

**Project Name:** Preliminary Assessment and Survey of Land Degradation in the Dalrymple Shire, QLD  
**Project Code:** DLR **Site ID:** T553 **Observation ID:** 1  
**Agency Name:** QLD Department of Primary Industries

#### Site Information

<b>Desc. By:</b> M.G. Cannon	<b>Locality:</b>
<b>Date Desc.:</b> 05/03/92	<b>Elevation:</b> 210 metres
<b>Map Ref.:</b> Sheet No. : 8256 GPS	<b>Rainfall:</b> No Data
<b>Northing/Long.:</b> 7683740 AMG zone: 55	<b>Runoff:</b> Slow
<b>Easting/Lat.:</b> 465286 Datum: AGD66	<b>Drainage:</b> Imperfectly drained

#### Geology

<b>Exposure Type:</b> No Data	<b>Conf. Sub. is Parent. Mat.:</b> No Data
<b>Geol. Ref.:</b> Cpi	<b>Substrate Material:</b> Undisturbed soil core, Diorite

#### Land Form

<b>Rel/Slope Class:</b> Level plain <9m <1%	<b>Pattern Type:</b> No Data
<b>Morph. Type:</b> Flat	<b>Relief:</b> No Data
<b>Elem. Type:</b> Plain	<b>Slope Category:</b> Level
<b>Slope:</b> 1 %	<b>Aspect:</b> No Data

**Surface Soil Condition (dry):** Cracking, Self-mulching

**Erosion:** 5 m, 99 m;

#### Soil Classification

<b>Australian Soil Classification:</b>	<b>Mapping Unit:</b> N/A
Epicalcareous Self-Mulching Black Vertosol Slightly gravelly	<b>Principal Profile Form:</b> Ug5.12
Medium fine Very fine Deep	
<b>ASC Confidence:</b>	<b>Great Soil Group:</b> Black earth

All necessary analytical data are available.

**Site Disturbance:** Extensive clearing, for example poisoning, ringbarking

**Vegetation:** Low Strata - Tussock grass, 0.26-0.5m, Very sparse. \*Species includes - Cenchrus ciliaris  
 Mid Strata - Tree, 1.01-3m, Sparse. \*Species includes - Acacia species  
 Tall Strata - Tree, 6.01-12m, Isolated plants. \*Species includes - Eucalyptus erythrophloia, Melaleuca bracteata

**Surface Coarse Fragments:** 2-10%, cobbly, 60-200mm, rounded, Diorite

#### Profile Morphology

A11	0 - 0.03 m	Very dark grey (10YR3/1-Moist); ; Light medium clay; Strong grade of structure, <2 mm, Granular; Smooth-ped fabric; Moderately moist; Very weak consistence; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Concretions; , Gypseous, , ; Field pH 9 (Raupach, 0); Clear, Wavy change to -
A12	0.03 - 0.1 m	Very dark grey (10YR3/1-Moist); ; Light medium clay; Strong grade of structure, 5-10 mm, Subangular blocky; Strong grade of structure, 2-5 mm, Subangular blocky; Smooth-ped fabric; Moderately moist; Firm consistence; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Concretions; , Gypseous, , ; Field pH 8.5 (Raupach, 0.07); Gradual, Wavy change to -
B1	0.1 - 0.35 m	Very dark grey (10YR3/1-Moist); ; Medium clay; Strong grade of structure, 10-20 mm, Angular blocky; Strong grade of structure, 2-5 mm, Angular blocky; Smooth-ped fabric; Moderately moist; Firm consistence; Common cutans, 10-50% of ped faces or walls coated, prominent; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Concretions; , Gypseous, , ; Field pH 8.5 (Raupach, 0.2); Diffuse, Wavy change to -
B21	0.35 - 0.65 m	Very dark grey (10YR3/1-Moist); ; Medium heavy clay; Strong grade of structure, 10-20 mm, Lenticular; Smooth-ped fabric; Moderately moist; Very firm consistence; Many cutans, >50% of ped faces or walls coated, prominent; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Concretions; , Gypseous, , ; Field pH 8.5 (Raupach, 0.5); Diffuse, Wavy change to -
B22	0.65 - 0.95 m	Very dark grey (10YR3/1-Moist); ; Medium heavy clay; Strong grade of structure, 50-100 mm, Lenticular; Smooth-ped fabric; Moderately moist; Very firm consistence; Many cutans, >50% of ped faces or walls coated, prominent; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Concretions; , Gypseous, , ; Field pH 8.5 (Raupach, 0.8); Diffuse, Wavy change to -
B23	0.95 - 1.15 m	Very dark grey (10YR3/1-Moist); ; Medium heavy clay; Smooth-ped fabric; Moderately moist; Firm consistence; Many cutans, >50% of ped faces or walls coated, prominent; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Concretions; , Gypseous, , ; Field pH 8.5 (Raupach, 1.05); Gradual, Wavy change to -
BC	1.15 - 1.5 m	; Medium clay; Smooth-ped fabric; Moderately moist; Weak consistence; Common cutans, 10-50% of ped faces or walls coated, distinct; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Soft segregations; , Gypseous, , ; Field pH 8 (Raupach, 1.3); Diffuse, Wavy change to -

