

Features:

4.

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

5.

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

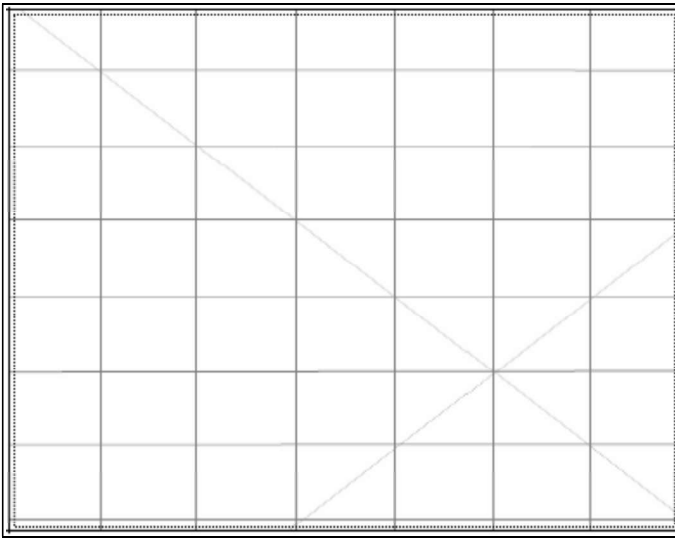
Site photographs



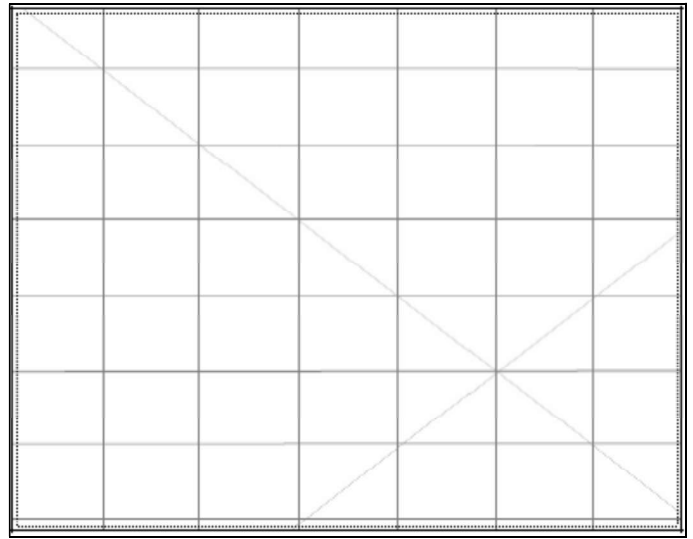
Description:



Description:



Description:



Description:

Site restrictions

Do you want to
Restrict this site?:

Restriction type: Gender General Location
N/A

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

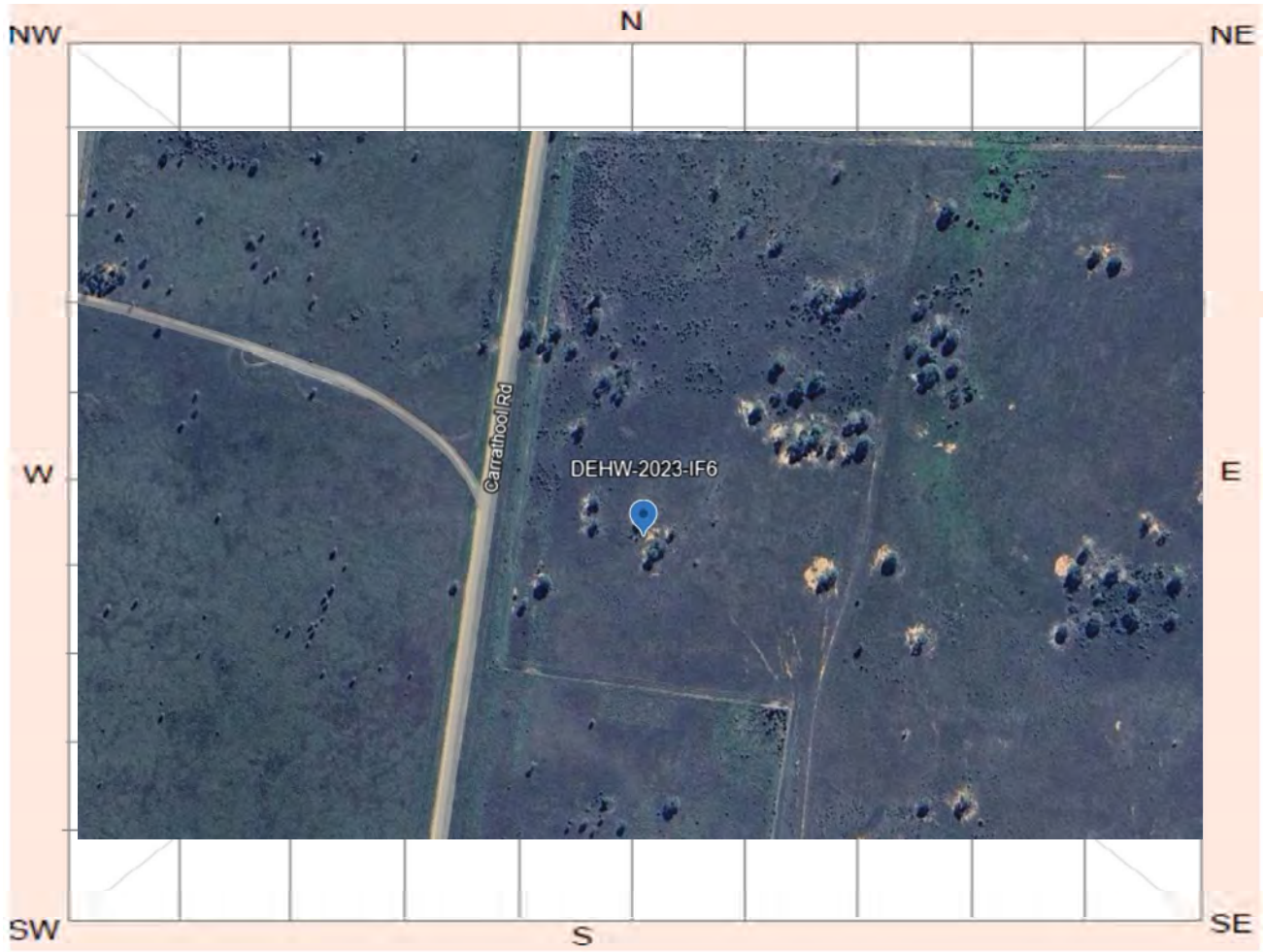
Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

