

Project Name: EAR
Project Code: EAR **Site ID:** T354 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By:	R.J. Coventry	Locality:	CSIRO Experimental Area.
Date Desc.:	22/08/79	Elevation:	No Data
Map Ref.:	Sheet No. : 8057 1:100000	Rainfall:	650
Northing/Long.:	145.863888888889	Runoff:	No Data
Easting/Lat.:	-20.230555555556	Drainage:	No Data

Geology

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

Land Form

Rel/Slope Class:	No Data	Pattern Type:	No Data
Morph. Type:	No Data	Relief:	No Data
Elem. Type:	No Data	Slope Category:	No Data
Slope:	0 %	Aspect:	No Data

Surface Soil Condition (dry): N/A

Erosion:

Soil Classification

Australian Soil Classification:	Mapping Unit:	N/A
Haplic Mesotrophic Red Kandosol	Principal Profile Form:	Gn2.11
ASC Confidence:	Great Soil Group:	Red earth

All necessary analytical data are available.

Site Disturbance: No effective disturbance other than grazing by hoofed animals

Vegetation:

Surface Coarse Fragments: No surface coarse fragments

Profile Morphology

A1	0 - 0.1 m	Dark reddish brown (2.5YR3/4-Moist); Reddish brown (5YR4/4-Dry); ; Sandy loam (Heavy); Massive grade of structure; Earthy fabric; Dry; Very firm consistence; 0-2%, medium gravelly, 6-20mm, Quartz, coarse fragments;
A1	0.1 - 0.2 m	Dark reddish brown (2.5YR3/4-Moist); Red (2.5YR4/6-Dry); ; Sandy loam (Heavy); Massive grade of structure; Earthy fabric; Dry; Very firm consistence; 0-2%, medium gravelly, 6-20mm, Quartz, coarse fragments; Gradual change to -
A3	0.2 - 0.3 m	Dark red (10R3/6-Moist); Red (2.5YR4/6-Dry); ; Sandy clay loam; Massive grade of structure; Earthy fabric; Dry; Strong consistence; 0-2%, medium gravelly, 6-20mm, Quartz, coarse fragments; Diffuse change to -
B1	0.3 - 0.5 m	Dark red (10R3/6-Moist); Red (2.5YR4/6-Dry); ; Clay loam, coarse sandy; Massive grade of structure; Earthy fabric; Dry; Strong consistence; 0-2%, medium gravelly, 6-20mm, Quartz, coarse fragments; Diffuse change to -
B21	0.5 - 0.6 m	Dark red (10R3/5-Moist); ; Sandy light clay; Massive grade of structure; Earthy fabric; Dry; Very strong consistence; 0-2%, medium gravelly, 6-20mm, Quartz, coarse fragments; Very few (0 - 2 %), Argillaceous, Coarse (6 - 20 mm), Nodules;
B21	0.6 - 0.75 m	Dark red (10R3/5-Moist); ; Sandy light clay; Massive grade of structure; Earthy fabric; Dry; Very strong consistence; 0-2%, medium gravelly, 6-20mm, Quartz, coarse fragments; Very few (0 - 2 %), Argillaceous, Coarse (6 - 20 mm), Nodules;
B21	0.75 - 0.9 m	Dark red (10R3/5-Moist); ; Sandy medium clay; Massive grade of structure; Earthy fabric; Dry; Very strong consistence; 0-2%, medium gravelly, 6-20mm, Quartz, coarse fragments; Very few (0 - 2 %), Argillaceous, Coarse (6 - 20 mm), Nodules; Diffuse change to -
B22	0.9 - 1.2 m	Dark red (10R3/7-Moist); ; Sandy medium clay; Weak grade of structure, 20-50 mm, Prismatic; Earthy fabric; Dry; Very strong consistence; Few (2 - 10 %), Argillaceous, Coarse (6 - 20 mm), Nodules;
B22	1.2 - 1.5 m	Dark red (10R3/7-Moist); ; Sandy medium clay; Weak grade of structure, 20-50 mm, Prismatic; Earthy fabric; Dry; Very strong consistence; Few (2 - 10 %), Argillaceous, Coarse (6 - 20 mm), Nodules;
B22	1.5 - 1.8 m	Red (10R4/6-Moist); ; Sandy medium clay; Weak grade of structure, 20-50 mm, Prismatic; Earthy fabric; Dry; Very strong consistence; Few (2 - 10 %), Argillaceous, Coarse (6 - 20 mm),

