# Appendix B - Landform, Soil and Vegetation Assessment Report (Field Survey)

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# LAND TYPES AND LAND CAPABILITY ON PARTS OF RITA'S HOLDING, MICK'S EAST AND FLORENCE'S EAST PADDOCKS, UCHARONIDGE STATION

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**Prepared for:** Cleveland Agriculture

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# 1. Introduction

## 1.1 Background

Cleveland Agriculture manage Ucharonidge Station in the Barkly Tableland region of the Northern Territory on behalf of the owner, Ucha Pty Ltd. They propose to clear approximately 4 889 ha of native vegetation for diversification into broadscale dryland cropping on the property. As lessee of the pastoral lease, Ucha Pty Ltd are required to lodge an 'application to clear native vegetation' for consideration and approval by the Pastoral Land Board. Cleveland Agriculture, on behalf of Ucha Pty Ltd, are lodging the application. Nicholas McGrath (ABN 30 391 624 635) has been tasked by Cleveland Agriculture to assess the landform, soil and vegetation properties of the proposed clearing area to reliably inform and assist in the completion of the Land Resources (Section 7) and Erosion and Sediment Control (Section 11) sections of the application. The following report describes findings of the land resource assessment and land capability assessment of the proposed clearing area.

## 1.2 Survey area

The proposed clearing area, referred to as the survey area, is located east and north of the Ucharonidge station homestead and covers a total area of 4 889 ha (Figure 1). The survey area is divided into three sections. 'Rita's Holding' (1 401 ha) is the southern most section, 'Mick's East' (1 962 ha) is the middle section and 'Florence's East' (1 536 ha) is the northern most section. For simplicity, the survey area is referred to as a whole throughout this report.

The location and extent of the survey area was adjusted during field assessment after preliminary field observations of the original survey area (further to the south and east of the current survey area) identified drainage features and riparian vegetation (*Eucalyptus microtheca*). Adjustment of the boundary was made to avoid such areas and enabled the proposed clearing area to include a single uniform land type, namely a non-gravelly, level to gently undulating Mitchell grass clay plain (Land Type 1).

Figure 2 illustrates the level to gently undulating landform associated with Land Type 1.

## 1.3 Previous land resource mapping

Previous land resource studies that intersect the survey area are limited to the 1:1 000 000 land systems mapping – *Survey of the Barkly Region, Northern Territory and Queensland, 1947-48* (Christian *et al*. 1954). Two land systems from this mapping intersect the survey area. The Creswell land system covers the majority of survey area. This land system is characterised as very gently undulating to nearly flat Tertiary swamps with heavy grey pedocal soils and dominant vegetation of *Eulalia fulva* and *Dicanthium fecundum* grassland (Christian *et al*. 1954). A small portion of the survey area in the south is mapped as the Sylvester land system. This land system is characterised as very gently undulating seasonally flooded swamps with heavy grey pedocal soils and a dominant vegetation of *Chenopodium auricomum* shrubland with *Eucalyptus microtheca* on the fringes (Christian *et al*. 1954).

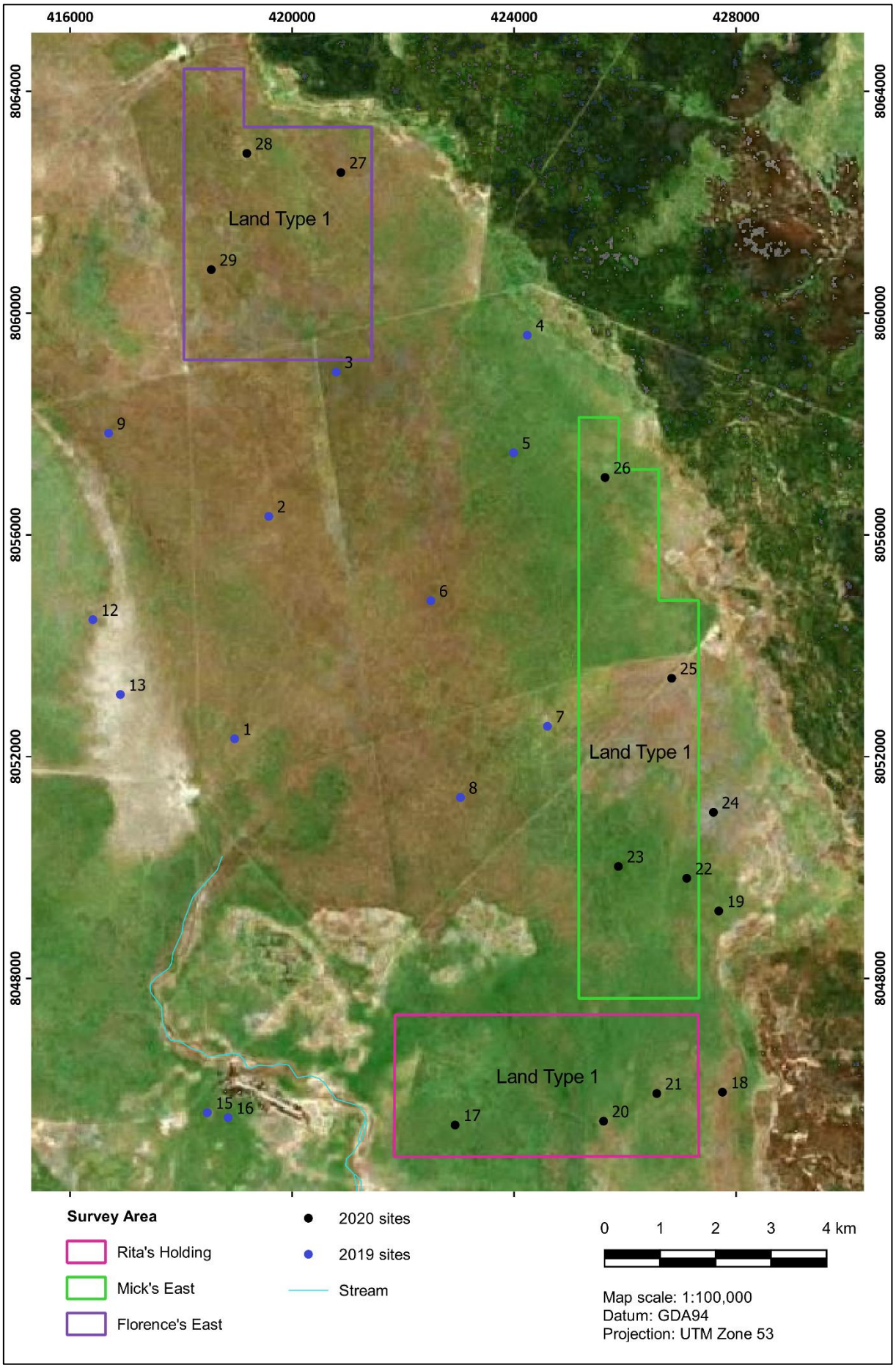



Figure 1 The location and extent of the survey area, including field sites and land types (image source: Bing).

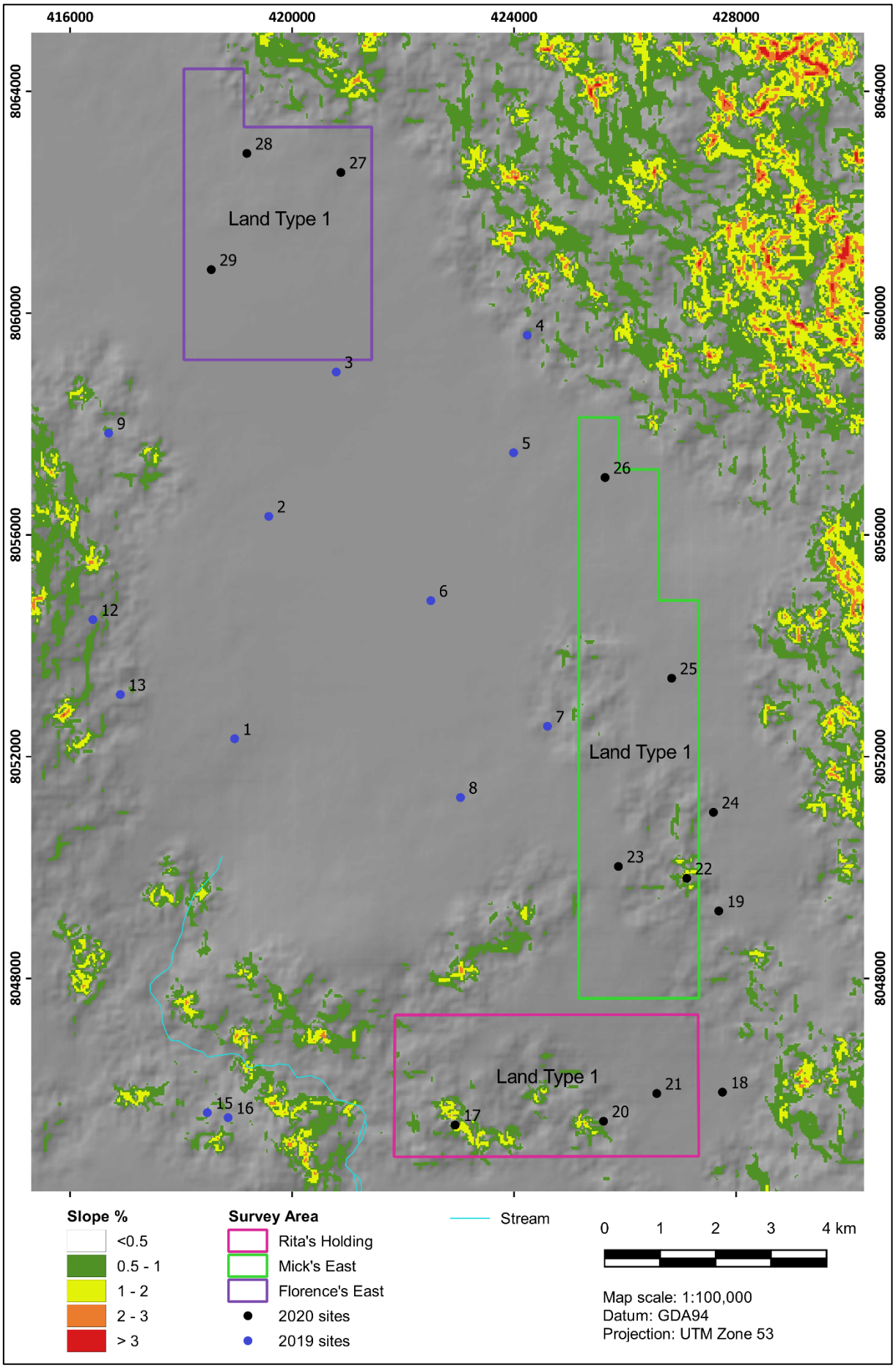



Figure 2 Hillshade and percentage slope of the the survey area, from the SRTM-derived 1 second (30 m) Digital Elevation Model (source: Geoscience Australia).

# 2. Investigation methods

## 2.1 Land type mapping

The Northern Territory *Land Clearing Guidelines* (DENR 2020) define a land type as a simplified land unit that incorporates "a reasonably homogenous part of a land surface, distinct from surrounding terrain with consistent properties in landform, soil or vegetation" (Hooper 1970). As such, mapped land types typically exhibit a uniform pattern on aerial photography or satellite imagery, and present as a repeatable and recognisable combination of landscape terrain, soil type and associated vegetation community.

Preliminary landscape interpretation incorporating geological mapping, digital elevation model (DEM) analysis, satellite imagery patterns and observable landscape features was used to delineate potential landform, soil and vegetation changes within the survey area. Proposed field sampling locations were selected during this process and preliminary land type boundaries were verified and adjusted during fieldwork.

## 2.2 Mapping scale

Due to the uniformity of landform, soil and vegetation characteristics within the survey area, and the low to medium intensity (see McKenzie *et al.* 2008) broadscale nature of the proposed land use (broadscale dryland cropping), a mapping scale of 1:50,000 was deemed appropriate. Field site densities and data collection conform with minimum acceptable requirements for this scale (McKenzie *et al.* 2008).

## 2.3 Field survey

The field program was undertaken in late July 2020. In total, 11 detailed field sites were described for landform, soil and vegetation characteristics. A further two field sites were described for landform, surface soil and vegetation characteristics. In addition to the 13 field sites described in July 2020, another 4 field sites described in September 2019 and located near the survey area were used to assist site selection and mapping in this investigation. All field site locations are shown in Figure 1 and Figure 2.

Detailed field sites comprise fully described soil pits to a depth of between 1.1 m and 1.5 m. Soil pits were excavated by a backhoe, and have been comprehensively photographed, described and sampled. Landform, soil and vegetation descriptions were collected in accordance with national standards outlined by NCST (2009), Hnatiuk *et al*. (2009) and Isbell and NCST (2016). Sampling of the surface soil and subsoil horizons was undertaken at standard depth intervals; 0-0.05 m (or depth of A11 horizon), 0.2-0.3 m, 0.5-0.6 m, 0.8-0.9 m, 1.1-1.2 m and 1.4-1.5 m (if exposed) at all detailed field sites. Salinity analyses were completed for all sites (Field sites – 17, 18, 19, 21, 22, 23, 24, 25, 26, 27 and 29), while cation chemistry and potential sodicity characteristics were undertaken at selected representative sites (Field sites – 21, 22 and 27).

## 2.4 Laboratory analysis

All laboratory analyses were undertaken by Agricultural Chemistry Pty Ltd. in Queensland. This is an Australasian Soil and Plant Analysis Council (ASPAC) accredited laboratory and methodologies used follow the procedures described by Rayment and Lyons (2011) and McKenzie *et al.* (2002).

### *2.4.1 Salinity assessment*

Analyses undertaken at each sample depth included $pH_{1:5}$, electrical conductivity ($EC_{1:5}$), soluble chloride ($Cl_{1:5}$). $EC_e$ is a measure of the electrical conductivity of a saturated soil-water extract, and is the preferred method for assessing soil salinity within the broader landscape. Standard $EC_{1:5}$ measurements can be converted to $EC_e$ however the dissolution of crystalline gypsum ($CaSO_4$) during dilution (1:5 soil-water) inflates measured values and makes $EC_{1:5}$ data inconsistent and difficult to interpret. Soluble chloride ($Cl_{1:5}$) data, in contrast, is unaffected by the presence of gypsum and provides a reliable measure by which to quantify salinity characteristics. Due to the presence of crystalline gypsum in the soil in the survey area, $EC_e$ values have been calculated from soluble chloride (Cl) data and not $EC_{1:5}$ measurement. Soluble chloride (Cl) data from the survey area were converted to $EC_{Cl}$ values and then $EC_e$ values using the following equations:

*Equation 1* $\%Cl = Cl\ (mg/kg) \times 10^{-4}$

*Equation 2* $EC_{Cl}\ (dS/m) = 6.64 \times \%Cl$ (per weight of soil)

*Equation 3* $EC_e\ (dS/m) = EC_{Cl}\ (dS/m) \times$ multiplier factor (fromTable 1 below)

Table 1 Multiplier factors for converting $EC_{1:5}$ (dS/m) to an approximate value of $EC_e$ (dS/m) (Hazelton and Murphy 2016)

| Soil texture | Multiplier factor |
|---|---|
| Light medium clay | 8.6 |
| Medium clay | 7.5 |
| Medium heavy clay, heavy clay | 5.8 |

Salinity data (including the conversion of Cl data to $EC_{Cl}$ and then to $EC_e$) for the survey area is presented in Appendix 3.

### *2.4.2 Sodicity assessment*

Sodicity is measured as the exchangeable sodium percentage (ESP) and is calculated as exchangeable sodium over cation exchange capacity (Na/CEC). Analyses were undertaken at 0-0.05 m (or depth of A11 horizon), 0.2-0.3 m, 0.5-0.6 m and 0.8-0.9 m, at 3 detailed field sites for cation chemistry and potential sodicity characteristics. The 3 representative sites were selected to ensure adequate spatial distribution across the survey area (Site 21 is located in the southern section ('Rita's Holding'), Site 22 is located in the middle section ('Mick's East') and Site 27 is in the north section ('Florence's East'). Analyses undertaken included cation exchange capacity (CEC/ECEC), exchangeable cations (Ca, Mg, Na and K), ESP and Ca/Mg ratio.

Sodicity data (including CEC/ECEC, exchangeable cations, ESP and Ca/Mg ratio) for the survey area are presented in Appendix 3.

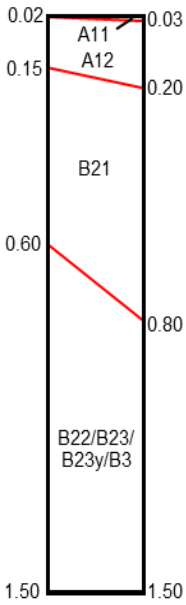
# 3. Land types

| Land Type 1 | Mitchell grass plains with grey cracking clays |
|---|---|
| **Geological landscape:** | Undifferentiated Cainozoic clay sheets derived from reworked terrestrial, alluvial and lacustrine deposits (unconsolidated clay, minor chert/chalcedony gravel) (Czb). |
| **Landform:** | Level to gently undulating, undifferentiated colluvial/alluvial plain, slopes mostly ≤0.5%, occasionally up to 2% |
| **Soil concept:** | Very deep (>1.5 m), hardsetting, firm pedal to weakly or moderately self-mulching, grey cracking clay (MHC subsoil); with an inconsistent, moderately thick (0.02-0.03 m), coarse granular (2-5 mm) to blocky (10-20 mm) A11 surface horizon (LMC-MC), over a moderately friable, blocky (mostly 5-30 mm) A12 subsurface horizon (MHC). |
| **Aust. Soil Classification:** | Epipedal or Self-mulching Grey Vertosol. |
| **Runoff, perm., & drainage:** | Very slow runoff; slowly permeable; moderately well-drained. |
| **Surface features:** | Hardsetting, firm pedal to weakly or moderately self-mulching; cracking; crabhole or normal gilgai (VI 0.15-0.3 m HI 2-5 m); non-gravelly; no outcrop; no termitaria. |
| **Dominant vegetation community:** | *Astrebla sp. +/- Paspalidium retiglume +/- Iseilema vaginiflorum* low tussock grassland. |
| **Sub-dominant vegetation communities:** | *Sorghum timorense +/- Astrebla sp.* mid tussock grassland.<br>(Vegetation characteristics (height, cover etc.) are described on field sheets (Appendix 4)) |

*Astrebla sp. +/- Paspalidium retiglume +/- Iseilema vaginiflorum* low tussock grassland (Site 22).