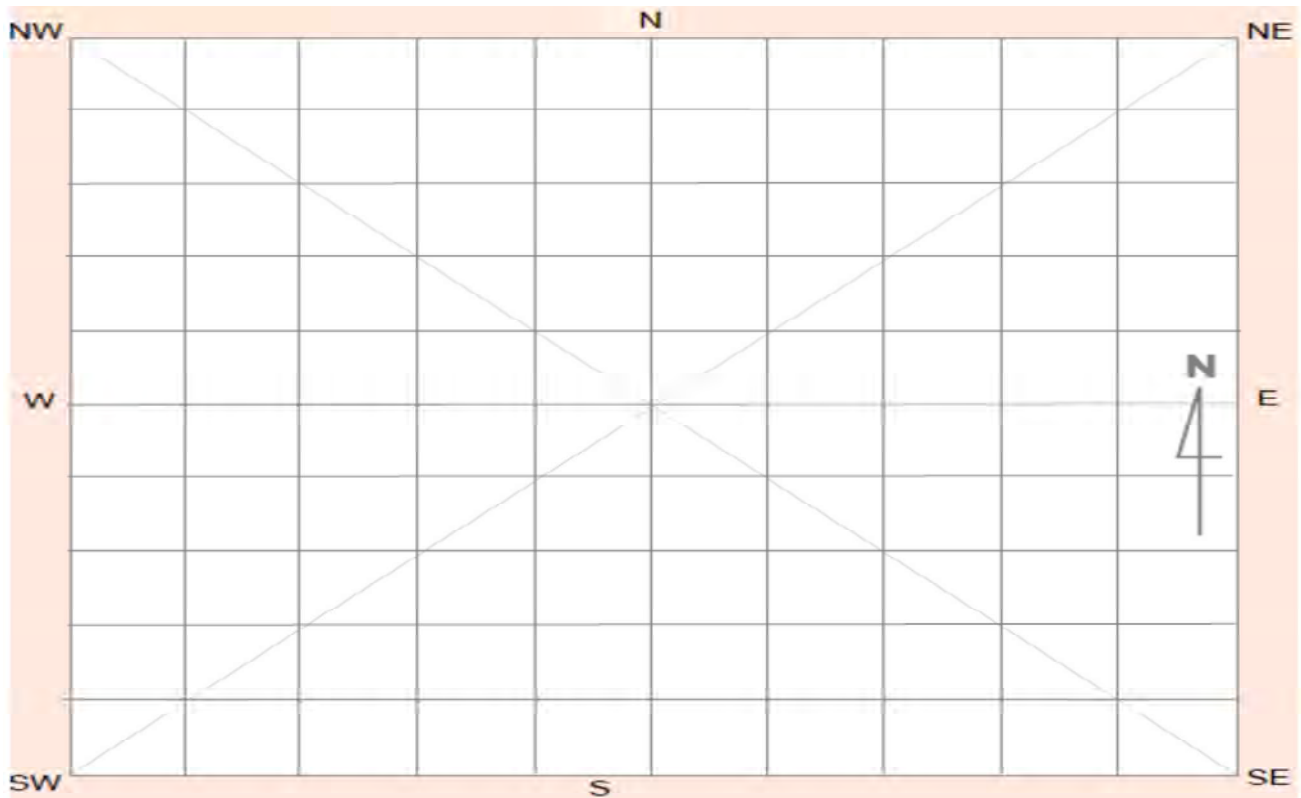
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Tentative grinding stone fragment comprising brown/ purple material potentially sandstone or quartzite, or a conglomerate of materials associated with nearby paleochannels. The fragment was identified on a scald exposure.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

4.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

5.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

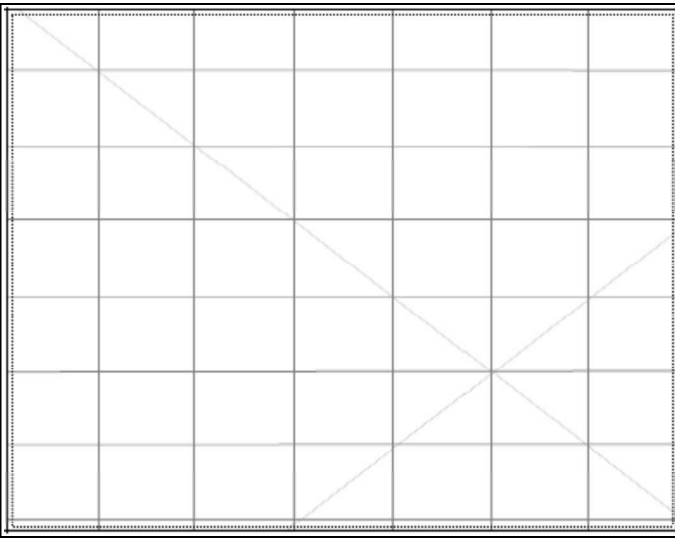
Site photographs



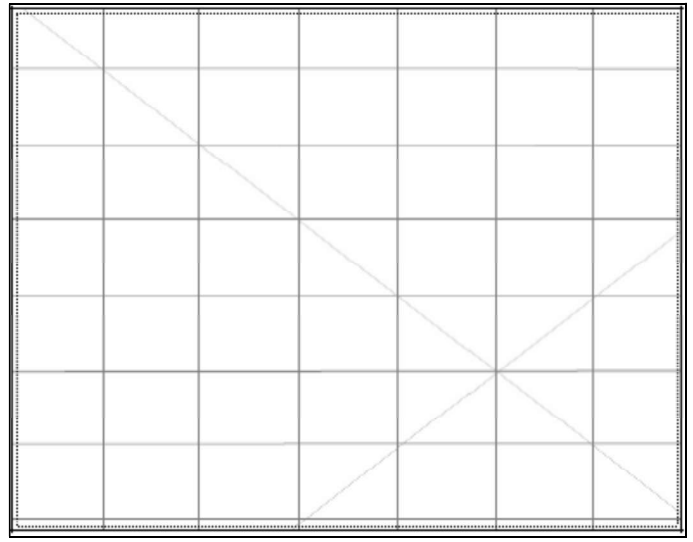
Description: Detailed close up of grinding stone fragment.



Description: Location of grinding fragment and condition of surrounding landscape. View north-east.