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B22	1.8 - 2.1 m	Red (10R4/6-Moist); ; Sandy medium clay; Weak grade of structure, Prismatic; Earthy fabric; Dry; Very strong consistence; Few (2 - 10 %), Argillaceous, Coarse (6 - 20 mm), Nodules; Diffuse change to -
B23	2.1 - 2.4 m	Dark red (10R3/6-Moist); ; Clay loam; Massive grade of structure; Dry; Very strong consistence; Many (20 - 50 %), Argillaceous, Coarse (6 - 20 mm), Nodules; Clear change to -
C1	2.4 - 2.5 m	Dark red (10R3/6-Moist); , 5YR56, 0-2% , 15-30mm, Distinct; , 10YR56, 0-2% , 15-30mm, Distinct; Clay loam, coarse sandy; Massive grade of structure; Dry; Very strong consistence; 2-10%, coarse gravelly, 20-60mm, rounded, Quartz, coarse fragments; Few (2 - 10 %), Argillaceous, Coarse (6 - 20 mm), Nodules; Gradual change to -
C2	2.5 - 2.7 m	Dark red (10R3/6-Moist); , 5YR56, 20-50% , 15-30mm, Prominent; , 10YR56, 20-50% , 15-30mm, Prominent; Clay loam, coarse sandy; Massive grade of structure; Earthy fabric; Dry; Rigid consistence; Few (2 - 10 %), Argillaceous, Coarse (6 - 20 mm), Nodules;
C2	2.7 - 3 m	Dark red (10R3/6-Moist); , 5YR56, 20-50% , 15-30mm, Prominent; , 10YR56, 20-50% , 15-30mm, Prominent; Clay loam, coarse sandy; Massive grade of structure; Earthy fabric; Dry; Rigid consistence; Few (2 - 10 %), Argillaceous, Coarse (6 - 20 mm), Nodules;
C2	3 - 3.3 m	Dark red (10R3/6-Moist); , 5YR56, 20-50% , 15-30mm, Prominent; , 10YR56, 20-50% , 15-30mm, Prominent; Clay loam, coarse sandy; Massive grade of structure; Earthy fabric; Dry; Rigid consistence; Few (2 - 10 %), Argillaceous, Coarse (6 - 20 mm), Nodules;
C2	3.3 - 3.6 m	Dark red (10R3/6-Moist); , 5YR56, 20-50% , 15-30mm, Prominent; , 10YR56, 20-50% , 15-30mm, Prominent; Clay loam, coarse sandy; Massive grade of structure; Earthy fabric; Dry; Rigid consistence; Few (2 - 10 %), Argillaceous, Coarse (6 - 20 mm), Nodules;
C2	3.6 - 3.75 m	Dark red (10R3/6-Moist); , 5YR56, 20-50% , 15-30mm, Prominent; , 10YR56, 20-50% , 15-30mm, Prominent; Clay loam, coarse sandy; Massive grade of structure; Earthy fabric; Dry; Rigid consistence; Few (2 - 10 %), Argillaceous, Coarse (6 - 20 mm), Nodules; Gradual change to -
C3	3.75 - 4 m	Red (2.5YR4/8-Moist); , 7.5YR68, 20-50% , 0-5mm, Distinct; , 10YR68, 20-50% , 0-5mm, Distinct; Sandy medium clay; Massive grade of structure; Earthy fabric; Dry; Strong consistence; Very few (0 - 2 %), Argillaceous, , Nodules;