Firm pedal to weakly self-mulching, grey cracking clay.

## Modal Soil Profile Description

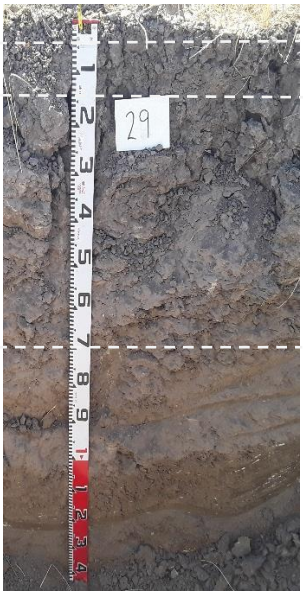



The **upper surface soil** (A11) is a grey (10YR, 2.5Y 4/1-2, 5/2), light medium clay to medium clay, with weak to moderate granular (2-5 mm) to subangular blocky (10-20 mm) structure; field pH 6.0-6.5.

The **lower surface soil** (A12) is a grey (2.5Y 4/2, 5/1), medium heavy clay, with moderate subangular blocky (10-40 mm) structure; field pH 6.5.

The **upper subsoil** (B21) is a grey (2.5Y 4/2, 5/1), medium heavy clay, with moderate to strong lenticular or angular blocky (10-50 mm) structure; field pH 7.0-7.5.

The **lower subsoil** (B22/B23/B23y/B3) is a grey (2.5Y 4/2), mottled (2-70% 5-10 mm distinct orange substrate mottles increasing with depth), medium heavy clay, with weak to moderate lenticular or angular blocky (10-40 mm) structure; 1-10% 5-10 mm gypsum crystals with occasional 1-2% 2 mm calcareous nodules; field pH 7.5-8.5.



# 4. Land capability

## 4.1 Land capability assessment

Land capability has been assessed in accordance with the *Land Clearing Guidelines* (DENR 2020). Four land capability classes are recognised within the Northern Territory (Table 2). Class 1 generally defines the most versatile soil and land resources, while Class 4 identifies the most constrained land. Increasing class values signal an escalating degree of limiting constraint.

Table 2 Land capability classes from Table 6 and Table 8 of the *Land Clearing Guidelines* (DENR 2020).

| Class | Land capability | Description |
|---|---|---|
| **1** | High | **Land with negligible constraints** and requires only simple management practices.<br>(ASS not present; flood-free; gilgai microrelief absent, $EC_e$ <2 dS/m; ESP <6%; 0-1% slope; >1.0 m soil depth; rapid to well-drained soil; no surface rock; low wind erosion hazard) |
| **2** | Moderate | **Land with minor or moderate constraints** but requires more than the simple management practices of Class 1.<br>(ASS not present; and/or flooding extremely rare (<1 in 30 years); and/or gilgai microrelief vertical interval <0.3 m; and/or $EC_e$ 2-4 dS/m; and/or ESP 6-15%; and/or 1-2% slope; and/or soil depth 0.5-1.0 m; and/or moderately drained soil; and/or 0-2% surface rock; and/or moderate wind erosion hazard) |
| **3** | Marginal | **Land with severe constraints** and requires considerable management practices.<br>(ASS not present; and/or flooding rare (1 in 10 to 30 years); and/or gilgai microrelief vertical interval 0.3-0.6 m; and/or $EC_e$ 4-8 dS/m; and/or ESP 15-20%; and/or 2-3% slope; and/or 0.25-0.5 m soil depth; and/or imperfectly drained soil; and/or 2-10% surface rock; and/or high wind erosion hazard) |
| **4** | Not recommended | **Land with extreme constraints** too severe to develop. Can only be overcome with major management and/or engineered solutions.<br>(ASS present; and/or regular to permanent flooding (>1 in 10 years); and/or gilgai microrelief vertical interval >0.6 m; and/or $EC_e$ >8 dS/m; and/or ESP >20%; and/or >3% slope; and/or <0.25 m soil depth; and/or poor to very poorly drained soil; and/or >10% surface rock; and/or very high wind to extreme erosion hazard) |

Eight soil and land resource attributes from Table 2 are considered important in the northern Barkly region. These include flooding, microrelief, salinity, slope (as a surrogate for water erosion), sodicity, soil depth, soil drainage and surface rock. Acid sulfate soil (ASS) presence was not assessed because of the elevation of the site above sea level and absence of coastal landscapes in the area. Similarly, wind erosion was not assessed as it is only applicable in sandy, arid zone landscapes or where coastal sand masses are involved. Each key characteristic was assessed against the defined land capability criteria, and a criteria sub-class from 1 to 4 was assigned to each land type. A final land capability class was determined by the most limiting characteristic recorded for each land type (i.e. the highest assigned criteria sub-class).

## 4.2 Land capability assessment outcomes

Land capability outcomes for the survey area are summarised in Tables 3 and 4. Land Type 1 is considered to have moderate capability (Land Capability Class 2) with only minor or moderate constraints. The land type comprises a level to gently undulating, undifferentiated colluvial/alluvial plain with a very deep (>1.5 m), uniform, gravel-free, grey cracking clay (Epipedal or Self-mulching Grey Vertosol).

Minor or moderate constraints are limited to rare, very shallow, low velocity local inundation following very large, short duration 'Wet season' rainfall events (1 in 10 to 30 years) on the colluvial/alluvial plain, the presence of shallow gilgai microrelief (VI <0.3 m), moderate ESP levels (6 to 15%), areas with slope between 1 and 2%, and slightly impeded drainage (moderately well-drained profiles).

### *4.2.1 Salinity and sodicity assessment findings*

Laboratory analysis of Chloride (Cl) levels at each site identified low salinity levels (<2 ECe (dS/m)) from 0 to 1 m. Advice from representatives of the Land Assessment Branch, DENR, based on existing soil knowledge from the northern Barkly region, suggests sodicity constraints are closely linked with the development of salinity loads within the soil profile. Analysis of salinity data within the survey area shows an increase of salt loads with depth down the profile but low salt loads (<2 ECe (dS/m)) within the top 1 m of all field sites. Based on this information, it is likely sodicity characteristics also match these trends and that ESP values are also likely to be low in the top 0.6 m of the soil profile.

Laboratory analysis of ESP values for the 3 representative sites (Sites 21, 22 and 27) identified low levels (<6% ESP) from 0 to 0.6 m at Sites 21 and 27 and a moderate level (6% ESP) between 0.5 and 0.6 m at Site 22. This data indicates that clay dispersion is unlikely to be significant from 0 to 0.6 m. Analysis of exchangeable cations (at Sites 21, 22 and 27) identified the soil is calcium dominant (relative to magnesium and sodium) at depth 0.5 and 0.6 m, with a Ca/Mg ratio >1, indicating that the soil is likely to have good physical properties (Baker and Eldershaw 1993). In addition, the relatively level landscape (slopes <2%) and lack of erosive surface flows over the survey area means that soil erosion risk is likely to be low to very low.

### *4.2.2 Avoidance of flooding/inundation constraints*

The proposed clearing areas have been positioned to avoid recognised drainage features in the area. Local drainage systems are subject to short duration, low energy, low velocity, low gradient, back-up water inundation. Field observations and satellite imagery analysis of a large rainfall event in the 2015/16 'Wet season' identified drainage features to the south, west and east of the southern section ('Rita's Holding'). The identified drainage depression to the east of the southern section appears to receive flow coming off Creataceous landscapes immediately to the east. The drainage depression starts south-east of Site 19 and extends south to the Coolibah swamp. Vegetation within the depression is not considered riparian, indicating that flooding is only rare or extremely rare. All proposed clearing areas, particularly the southern section, have been carefully located to ensure they are segregated and appropriately buffered with natural Mitchell grassland from recognised areas of back-up inundation. Any inundation that may enter the proposed clearing areas is likely to be short duration, very shallow, low energy and low velocity, and would be similar to an irrigation event.

### *4.2.3 Slope characteristics*

Field observations indicate the majority of the survey area has <0.5% slope with minor areas of 0.5 to 1% and 1 to 2% slope. This is consistent with the DEM generated slope map (Figure 2). Areas indicated as having slopes >2% according to the slope map were navigated to in the field and measured using a clinometer. GPS coordinates, measured slope and a photo of each of the locations are presented in Appendix 2. A total of 3 locations, consisting of a singular 30 x 30 m pixel of between 2 and 3% slope are located within the survey area. Two of the locations are presented in Appendix 2 and the third location is at Site 17. Measured slope at all 3 locations was <2% and is appropriate for arable agriculture.

Table 3 Land capability assessment for the land types in the Ucharonidge survey area.

| Land Type | Land Capability | Flooding | Microrelief | Salinity (0 to 1 m) | Sodicity (0 to 0.6 m) | Slope | Soil Depth | Soil Drainage | Surface Rock | Overall Land Capability Class |
|---|---|---|---|---|---|---|---|---|---|---|
| **1** | Initial assessment | Rare (1 in 10 to 30 years) | Vertical interval <0.3m | <2 ECe (dS/m) | ESP 6 to 15% | 1 to 2% | >1 m | Moderately well-drained | 0% | - |
| | Initial land capability sub-class | 3 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 3 |
| | Amended land capability sub-class | 2[1] | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 2 |

Note 1: The flooding sub-class has been amended in accordance with Section 4.2.7 of the *Land Clearing Guidelines* (DENR 2020). Frequency of inundation of the proposed clearing areas is unknown and could potentially be extremely rare (<1 in 30 years). Inundation of the proposed clearing areas is likely to be short duration, very shallow, low energy, low velocity, back-up inundation, similar to an irrigation event. Therefore, the amended land type is considered Class 2 for the proposed land use of broadscale dryland cropping.

Table 4 Overall land capability assessment for the land types in the Ucharonidge survey area.

| Land Type | Description | Overall land capability |
|---|---|---|
| **1** | Level to gently undulating, undifferentiated colluvial/alluvial plain; slopes mostly ≤0.5% (occasionally up to 2%); very deep (>1.5 m), moderately well-drained, grey cracking clay (Vertosol); *Astrebla sp.* +/- *Paspalidium retiglume* +/- *Iseilema vaginiflorum* low tussock grassland. | **Class 2** |

# 5. References

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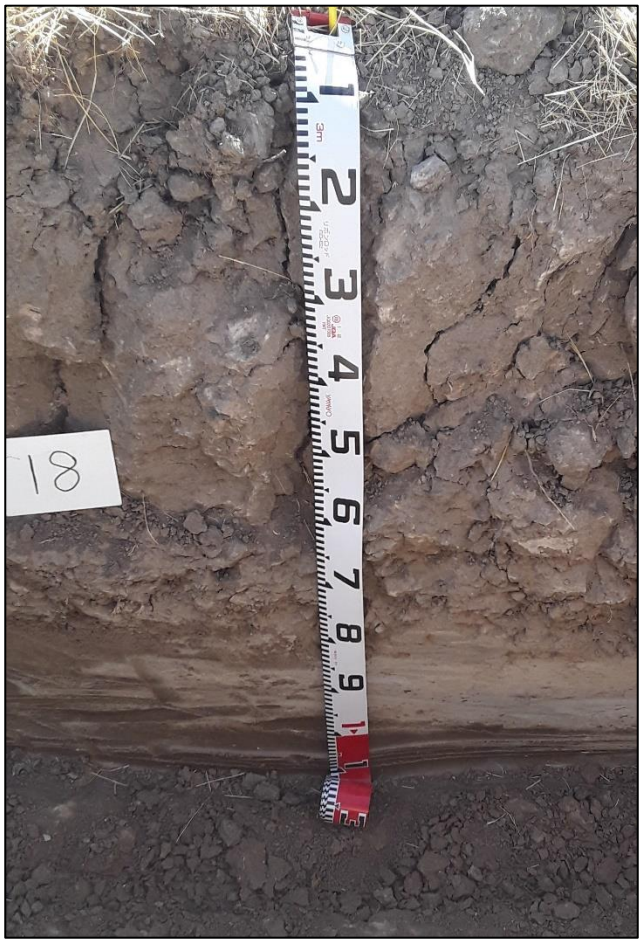
# 6. Limitations

*The interpretations of data and recommendations presented in this report are based on the physical and chemical conditions only at the locations where sampling occurred. The conditions of the site are considered representative, however due to natural variability, actual conditions across the site may be different from those described, especially between sampling locations. Therefore, the findings in this report should only be used within the limitations and methodology specified and those acting on information provided in this report do so entirely at their own risk. Specific circumstances in the future may also influence the accuracy of the data and recommendations within the report. Nicholas McGrath accepts no liability or responsibility for any losses, damages, cost or other consequences for any action taken or not taken on the basis of any part of the contents of this report.*

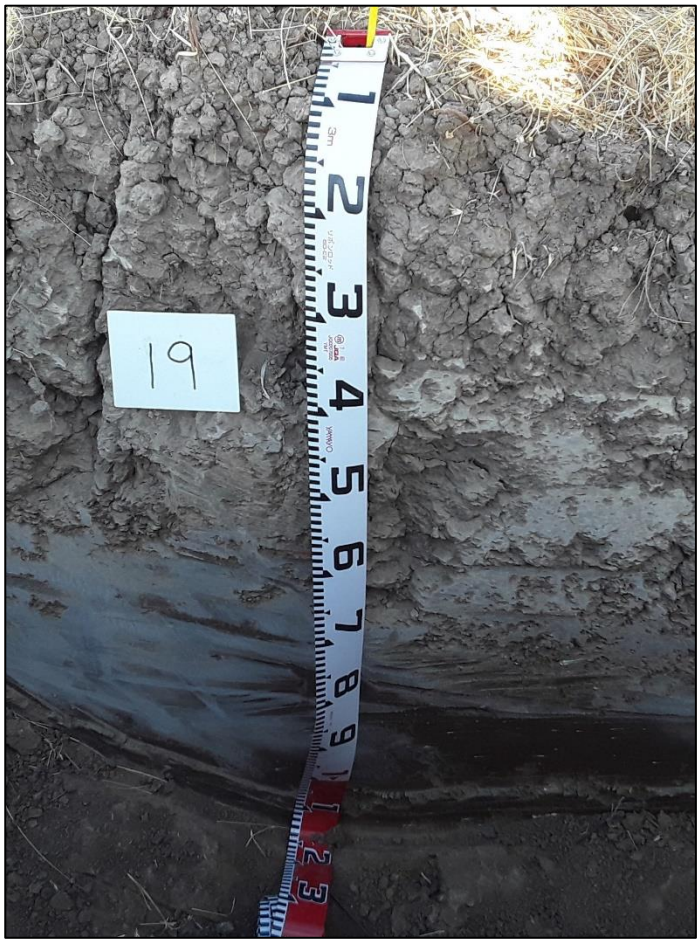
# Appendix 1 Field site photos and location

**Site 17** Location: 422937 E 8045355 N ASC: Self-mulching Grey Vertosol Slope: 1%

**Site 18** Location: 427756 E 8045948 N ASC: Self-mulching Grey Vertosol Slope: 0.5%



| **Site 19** | Location: 427689 E | 8049217 N | ASC: Epipedal Grey Vertosol | Slope: 0.5% |
|---|---|---|---|---|

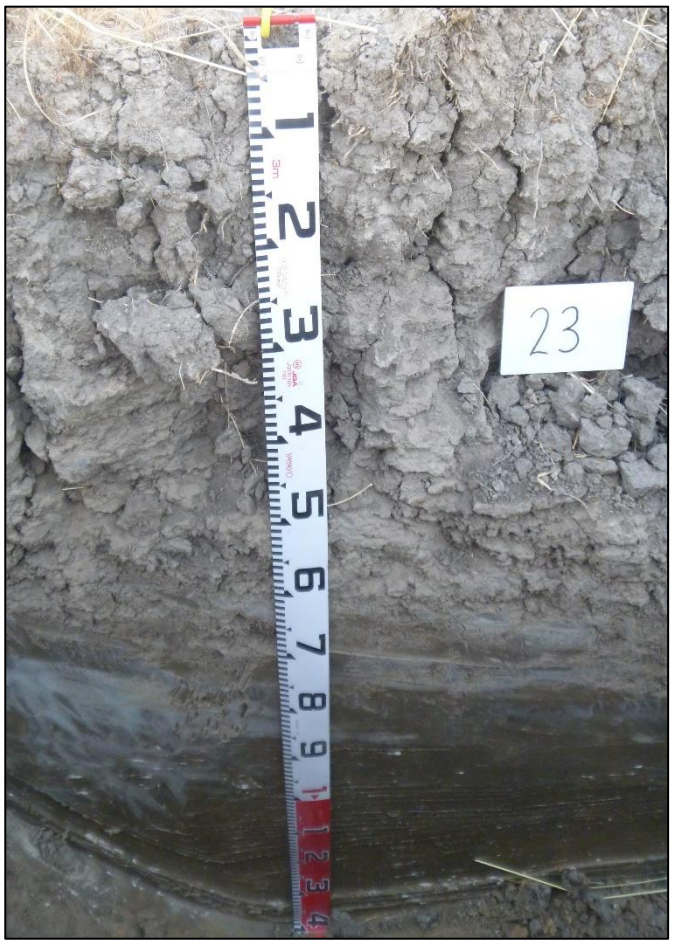


**Site 20** Location: 425612 E 8045424 N ASC: - Slope: 1.0%

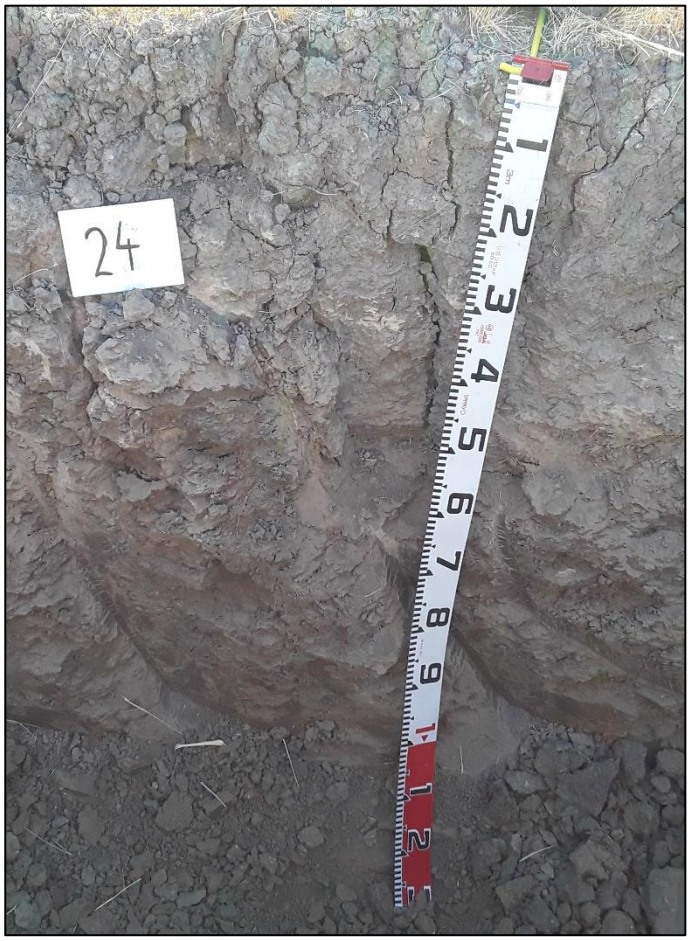
| **Site 21** | Location: 426572 E | 8045924 N | ASC: Epipedal Grey Vertosol | Slope: <0.5% |
|---|---|---|---|---|

| **Site 22** | Location: 427113 E | 8049807 N | ASC: Epipedal Grey Vertosol | Slope: 0.5% |
|---|---|---|---|---|