Description:



Description:

Site restrictions

Do you want to
Restrict this site?:

Restriction type: Gender General Location
N/A

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

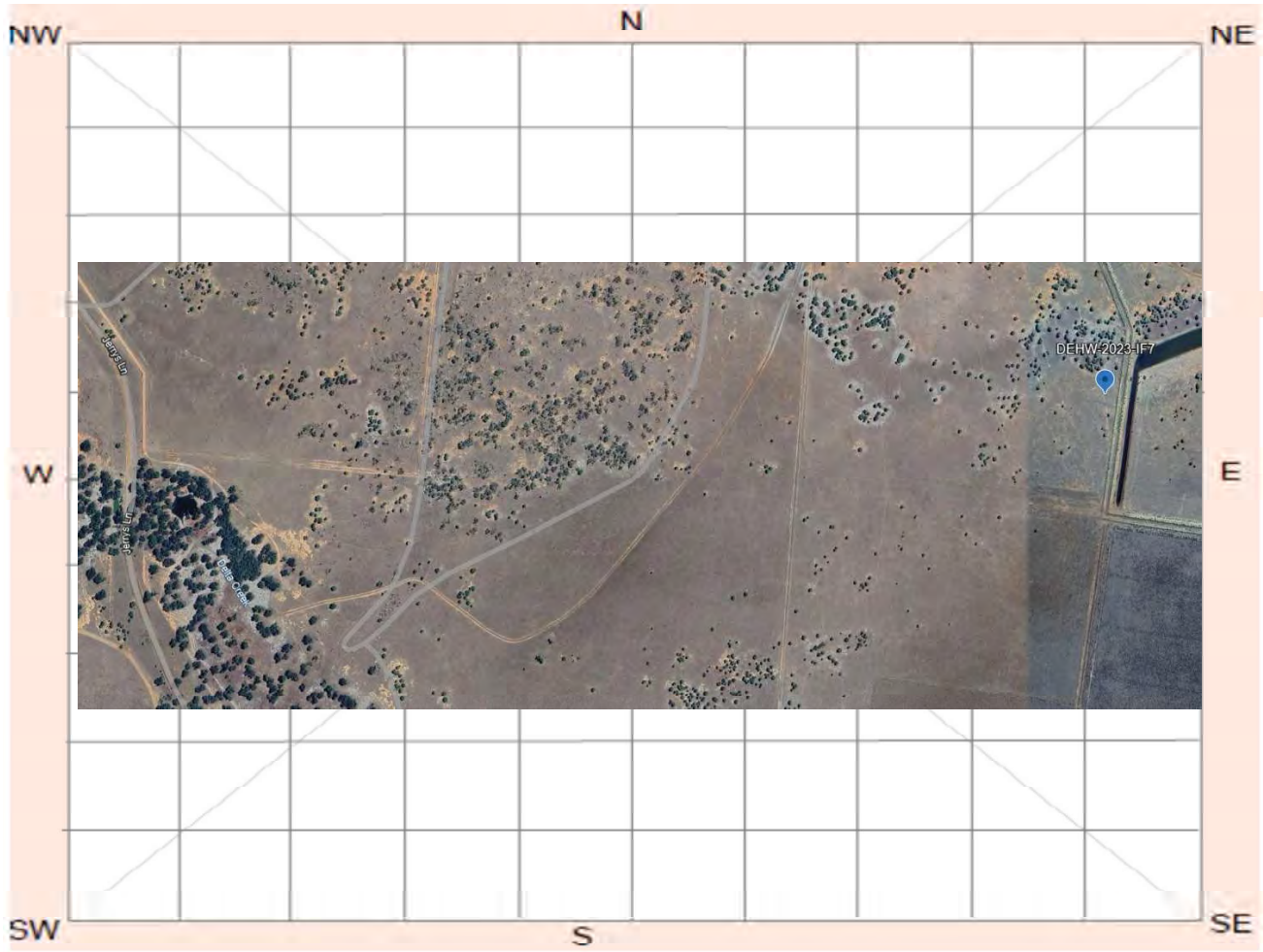
Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

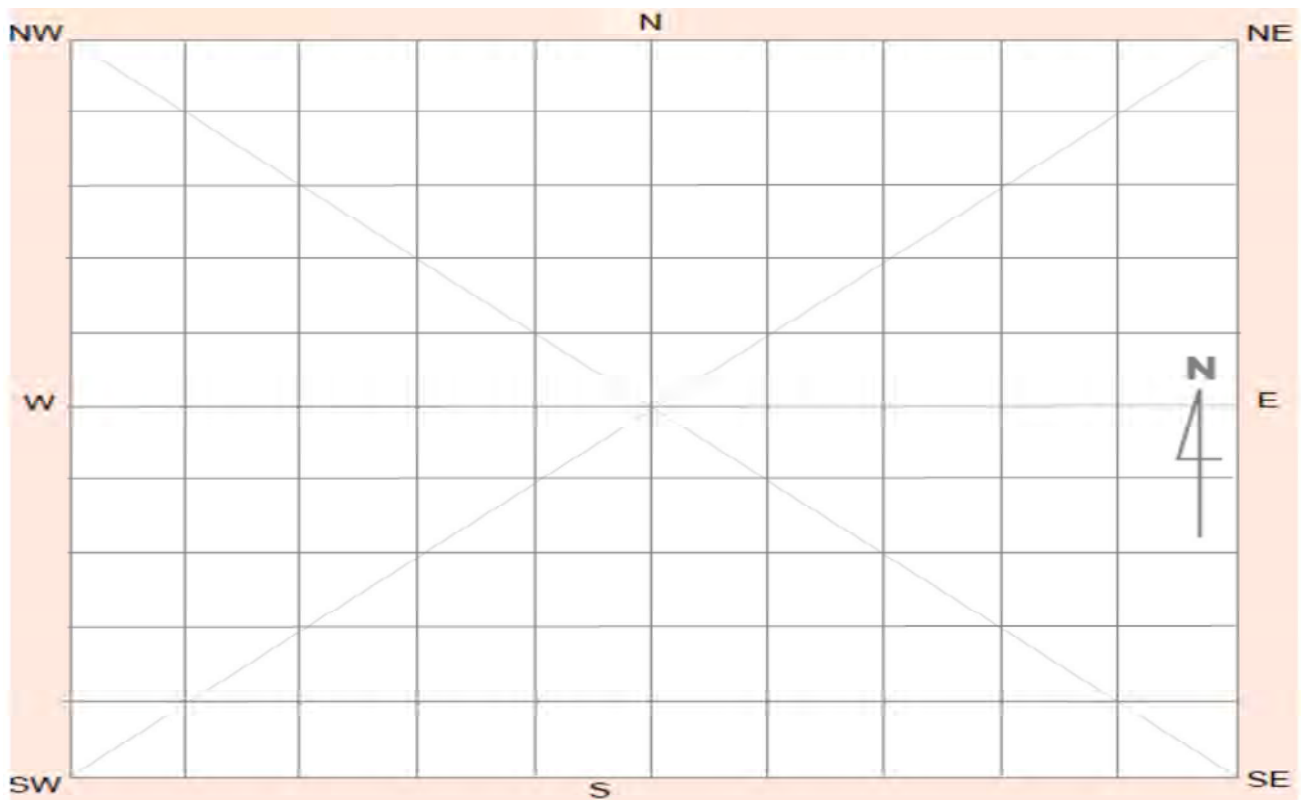
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Grinding stone fragment, polished surfaces on both sides located on cattle track exposure.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