C3	4 - 4.5 m	Red (2.5YR4/8-Moist); , 7.5YR68, 20-50% , 0-5mm, Distinct; , 10YR68, 20-50% , 0-5mm, Distinct; Sandy medium clay; Massive grade of structure; Earthy fabric; Dry; Strong consistence; Very few (0 - 2 %), Argillaceous, , Nodules;
C3	4.5 - 5 m	Red (2.5YR4/8-Moist); , 7.5YR48, 20-50% , 0-5mm, Distinct; , 10YR68, 20-50% , 0-5mm, Distinct; Sandy medium clay; Massive grade of structure; Earthy fabric; Dry; Strong consistence; Very few (0 - 2 %), Argillaceous, , Nodules;
C3	5 - 5.5 m	Red (2.5YR4/8-Moist); , 7.5YR48, 20-50% , 0-5mm, Distinct; , 10YR68, 20-50% , 0-5mm, Distinct; Sandy medium clay; Massive grade of structure; Earthy fabric; Dry; Strong consistence; Very few (0 - 2 %), Argillaceous, , Nodules;
C3	5.5 - 6 m	Red (2.5YR4/8-Moist); , 7.5YR48, 20-50% , 0-5mm, Distinct; , 10YR68, 20-50% , 0-5mm, Distinct; Sandy medium clay; Massive grade of structure; Earthy fabric; Dry; Strong consistence; Very few (0 - 2 %), Argillaceous, , Nodules;
C3	6 - 6.5 m	Red (2.5YR4/8-Moist); , 7.5YR48, 20-50% , 0-5mm, Distinct; , 10YR68, 20-50% , 0-5mm, Distinct; Sandy medium clay; Massive grade of structure; Earthy fabric; Dry; Strong consistence; Very few (0 - 2 %), Argillaceous, , Nodules;
C3	6.5 - 7 m	Red (2.5YR4/8-Moist); , 7.5YR48, 20-50% , 0-5mm, Distinct; , 10YR68, 20-50% , 0-5mm, Distinct; Sandy medium clay; Massive grade of structure; Earthy fabric; Dry; Strong consistence; Very few (0 - 2 %), Argillaceous, , Nodules;
C3	7 - 7.35 m	Red (2.5YR4/8-Moist); , 7.5YR48, 20-50% , 0-5mm, Distinct; , 10YR68, 20-50% , 0-5mm, Distinct; Sandy medium clay; Massive grade of structure; Earthy fabric; Dry; Strong consistence; Very few (0 - 2 %), Argillaceous, , Nodules;
C3	7.35 - 7.45 m	Red (2.5YR4/8-Moist); , 7.5YR48, 20-50% , 0-5mm, Distinct; , 10YR68, 20-50% , 0-5mm, Distinct; Sandy medium clay; Massive grade of structure; Earthy fabric; Dry; Strong consistence; Very few (0 - 2 %), Argillaceous, , Nodules;
C3	7.45 - 7.75 m	Red (2.5YR4/8-Moist); , 7.5YR48, 20-50% , 0-5mm, Distinct; , 10YR68, 20-50% , 0-5mm, Distinct; Sandy medium clay; Massive grade of structure; Earthy fabric; Dry; Strong consistence; Very few (0 - 2 %), Argillaceous, , Nodules; Clear change to -
C4	7.75 - 8 m	Red (10R4/7-Moist); , 7.5YR56, 20-50% , 5-15mm, Prominent; , 5Y71, 20-50% , 5-15mm, Prominent; Sandy medium clay; Massive grade of structure; Dry; Very strong consistence; 0-2%, angular, Substrate material, coarse fragments;

