat.: 544723 Datum: GDA94 **Drainage:** Poorly drained

Geology

ExposureType: Soil pit **Conf. Sub. is Parent. Mat.:** No Data
Geol. Ref.: Qa **Substrate Material:** Soil pit, 88 m deep,, Alluvium

Landform

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

Morph. Type: Flat **Relief:** No Data
Elem. Type: Terrace flat **Slope Category:** Level
Slope: 0 % **Aspect:** No Data

Surface Soil Condition Self-mulching

Erosion

Soil Classification

Australian Soil Classification: Mapping Unit: N/A
 Haplic Self-Mulching Black Vertosol Non-gravelly Medium fine Principal Profile Form: N/A
 Medium fine Moderately deep
ASC Confidence: Great Soil Group: N/A
 All necessary analytical data are available.

Site Disturbance

Vegetation

Surface Coarse Fragments 0-2%, coarse gravelly, 20-60mm, subangular,

Profile Morphology

A11p 0 - 0.09 m Black (10YR2/1-Moist); , 0-0% ; Light medium clay; Moderate grade of structure, 10-20 mm, Polyhedral;

Earthy fabric; Fine, (0 - 5) mm crack; Many (>5 per 100mm²) Very fine (0.075-1mm)
 macropores,
 Moderately moist; Firm consistence; Slightly plastic; Normal plasticity; Slightly sticky; 0-2%, coarse
 gravelly, 20-60mm, subrounded, dispersed, Dolerite, coarse fragments; Many, very fine
 (0-1mm) roots;
 Abrupt, Wavy change to -

A12 0.09 - 0.27 m Black (10YR2/1-Moist); , 0-0% ; Light clay; Moderate grade of structure, 10-20 mm, Polyhedral; Rough-
 ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm²) Very fine (0.075-1mm)
 macropores,
 Moderately moist; Firm consistence; Slightly plastic; Normal plasticity; Slightly sticky; Few
 cutans, <10%
 of ped faces or walls coated, prominent; Common, very fine (0-1mm) roots; Clear, Wavy
 change to -

A13 0.27 - 0.58 m Black (10YR2/1-Moist); , 0-0% ; Light medium clay; Moderate grade of structure, 20-50 mm, Polyhedral;
 Rough-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm²) Very fine (0.075-1mm)
 macropores,
 Moderately moist; Firm consistence; Slightly plastic; Normal plasticity; Slightly sticky;
 Common cutans,
 10-50% of ped faces or walls coated, prominent; Few, very fine (0-1mm) roots; Diffuse,
 Wavy change to -

A3 0.58 - 0.78 m Dark greyish brown (10YR4/2-Moist); Mottles, 10YR56, 2-10% , 5-15mm, Distinct;
 Mottles, 10-20% , 5-15mm, Distinct; Medium clay; Moderate grade of structure, 50-100 mm, Polyhedral;
 Rough-ped fabric;
 Fine, (0 - 5) mm crack; Moderately moist; Firm consistence; Slightly plastic; Normal
 plasticity; Slightly

<10% of ped faces sticky; Common cutans, 10-50% of ped faces or walls coated, prominent; Few cutans, or walls coated, faint; Clear, Wavy change to -

B2 0.78 - 0.88 m Dark yellowish brown (10YR4/6-Moist); Mottles, 10YR58, 10-20% , 0-5mm, Distinct; Medium heavy clay; Moderate grade of structure, 50-100 mm, Polyhedral; Rough-ped fabric; Fine, (0 - 5) mm crack; Moderately moist; Firm consistence; Slightly plastic; Normal plasticity; Slightly sticky; 10-20%, fine gravelly, 2-6mm, subrounded, dispersed, Dolerite, coarse fragments; Common cutans, 10-50% of ped faces or walls coated, distinct;

Morphological Notes

A11p N40A sampled at 0-75mm
A12 N40B sampled at 140-215mm
A13 N40C sampled at 270-580mm
A3 N40D sampled at 580-780mm
B2 N40E sampled at 780-880mm

Observation Notes

Direct drilled Barley June 06. Hit river cobbles of dolerite at 86cm. Fragments were rounded, strong rock,

Site Notes

Mode of Geomorphic Activity: Aggraded by 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 6.3A	0.106A	35.47A	14.46	0.27	0.62	0.05D 0G 0.07A		50.89B	
0.14 - 0.215	5.5C 6.3A	0.114A	33.22A	13.31	0.21	0.62	0.04D 0G 0.05A		47.41B	
0.27 - 0.58	6.1C 7.1A	0.053A	23.98A	15.12	0.21	0.32	0.02D 0G 0.04A		39.67B	
0.58 - 0.78	6.6C 7.4A	0.043A	11.01A	10.11	0.18	0.22	0.01D 0G 0.02A		21.54B	
0.78 - 0.88	6.6C 7.1A	0.038A	9.63A	7.47	0.17	0.23	0.01D 0G 0.03A		17.53B	

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		5.51B	68H 24.6I		0.43D			
0.14 - 0.215		5.25B	48H 17.5I		0.39D			
0.27 - 0.58		2.37B	3H 1I		0.17D			
0.58 - 0.78		0.59B	2H 1I		0.06D			
0.78 - 0.88		0.39B	2H 0.4I		0.05D			

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 detremination
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