4.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

5.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

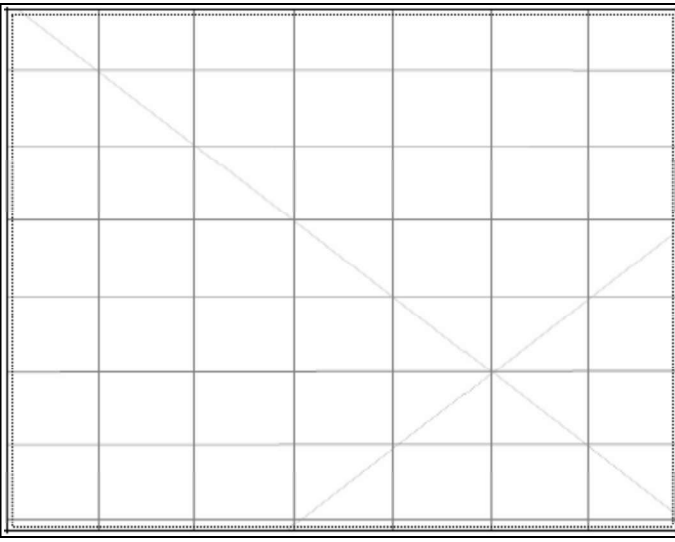
Site photographs



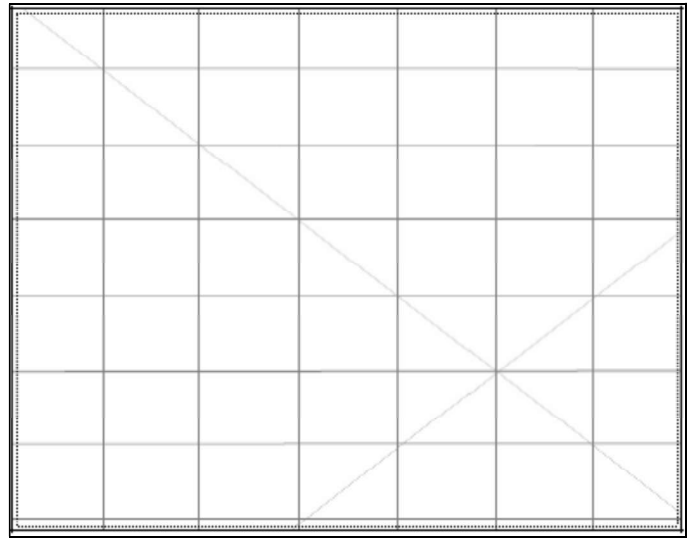
Description:



Description:



Description:



Description:

Site restrictions

Do you want to
Restrict this site?:

Restriction type: Gender General Location
N/A

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

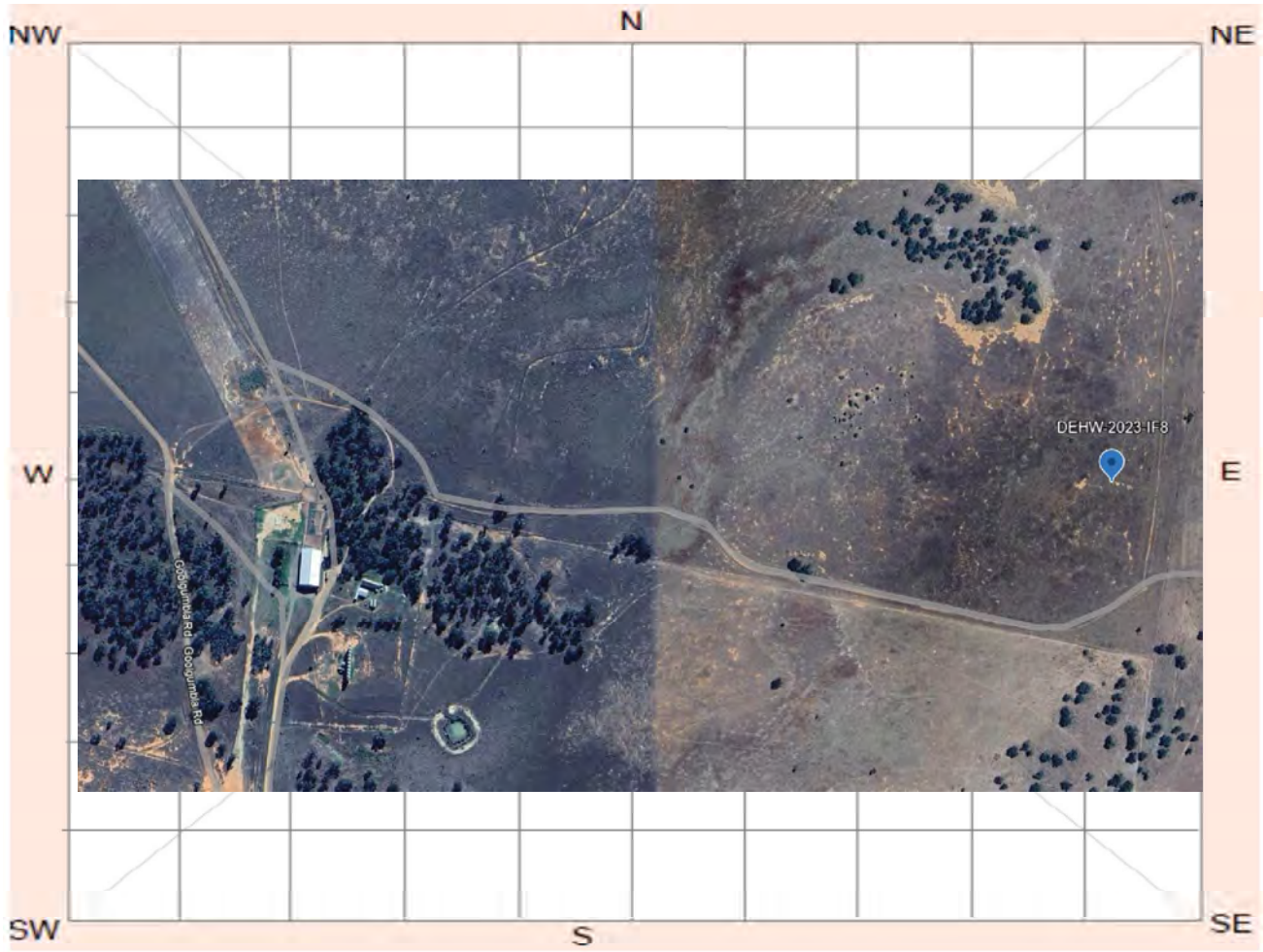
Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