**Site 23** Location: 425880 E 8050019 N ASC: Epipedal Grey Vertosol Slope: <0.5%



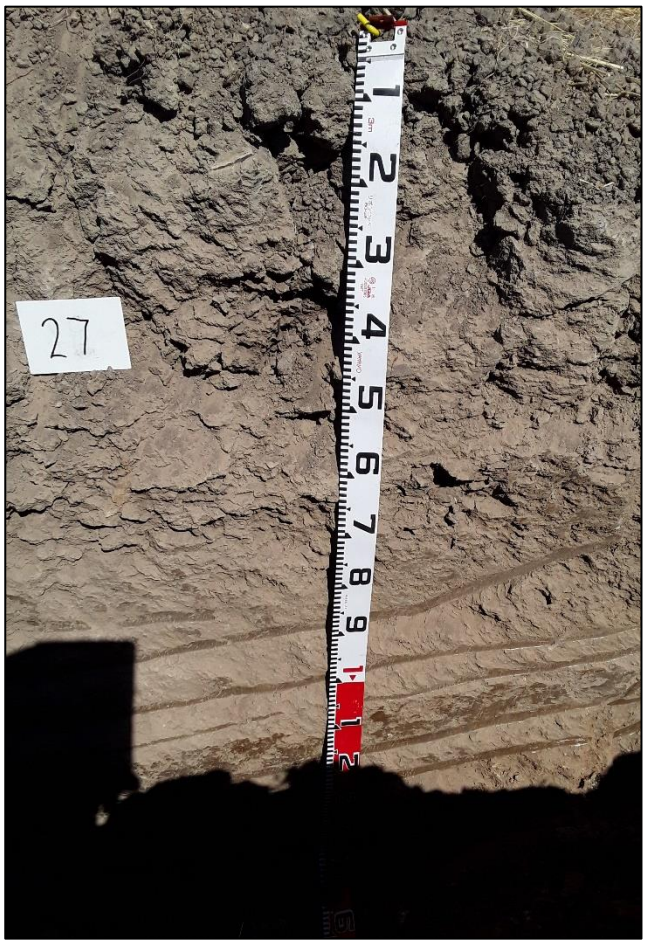
| **Site 24** | Location: 427594 E | 8050996 N | ASC: Epipedal Grey Vertosol | Slope: 0.5% |
|---|---|---|---|---|



| **Site 25** | Location: 426840 E | 8053414 N | ASC: Epipedal Grey Vertosol | Slope: <0.5% |
|---|---|---|---|---|

**Site 26** Location: 425640 E 8057035 N ASC: Self-mulching Grey Vertosol Slope: <0.5%

**Site 27** Location: 420879 E 8062537 N ASC: Epipedal Grey Vertosol Slope: <0.5%



**Site 28** Location: 419186 E 8062881 N ASC: - Slope: <0.5%

| **Site 29** | Location: 418544 E | 8060784 N | ASC Self-mulching Grey Vertosol | Slope: <0.5% |
|---|---|---|---|---|

# Appendix 2 Slope check site photos and location

Areas indicated as having slopes >2% according to the slope map (Figure 2) were measured in the field using a clinometer. GPS coordinates, measured slope and a photo of each of the locations are presented below.

Location: 422840 E 8045520 N DEM Slope: 2.3% Measured Field Slope: 0 – 1%

Location: 425290 E 8045390 N DEM Slope: 2.1% Measured Field Slope: 0.5 – 1.5%

# Appendix 3 Analytical data for field sites

**Agricultural Chemistry Pty Ltd**
**Soil Analysis Report**
**Batch Number: 20/57**

**Date Received: 5/8/2020**
**Date Completed: 15/8/2020**

**Client** Cleveland Ag

| Lab No | Site | Depth | pH | EC | Cl | %Cl | ECCl | ECe | Ca | Mg | K | Na | ECEC | ESP | Ca/Mg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | cm | | mS/cm | mg/kg | | dS/m | dS/m | meq/100g | meq/100g | meq/100g | meq/100g | meq/100g | % | ratio |
| 952 | 17 | 0 - 3 | 7.1 | 0.118 | 95 | 0.01 | 0.06 | 0.47 | | | | | | | |
| 953 | | 20 - 30 | 7.6 | 0.028 | 4.6 | 0.00 | 0.00 | 0.02 | | | | | | | |
| 954 | | 50 - 60 | 8.3 | 0.035 | 4.3 | 0.00 | 0.00 | 0.02 | | | | | | | |
| 955 | | 80 - 90 | 9.0 | 0.111 | 24 | 0.00 | 0.02 | 0.09 | | | | | | | |
| 956 | | 110 - 120 | 7.7 | 2.830 | 119 | 0.01 | 0.08 | 0.46 | | | | | | | |
| 957 | 18 | 0 - 2 | 6.7 | 0.042 | 27 | 0.00 | 0.02 | 0.13 | | | | | | | |
| 958 | | 20 - 30 | 7.5 | 0.020 | 4.9 | 0.00 | 0.00 | 0.02 | | | | | | | |
| 959 | | 50 - 60 | 8.0 | 0.028 | 8.7 | 0.00 | 0.01 | 0.03 | | | | | | | |
| 960 | | 80 - 90 | 8.4 | 0.142 | 124 | 0.01 | 0.08 | 0.48 | | | | | | | |
| 961 | | 110 - 120 | 8.4 | 0.390 | 369 | 0.04 | 0.24 | 1.42 | | | | | | | |
| 962 | 19 | 0 - 2 | 6.6 | 0.025 | 17 | 0.00 | 0.01 | 0.10 | | | | | | | |
| 963 | | 20 - 30 | 7.3 | 0.017 | 4.7 | 0.00 | 0.00 | 0.02 | | | | | | | |
| 964 | | 50 - 60 | 8.0 | 0.027 | 4.5 | 0.00 | 0.00 | 0.02 | | | | | | | |
| 965 | | 80 - 90 | 8.6 | 0.206 | 173 | 0.02 | 0.11 | 0.66 | | | | | | | |
| 966 | | 110 - 120 | 8.4 | 0.497 | 444 | 0.04 | 0.29 | 1.71 | | | | | | | |
| 967 | 21 | 0 - 2 | 6.5 | 0.115 | 99 | 0.01 | 0.07 | 0.57 | 8.2 | 9.9 | 1.19 | 0.122 | 19 | 1 | 0.8 |
| 968 | | 20 - 30 | 7.6 | 0.019 | 11 | 0.00 | 0.01 | 0.04 | 12.3 | 11.1 | 0.40 | 0.583 | 24 | 2 | 1.1 |
| 969 | | 50 - 60 | 8.1 | 0.042 | 16 | 0.00 | 0.01 | 0.06 | 12.1 | 10.8 | 0.40 | 1.302 | 25 | 5 | 1.1 |
| 970 | | 80 - 90 | 8.4 | 0.198 | 115 | 0.01 | 0.08 | 0.44 | 12.9 | 10.8 | 0.37 | 1.891 | 26 | 7 | 1.2 |
| 971 | | 110 - 120 | 7.7 | 2.640 | 256 | 0.03 | 0.17 | 0.98 | | | | | | | |
| 972 | 22 | 0 - 2 | 6.2 | 0.099 | 69 | 0.01 | 0.05 | 0.34 | 6.2 | 6.4 | 1.21 | 0.090 | 14 | 1 | 1.0 |
| 973 | | 20 - 30 | 7.3 | 0.019 | 5.4 | 0.00 | 0.00 | 0.02 | 10.5 | 8.6 | 0.33 | 0.366 | 20 | 2 | 1.2 |
| 974 | | 50 - 60 | 8.2 | 0.071 | 47 | 0.00 | 0.03 | 0.18 | 12.2 | 8.4 | 0.18 | 1.430 | 22 | 6 | 1.5 |
| 975 | | 80 - 90 | 8.1 | 0.600 | 425 | 0.04 | 0.28 | 1.64 | 12.7 | 9.1 | 0.24 | 2.281 | 24 | 9 | 1.4 |
| 976 | | 110 - 120 | 7.7 | 2.450 | 679 | 0.07 | 0.45 | 2.62 | | | | | | | |
| 977 | 23 | 0 - 2 | 6.5 | 0.055 | 44 | 0.00 | 0.03 | 0.22 | | | | | | | |
| 978 | | 20 - 30 | 7.3 | 0.019 | 6.2 | 0.00 | 0.00 | 0.02 | | | | | | | |
| 979 | | 50 - 60 | 8.0 | 0.060 | 30 | 0.00 | 0.02 | 0.12 | | | | | | | |
| 980 | | 80 - 90 | 8.1 | 0.303 | 150 | 0.02 | 0.10 | 0.58 | | | | | | | |
| 981 | | 110 - 120 | 7.4 | 2.440 | 440 | 0.04 | 0.29 | 1.70 | | | | | | | |
| 982 | | 140 - 150 | 7.4 | 3.030 | 512 | 0.05 | 0.34 | 1.97 | | | | | | | |
| 983 | 24 | 0 - 2 | 6.8 | 0.030 | 18 | 0.00 | 0.01 | 0.09 | | | | | | | |
| 984 | | 20 - 30 | 7.7 | 0.022 | 5.3 | 0.00 | 0.00 | 0.02 | | | | | | | |
| 985 | | 50 - 60 | 8.4 | 0.077 | 42 | 0.00 | 0.03 | 0.16 | | | | | | | |
| 986 | | 80 - 90 | 8.2 | 0.590 | 485 | 0.05 | 0.32 | 1.87 | | | | | | | |
| 987 | | 110 - 120 | 7.7 | 3.060 | 378 | 0.04 | 0.25 | 1.46 | | | | | | | |
| 988 | 25 | 0 - 2 | 7.1 | 0.030 | 17 | 0.00 | 0.01 | 0.10 | | | | | | | |
| 989 | | 20 - 30 | 7.5 | 0.027 | 5.9 | 0.00 | 0.00 | 0.02 | | | | | | | |
| 990 | | 50 - 60 | 8.0 | 0.112 | 63 | 0.01 | 0.04 | 0.24 | | | | | | | |
| 991 | | 80 - 90 | 7.3 | 2.350 | 135 | 0.01 | 0.09 | 0.52 | | | | | | | |
| 992 | | 110 - 120 | 7.3 | 2.880 | 308 | 0.03 | 0.20 | 1.18 | | | | | | | |
| 993 | | 140 - 150 | 7.4 | 3.040 | 355 | 0.04 | 0.24 | 1.37 | | | | | | | |
| 994 | 26 | 0 - 3 | 6.6 | 0.038 | 15 | 0.00 | 0.01 | 0.08 | | | | | | | |
| 995 | | 20 - 30 | 6.6 | 0.098 | 5.9 | 0.00 | 0.00 | 0.02 | | | | | | | |
| 996 | | 50 - 60 | 7.9 | 0.061 | 11 | 0.00 | 0.01 | 0.04 | | | | | | | |
| 997 | | 80 - 90 | 8.4 | 0.052 | 9.4 | 0.00 | 0.01 | 0.04 | | | | | | | |
| 998 | | 110 - 120 | 8.7 | 0.192 | 14 | 0.00 | 0.01 | 0.06 | | | | | | | |
| 999 | | 140 - 150 | 7.7 | 2.770 | 26 | 0.00 | 0.02 | 0.10 | | | | | | | |

| Lab No | Site | Depth | pH | EC | Cl | %Cl | ECCl | ECe | Ca | Mg | K | Na | ECEC | ESP | Ca/Mg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | cm | | mS/cm | mg/kg | | dS/m | dS/m | meq/100g | meq/100g | meq/100g | meq/100g | meq/100g | % | ratio |
| 1000 | 27 | 0 - 3 | 6.5 | 0.034 | 21 | 0.00 | 0.01 | 0.12 | 8.0 | 6.8 | 0.46 | 0.183 | 15 | 1 | 1.2 |
| 1001 | | 20 - 30 | 7.0 | 0.024 | 12 | 0.00 | 0.01 | 0.05 | 10.1 | 7.4 | 0.29 | 0.346 | 18 | 2 | 1.4 |
| 1002 | | 50 - 60 | 7.9 | 0.051 | 26 | 0.00 | 0.02 | 0.10 | 12.7 | 7.5 | 0.16 | 1.182 | 21 | 5 | 1.7 |
| 1003 | | 80 - 90 | 7.9 | 0.282 | 252 | 0.03 | 0.17 | 0.97 | 12.7 | 7.7 | 0.15 | 1.858 | 22 | 8 | 1.7 |
| 1004 | | 110 - 120 | 7.6 | 2.320 | 445 | 0.04 | 0.30 | 1.71 | | | | | | | |
| 1005 | | 140 - 150 | 7.6 | 2.660 | 504 | 0.05 | 0.33 | 1.94 | | | | | | | |
| 1006 | 29 | 0 - 3 | 6.6 | 0.044 | 19 | 0.00 | 0.01 | 0.09 | | | | | | | |
| 1007 | | 20 - 30 | 7.4 | 0.029 | 6.1 | 0.00 | 0.00 | 0.02 | | | | | | | |
| 1008 | | 50 - 60 | 7.8 | 0.203 | 81 | 0.01 | 0.05 | 0.31 | | | | | | | |
| 1009 | | 80 - 90 | 6.9 | 2.330 | 342 | 0.03 | 0.23 | 1.32 | | | | | | | |
| 1010 | | 110 - 120 | 7.1 | 3.240 | 444 | 0.04 | 0.29 | 1.71 | | | | | | | |
| 1011 | | 140 - 150 | 7.2 | 3.300 | 580 | 0.06 | 0.39 | 2.23 | | | | | | | |

# Appendix 4 Field site sheets

| PROJECT | SURVEY | SITE | DATE Day | Month | Year | Described by |
|---|---|---|---|---|---|---|
| UCH210 | | 017 | 20 | 07 | 20 | NICK |

AIR PHOTO REFERENCE

| Film Number | Name | Year | Run | Number | Easting (mm) | Northing (mm) |
|---|---|---|---|---|---|---|
| | | | | | | |

MAP REFERENCE

| Datum | Scale | Zone | G. GPS T. Topo. | Map Sheet Number | Easting WP 84 | Northing | Latitude d d m m s s s | Longitude d d d m m s s s |
|---|---|---|---|---|---|---|---|---|
| GDA94 | 1: | 53 | G | | 422937 | 8045355 | | |

SLOPE

| A. Abney E. Est | Value % | Aspect |
|---|---|---|
| | 1.0 | 127 |

range 0.5 - 2%
all < 2%.

LANDFORM ELEMENT

| Morph. Type | Slope Incl. | Mode (geomorph) | Element |
|---|---|---|---|
| F | | | PLA |

LANDFORM PATTERN

| Relief (m) | Modal Slope % | Eros. LFP | Mode (geomorph) | Pattern |
|---|---|---|---|---|
| | L P VGP? | | | PLA |

Stream Channel Occurrence

| Spacing | Dvlpmt. | Width (m) | Depth (m) | Pattern |
|---|---|---|---|---|
| | | . | . | |

THEMATIC REFERENCE

| Land System | Land Unit | Geology | Soil Profile Class |
|---|---|---|---|
| | | C26 | |

MICRORELIEF

| Type 1 | 2 | 3 | Proportion | Vertical (m) | Horizontal (m) | Comp. sampled |
|---|---|---|---|---|---|---|
| C | | | | 0.20 | 3.0 | |

occ normal

SITE DSTB. 128: 1L

SURFACE CONDITION 189: sandy wash; Moisture status: G MX D

144 Runoff: 1

201 Permeability: 2

202 Drainage: 4

INUNDATION

| Frequency | Duration | Depth (m) ? |
|---|---|---|
| W | 2 | .30 |

AGGRADATION

| State | Depth (mm) | Type |
|---|---|---|
| X | | |

EROSION

| State | Type 1 | 2 | 3 | Extent % 1 | 2 | 3 | Degree 1 | 2 | 3 | Gully Dimensions Depth (m) | Width (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N | | | | | | | | | | . | . |

SUBSTRATE

| Type Obs. | Distance (m) | Conf. | Depth (m) | Strength | Alter. | Lithology | Genetic Class |
|---|---|---|---|---|---|---|---|
| P | | | . | | | NO | |

ROCK OUTCROP

| Abundance % 1 | 2 | Lithology 1 | 2 |
|---|---|---|---|
| 0 | | | |

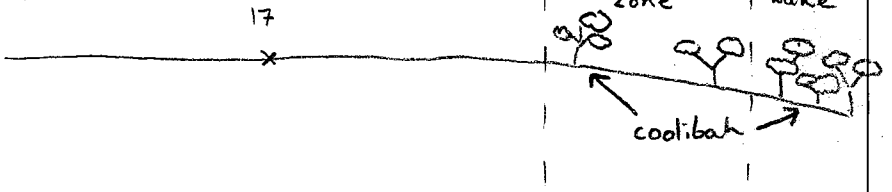
COMMENTS

Site to investigate bumpy DEM and 0.5-2% slope areas.
Measured slope was mostly 1% and all < 2%.