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C4	8 - 8.25 m	Red (10R4/7-Moist); , 7.5YR56, 20-50% , 5-15mm, Prominent; , 5Y71, 20-50% , 5-15mm, Prominent; Sandy medium clay; Massive grade of structure; Dry; Very strong consistence; 0-2%, angular, Substrate material, coarse fragments; Abrupt change to -
R1	8.25 - 8.5 m	Rock
R1	8.5 - 8.8 m	Rock

Morphological Notes

Observation Notes

Site Notes

REDLANDS

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations			Exchangeable Acidity		CEC	ECEC	ESP
m		dS/m	Ca	Mg	K	Na				%
0 - 0.1	5.7A		3.36H	1.57	0.25	0.12	0.03F	4.1A	5.3F	2.93
0.1 - 0.2			1.61H	0.85	0.2	0.07	0.04F	3.3A	2.8F	2.12
0.2 - 0.3	5.8A		1.65H	0.84	0.21	0.46	0.05F	3A	3.2F	15.33
0.3 - 0.5	6A		1.94H	1.14	0.24	0.02	0.04F	2.8A	3.4F	0.71
0.5 - 0.6			1.98H	1.21	0.26	<0.02	0.05F	2.9A	3.5F	
0.6 - 0.75	5.9A		1.89H	1.53	0.21	<0.02	0.01F	3.2A	3.7F	
0.75 - 0.9			1.59H	1.57	0.16	<0.02	0.03F	3.4A	3.4F	
0.9 - 1.2	6.1A		1.56H	1.93	0.12	<0.02	<0.01F	3.6A	3.6F	
1.2 - 1.5			1.2H	1.61	0.12	<0.02	0.03F	3.3A	3F	
1.5 - 1.8	6.3A		0.89H	3.25	0.09	0.02	0.01F	3.4A	4.3F	0.59
1.8 - 2.1			0.68H	3.76	0.07	0.03	0.08F	3.2A	4.6F	0.94
2.1 - 2.4	6.3A		0.42H	3.67	0.06	0.06	0.02F	2.9A	4.2F	2.07
2.4 - 2.5	6.1A		0.2H	3.66	0.05	0.08	0.01F	3.2A	4F	2.50
2.5 - 2.7	6A		0.12H	3.6	0.05	0.08	0.01F	2.3A	3.9F	3.48
2.7 - 3			<0.02H	3.67	0.04	0.13	<0.01F	2.9A	3.9F	4.48
3 - 3.3			<0.02H	3.65	0.03	0.16	0.01F	3.1A	3.9F	5.16
3.3 - 3.6	5.8A		<0.02H	3.82	0.03	0.19	0.01F	3.1A	4.1F	6.13
3.6 - 3.75										
4 - 4.5	5.6A		<0.02H	3.31	0.02	0.22	0.04F	3.1A	3.6F	7.10
4 - 4.5	5.6A		<0.02H	3.31	0.02	0.22	0.04F	3.1A	3.6F	7.10
4.5 - 5										
5 - 5.5			<0.02H	3.35	0.02	0.3	0.03F	2.9A	3.7F	10.34
5.5 - 6										
6 - 6.5	5.2A		<0.02H	2.85	0.02	0.21	0.04F	2.3A	3.1F	9.13
6.5 - 7										
7 - 7.35			<0.02H	2.86	0.02	0.25	0.04F	2.4A	3.2F	10.42
7.35 - 7.45	5A		<0.02H	2.46	0.02	0.21	0.12F	2.6A	2.8F	8.08
7.45 - 7.75	5.1A		<0.02H	3.02	0.03	0.25	0.35F	2.7A	3.7F	9.26
7.75 - 8	5.5A		<0.02H	2.38	0.02	0.27	0.08F	2.6A	2.8F	10.38
8 - 8.25	5.3A		<0.02H	2.85	0.02	0.27	0.1F	2.9A	3.3F	9.31
8.25 - 8.5	5.4A		<0.02H	2.42	0.02	0.23	0.14F	2.6A	2.8F	8.85
8.5 - 8.8	5.4A		<0.02H	2.52	0.03	0.26	0.14F	2.5A	3F	10.40

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size		Analysis	
m	%	%	mg/kg	%	%	%	Mg/m3	GV	CS	FS	Silt Clay
0 - 0.1									43A	36	6 15
0.1 - 0.2									43A	35	5 17
0.2 - 0.3								1	41A	32	6 21
0.3 - 0.5								1	35A	24	5 36
0.5 - 0.6								1	26A	21	4 49
0.6 - 0.75								1	26A	19	5 51
0.75 - 0.9								1	24A	19	5 52
0.9 - 1.2								1	25A	19	6 50
1.2 - 1.5								1	21A	19	8 53
1.5 - 1.8								1	19A	23	11 47
1.8 - 2.1								3	20A	22	9 49
2.1 - 2.4								4	20A	23	9 49
2.4 - 2.5								9	23A	21	8 48
2.5 - 2.7								5	26A	23	6 44

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Laboratory Analyses Completed for this profile

13C1_FE	Citrate/dithionite-extractable iron, aluminium, Manganese and Silicon
15A2_CEC	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15E1_CA	Exchangeable bases (Ca ²⁺ ,Mg ²⁺ ,Na ⁺ ,K ⁺) by compulsive exchange, no pretreatment for soluble
15E1_K	Exchangeable bases, CEC and AEC by compulsive exchange, no pretreatment for soluble salts
15E1_MG	Exchangeable bases, CEC and AEC by compulsive exchange, no pretreatment for soluble salts
15E1_NA	Exchangeable bases, CEC and AEC by compulsive exchange, no pretreatment for soluble salts
15G_C	Exchange acidity (hydrogen and aluminium) - meq per 100g of soil - By 1M KCl exch. acidity by titration to pH 8.4
15J1	Effective CEC
4A1	pH of 1:5 soil/water suspension
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
P10_GRAV	Gravel (%)