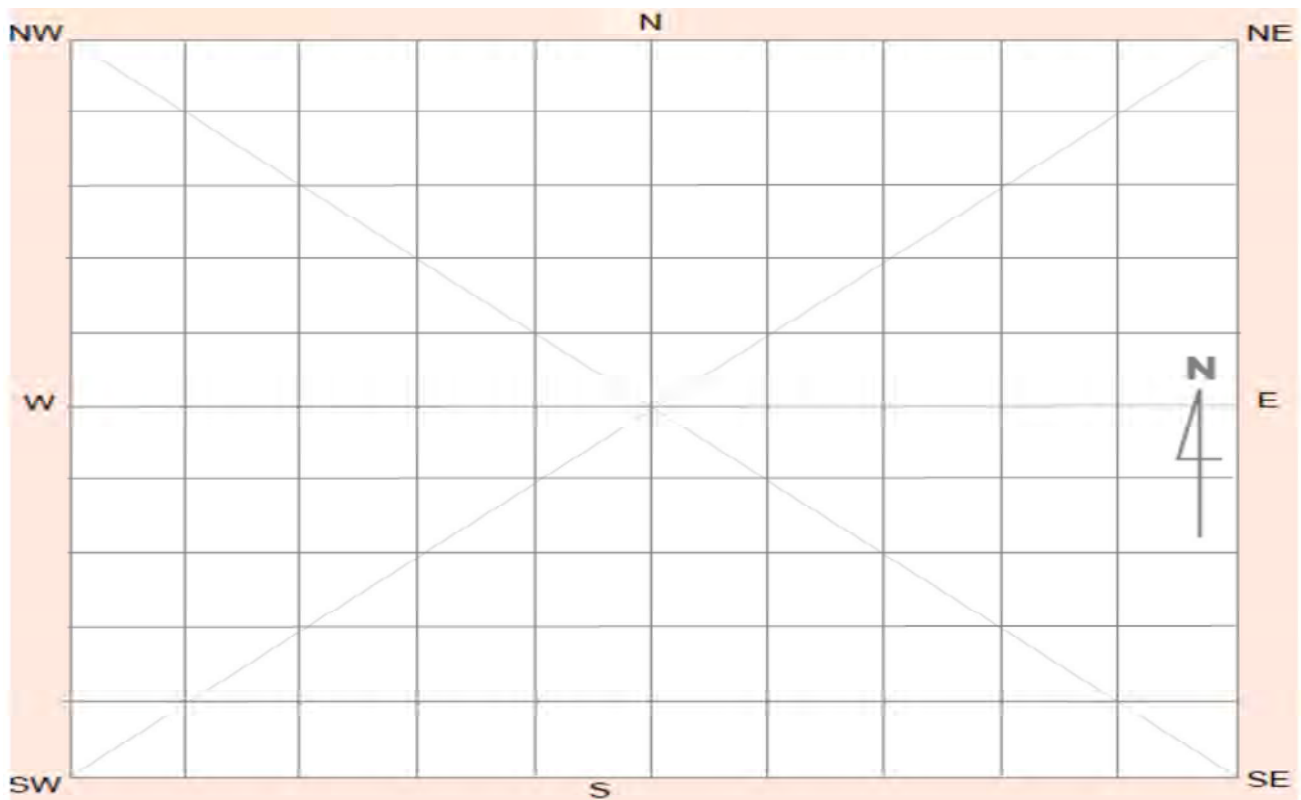
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

One tentative mudstone flake identified on a scald exposure.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

4.

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Features:

5.

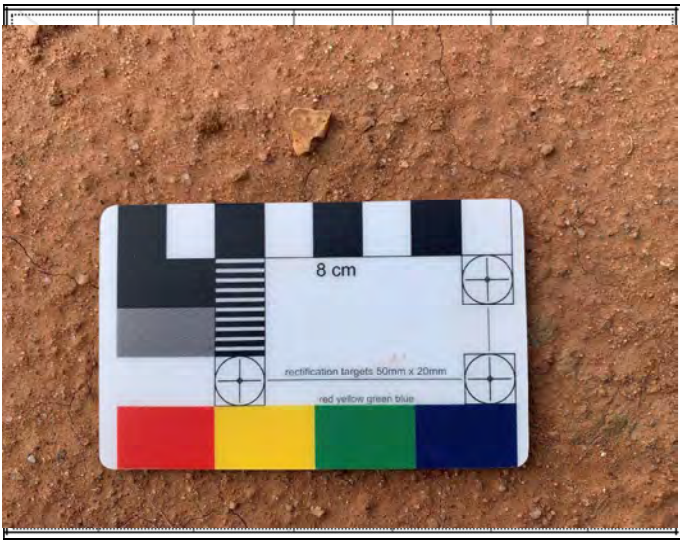
Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