Vegetation - Sorghum timorense. + Aristida latifolia Mid TG
cover: 70%
height: 50-100 cm avg 60 cm, (onion vine)
± Operculina aequisepala ± Gossypium australe (native cotton) ±
Sesbania (horse bean)

DIAGRAMS

N Cz6 plain



| SITE NO. | VEG CLASS | + Free Water - 0 | SOIL EXPOSURE Type | Depth (m) | Stopped by | SOIL CLASSIFICATION Australian Soil Classification | Prefix | PPF | GSG |
|---|---|---|---|---|---|---|---|---|---|
| 117 | | 144 | P | 1.30 | E | GS? VEADEICDERRW | | | |

| | HORIZON 148 | DEPTH (m) 156 Upper | Lower | BNDY 199 Distinct | Shape | MATRIX COLOUR 159 Moist Hue | Value | Chroma | Dry Hue | Value | Chroma | MOTTLES 159 Type | Abundance % 1 | 2 | 3 | Size (mm) 1 | 2 | 3 | Contrast 1 2 3 | Colour 1 2 3 | TEXTURE 161 Grade | Qualifier | Modifier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A11 | 0.0 | 0.03 | C | | 2.5Y | 4 | 2 | • | | | | 0 | | | | | | | | MC | | |
| 2 | A12 | 0.03 | 0.15 | G | | 2.5Y | 4 | 2 | • | | | | 1 | | | 2 | | | D | O | MC | | |
| 3 | B21 | 0.15 | 0.70 | D | | 2.5Y | 4 | 2 | • | | | | 0 | | | | | | | | MHC | | |
| 4 | B22 | 0.70 | 0.85 | D | | 2.5Y | 4 | 2 | • | | | | 0 | | | | | | | | MHC | | |
| 5 | B23 | 0.85 | 1.30 | | | 2.5Y | 4 | 2 | • | | | | 40 | | | 10 | | | D | O | MHC | | |
| 6 | | • | • | | | • | | | • | | | | | | | | | | | | | | |
| 7 | | • | • | | | • | | | • | | | | | | | | | | | | | | |
| 8 | | • | • | | | • | | | • | | | | | | | | | | | | | | |

| | STRUCTURE 171 Grade | Size (mm) Smallest | Next Size | 173 Type Smallest | Next Size | 181 Fabric | CONSISTENCE 186 Soil Water | Strength | Stickiness | Plasticity 188 Type | Degree | CUTANS 182 Type | Abund. | Distinct | VOIDS 184 Cracks | Pores | Abund. | Diam. | ROOTS 199 Size | Abund. | PANS 192 Cement. | Type | Contin. | Struct. | 198 Efferves. | pH 198 | EC ds/m | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W 1 | M | 2 | 20 | GR | SB | | D | | | | | | | | C | | | 0 | | | | | | | N | 7.0 | • | Mod thick 2-3 cm Weak - mod SM |
| 2 | S | 10 | 20 | SB | SB | | D | | | | | | | | C | | | 0 | | | | | | | N | 6.5 | • | Some very minor disp @ 50-60 cm |
| 3 | S | 10 | 40 | ABLE | ABLE | | D | | | | | | | | C | | | 0/1 | | | | | | | N | 7.5 | • | minor |
| 4 | M | 10 | 40 | ABLE | ABLE | | D | | | | | | | | C | | | 0 | | | | | | | N | 8.0 | • | Sand throughout |
| 5 | M | 10 | 30 | ABLE | ABLE | | T | | | | | | | | C | | | 0 | | | | | | | N | 8.5 | • | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • | Sampled to 110 - 120 cm |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • | |

| | 139 COARSE FRAGMENTS Abundance % 1 | 2 | 3 | 4 | 140 Size (mm) 1 | 2 | 3 | 4 | 142 Shape 1 | 2 | 3 | 4 | 142 Lithology 1 | 2 | 3 | 4 | SEGREGATIONS 195 Abundance % 1 | 2 | Size (mm) 1 | 2 | Nature 1 | 2 | Form 1 | 2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | <1 | | | | | | | | | | | | | | | | 0 | | | | | | | | 0 |
| 1 | <1 | | | | | | | | | | | | | | | | 0 | | | | | | | | 1 |
| 2 | <1 | | | | | | | | | | | | | | | | 0 | | | | | | | | 2 |
| 3 | <1 | | | | | | | | | | | | | | | | 1 | | | | | | | | 3 |
| 4 | 10 | | | | | | | | | | | | | | | | 2 | | 2 | | K | | N | | 4 |
| 5 | 10 | | | | | | | | | | | | | | | | 2 | 2 | 5 | 5 | K | Y | N | X | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | 8 |

| PROJECT | SURVEY | SITE | DATE (Day / Month / Year) | Described by |
|---|---|---|---|---|
| 4CH20 | | 18 | 20 / 07 / 20 | NICK |

AIR PHOTO REFERENCE

| Film Number | Name | Year | Run | Number | Easting (mm) | Northing (mm) |
|---|---|---|---|---|---|---|
| | | | | | | |

MAP REFERENCE

| Datum | Scale | Zone | G. GPS T. Topo. | Map Sheet Number | Easting | Northing | Latitude (d d m m s s s) | Longitude (d d d m m s s s) |
|---|---|---|---|---|---|---|---|---|
| GDA94 | | 53 | G | | 427756 (WP87) | 8045948 | | |

SLOPE

| A. Abney E. Est | Value % | Aspect |
|---|---|---|
| A | 0.5 | 127 |

range 0-1 %

LANDFORM ELEMENT

| 19 Morph. Type | 21 Slope Incl. | 29 Mode (geomorph) | 31 Element |
|---|---|---|---|
| F | | | PLA |

LANDFORM PATTERN

| 45 Relief (m) | 45 Modal Slope % | 47 Eros. LFP | 54 Mode (geomorph) | 55 Pattern | Stream Channel Occurrence: 48 Spacing | 49 Dvlpmt. | Width (m) | Depth (m) | 50 Pattern |
|---|---|---|---|---|---|---|---|---|---|
| | LP | | | PLA? | | | • | • | |

THEMATIC REFERENCE

| Land System | Land Unit | Geology | Soil Profile Class |
|---|---|---|---|
| | | Cz16 | |

MICRORELIEF

Gilgai 129

| Type 1 2 3 | Proportion | Vertical (m) | Horizontal (m) | Comp. sampled |
|---|---|---|---|---|
| N | | 0.30 | 2.0 | |

SITE DSTB. 128: 1H

SURFACE CONDITION 189

| | Moisture status |
|---|---|
| GMX | D |

144 Runoff: 1

201 Permeability: 2

202 Drainage: 4

INUNDATION

| Frequency | Duration | 138 Depth (m) |
|---|---|---|
| 3 | 2 | .30 ? 50 |

AGGRADATION

| State | 138 Depth (mm) | Type |
|---|---|---|
| X | | |

occ crabhole

EROSION 133

| State | Type 1 2 3 | Extent % 1 2 3 | Degree 1 2 3 | Gully Dimensions Depth (m) | Gully Dimensions Width (m) |
|---|---|---|---|---|---|
| N | | | | • | • |

SUBSTRATE

| 205 Type Obs | Distance (m) | 206 Conf. | Depth (m) | 209 Strength | 211 Alter. | 214 Lithology | 218 Genetic Class |
|---|---|---|---|---|---|---|---|
| P | | | • | | | ND | |

ROCK OUTCROP

| 143 Abundance % 1 | 2 | 214 Lithology 1 | 2 |
|---|---|---|---|
| 0 | | | |

COMMENTS

Site to investigate strip / between retigume? uniform, cracking clay to west + red/brown soil to the east

Vegetation: Paspalidium + Astrebla sp. ± Aristida lat ± Sesbania Low TG

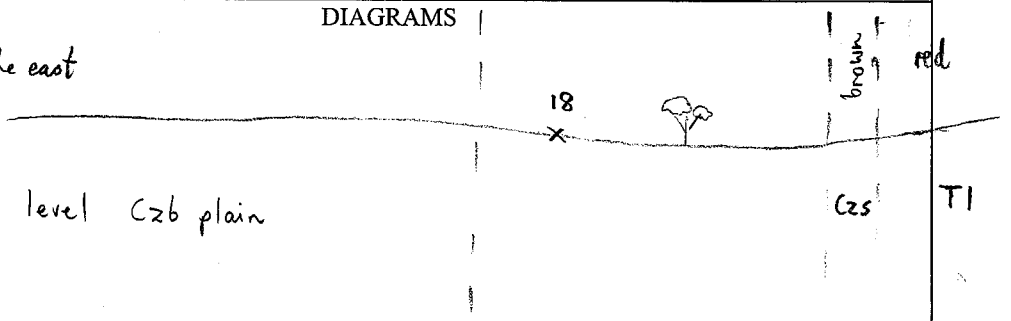
± Iseilema vaginiflorum ± neptunia sp.?

Odd, sparse bauhinia cunninghamii

Height: 10 - 30 cm avg 20

cover = 60%

DIAGRAMS



| SITE NO. | VEG CLASS | + Free Water - 144 | SOIL EXPOSURE 147 Type | Depth (m) | Stopped by | SOIL CLASSIFICATION Australian Soil Classification | Prefix | PPF | GSG |
|---|---|---|---|---|---|---|---|---|---|
| 18 | | 0 . | P | 1.10 | E | VEA0E1C0ERRW | | | |

GS?

| | HORIZON 148 | DEPTH (m) 156 Upper | Lower | BNDY 199 Distinct | Shape | MATRIX COLOUR 159 Moist Hue | Value | Chroma | Dry Hue | Value | Chroma | MOTTLES 159 Type | Abundance % 1 2 3 | Size (mm) 1 2 3 | Contrast 1 2 3 | Colour 1 2 3 | TEXTURE 161 Grade | 166 Qualifier | Modifier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A11 | 0.00 | 0.02 | C | | 2.5Y | 5 | 2 | • | | | | 0 | | | | MC | | |
| 2 | A12 | 0.02 | 0.15 | G | | 2.5Y | 5 | 2 | • | | | | 0 | | | | MHC | | |
| 3 | B21 | 0.15 | 0.70 | D | | 2.5Y | 5 | 2 | • | | | | 0 | | | | MHC | | |
| 4 | B22 | 0.70 | 1.10 | | | 2.5Y | 5 | 2 | • | | | Z | 50 | 10 | D | O | MHC | | |
| 5 | | • | • | | | • | | | • | | | | | | | | | | |
| 6 | | • | • | | | • | | | • | | | | | | | | | | |
| 7 | | • | • | | | • | | | • | | | | | | | | | | |
| 8 | | • | • | | | • | | | • | | | | | | | | | | |

B3?

| | STRUCTURE 171 Grade | Size (mm) Smallest | Next Size | 173 Type Smallest | Next Size | 181 Fabric | CONSISTENCE 186 Soil Water | Strength | Stickiness | Plasticity 188 Type | Degree | CUTANS 182 Type | Abund. | Distinct | VOIDS 184 Cracks | Pores | Abund. | Diam. | ROOTS 199 Size | Abund. | PANS 192 Cement. | Type | Contin. | Struct. | 198 Efferves. | pH 198 | EC ds/m | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | W | 1 | 2 | 2 | 10 | G | R | S | B | | | | | | C | | | 0 | | | | | | | N | 6.5 | • | Very minor disp @ 50-60 and below (odd particle) |
| 2 | M | 1 | 5 | 4 | 10 | S | B | S | B | | | | | | C | | | 0 | | | | | | | N | 7.5 | • | |
| 3 | S | 2 | 0 | 5 | 10 | L | E | L | E | | | | | | C/P | | | 0 | | | | | | | N | 8.0 | • | |
| 4 | M | 1 | 0 | 4 | 0 | L | E | L | E | | | | | | C | | | 0 | | | | | | | N | 8.5 | • | Sampled to 110-120 cm |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • | |

| | 139 COARSE FRAGMENTS Abundance % 1 2 3 4 | 140 Size (mm) 1 2 3 4 | 142 Shape 1 2 3 4 | 142 Lithology 1 2 3 4 | SEGREGATIONS 195 Abundance % 1 2 | Size (mm) 1 2 | Nature 1 2 | Form 1 2 | |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | | | | 0 | | | | 0 |
| 1 | 0 | | | | 0 | | | | 1 |
| 2 | 0 | | | | 0 | | | | 2 |
| 3 | 0 | | | | 0 | | | | 3 |
| 4 | 0 | | | | 1 | 2 | K | N | 4 |
| 5 | | | | | | | | | 5 |
| 6 | | | | | | | | | 6 |
| 7 | | | | | | | | | 7 |
| 8 | | | | | | | | | 8 |

| PROJECT | SURVEY | SITE | DATE Day | DATE Month | DATE Year | Described by |
|---|---|---|---|---|---|---|
| UCH210 | | 19 | 20 | 07 | 20 | NICK |

AIR PHOTO REFERENCE

| Film Number | Name | Year | Run | Number | Easting (mm) | Northing (mm) |
|---|---|---|---|---|---|---|
| | | | | | | |

MAP REFERENCE WP 89

| Datum | Scale | Zone | G. GPS T. Topo. | Map Sheet Number | Easting | Northing | Latitude d d m m s s s | Longitude d d d m m s s s |
|---|---|---|---|---|---|---|---|---|
| GDA94 | | 53 | G | | 412718 | 8104921 17 | | |

SLOPE 21

| A. Abney E. Est | Value % | Aspect 127 |
|---|---|---|
| A | 10.5 | |

<1%

LANDFORM ELEMENT 19 21 29 31

| Morph. Type | Slope Incl. | Mode (geomorph) | Element |
|---|---|---|---|
| F | | | PLA |

LANDFORM PATTERN 45 45 47 54 55

| Relief (m) | Modal Slope % | Eros. LFP | Mode (geomorph) | Pattern |
|---|---|---|---|---|
| | LP | | | PLA? |

Stream Channel Occurrence 48 49 50

| Spacing | Dvlpmt. | Width (m) | Depth (m) | Pattern |
|---|---|---|---|---|
| | | . | . | |

THEMATIC REFERENCE

| Land System | Land Unit | Geology | Soil Profile Class |
|---|---|---|---|
| | | Cz6 | |

MICRORELIEF Gilgai 129

| Type 1 2 3 | Proportion | Vertical (m) | Horizontal (m) | Comp. sampled |
|---|---|---|---|---|
| N | | . | . | |

occ crabhole

SITE DSTB. 128: 1M

SURFACE CONDITION 189

| occ hardsett | Moisture Status |
|---|---|
| GFC | D |

144 Runoff: 1

201 Permeability: 2

202 Drainage: 4

INUNDATION

| Frequency | Duration | 138 Depth (m) |
|---|---|---|
| 3 | 2 | .30 |

AGGRADATION 138

| State | Depth (mm) | Type |
|---|---|---|
| X | | |

minor areas of weak SM, mostly F to H

EROSION 133

| State | Type 1 2 3 | Extent % 1 2 3 | Degree 1 2 3 | Gully Dimensions Depth (m) | Gully Dimensions Width (m) |
|---|---|---|---|---|---|
| N | | | | . | . |

SUBSTRATE 205 206 209 211 214 218

| Type Obs. | Distance (m) | Conf. | Depth (m) | Strength | Alter. | Lithology | Genetic Class |
|---|---|---|---|---|---|---|---|
| P | | | . | | | N 10 | |

ROCK OUTCROP 143 214

| Abundance % 1 2 | Lithology 1 2 |
|---|---|
| 10 | |

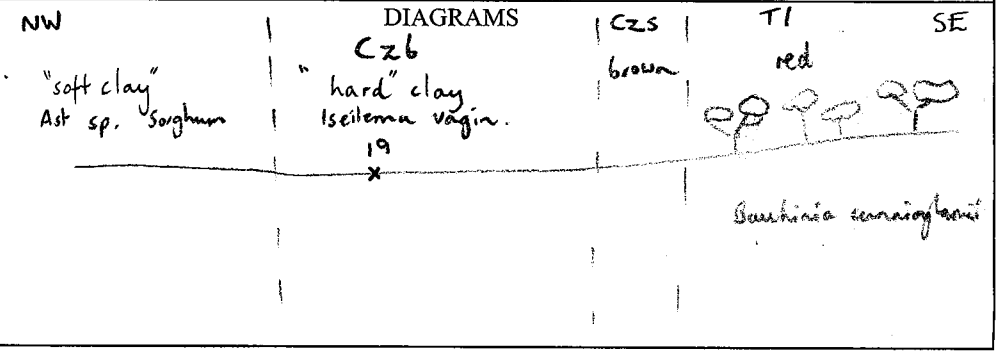
COMMENTS

Vegetation - Iseilema vaginiflorum (dom) ± Astrebla sp. ± Fimbristylis dicho. Low CTG