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BC            1.5 - 1.9 m            ; Smooth-ped fabric; Moderately moist; Weak consistence; Common cutans, 10-50% of ped faces or walls coated, distinct; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Soft segregations; , Gypseous, , ; Field pH 8 (Raupach, 1.7);

**Morphological Notes**

**Observation Notes**

DLR1059; CALCIUM NODULES ON SURFACE:

**Site Notes**

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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				%
0.03 - 0.1	8.81A	0.08A	60B 33.3J	16 12.5	0.5 0.05	0.42 0.19		48.3I		0.87 0.39
0.1 - 0.35	8.92A	0.09A								
0.35 - 0.65	9.04A	0.12A	57B 30.8J	23 16.5	0.51 0.05	1.7 0.81		56.9D 48.4I		2.99 3.51 1.42 1.67
0.65 - 0.95	9.09A	0.15A								
0.95 - 1.15	8.95A	0.21A	27.8J	17.8	0.06	1.35		48.6I		2.78
1.15 - 1.5	9.38A	0.2A								
1.5 - 1.9	9.24A	0.24A	29.2J	16.9	0.02	1.27		48.2I		2.63

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle		Size	Analysis	
								GV	CS		FS	Silt
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0.03 - 0.1	1.8A	1.1B		0.024A	0.04A	0.209A			6A	20	16	58
0.1 - 0.35												
0.35 - 0.65	2.7A	1.1B		0.021A	0.03A	0.207A			6A	17	16	61
0.65 - 0.95												
0.95 - 1.15									4A	17	14	65
1.15 - 1.5												
1.5 - 1.9									21A	37	20	22

[illegible]

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**Laboratory Analyses Completed for this profile**

10A1	Total sulfur - X-ray fluorescence
10B	Extractable sulfur(mg/kg) - Phosphate extractable sulfur
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
15A2_CA	Exchangeable bases (Ca <sup>2+</sup> ,Mg <sup>2+</sup> ,Na <sup>+</sup> ,K <sup>+</sup> ) - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_K	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_MG	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_NA	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15D2_CEC	CEC - 1M ammonium acetate at pH 7.0, pretreatment for soluble salts; automatic extractor
15F1_CA	Exchangeable bases by 0.01M silver-thiourea (AgTU)+, no pretreatment for soluble salts
15F1_K	Exchangeable bases by 0.01m (AgTU)+, no pretreatment for soluble salts
15F1_MG	Exchangeable bases by 0.01m (AgTU)+, no pretreatment for soluble salts
15F1_NA	Exchangeable bases by 0.01m (AgTU)+, no pretreatment for soluble salts
15F3	CEC by 0.01M silver-thiourea (AgTU)+
15N1	Exchangeable sodium percentage (ESP)
17A1	Total potassium - X-ray fluorescence
19A1	Carbonates - rapid titration
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
5A1	Chloride - 1:5 soil/water extract, potentiometric titration
6B2	Total organic carbon - high frequency induction furnace, volumetric
7A2	Total nitrogen - semimicro Kjeldahl , automated colour
9A1	Total phosphorus - X-ray fluorescence
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_CS	Coarse sand (%) - Coventry and Fett pipette method
P10_CF_FS	Fine sand (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method