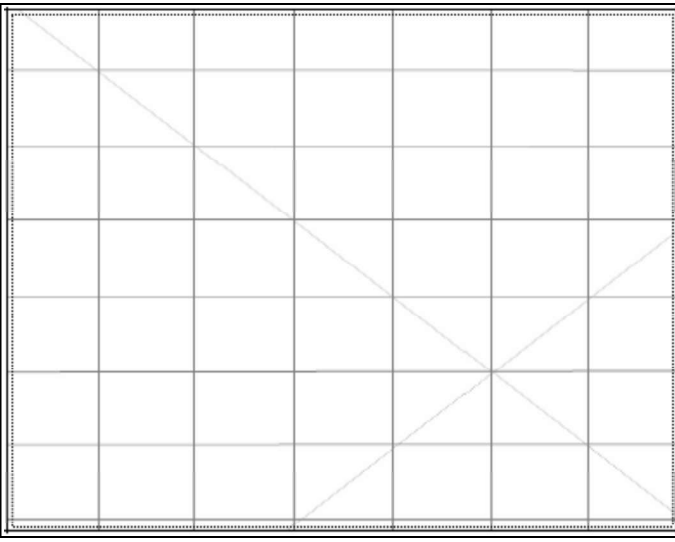
Site photographs



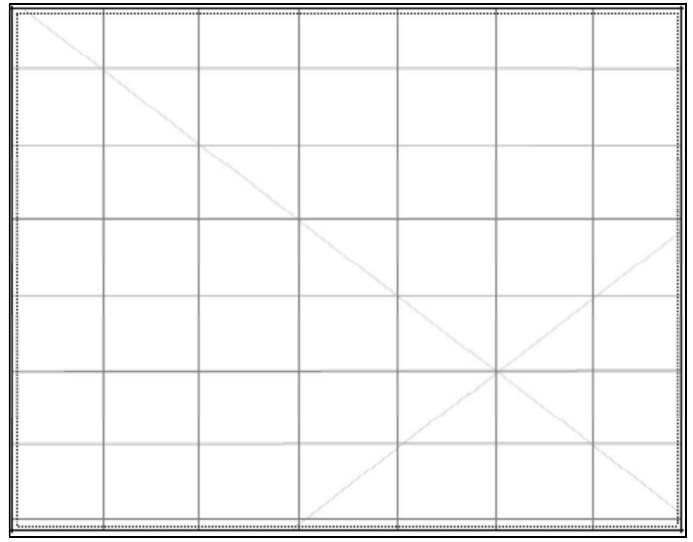
Description:



Description:



Description:



Description:

Site restrictions

Do you want to
Restrict this site?:

Restriction type: Gender N/A General Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="O'Brien-Poude"/>	<input type="text" value="Phillipa"/>
Organisation: <input type="text" value="EMM Consulting"/>		
Address: <input type="text" value="Ground floor, 20 Chandos Street, St Leonards NSW 2065"/>		
Phone: <input type="text" value="0249074881"/>	E-mail: <input type="text" value="pobrienpoude@emmconsulting.com.au"/>	

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: **Northing:** **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: **E-mail:**