Cover: 80%

Height 10-50 avg 30 cm

DIAGRAMS



| SITE NO. | VEG CLASS | + Free Water - 0 | SOIL EXPOSURE Type | 147 Depth (m) | Stopped by | SOIL CLASSIFICATION Australian Soil Classification | Prefix | PPF | GSG |
|---|---|---|---|---|---|---|---|---|---|
| 19 | | 144 | P | 1.15 | E | VEADOSCODERRW | | | |

| | HORIZON 148 | DEPTH (m) 156 Upper | Lower | BNDY 199 Distinct | Shape | MATRIX COLOUR 159 Moist Hue | Value | Chroma | Dry Hue | Value | Chroma | MOTTLES 159 Type | Abundance % 1 | 2 | 3 | Size (mm) 1 | 2 | 3 | Contrast 1 2 3 | Colour 1 2 3 | TEXTURE 161 Grade | 166 Qualifier | Modifier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A 1 1 | 0.0 | 0.02 | C | | 2.5Y | 4 | 2 | | | | | 10 | | | | | | | | LMC | | |
| 2 | A 1 2 | 0.02 | 0.210 | | | 2.5Y | 4 | 2 | | | | | 10 | | | | | | | | MHC | | |
| 3 | B 2 1 | 0.210 | 0.810 | | | 2.5Y | 5 | 1 | | | | | 10 | | | | | | | | MHC | | |
| 4 | B 2 2 | 0.8 10 | 1.1 5 | | | 2.5Y | 4 | 2 | | | | Z | 30 | | | 10 | | | 0 | 0 | MHC | | |
| 5 | | • | • | | | • | | | • | | | ↓ | 50 | @120cm | | | | | | | | | |
| 6 | | • | • | | | • | | | • | | | | | | | | | | | | | | |
| 7 | | • | • | | | • | | | • | | | | | | | | | | | | | | |
| 8 | | • | • | | | • | | | • | | | | | | | | | | | | | | |

| | STRUCTURE 171 Grade | Size (mm) Smallest | Next Size | 173 Type Smallest | Next Size | 181 Fabric | CONSISTENCE 186 Soil Water | Strength | Stickiness | Plasticity 188 Type | Degree | CUTANS 182 Type | Abund. | Distinct | ~~VOIDS~~ 184 Slak Cracks | Pores | Abund. | Disp Diam. | ROOTS 199 Size | Abund. | PANS 192 Cement. | Type | Contin. | Struct. | 198 Efferves. | pH 198 | EC ds/m | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | Hard surface underfoot + vehicle |
| 1 | W | 2 | 10 | S B | S B | | | | | | | | | | C | | | 0 | | | | | | | N | 6.0 | • | Very minor disp @ 50-60cm |
| 2 | M | 10 | 30 | S B | S B | | | | | | | | | | C | | | 0 | | | | | | | N | 6.5 | • | |
| 3 | S | 1 5 | 40 | AB LE | AB LE | | | | | | | | | | C | | | 0 | | | | | | | N | 7.0 | • | |
| 4 | M | 10 | 40 | AB LE | AB LE | | | | | | | | | | C | | | 0 | | | | | | | N | 8.0 | • | Sampled to 110-120 cm |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • | |

| | 139 Abundance % 1 | 2 | 3 | 4 | 140 Size (mm) 1 | 2 | 3 | 4 | COARSE FRAGMENTS 142 Shape 1 | 2 | 3 | 4 | 142 Lithology 1 | 2 | 3 | 4 | SEGREGATIONS 195 Abundance % 1 | 2 | Size (mm) 1 | 2 | Nature 1 | 2 | Form 1 | 2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 0 |
| 1 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 1 |
| 2 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 2 |
| 3 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 3 |
| 4 | 0 | | | | | | | | | | | | | | | | 1 | | 2 | | K | | N | | 4 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | 8 |

| PROJECT | SURVEY | SITE | DATE (Day / Month / Year) | Described by |
|---|---|---|---|---|
| UCH210 | | 120 | 21 / 07 / 10 | NICK |

check site

AIR PHOTO REFERENCE

| Film Number | Name | Year | Run | Number | Easting (mm) | Northing (mm) |
|---|---|---|---|---|---|---|
| | | | | | | |

MAP REFERENCE WP 94

| Datum | Scale | Zone | G. GPS T. Topo. | Map Sheet Number | Easting | Northing | Latitude (d d m m s s s) | Longitude (d d d m m s s s) |
|---|---|---|---|---|---|---|---|---|
| GDA94 | | 53 | G | | 425612 | 8104514 | | |

SLOPE

| A. Abney E. Est. | Value % | Aspect |
|---|---|---|
| A | 10 | 127 |

LANDFORM ELEMENT

| Morph. Type (19) | Slope Incl. (21) | Mode (geomorph) (29) | Element (31) |
|---|---|---|---|
| F | | | PLA |

LANDFORM PATTERN

| Relief (m) (45) | Modal Slope % (45) VGP? | Eros. LFP (47) | Mode (geomorph) (54) | Pattern (55) |
|---|---|---|---|---|
| | LP | | | PLA |

Stream Channel Occurrence

| Spacing (48) | Dvlpmt. (49) | Width (m) | Depth (m) | Pattern (50) |
|---|---|---|---|---|
| | | • | • | |

THEMATIC REFERENCE

| Land System | Land Unit | Geology | Soil Profile Class |
|---|---|---|---|
| | | CZ6 | |

MICRORELIEF

Gilgai (129)

| Type 1 | Type 2 | Type 3 | Proportion | Vertical (m) | Horizontal (m) | Comp. sampled |
|---|---|---|---|---|---|---|
| N | | | | •20 | 13•0 | |

SITE DSTB. (128): IH

SURFACE CONDITION (189): GM | O — minor brown crypto

Runoff (144): 1

Permeability (201):

Drainage (202):

mod thick (2cm) mod SM

INUNDATION

| Frequency | Duration | Depth (m) (138) |
|---|---|---|
| 3 | 2 | •30 |

AGGRADATION

| State | Depth (mm) (138) | Type |
|---|---|---|
| X | | |

EROSION (133)

| State | Type 1 | Type 2 | Type 3 | Extent % 1 | Extent % 2 | Extent % 3 | Degree 1 | Degree 2 | Degree 3 | Gully Dimensions Depth (m) | Gully Dimensions Width (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Z | | | | | | | | | | • | • |

SUBSTRATE

| Type Obs (205) | Distance (m) (206) | Conf. | Depth (m) | Strength (209) | Alter. (211) | Lithology (214) | Genetic Class (218) |
|---|---|---|---|---|---|---|---|
| C | | | • | | | NO | |

ROCK OUTCROP

| Abundance % 1 (143) | Abundance % 2 (143) | Lithology 1 (214) | Lithology 2 (214) |
|---|---|---|---|
| 10 | | | |

COMMENTS

Check site to investigate small patch of gidyea shrubs (approx 7 plants) + bumpy DEM

Cored down to 60cm – no rock/substrate – machine lacked power to go deeper

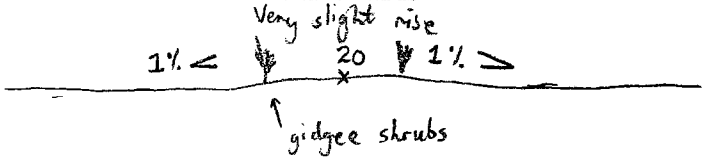
Similar to Site 21

Vegetation – Astrebla sp. + Iseilema vaginiflorum ± Paspalidium retig.? ± Neptunia ? Low TG ± isolated Acacia cambagei

Height: 10–40cm avg 30

cover: 70%

DIAGRAMS



| SITE NO. | VEG CLASS | + Free Water - 144 0 | SOIL EXPOSURE 147 Type | Depth (m) | Stopped by | SOIL CLASSIFICATION Australian Soil Classification | Prefix | PPF | GSG |
|---|---|---|---|---|---|---|---|---|---|
| 12 10 | | . | C | 0.6 0 | E | | | . | |

| | HORIZON 148 | DEPTH (m) 156 Upper | Lower | BNDY 199 Distinct | Shape | MATRIX COLOUR 159 Moist Hue | Value | Chroma | Dry Hue | Value | Chroma | MOTTLES 159 Type | Abundance % 1 | 2 | 3 | Size (mm) 1 | 2 | 3 | Contrast 1 2 3 | Colour 1 2 3 | TEXTURE 161 Grade | 166 Qualifier | Modifier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | • | • | | | • | | | • | | | | | | | | | | | | | | |
| 2 | | • | • | | | • | | | • | | | | | | | | | | | | | | |
| 3 | | • | • | | | • | | | • | | | | | | | | | | | | | | |
| 4 | | • | • | | | • | | | • | | | | | | | | | | | | | | |
| 5 | | • | • | | | • | | | • | | | | | | | | | | | | | | |
| 6 | | • | • | | | • | | | • | | | | | | | | | | | | | | |
| 7 | | • | • | | | • | | | • | | | | | | | | | | | | | | |
| 8 | | • | • | | | • | | | • | | | | | | | | | | | | | | |

| | STRUCTURE 171 Grade | Size (mm) Smallest | Next Size | 173 Type Smallest | Next Size | 181 Fabric | CONSISTENCE 186 Soil Water | Strength | Stickiness | Plasticity 188 Type | Degree | CUTANS 182 Type | Abund. | Distinct | VOIDS 184 Cracks | Pores | Abund. | Diam. | ROOTS 199 Size | Abund. | PANS 192 Cement. | Type | Contin. | Struct. | 198 Efferves. | pH 198 | EC ds/m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • |

COMMENTS

Check site with coring rig.
Went as far as rig could go - 60cm

Similar profile to Site 21

Surface - mod SM 2cm thick

| | 139 Abundance % 1 | 2 | 3 | 4 | 140 Size (mm) 1 | 2 | 3 | 4 | COARSE FRAGMENTS 142 Shape 1 | 2 | 3 | 4 | 142 Lithology 1 | 2 | 3 | 4 | SEGREGATIONS 195 Abundance % 1 | 2 | Size (mm) 1 | 2 | Nature 1 | 2 | Form 1 | 2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | 3 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | 8 |

| PROJECT | SURVEY | SITE | DATE Day | DATE Month | DATE Year | Described by |
|---|---|---|---|---|---|---|
| UCH20 | | 21 | 21 | 07 | 20 | NICK |

AIR PHOTO REFERENCE

| Film Number | Name | Year | Run | Number | Easting (mm) | Northing (mm) |
|---|---|---|---|---|---|---|
| | | | | | | |

MAP REFERENCE WP 104

| Datum | Scale | Zone | G. GPS T. Topo. | Map Sheet Number | Easting | Northing | Latitude d d m m s s s | Longitude d d d m m s s s |
|---|---|---|---|---|---|---|---|---|
| GDA94 | | 53 | G | | 426572 | 8045924 | | |

SLOPE 21

| A. Abney E. Est | Value % | Aspect 127 |
|---|---|---|
| A | <0.5 | |

LANDFORM ELEMENT 19 21 29 31

| Morph. Type | Slope Incl. | Mode (geomorph) | Element |
|---|---|---|---|
| F | | | PLA |

LANDFORM PATTERN 45 45 47 54 55

| Relief (m) | Modal Slope % | Eros. LFP | Mode (geomorph) | Pattern |
|---|---|---|---|---|
| | LP | | | PLA |

Stream Channel Occurrence 48 49 50

| Spacing | Dvlpmt. | Width (m) | Depth (m) | Pattern |
|---|---|---|---|---|
| | | . | . | |

THEMATIC REFERENCE

| Land System | Land Unit | Geology | Soil Profile Class |
|---|---|---|---|
| | | CZ6 | |

MICRORELIEF Gilgai 129

| Type 1 | 2 | 3 | Proportion | Vertical (m) | Horizontal (m) | Comp. sampled |
|---|---|---|---|---|---|---|
| N | | | | .20 | 5.0 | |

+ crabhole

SITE DSTB. 128: 1M

SURFACE CONDITION 189

| Moisture status |
|---|
| GMIX |

areas of Firm

144 Runoff: 1

201 Permeability: 2

202 Drainage: 4

INUNDATION

| Frequency | Duration | 138 Depth (m) |
|---|---|---|
| 3 | 2 | .30 |

AGGRADATION 138

| State | Depth (mm) | Type |
|---|---|---|
| X | | |

EROSION 133

| State | Type 1 | 2 | 3 | Extent % 1 | 2 | 3 | Degree 1 | 2 | 3 | Gully Dimensions Depth (m) | Width (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Z | | | | | | | | | | . | . |

SUBSTRATE 205 206 209 211 214 218

| Type Obs | Distance (m) | Conf. | Depth (m) | Strength | Alter. | Lithology | Genetic Class |
|---|---|---|---|---|---|---|---|
| P | | | . | | | NO | |

ROCK OUTCROP 143 214

| Abundance % 1 | 2 | Lithology 1 | 2 |
|---|---|---|---|
| 0 | | | |

COMMENTS

Site to investigate uniform brown photo pattern + level OEM

Vegetation: Paspali. retiginé? ± Astrebla sp ± Iseilema vagin ± Neptunia? Low TG

Height: 10–30 avg 20cm

Cover: 70%

DIAGRAMS

21

| SITE NO. | VEG CLASS | + Free Water / - 0 | SOIL EXPOSURE Type | Depth (m) 147 | Stopped by | SOIL CLASSIFICATION Australian Soil Classification | Prefix | PPF | GSG |
|---|---|---|---|---|---|---|---|---|---|
| 21 | | 144 | P | 1.10 | E | VEA0GSCODERRW | | . | |

| | HORIZON 148 | DEPTH (m) 156 Upper | Lower | BNDY 199 Distinct | Shape | MATRIX COLOUR 159 Moist Hue | Value | Chroma | Dry Hue | Value | Chroma | MOTTLES 159 Type | Abundance % 1 | 2 | 3 | Size (mm) 1 | 2 | 3 | Contrast 1 | 2 | 3 | Colour 1 | 2 | 3 | TEXTURE 161 Grade | Qualifier | Modifier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A11 | 0.00 | 0.02 | C | | 2.5Y | 4 | 2 | . | | | | 0 | | | | | | | | | | | | LMC | | |
| 2 | A12 | 0.02 | 0.15 | G | | 2.5Y | 4 | 2 | . | | | | 0 | | | | | | | | | | | | MHC | | |
| 3 | B21 | 0.15 | 0.60 | D | | 2.5Y | 5 | 1 | . | | | | 0 | | | | | | | | | | | | MHC | | |
| 4 | B22 | 0.60 | 0.90 | D | | 2.5Y | 4 | 2 | . | | | | 5 | | | 3 | | | 0 | | | 0 | | | MHC | | |
| 5 | B23 | 0.90 | 1.10 | | | 2.5Y | 4 | 2 | . | | | | 5 | 0 | | 5 | | | 0 | | | 0 | | | MHC | | |
| 6 | | . | . | | | . | | | . | | | | | | | | | | | | | | | | | | |
| 7 | | . | . | | | . | | | . | | | | | | | | | | | | | | | | | | |
| 8 | | . | . | | | . | | | . | | | | | | | | | | | | | | | | | | |

| | STRUCTURE 171 Grade | Size (mm) Smallest | Next Size | 173 Type Smallest | Next Size | 181 Fabric | CONSISTENCE 186 Soil Water | Strength | Stickiness | Plasticity 188 Type | Degree | CUTANS 182 Type | Abund. | Distinct | VOIDS 184 Slak Cracks | Pores | Abund. | Disp Diam. | ROOTS 199 Size | Abund. | PANS 192 Cement. | Type | Contin. | Struct. | 198 Efferves. | pH 198 | EC ds/m | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | W | 02 | 15 | SB | SB | | D | | | | | | | | C | | | 0 | | | | | | | N | 6.5 | . | Thin weakly SM |
| 2 | M | 10 | 30 | SB | SB | | D | | | | | | | | C | | | 0 | | | | | | | N | 6.5 | . | Roots to 90 cm |
| 3 | M | 10 | 40 | AB LE | AB LE | | D | | | | | | | | C | | | 1 | | | | | | | N | 7.0 | . | Minor dispersion @ 20-30 + 50-60 + 80-90 |
| 4 | M | 10 | 30 | A | B | | D/T | | | | | | | | C | | | 0/1 | | | | | | | N | 7.5 | . | Hard digging beyond 1m. |
| 5 | M | 10 | 30 | A | B | | T | | | | | | | | C | | | 0/1 | | | | | | | N | 8.0 | . | Get analyses done |
| 6 | | . | . | | | | | | | | | | | | | | | | | | | | | | | . | . | Sampled to 110 - 120 cm |
| 7 | | . | . | | | | | | | | | | | | | | | | | | | | | | | . | . | |
| 8 | | . | . | | | | | | | | | | | | | | | | | | | | | | | . | . | |

| | 139 COARSE FRAGMENTS Abundance % 1 | 2 | 3 | 4 | 140 Size (mm) 1 | 2 | 3 | 4 | 142 Shape 1 | 2 | 3 | 4 | 142 Lithology 1 | 2 | 3 | 4 | SEGREGATIONS 195 Abundance % 1 | 2 | Size (mm) 1 | 2 | Nature 1 | 2 | Form 1 | 2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 0 |
| 1 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 1 |
| 2 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 2 |
| 3 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 3 |
| 4 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 4 |
| 5 | 0 | | | | | | | | | | | | | | | | 5 | 2 | 10 | 2 | Y | K | X | S | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | 8 |

| PROJECT | SURVEY | SITE | DATE Day | Month | Year | Described by |
|---|---|---|---|---|---|---|
| UCH20 | | 212 | 21 | 07 | 20 | NICK |

AIR PHOTO REFERENCE

| Film Number | Name | Year | Run | Number | Easting (mm) | Northing (mm) |
|---|---|---|---|---|---|---|
| | | | | | | |

MAP REFERENCE

| Datum | Scale | Zone | G. GPS T. Topo. | Map Sheet Number | Easting | Northing | Latitude d d m m s s s | Longitude d d d m m s s s |
|---|---|---|---|---|---|---|---|---|
| GDA94 | | 53 | G | | 427113 | 8049807 | | |

WP 102

SLOPE

| A. Abney E. Est. | Value % | Aspect |
|---|---|---|
| A | 0.5 | 127 |

range 0 - 1%

LANDFORM ELEMENT

| 19 Morph. Type | 21 Slope Incl. | 29 Mode (geomorph) | 31 Element |
|---|---|---|---|
| F | | | PLA |

LANDFORM PATTERN

| 45 Relief (m) | 45 Modal Slope % | 47 Eros. LFP | 54 Mode (geomorph) | 55 Pattern |
|---|---|---|---|---|
| | LP | | | PLA |

Stream Channel Occurrence

| 48 Spacing | 49 Dvlpmt. | Width (m) | Depth (m) | 50 Pattern |
|---|---|---|---|---|
| | | . | . | |

THEMATIC REFERENCE

| Land System | Land Unit | Geology | Soil Profile Class |
|---|---|---|---|
| | | Cz6 | |