Site Context Information

Land Form Pattern: **Land Use:**

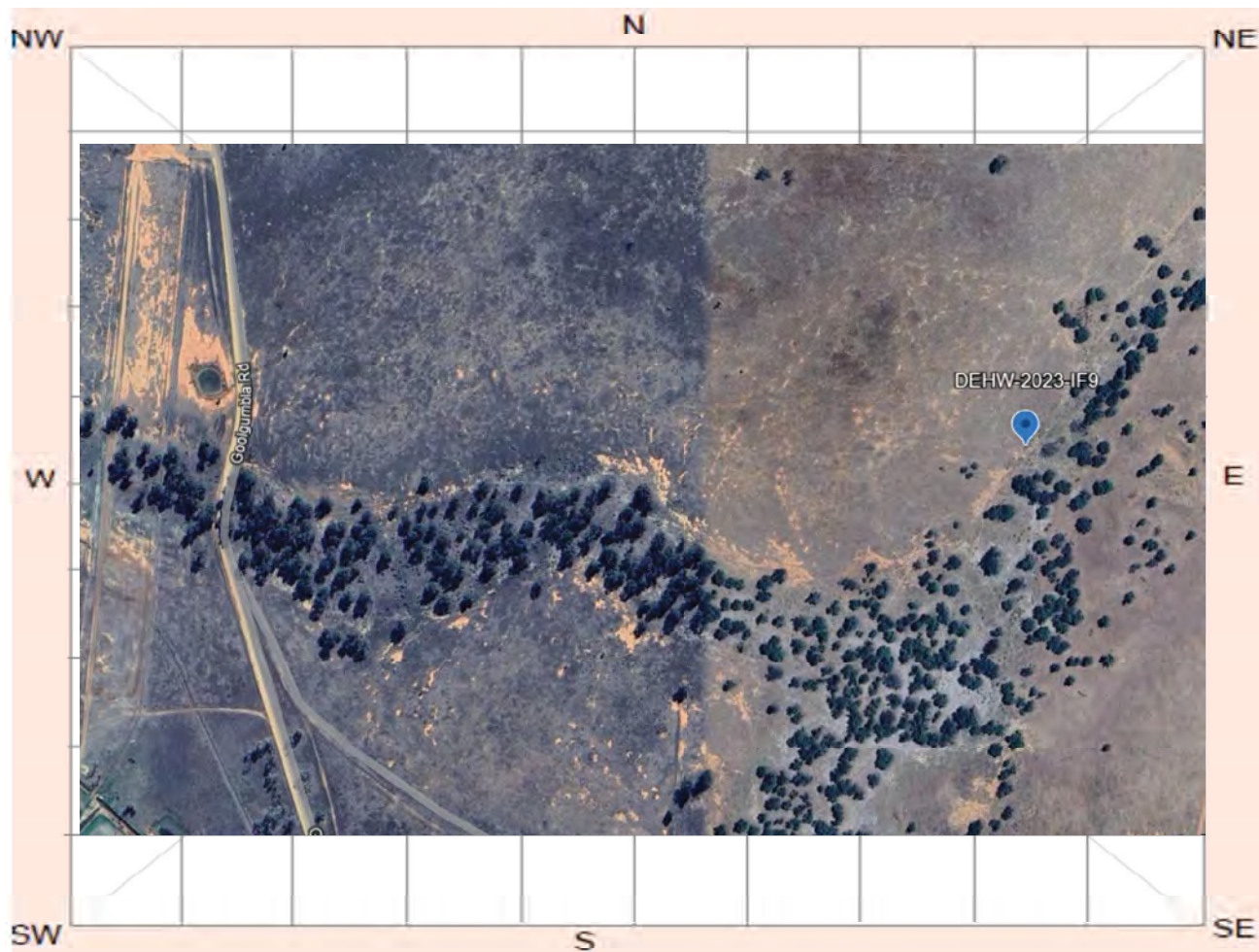
Land Form Unit: **Vegetation:**

Distance to Water (m): **Primary Report:**

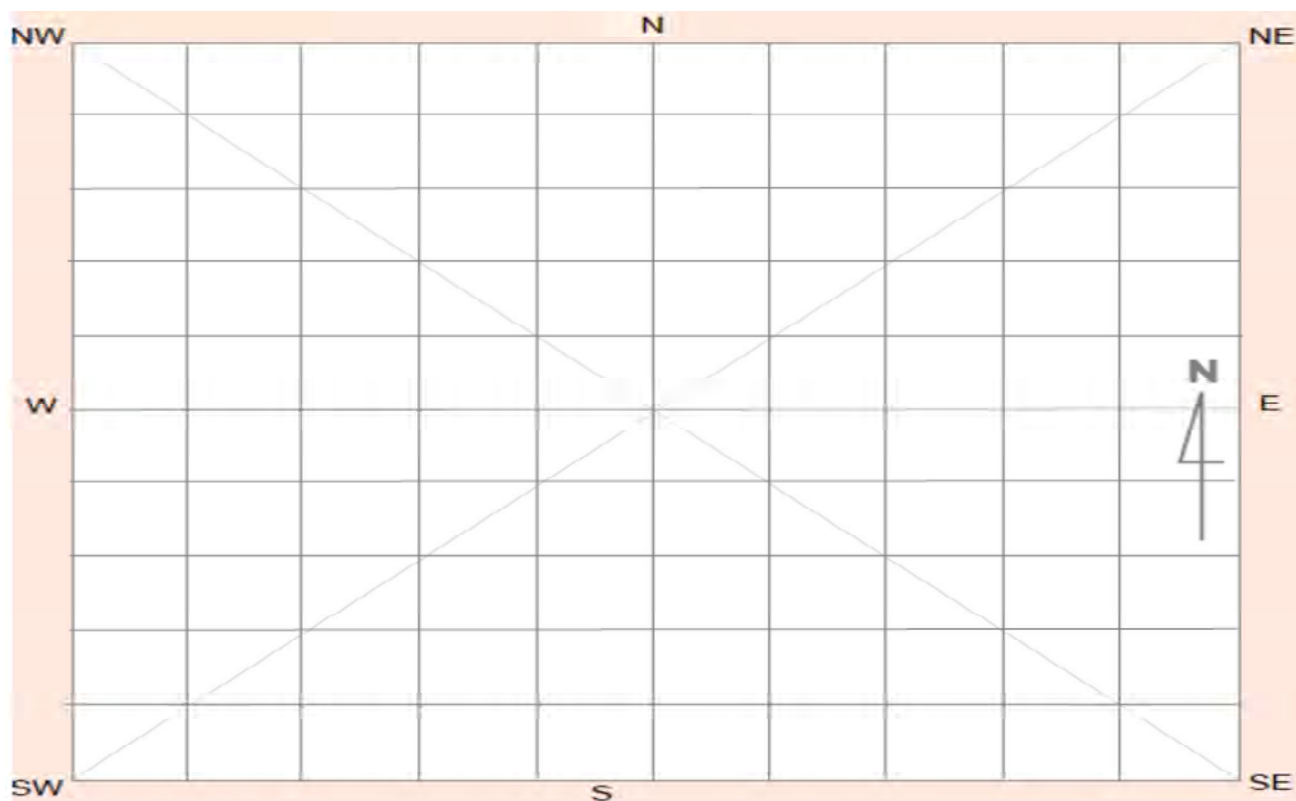
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Description:

Single tentative quartz flake located on a scald exposure.

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

4.

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Feature condition:

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

5.

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Feature condition:

Description:

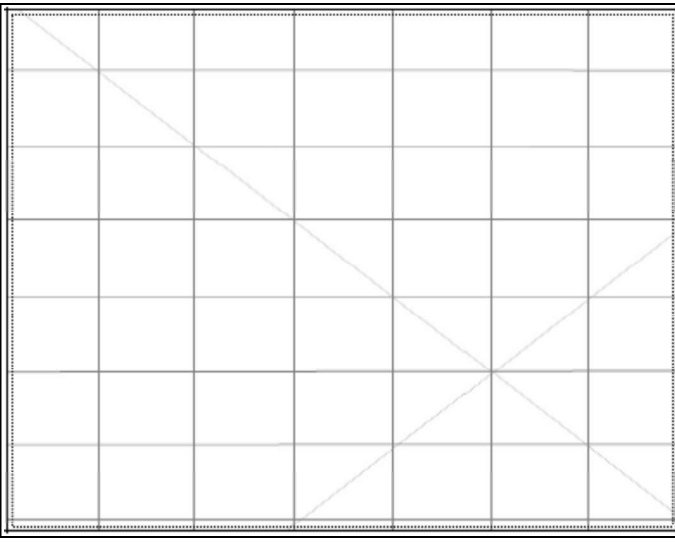
Site photographs



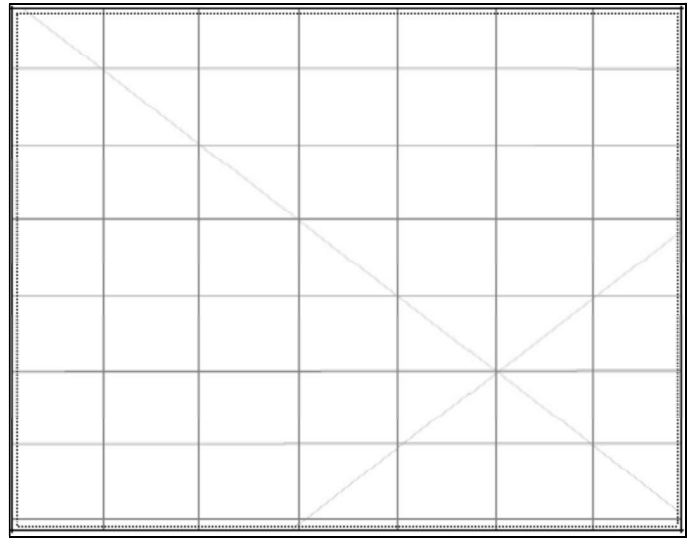
Description:



Description:



Description:



Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender N/A General Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Poude	Phillipa
Organisation: EMM Consulting		
Address: Ground floor, 20 Chandos Street, St Leonards NSW 2065		
Phone: 0249074881	E-mail: pobrienpoude@emmconsulting.com.au	