MICRORELIEF Gilgai 129

| Type 1 | 2 | 3 | Proportion | Vertical (m) | Horizontal (m) | Comp. sampled |
|---|---|---|---|---|---|---|
| N | | | | .30 | 13.0 | |

one crabhole

SITE DSTB. 128

| |
|---|
| 1M |

SURFACE CONDITION 189

| | Moisture status |
|---|---|
| GFC | 0 |

one H sandy wash

144 Runoff: 1

201 Permeability: 2

202 Drainage: 4

INUNDATION

| Frequency | Duration | 138 Depth (m) |
|---|---|---|
| 3 | 2 | 10.30 |

AGGRADATION

| State | 138 Depth (mm) | Type |
|---|---|---|
| X | | |

mostly firm, minor areas of W SM

EROSION 133

| State | Type 1 | 2 | 3 | Extent % 1 | 2 | 3 | Degree 1 | 2 | 3 | Gully Dimensions Depth (m) | Width (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N | | | | | | | | | | . | . |

SUBSTRATE

| 205 Type Obs | Distance (m) | 206 Conf. | Depth (m) | 209 Strength | 211 Alter. | 214 Lithology | 218 Genetic Class |
|---|---|---|---|---|---|---|---|
| P | | | . | | | NO | |

ROCK OUTCROP

| 143 Abundance % 1 | 2 | 214 Lithology 1 | 2 |
|---|---|---|---|
| 0 | | | |

COMMENTS

Site to investigate bumpy OEM + apparent slope 1-2%
Measured slope 0-1% avg 0.5%

Vegetation - Paspalidium retig? + Ast. sp. (bull, barley + weeping) + Iseilema vaginiflorum
± Fimbristylis dichotoma? ± panicum sp. ± Chrysopogon fallax?
Height: 10 - 100 cm avg 30 cm LOW TG
Cover: 70%
Similar to site 5 from 2019 assessment

DIAGRAMS

22

Cz6 plain

| SITE NO. | VEG CLASS | + Free Water - 144 0 | SOIL EXPOSURE Type | 147 Depth (m) | Stopped by | SOIL CLASSIFICATION Australian Soil Classification | Prefix | PPF | GSG |
|---|---|---|---|---|---|---|---|---|---|
| 212 | | . | P | 1.10 | | VEADGSCDERRW | | . | |

| | HORIZON 148 | DEPTH (m) 156 Upper | Lower | BNDY 199 Distinct | Shape | MATRIX COLOUR 159 Moist Hue | Value | Chroma | Dry Hue | Value | Chroma | MOTTLES 159 Type | Abundance % 1 | 2 | 3 | Size (mm) 1 | 2 | 3 | Contrast 1 2 3 | Colour 1 2 3 | TEXTURE 161 Grade | Qualifier | Modifier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A11 | 0.00 | 0.02 | C | | 2.5YR | 5 | 2 | • | | | | 0 | | | | | | | | MC | | |
| 2 | A12 | 0.02 | 0.15 | G | | 2.5YR | 5 | 2 | • | | | | 0 | | | | | | | | MHC | | |
| 3 | B21 | 0.15 | 0.70 | D | | 2.5YR | 5 | 2 | • | | | | 0 | | | | | | | | MHC | | |
| 4 | B22 | 0.70 | 1.10 | | | 2.5YR | 4 | 2 | • | | | | 50 | | | 10 | | | D | O | MHC | | |
| 5 | B23 | 1.10 | 1.20 | | | 2.5YR | 4 | 2 | • | | | | 70 | | | 10 | | | D | O | MHC | | |
| 6 | | • | • | | | • | | | • | | | | | | | | | | | | | | |
| 7 | | • | • | | | • | | | • | | | | | | | | | | | | | | |
| 8 | | • | • | | | • | | | • | | | | | | | | | | | | | | |

| | STRUCTURE 171 Grade | Size (mm) Smallest | Next Size | 173 Type Smallest | Next Size | 181 Fabric | CONSISTENCE 186 Soil Water | Strength | Stickiness | 188 Plasticity Type | Degree | CUTANS 182 Type | Abund. | Distinct | VOIDS 184 Slak Disp Cracks | Pores | Abund. | Diam. | ROOTS 199 Size | Abund. | PANS 192 Cement. | Type | Contin. | Struct. | 198 Efferves. | pH 198 | EC ds/m | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M | 5 | 15 | SB | GR 5B | | D | | | | | | | | C | | | O | | | | | | | N | 6.5 | • | Minor Dispersion @ 80-90 |
| 2 | M | 10 | 40 | SB | SB | | D | | | | | | | | C | | | O | | | | | | | N | 6.5 | • | Roots to 80 cm |
| 3 | S | 10 | 50 | AB | LE | | D | | | | | | | | C | | | O | | | | | | | N | 7.0 | • | |
| 4 | M | 10 | 40 | AB | LE | | T | | | | | | | | P | | | 1 | | | | | | | N | 7.5 | • | Hard digging with backhoe beyond 80 cm |
| 5 | | | | | | | T | | | | | | | | C | | | O | | | | | | | N | 8.0 | • | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • | Sampled to 110-120 cm |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • | |

| | 139 Abundance % 1 | 2 | 3 | 4 | 140 Size (mm) 1 | 2 | 3 | 4 | COARSE FRAGMENTS 142 Shape 1 | 2 | 3 | 4 | 142 Lithology 1 | 2 | 3 | 4 | SEGREGATIONS 195 Abundance % 1 | 2 | Size (mm) 1 | 2 | Nature 1 | 2 | Form 1 | 2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 0 |
| 1 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 1 |
| 2 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 2 |
| 3 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 3 |
| 4 | 0 | | | | | | | | | | | | | | | | 0 | 1 | 2 | | K | | N | | 4 |
| 5 | 0 | | | | | | | | | | | | | | | | 0 | 5 | 5 | | Y | | X | | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | 8 |

| PROJECT | SURVEY | SITE | DATE Day | Month | Year | Described by |
|---|---|---|---|---|---|---|
| UCH210 | | 123 | 21 | 07 | 10 | NICK |

AIR PHOTO REFERENCE (mm)

| Film Number | Name | Year | Run | Number | Easting | Northing |
|---|---|---|---|---|---|---|
| | | | | | | |

MAP REFERENCE WP 103

| Datum | Scale | Zone | G. GPS T. Topo. | Map Sheet Number | Easting | Northing | Latitude d d m m s s s | Longitude d d d m m s s s |
|---|---|---|---|---|---|---|---|---|
| G10A914 | | 53 | G | | 4258810 | 8050019 | | |

SLOPE

| A. Abney E. Est | Value % | Aspect |
|---|---|---|
| | <0.5 | 127 |

LANDFORM ELEMENT

| 19 Morph. Type | 21 Slope Incl. | 29 Mode (geomorph) | 31 Element |
|---|---|---|---|
| L | | | PLA |

LANDFORM PATTERN

| 45 Relief (m) | 45 Modal Slope % | 47 Eros. LFP | 54 Mode (geomorph) | 55 Pattern |
|---|---|---|---|---|
| | L P | | | PLA |

Stream Channel Occurrence

| 48 Spacing | 49 Dvlpmt. | Width (m) | Depth (m) | 50 Pattern |
|---|---|---|---|---|
| | | • | • | |

THEMATIC REFERENCE

| Land System | Land Unit | Geology | Soil Profile Class |
|---|---|---|---|
| | | Cz6 | |

MICRORELIEF Gilgai 129

| Type 1 | 2 | 3 | Proportion | Vertical (m) | Horizontal (m) | Comp. sampled |
|---|---|---|---|---|---|---|
| C | | | | •20 | 13•0 | |

SITE DSTB. 128

| |
|---|
| 1M |

SURFACE CONDITION 189

occ H sandy wash

| Moisture status |
|---|
| GFC D |

144 Runoff: 1

201 Permeability: 2

202 Drainage: 4

INUNDATION 138

| Frequency | Duration | Depth (m) |
|---|---|---|
| 3 | 2 | 10•30 |

AGGRADATION 138

| State | Depth (mm) | Type |
|---|---|---|
| X | | |

some Normal

minor areas of W SM

EROSION 133

| State | Type 1 | 2 | 3 | Extent % 1 | 2 | 3 | Degree 1 | 2 | 3 | Gully Dimensions Depth (m) | Width (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N | | | | | | | | | | • | • |

SUBSTRATE

| 205 Type Obs | Distance (m) | 206 Conf. | Depth (m) | 209 Strength | 211 Alter. | 214 Lithology | 218 Genetic Class |
|---|---|---|---|---|---|---|---|
| P | | | • | | | NO | |

ROCK OUTCROP

| 143 Abundance % 1 | 2 | 214 Lithology 1 | 2 |
|---|---|---|---|
| 10 | | | |

COMMENTS

Site to inspect uniform green patch on level OEM
Comparison to site 22 on green patch but bumpy OEM

Vegetation: Sorghum timorense (dom) ± Astrebla sp ± Fimbristylis dichotoma? ± Chrysopogon fallax? Mid TG
Height: 30 - 100 cm avg 60 cm
Cover: 70%
Similar to Site 5 + 22

DIAGRAMS

23

Level Cz6 plain

| SITE NO. | VEG CLASS | + Free Water / - 144 / 0 | SOIL EXPOSURE 147 Type | Depth (m) | Stopped by | SOIL CLASSIFICATION Australian Soil Classification | Prefix | PPF | GSG |
|---|---|---|---|---|---|---|---|---|---|
| 23 | | . | | 1.40 | E | VEA0GSCDERRW | | . | |

| | HORIZON 148 | DEPTH (m) 156 Upper | Lower | BNDY 199 Distinct | Shape | MATRIX COLOUR 159 Moist Hue | Value | Chroma | Dry Hue | Value | Chroma | MOTTLES 159 Type | Abundance % 1 | 2 | 3 | Size (mm) 1 | 2 | 3 | Contrast 1 2 3 | Colour 1 2 3 | TEXTURE 161 Grade | Qualifier | Modifier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A 1 1 | 0.0 | 0.02 | | | 2.5Y | 4 | 1 | . | | | | 0 | | | | | | | | MC | | |
| 2 | A 1 2 | 0.02 | 0.15 | | | 2.5Y | 5 | 1 | . | | | | 0 | | | | | | | | MHC | | |
| 3 | B 2 1 | 0.15 | 0.70 | | | 2.5Y | 5 | 1 | . | | | | 0 | | | | | | | | MHC | | |
| 4 | B 2 2 | 0.70 | 1.00 | | | 2.5Y | 4 | 2 | . | | | | 2 | | | 5 | | | D | 0 | MHC | | |
| 5 | B 2 3 Y | 1.00 | 1.40 | | | 2.5Y | 5 | 2 | . | | | | 60 | | | 10 | | | D | D | MHC | | |
| 6 | | . | . | | | . | | | . | | | | | | | | | | | | | | |
| 7 | | . | . | | | . | | | . | | | | | | | | | | | | | | |
| 8 | | . | . | | | . | | | . | | | | | | | | | | | | | | |

| | STRUCTURE 171 Grade | Size (mm) Smallest | Next Size | 173 Type Smallest | Next Size | 181 Fabric | CONSISTENCE 186 Soil Water | Strength | Stickiness | Plasticity 188 Type | Degree | CUTANS 182 Type | Abund. | Distinct | ~~VOIDS~~ 184 Slak Disp Cracks | Pores | Abund. | Diam. | ROOTS 199 Size | Abund. | PANS 192 Cement. | Type | Contin. | Struct. | 198 Efferves. | pH 198 | EC ds/m | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M | 2 | 10 | SB | GR | | D | | | | | | | | C | | | 0 | | | | | | | N | . | . | Minor dispersion @ 50-60 cm + 80-90 cm |
| 2 | M | 10 | 30 | SB | SB | | D | | | | | | | | C | | | 0 | | | | | | | N | . | . | |
| 3 | S | 10 | 40 | AB | LE | | D | | | | | | | | C | | | 0/1 | | | | | | | N | . | . | Easy digging with backhoe |
| 4 | M | 10 | 40 | AB | AB | | D | | | | | | | | P | | | 0 | | | | | | | N | . | . | |
| 5 | M | 10 | 40 | AB | AB | | T | | | | | | | | C | | | 0 | | | | | | | N | . | . | Sampled to 140-150 cm |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | . | . | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | . | . | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | . | . | |

| | 139 COARSE FRAGMENTS Abundance % 1 | 2 | 3 | 4 | 140 Size (mm) 1 | 2 | 3 | 4 | 142 Shape 1 | 2 | 3 | 4 | 142 Lithology 1 | 2 | 3 | 4 | SEGREGATIONS 195 Abundance % 1 | 2 | Size (mm) 1 | 2 | Nature 1 | 2 | Form 1 | 2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 10 | | | | | | | | | | | | | | | | 0 | | | | | | | | 0 |
| 1 | 10 | | | | | | | | | | | | | | | | 0 | | | | | | | | 1 |
| 2 | 10 | | | | | | | | | | | | | | | | 0 | | | | | | | | 2 |
| 3 | 60 | | | | | | | | | | | | | | | | 0 | | | | | | | | 3 |
| 4 | 10 | | | | | | | | | | | | | | | | 0 | | | | | | | | 4 |
| 5 | 10 | | | | | | | | | | | | | | | | 10 | | 7 | | Y | | X | | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | 8 |

| PROJECT | SURVEY | SITE | DATE (Day / Month / Year) | Described by |
|---|---|---|---|---|
| WCHA20 | | 24 | 21 / 07 / 20 | NICK |

**AIR PHOTO REFERENCE**

| Film Number | Name | Year | Run | Number | Easting (mm) | Northing (mm) |
|---|---|---|---|---|---|---|
| | | | | | | |

**MAP REFERENCE** WP 109

| Datum | Scale | Zone | G. GPS T. Topo. | Map Sheet Number | Easting | Northing | Latitude (d d m m s s s) | Longitude (d d d m m s s s) |
|---|---|---|---|---|---|---|---|---|
| GDA94 | | 53 | G | | 427594 | 8050996 | | |

**SLOPE**

| A. Abney E. Est | Value % | Aspect |
|---|---|---|
| | 10.5 | 127 |

**LANDFORM ELEMENT**

| Morph. Type (19) | Slope Incl. (21) | Mode (geomorph) (29) | Element (31) |
|---|---|---|---|
| F | | | PLA |

**LANDFORM PATTERN**

| Relief (m) (45) | Modal Slope % (45) | Eros. LFP (47) | Mode (geomorph) (54) | Pattern (55) |
|---|---|---|---|---|
| | LP | | | PLA |

**Stream Channel Occurrence**

| Spacing (48) | Dvlpmt. (49) | Width (m) | Depth (m) | Pattern (50) |
|---|---|---|---|---|
| | | • | • | |

**THEMATIC REFERENCE**

| Land System | Land Unit | Geology | Soil Profile Class |
|---|---|---|---|
| | | Cz6 | |

**MICRORELIEF** Gilgai (129)

| Type 1 | Type 2 | Type 3 | Proportion | Vertical (m) | Horizontal (m) | Comp. sampled |
|---|---|---|---|---|---|---|
| N | | | | •20 | 50• | |

**SITE DSTB.** (128): 1

**SURFACE CONDITION** (189): hardsetting sandy wash

| Moisture status | Runoff (144) | Permeability (201) | Drainage (202) |
|---|---|---|---|
| 0 | 1 | 2 | 4 |

**INUNDATION**

| Frequency | Duration | Depth (m) (138) |
|---|---|---|
| 3 | 2 | •30 |

**AGGRADATION**

| State | Depth (mm) (138) | Type |
|---|---|---|
| X | | |

occ crabhole very rough to drive over

**EROSION** (133)

| State | Type 1 | Type 2 | Type 3 | Extent % 1 | Extent % 2 | Extent % 3 | Degree 1 | Degree 2 | Degree 3 | Gully Dimensions Depth (m) | Gully Dimensions Width (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Z | | | | | | | | | | • | • |

**SUBSTRATE**

| Type Obs (205) | Distance (m) (206) | Conf. | Depth (m) | Strength (209) | Alter. (211) | Lithology (214) | Genetic Class (218) |
|---|---|---|---|---|---|---|---|
| P | | | • | | | NO | |

**ROCK OUTCROP**

| Abundance % 1 (143) | Abundance % 2 (143) | Lithology 1 (214) | Lithology 2 (214) |
|---|---|---|---|
| 0 | | | |

**COMMENTS**

Site to inspect grey/white pattern on Bing imagery

Vegetation: Iseilema vaginiflorum (dom) ± Paspali. retig.? ± Astr. sp. (bull + barley) ± Fimbristylis dichotoma minor Aris latifolia + Panicum sp. Low CTG

Height: 20 - 100 cm avg 30 cm

cover: 80%

Similar to Site 19

**DIAGRAMS**

24

Level Cz6 plain

| SITE NO. | VEG CLASS | + Free Water / - 144 / 0 | SOIL EXPOSURE 147 Type | Depth (m) | Stopped by | SOIL CLASSIFICATION Australian Soil Classification | Prefix | PPF | GSG |
|---|---|---|---|---|---|---|---|---|---|
| 214 | | . | P | 1.40 | . | VEA0GSCOERRW | | . | |

| | HORIZON 148 | DEPTH (m) 156 Upper | Lower | BNDY 199 Distinct | Shape | MATRIX COLOUR 159 Moist Hue | Value | Chroma | Dry Hue | Value | Chroma | MOTTLES 159 Type | Abundance % 1 | 2 | 3 | Size (mm) 1 | 2 | 3 | Contrast 1 2 3 | Colour 1 2 3 | TEXTURE 161 Grade | Qualifier | Modifier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A11 | 0.00 | 0.02 | C | | 10YR | 4 | 2 | . | | | | 0 | | | | | | | | MC | | |
| 2 | A12 | 0.02 | 0.20 | G | | 2.5Y | 5 | 1 | . | | | | 0 | | | | | | | | MHC | | |
| 3 | B21 | 0.20 | 0.70 | D | | 2.5Y | 4 | 2 | . | | | | 0 | | | | | | | | MHC | | |
| 4 | B22 | 0.70 | 1.10 | D | | 2.5Y | 4 | 2 | . | | | | 10 | | | 5 | | | D | 0 | MHC | | |
| B3? 5 | B23Y | 1.10 | 1.40 | | | 2.5Y | 4 | 2 | . | | | Z | 60 | | | 5 | | | D | 0 | MHC | | |
| 6 | | . | . | | | . | | | . | | | | | | | | | | | | | | |
| 7 | | . | . | | | . | | | . | | | | | | | | | | | | | | |
| 8 | | . | . | | | . | | | . | | | | | | | | | | | | | | |

| | STRUCTURE 171 Grade | Size (mm) Smallest | Next Size | 173 Type Smallest | Next Size | 181 Fabric | CONSISTENCE 186 Soil Water | Strength | Stickiness | 188 Plasticity Type | Degree | CUTANS 182 Type | Abund. | Distinct | VOIDS 184 Slaking Disp Cracks | Pores | Abund. | Diam. | ROOTS 199 Size | Abund. | PANS 192 Cement. | Type | Contin. | Struct. | 198 Effervs. | pH 198 | EC ds/m | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | W | 5 | 20 | SB | SB | | D | | | | | | | | C | | | 0 | | | | | | | N | 6.0 | . | Very minor dispersion @ 50-60 cm |
| 2 | M | 10 | 30 | SB | SB | | D | | | | | | | | C | | | 0 | | | | | | | N | 6.5 | . | + 80-90 cm |
| 3 | S | 10 | 40 | LE | LE | | D | | | | | | | | C | | | 0/1 | | | | | | | N | 7.0 | . | |
| 4 | M | 10 | 30 | AB | AB | | T | | | | | | | | C | | | 0 | | | | | | | N | 7.5 | . | Roots to 100 cm |
| 5 | M | 10 | 30 | AB | AB | | T | | | | | | | | C | | | 0 | | | | | | | N | 8.0 | . | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | 8.5 | . | Sampled to 110 - 120 cm |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | . | . | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | . | . | |

| | 139 COARSE FRAGMENTS Abundance % 1 | 2 | 3 | 4 | 140 Size (mm) 1 | 2 | 3 | 4 | 142 Shape 1 | 2 | 3 | 4 | 142 Lithology 1 | 2 | 3 | 4 | SEGREGATIONS 195 Abundance % 1 | 2 | Size (mm) 1 | 2 | Nature 1 | 2 | Form 1 | 2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 0 |
| 1 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 1 |
| 2 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 2 |
| 3 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 3 |
| 4 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 4 |
| 5 | 0 | | | | | | | | | | | | | | | | 10 | | 1 | 10 | 5 | Y | K | X | S | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | 8 |

| PROJECT | SURVEY | SITE | DATE Day | DATE Month | DATE Year | Described by |
|---|---|---|---|---|---|---|
| UCH20 | | 25 | 22 | 07 | 20 | NIC K |

AIR PHOTO REFERENCE

| Film Number | Name | Year | Run | Number | Easting (mm) | Northing (mm) |
|---|---|---|---|---|---|---|
| | | | | | | |

MAP REFERENCE WP 105

| Datum | Scale | Zone | G. GPS T. Topo. | Map Sheet Number | Easting | Northing | Latitude d d m m s s s | Longitude d d d m m s s s |
|---|---|---|---|---|---|---|---|---|
| GDA94 | | 53 | G | | 426840 | 8053414 | | |

SLOPE

| A. Abney E. Est | Value % | Aspect |
|---|---|---|
| A | <0.5 | 127 |

LANDFORM ELEMENT

| 19 Morph. Type | 21 Slope Incl. | 29 Mode (geomorph) | 31 Element |
|---|---|---|---|
| F | | | PLA |

LANDFORM PATTERN

| 45 Relief (m) | 45 Modal Slope % | 47 Eros. LFP | 54 Mode (geomorph) | 55 Pattern |
|---|---|---|---|---|
| | LP | | | PLA |

Stream Channel Occurrence

| 48 Spacing | 49 Dvlpmt. | Width (m) | Depth (m) | 50 Pattern |
|---|---|---|---|---|
| | | • | • | |

THEMATIC REFERENCE

| Land System | Land Unit | Geology | Soil Profile Class |
|---|---|---|---|
| | | Czb | |

MICRORELIEF Gilgai 129

| Type 1 | Type 2 | Type 3 | Proportion | Vertical (m) | Horizontal (m) | Comp. sampled |
|---|---|---|---|---|---|---|
| C | | | | •20 | 3.0 | |

some normal

SITE DSTB. 128

| |
|---|
| IL |

SURFACE CONDITION 189

Landsetting sandy wash

| Moisture status |
|---|
| D |

144 Runoff: 1

201 Permeability: 2

202 Drainage: 4

INUNDATION 138

| Frequency | Duration | Depth (m) ? |
|---|---|---|
| 3 | 2 | 10.30 |

AGGRADATION 138

| State | Depth (mm) | Type |
|---|---|---|
| X | | |

minor areas of W SM

EROSION 133

| State | Type 1 | Type 2 | Type 3 | Extent % 1 | Extent % 2 | Extent % 3 | Degree 1 | Degree 2 | Degree 3 | Gully Dimensions Depth (m) | Gully Dimensions Width (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N | | | | | | | | | | • | • |

SUBSTRATE

| 205 Type Obs | 206 Distance (m) | Conf. | Depth (m) | 209 Strength | 211 Alter. | 214 Lithology | 218 Genetic Class |
|---|---|---|---|---|---|---|---|
| P | | | • | | | ND | |

ROCK OUTCROP

| 143 Abundance % 1 | 143 Abundance % 2 | 214 Lithology 1 | 214 Lithology 2 |
|---|---|---|---|
| 0 | | | |

COMMENTS

Site to investigate white and pale brown blotch pattern on Imagery, level DEM

Vegetation: Paspalidium retiglume? (dom) + Iseilema vagin + Asti elymoides + Aristida latifolia ± Fimbristylis dichotoma ± Panicum sp. Low CTG

Height: 10-80 cm avg 30 cm
Cover: 90%

Similar to site 24

DIAGRAMS

25

Level Czb plain

swapped to narrow bucket - -

| SITE NO. | VEG CLASS | + Free Water - 144 0 | SOIL EXPOSURE Type | 147 Depth (m) | Stopped by | SOIL CLASSIFICATION Australian Soil Classification | Prefix | PPF | GSG |
|---|---|---|---|---|---|---|---|---|---|
| 215 | | . | P | 1.40 | E | VEADGSCDERRW | | . | |

| | HORIZON 148 | DEPTH (m) 156 Upper | Lower | BNDY 199 Distinct | Shape | MATRIX COLOUR 159 Moist Hue | Value | Chroma | Dry Hue | Value | Chroma | MOTTLES 159 Type | Abundance % 1 | 2 | 3 | Size (mm) 1 | 2 | 3 | Contrast 1 2 3 | Colour 1 2 3 | TEXTURE 161 Grade | Qualifier | Modifier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A 1 1 | 0.0 | 0.02 | C | | 10YR | 4 | 2 | 10YR | 4 | 2 | | 0 | | | | | | | | LMC | | |
| 2 | A 1 2 | 0.0 | 0.20 | G | | 10YR | 4 | 2 | 10YR | 4 | 2 | | 0 | | | | | | | | MHC | | |
| 3 | B 2 1 | 0.2 | 0.60 | D | | 2.5Y | 4 | 2 | 2.5Y | 4 | 2 | | 0 | | | | | | | | MHC | | |
| 4 | B 2 2 | 0.6 | 0.80 | D | | 2.5Y | 4 | 2 | 2.5Y | 4 | 2 | | 5 | | | 5 | | | D | O | MHC | | |
| 5 | B 2 3 Y | 0.8 | 1.40 | | | 2.5Y | 4 | 2 | 2.5Y | 4 | 2 | | 60 | | | 10 | | | D | O | MHC | | |
| 6 | | . | . | | | . | | | . | | | | | | | | | | | | | | |
| 7 | | . | . | | | . | | | . | | | | | | | | | | | | | | |
| 8 | | . | . | | | . | | | . | | | | | | | | | | | | | | |

| | STRUCTURE 171 Grade | Size (mm) Smallest | Next Size | 173 Type Smallest | Next Size | 181 Fabric | CONSISTENCE 186 Soil Water | Strength | Stickiness | Plasticity 188 Type | Degree | CUTANS 182 Type | Abund. | Distinct | VOIDS 184 Slak Disp Cracks | Pores | Abund. | Diam. | ROOTS 199 Size | Abund. | PANS 192 Cement. | Type | Contin. | Struct. | 198 Efferves. | pH 198 | EC ds/m | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | W | 2 | 10 | GR | SB | | D | | | | | | | | C | | | O | | | | | | | N | 6.0 | . | Rough to drive over - hard |
| 2 | M | 10 | 30 | SB | SB | | D | | | | | | | | C | | | O | | | | | | | N | 6.5 | . | Minor dispersion (cloudiness) @ all levels |
| 3 | M | 10 | 30 | ABLE | ABLE | | D | | | | | | | | C | | | O/1 | | | | | | | N | 7.0 | . | from 20 cm |
| 4 | M | 10 | 30 | ABLE | ABLE | | D/F | | | | | | | | C | | | O/1 | | | | | | | N | 7.5 | . | Sampled to 140 - 150 cm |
| 5 | W | 10 | 40 | AB | AB | | F | | | | | M | 1 | D | C | | | 1 | | | | | | | N | 8.0 | . | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | 8.5 | . | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | . | . | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | . | . | |

| | 139 COARSE FRAGMENTS Abundance % 1 | 2 | 3 | 4 | 140 Size (mm) 1 | 2 | 3 | 4 | 142 Shape 1 | 2 | 3 | 4 | 142 Lithology 1 | 2 | 3 | 4 | SEGREGATIONS 195 Abundance % 1 | 2 | Size (mm) 1 | 2 | Nature 1 | 2 | Form 1 | 2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 0 |
| 1 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 1 |
| 2 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 2 |
| 3 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 3 |
| 4 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 4 |
| 5 | 0 | | | | | | | | | | | | | | | | 10 | | 5 | | Y | | X | | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | 8 |

| PROJECT | SURVEY | SITE | DATE (Day / Month / Year) | Described by |
|---|---|---|---|---|
| UCH20 | | 216 | 22 / 07 / 10 | NIC K |

**AIR PHOTO REFERENCE**

| Film Number | Name | Year | Run | Number | Easting (mm) | Northing (mm) |
|---|---|---|---|---|---|---|
| | | | | | | |

**MAP REFERENCE** WP 106

| Datum | Scale | Zone | G. GPS T. Topo. | Map Sheet Number | Easting | Northing | Latitude (d d m m s s s) | Longitude (d d d m m s s s) |
|---|---|---|---|---|---|---|---|---|
| GDA94 | | 53 | G | | 425640 | 8057035 | | |

**SLOPE** 21

| A. Abney E. Est. | Value % | Aspect 127 |
|---|---|---|
| A | <0.5 | |

**LANDFORM ELEMENT** 19 21 29 31

| Morph. Type | Slope Incl. | Mode (geomorph) | Element |
|---|---|---|---|
| F | | | PLA |

**LANDFORM PATTERN** 45 45 47 54 55 — **Stream Channel Occurrence** 48 49 50

| Relief (m) | Modal Slope % | Eros. LFP | Mode (geomorph) | Pattern | Spacing | Dvlpmt. | Width (m) | Depth (m) | Pattern |
|---|---|---|---|---|---|---|---|---|---|
| | LP | | | PLA | | | • | • | |

**THEMATIC REFERENCE**

| Land System | Land Unit | Geology | Soil Profile Class |
|---|---|---|---|
| | | Cz6 | |

**MICRORELIEF** Gilgai 129

| Type 1 | 2 | 3 | Proportion | Vertical (m) | Horizontal (m) | Comp. sampled |
|---|---|---|---|---|---|---|
| N | | | | •40 | 1•5 | |

very rough to drive over

**SITE DSTB.** 128: 1M

**SURFACE CONDITION** 189: brown cryptogams

| Moisture status |
|---|
| GMXYD |

**144 Runoff:** 1

**201 Permeability:** 2

**202 Drainage:** 4

**INUNDATION**

| Frequency | Duration | Depth (m) 138 ? |
|---|---|---|
| 3 | 2 | •30 |

**AGGRADATION**

| State | Depth (mm) 138 | Type |
|---|---|---|
| X | | |

mod thick  weak to mostly mod SM

**EROSION** 133

| State | Type 1 | 2 | 3 | Extent % 1 | 2 | 3 | Degree 1 | 2 | 3 | Gully Dimensions Depth (m) | Width (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Z | | | | | | | | | | • | • |

**SUBSTRATE** 205 206 209 211 214 218

| Type Obs | Distance (m) | Conf. | Depth (m) | Strength | Alter. | Lithology | Genetic Class |
|---|---|---|---|---|---|---|---|
| P | | | • | | | ND | |

**ROCK OUTCROP** 143 214

| Abundance % 1 | 2 | Lithology 1 | 2 |
|---|---|---|---|
| 0 | | | |

**COMMENTS**

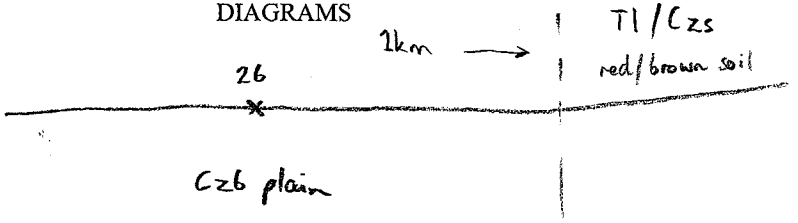
Site to investigate similar photo pattern to site 24, but different soil

Vegetation - Astr. sp. (bull + barley) (on mounds) + Paspali. retig.? + Iseilema V. (dom) ± Aristida lat. ± Panicum sp. Low TG

Height - 20-80 cm avg 30 cm

Cover 50%

**DIAGRAMS**



| SITE NO. | VEG CLASS | + Free Water / - / 0 | SOIL EXPOSURE Type | Depth (m) 147 | Stopped by | SOIL CLASSIFICATION Australian Soil Classification | Prefix | PPF | GSG |
|---|---|---|---|---|---|---|---|---|---|
| 216 | | 144 | P | 1.70 | E | VEAOE / CODERRX | | | |

B37.

| | HORIZON 148 | DEPTH (m) 156 Upper | Lower | BNDY 199 Distinct | Shape | MATRIX COLOUR 159 Moist Hue | Value | Chroma | Dry Hue | Value | Chroma | MOTTLES 159 Type | Abundance % 1 | 2 | 3 | Size (mm) 1 | 2 | 3 | Contrast 1 | 2 | 3 | Colour 1 | 2 | 3 | TEXTURE 161 Grade | Qualifier | Modifier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A 1 1 | 0.0 | 0.03 | C | | 2.5 Y | 5 | 3 | • | | | | 0 | | | | | | | | | | | | L M C | | |
| 2 | A 1 2 | 0.03 | 0.15 | C | | 2.5 Y | 4 | 3 | • | | | | 0 | | | | | | | | | | | | M H C | | |
| 3 | B 2 1 | 0.15 | 0.80 | D | | 2.5 Y | 4 | 2 | • | | | | 0 | | | | | | | | | | | | M H C | | |
| 4 | B 2 2 | 0.80 | 1.10 | D | | 2.5 Y | 4 | 2 | • | | | | 2 | | | 5 | | | 0 | | | 0 | | | M H C | | |
| 5 | B 2 3 | 1.10 | 1.70 | | | 2.5 Y | 4 | 2 | • | | | Z | 6 | 0 | | 1 | 0 | | 0 | | | 0 | | | M H C | | |
| 6 | | • | • | | | • | | | • | | | | | | | | | | | | | | | | | | |
| 7 | | • | • | | | • | | | • | | | | | | | | | | | | | | | | | | |
| 8 | | • | • | | | • | | | • | | | | | | | | | | | | | | | | | | |

| | STRUCTURE 171 Grade | Size (mm) Smallest | Next Size | 173 Type Smallest | Next Size | 181 Fabric | CONSISTENCE 186 Soil Water | Strength | Stickiness | Plasticity 188 Type | Degree | CUTANS 182 Type | Abund. | Distinct | VOIDS Slaking Disp 184 Cracks | Pores | Abund. | Diam. | ROOTS 199 Size | Abund. | PANS 192 Cement. | Type | Contin. | Struct. | 198 Efferves. | pH 198 | EC ds/m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M | 2 | 30 | GR | SB | | O | | | | | | | | C | | | O | | | | | | | N | 6.5 | • |
| 2 | M | 10 | 30 | SB | SB | | O | | | | | | | | C | | | O | | | | | | | N | 6.5 | • |
| 3 | S | 10 | 40 | LE | LE | | O | | | | | | | | C | | | O | | | | | | | N | 7.5 | • |
| 4 | M | 10 | 30 | LE AB | LE AB | | T | | | | | | | | C | | | O | | | | | | | N | 8.0 | • |
| 5 | W | 10 | 30 | A B | A B | | T | | | | | M | 1 | D | C | | | 1 | | | | | | | N | 8.5 | • |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | • | • |

COMMENTS

Roots to 80 cm

Minor dispersion from 50-60 cm and below. Level 1 dip @ 140-150 cm

Sampled to 140 - 150 cm

| | 139 COARSE FRAGMENTS Abundance % 1 | 2 | 3 | 4 | 140 Size (mm) 1 | 2 | 3 | 4 | 142 Shape 1 | 2 | 3 | 4 | 142 Lithology 1 | 2 | 3 | 4 | SEGREGATIONS 195 Abundance % 1 | 2 | Size (mm) 1 | 2 | Nature 1 | 2 | Form 1 | 2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 0 |
| 1 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 1 |
| 2 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 2 |
| 3 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 3 |
| 4 | 0 | | | | | | | | | | | | | | | | 1 | | 3 | | K | | N | | 4 |
| 5 | 0 | | | | | | | | | | | | | | | | 1 | 1 | 3 | 5 | K | Y | N | X | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | 8 |

| PROJECT | SURVEY | SITE | DATE Day | DATE Month | DATE Year | Described by |
|---|---|---|---|---|---|---|
| UCH210 | | 27 | 22 | 07 | 20 | NICK |

AIR PHOTO REFERENCE

| Film Number | Name | Year | Run | Number | Easting (mm) | Northing (mm) |
|---|---|---|---|---|---|---|
| | | | | | | |

MAP REFERENCE

WP 108

| Datum | Scale | Zone | G. GPS T. Topo. | Map Sheet Number | Easting | Northing | Latitude d d m m s s s | Longitude d d d m m s s s |
|---|---|---|---|---|---|---|---|---|
| GDA94 | | 53 | G | | 420879 | 8062537 | | |

SLOPE

| A. Abney E. Est. | Value % | Aspect |
|---|---|---|
| A | <0.5 | 127 |

LANDFORM ELEMENT

| 19 Morph. Type | 21 Slope Incl. | 29 Mode (geomorph) | 31 Element |
|---|---|---|---|
| F | | | PLA |

LANDFORM PATTERN

| 45 Relief (m) | 45 Modal Slope % | 47 Eros. LFP | 54 Mode (geomorph) | 55 Pattern |
|---|---|---|---|---|
| | LP | | | PLA |

Stream Channel Occurrence

| 48 Spacing | 49 Dvlpmt. | Width (m) | Depth (m) | 50 Pattern |
|---|---|---|---|---|
| | | • | • | |

THEMATIC REFERENCE

| Land System | Land Unit | Geology | Soil Profile Class |
|---|---|---|---|
| | | C26 | |

MICRORELIEF

Gilgai

| Type 1 | 2 | 3 | Proportion | 129 Vertical (m) | Horizontal (m) | Comp. sampled |
|---|---|---|---|---|---|---|
| C | | | | 0.15 | 5.0 | |

SITE DSTB. 128

| |
|---|
| 1L |

SURFACE CONDITION 189

| | Moisture status |
|---|---|
| GX | D |

| 144 Runoff | 201 Permeability | 202 Drainage |
|---|---|---|
| 1 | 2 | 4 |

INUNDATION

| Frequency | Duration | 138 Depth (m) ? |
|---|---|---|
| 3 | 2 | 10.30 |

AGGRADATION

| State | 138 Depth (mm) | Type |
|---|---|---|
| X | | |

From surface flake/crust with sandy wash + brown cryptogam crusting that breaks down readily to sm/rubble

EROSION 133

| State | Type 1 | 2 | 3 | Extent % 1 | 2 | 3 | Degree 1 | 2 | 3 | Gully Dimensions Depth (m) | Width (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N | | | | | | | | | | • | • |

SUBSTRATE

| 205 Type Obs | Distance (m) | 206 Conf. | Depth (m) | 209 Strength | 211 Alter. | 214 Lithology | 218 Genetic Class |
|---|---|---|---|---|---|---|---|
| P | | | • | | | ND | |

ROCK OUTCROP

| 143 Abundance % 1 | 2 | 214 Lithology 1 | 2 |
|---|---|---|---|
| 0 | | | |

COMMENTS

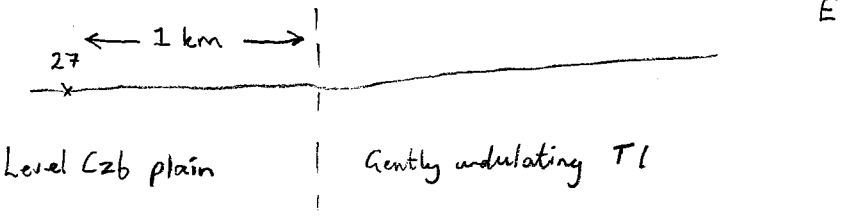
Site to inspect uniform imagery pattern and level OEM

Similar to Site 28 + 29

Vegetation: Sorghum timorense (dom) ± Astreb pectinata ± Panicum sp. ± Sesbania ! Mid TG

Height: 30 - 100 cm avg 80 cm
Cover: 60%

DIAGRAMS



| SITE NO. | VEG CLASS | + Free Water - 144 0 | SOIL EXPOSURE Type | 147 Depth (m) | Stopped by | SOIL CLASSIFICATION Australian Soil Classification | Prefix | PPF | GSG |
|---|---|---|---|---|---|---|---|---|---|
| 217 | | . | P | 1.50 | E | VEADGSCDERRX | | . | |

| | HORIZON 148 | DEPTH (m) 156 Upper | Lower | BNDY 199 Distinct | Shape | MATRIX COLOUR 159 Moist Hue | Value | Chroma | Dry Hue | Value | Chroma | MOTTLES 159 Type | Abundance % 1 | 2 | 3 | Size (mm) 1 | 2 | 3 | Contrast 1 2 3 | Colour 1 2 3 | TEXTURE 161 Grade | Qualifier | Modifier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A11 | 0.0 | 0.03 | C | | 10.0YR | 4 | 2 | • | | | | 0 | | | | | | | | LMC | | |
| 2 | A12 | 0.0 | 0.15 | | | 2.5Y | 4 | 2 | • | | | | 0 | | | | | | | | MHC | | |
| 3 | B21 | 0.1 | 0.80 | | | 2.5Y | 4 | 2 | • | | | | 0 | | | | | | | | MHC | | |
| 4 | B22 | 0.8 | 1.50 | | | 2.5Y | 4 | 2 | • | | | | 70 | | | 5 | | | D | O | MHC | | |
| 5 | | • | • | | | • | | | • | | | | | | | | | | | | | | |
| 6 | | • | • | | | • | | | • | | | | | | | | | | | | | | |
| 7 | | • | • | | | • | | | • | | | | | | | | | | | | | | |
| 8 | | • | • | | | • | | | • | | | | | | | | | | | | | | |

B3?

| | STRUCTURE 171 Grade | Size (mm) Smallest | Next Size | 173 Type Smallest | Next Size | 181 Fabric | CONSISTENCE 186 Soil Water | Strength | Stickiness | 188 Plasticity Type | Degree | CUTANS 182 Type | Abund. | Distinct | VOIDS 184 Type | Abund. | Diam. | ROOTS 199 Size | Abund. | PANS 192 Cement. | Type | Contin. | Struct. | 198 Efferves. | pH 198 | EC ds/m | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | W | 5 | | GR | SB | | D | | | | | C | | O | | | | | | | | | | N | 6.5 | • | Minor dispersion at 50-60 cm and below |
| 2 | M | 10 | 30 | SB | AB | | D | | | | | P | | O | | | | | | | | | | N | 6.5 | • | |
| 3 | M | 10 | 40 | LE | LE | | D | | | | | P | | O/1 | | | | | | | | | | N | 7.0 | • | Hard digging from 80 cm |
| 4 | M | 10 | 40 | ABLE | ABLE | | T | | | | | C | | O/1 | | | | | | | | | | N | 8.0 | • | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | 8.5 | • | Sampled to 140-150 cm |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | • | • | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | • | • | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | • | • | |

| | 139 COARSE FRAGMENTS Abundance % 1 | 2 | 3 | 4 | 140 Size (mm) 1 | 2 | 3 | 4 | 142 Shape 1 | 2 | 3 | 4 | 142 Lithology 1 | 2 | 3 | 4 | SEGREGATIONS 195 Abundance % 1 | 2 | Size (mm) 1 | 2 | Nature 1 | 2 | Form 1 | 2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 0 |
| 1 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 1 |
| 2 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 2 |
| 3 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 3 |
| 4 | 0 | | | | | | | | | | | | | | | | 5 | 1 | 5 | 3 | Y | K | X | S | 4 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | 8 |

| PROJECT | SURVEY | SITE | DATE Day | DATE Month | DATE Year | Described by |
|---|---|---|---|---|---|---|
| UCH20 | | 28 | 22 | 07 | 20 | NI CK |

Check site

AIR PHOTO REFERENCE (mm)

| Film Number | Name | Year | Run | Number | Easting | Northing |
|---|---|---|---|---|---|---|
| | | | | | | |

MAP REFERENCE

WP 100

| Datum | Scale | Zone | G. GPS T. Topo. | Map Sheet Number | Easting | Northing | Latitude d d m m s s s | Longitude d d d m m s s s |
|---|---|---|---|---|---|---|---|---|
| GDA94 | | 53 | G | | 411986 | 8062881 | | |

SLOPE

| A. Abney E. Est | Value % | Aspect |
|---|---|---|
| A | <0.5 | 127 |

LANDFORM ELEMENT

| 19 Morph. Type | 21 Slope Incl. | 29 Mode (geomorph) | 31 Element |
|---|---|---|---|
| F | | | PLA |

LANDFORM PATTERN

| 45 Relief (m) | 45 Modal Slope % | 47 Eros. LFP | 54 Mode (geomorph) | 55 Pattern |
|---|---|---|---|---|
| | L P | | | PLA |

Stream Channel Occurrence

| 48 Spacing | 49 Dvlpmt. | Width (m) | Depth (m) | 50 Pattern |
|---|---|---|---|---|
| | | • | • | |

THEMATIC REFERENCE

| Land System | Land Unit | Geology | Soil Profile Class |
|---|---|---|---|
| | | Cz6 | |

MICRORELIEF

Gilgai

| Type 1 | Type 2 | Type 3 | Proportion | 129 Vertical (m) | Horizontal (m) | Comp. sampled |
|---|---|---|---|---|---|---|
| N/C | | | | 0.20 | 03.0 | |

SITE DSTB. 128: I L

SURFACE CONDITION 189

| | Moisture status |
|---|---|
| GX | |

144 Runoff: 1

201 Permeability:

202 Drainage:

INUNDATION

| Frequency | Duration | 138 Depth (mm) ? |
|---|---|---|
| 3 | 2 | .30 |

AGGRADATION

| State | 138 Depth (mm) | Type |
|---|---|---|
| X | | |

firm surface flake/crust with sandy wash + minor algal crusting that's breaks down readily to SM/rubble

EROSION 133

| State | Type 1 | Type 2 | Type 3 | Extent % 1 | Extent % 2 | Extent % 3 | Degree 1 | Degree 2 | Degree 3 | Gully Dimensions Depth (m) | Gully Dimensions Width (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Z | | | | | | | | | | • | • |

SUBSTRATE

| 205 Type Obs | Distance (m) | 206 Conf. | Depth (m) | 209 Strength | 211 Alter. | 214 Lithology | 218 Genetic Class |
|---|---|---|---|---|---|---|---|
| | | | • | | | ND | |

ROCK OUTCROP

| 143 Abundance % 1 | 143 Abundance % 2 | 214 Lithology 1 | 214 Lithology 2 |
|---|---|---|---|
| 0 | | | |

COMMENTS

Check

Site to investigate pale green blotchy imagery pattern, level DEM

Vegetation - Sorghum timorense + Chrysopogon fallax Mid TG

Height: 40 - 100 cm avg 60 cm

Cover: 70 %

Astrob. sp. appears to be burnt out - short tussocks

Similar to site 29

DIAGRAMS

28

Level Cz6 plain

| PROJECT | SURVEY | SITE | DATE Day | DATE Month | DATE Year | Described by |
|---|---|---|---|---|---|---|
| UCH20 | | 29 | 22 | 07 | 20 | NICK |

AIR PHOTO REFERENCE

| Film Number | Name | Year | Run | Number | Easting (mm) | Northing (mm) |
|---|---|---|---|---|---|---|
| | | | | | | |

MAP REFERENCE — WP 107

| Datum | Scale | Zone | G. GPS T. Topo. | Map Sheet Number | Easting | Northing | Latitude d d m m s s s | Longitude d d d m m s s s |
|---|---|---|---|---|---|---|---|---|
| GDA94 | | 53 | G | | 418544 | 8060784 | | |

SLOPE

| A. Abney F. Est | Value % | Aspect |
|---|---|---|
| A | <0.5 | 127 |

LANDFORM ELEMENT

| 19 Morph. Type | 21 Slope Incl. | 29 Mode (geomorph) | 31 Element |
|---|---|---|---|
| F | | | PLA |

LANDFORM PATTERN

| 45 Relief (m) | 45 Modal Slope % | 47 Eros. LFP | 54 Mode (geomorph) | 55 Pattern |
|---|---|---|---|---|
| | LP | | | PLA |

Stream Channel Occurrence

| 48 Spacing | 49 Dvlpmt. | Width (m) | Depth (m) | 50 Pattern |
|---|---|---|---|---|
| | | • | • | |

THEMATIC REFERENCE

| Land System | Land Unit | Geology | Soil Profile Class |
|---|---|---|---|
| | | Cz16 | |

MICRORELIEF — Gilgai 129

| Type 1 | Type 2 | Type 3 | Proportion | Vertical (m) | Horizontal (m) | Comp. sampled |
|---|---|---|---|---|---|---|
| N | C | | | 0.20 | 3.0 | |

SITE DSTB. 128

| |
|---|
| 1L |

SURFACE CONDITION 189 — coarse SM

| Moisture status |
|---|
| GMX0 |

| 144 Runoff | 201 Permeability | 202 Drainage |
|---|---|---|
| 1 | 2 | 4 |

INUNDATION

| Frequency | Duration | 138 Depth (m) ? |
|---|---|---|
| 3 | 2 | .36 |

AGGRADATION

| State | 138 Depth (mm) | Type |
|---|---|---|
| X | | |

firm surface flake/crust that easily breaks down to SM/rubble. Sandy wash + brown crypto crusting

EROSION 133

| State | Type 1 | Type 2 | Type 3 | Extent % 1 | Extent % 2 | Extent % 3 | Degree 1 | Degree 2 | Degree 3 | Gully Dimensions Depth (m) | Gully Dimensions Width (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | | | | | | | | | | • | • |

SUBSTRATE

| 205 Type Obs | Distance (m) | 206 Conf. | Depth (m) | 209 Strength | 211 Alter. | 214 Lithology | 218 Genetic Class |
|---|---|---|---|---|---|---|---|
| P | | | • | | | ND | |

ROCK OUTCROP

| 143 Abundance % 1 | 143 Abundance % 2 | 214 Lithology 1 | 214 Lithology 2 |
|---|---|---|---|
| 0 | | | |

COMMENTS

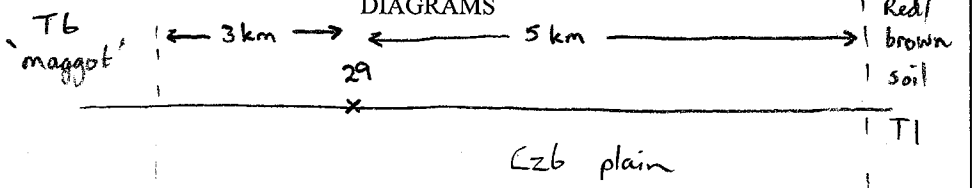
Vegetation: Sorghum timorense + Astr. (curly?) + Sesbania (dom.) ± Iseilema vag. ± Paspali. retig? ± Panicum sp. ± Operculina aeq. Mid TG

Height: 20 – 100 cm avg 80cm

Cover = 60%

Similar to Site 28

DIAGRAMS



| SITE NO. | VEG CLASS | + Free Water - 144 0 | SOIL EXPOSURE 147 Type | Depth (m) | Stopped by | SOIL CLASSIFICATION GS? Australian Soil Classification | Prefix | PPF | GSG |
|---|---|---|---|---|---|---|---|---|---|
| 2 9 | | . | P | 1.40 | E | VEA0E1C0ERRW | | . | |

| | HORIZON 148 | DEPTH (m) 156 Upper | Lower | BNDY 199 Distinct | Shape | MATRIX COLOUR 159 Moist Hue | Value | Chroma | Dry Hue | Value | Chroma | MOTTLES 159 Type | Abundance % 1 | 2 | 3 | Size (mm) 1 | 2 | 3 | Contrast 1 2 3 | Colour 1 2 3 | TEXTURE 161 Grade | Qualifier | Modifier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A1 1 | 0.00 | 0.03 | C | | 2.5Y | 4 | 1 | . | | | | 0 | | | | | | | | MC | | |
| 2 | A1 2 | 0.03 | 0.15 | G | | 2.5Y | 5 | 1 | . | | | | 0 | | | | | | | | MHC | | |
| 3 | B2 1 | 0.15 | 0.70 | | | 2.5Y | 5 | 1 | . | | | | 0 | | | | | | | | MHC | | |
| 4 | B2 2 Y | 0.70 | 1.40 | | | 2.5Y | 5 | 1 | . | | | | 50 | | | 5 | | | F | 0 | MHC | | |
| 5 | | . | . | | | . | | | . | | | | | | | | | | | | | | |
| 6 | | . | . | | | . | | | . | | | | | | | | | | | | | | |
| 7 | | . | . | | | . | | | . | | | | | | | | | | | | | | |
| 8 | | . | . | | | . | | | . | | | | | | | | | | | | | | |

| | STRUCTURE 171 Grade | Size (mm) Smallest | Next Size | 173 Type Smallest | Next Size | 181 Fabric | CONSISTENCE 186 Soil Water | Strength | Stickiness | Plasticity 188 Type | Degree | CUTANS 182 Type | Abund. | Distinct | VOIDS 184 Slaking Cracks | Pores | Abund. | Disp Diam. | ROOTS 199 Size | Abund. | PANS 192 Cement. | Type | Contin. | Struct. | 198 Efferves. | pH 198 | EC ds/m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M | 5 | 15 | GR | GR | | D | | | | | | | | C | | | D | | | | | | | N | 6.0 | . |
| 2 | M | 10 | 40 | SB | SB | | D | | | | | | | | C | | | D | | | | | | | M | 6.5 | . |
| 3 | S | 10 | 40 | LE | LE | | D | | | | | | | | C | | | 1 | | | | | | | N | 7.0 | . |
| 4 | M | 10 | 40 | AB | AB | | T | | | | | M | 1 | 0 | C | | | D | | | | | | | N | 7.5 | . |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | N | 8.0 | . |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | . | . |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | . | . |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | . | . |

COMMENTS

Roots to 90 cm
Sampled to 140 - 150 cm
Moderately effervescence in A12
Level 1 dispersion @ 50-60 cm. Minor disp below at all layers
Different soil to other sites - no distinct subsoil mottle. Softer to dig. Developed off limestone potentially?

| | 139 COARSE FRAGMENTS Abundance % 1 | 2 | 3 | 4 | 140 Size (mm) 1 | 2 | 3 | 4 | 142 Shape 1 | 2 | 3 | 4 | 142 Lithology 1 | 2 | 3 | 4 | SEGREGATIONS 195 Abundance % 1 | 2 | Size (mm) 1 | 2 | Nature 1 | 2 | Form 1 | 2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 0 |
| 1 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 1 |
| 2 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 2 |
| 3 | 0 | | | | | | | | | | | | | | | | 0 | | | | | | | | 3 |
| 4 | 0 | | | | | | | | | | | | | | | | 10 | | 10 | | Y | | X | | 4 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | 5 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | 7 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | 8 |