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

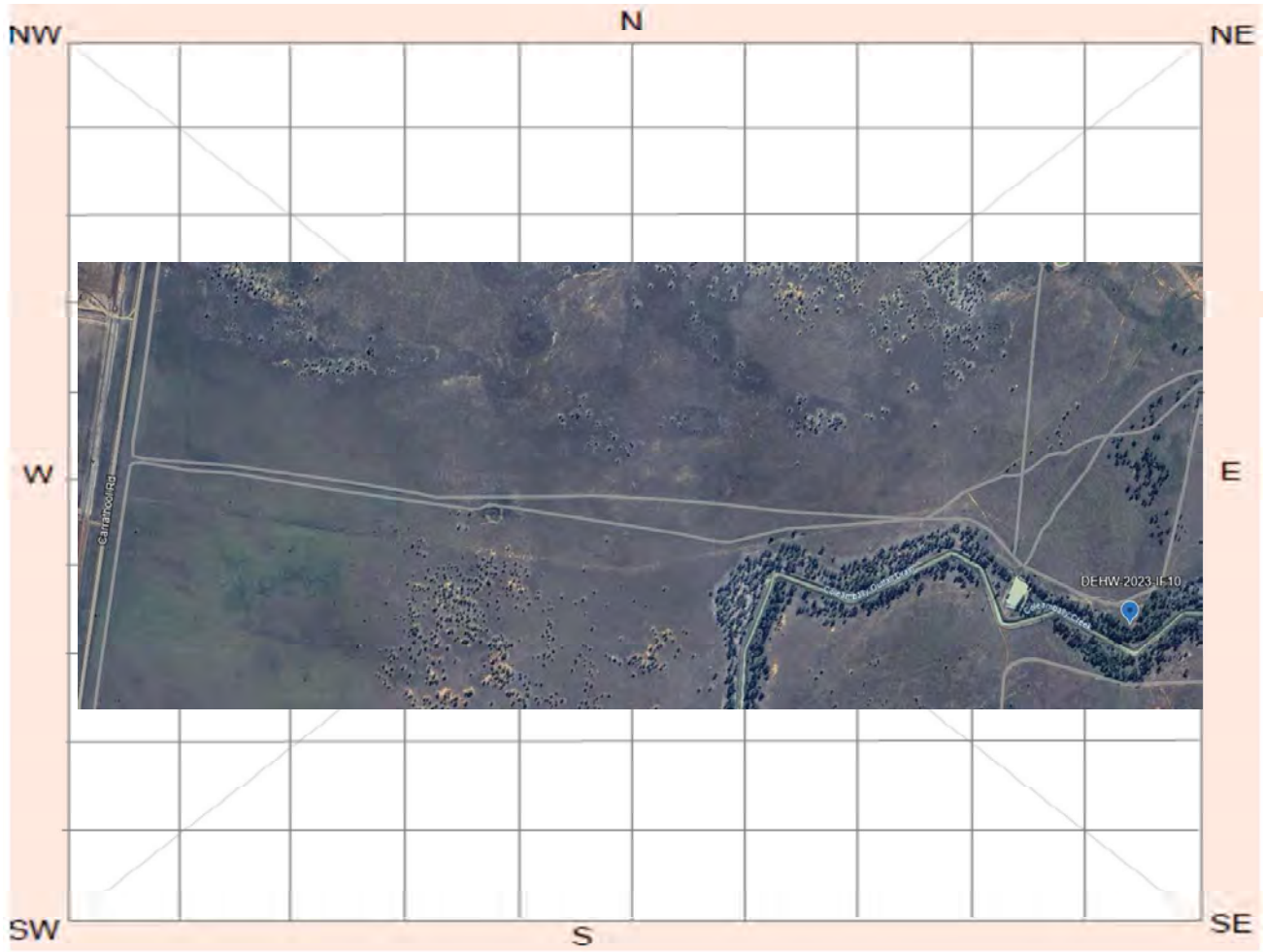
Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

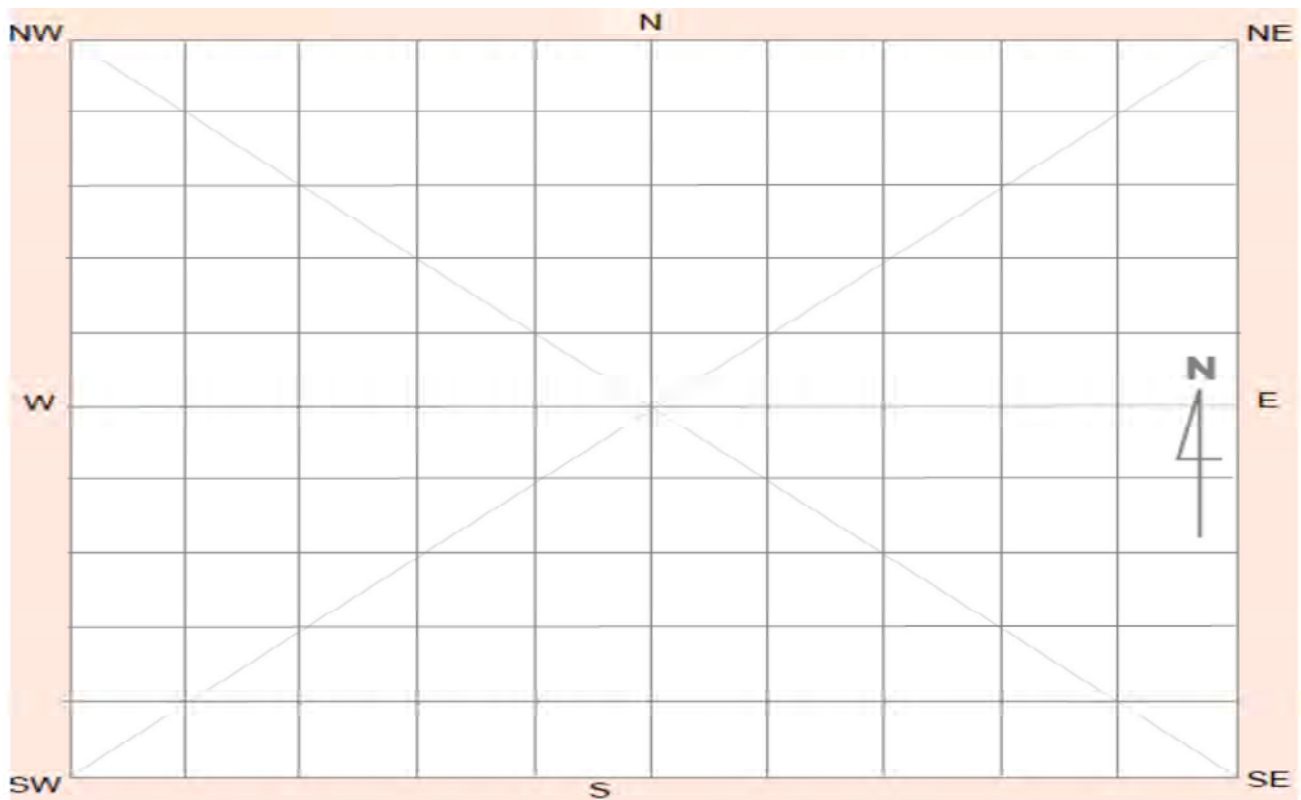
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
1	1	1

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

1.

Feature condition:

Description:

One quartz flake located on scald exposure in proximity to Buhdaani Buhdaani, a medicinal plant known as 'Old man sneeze weed'.

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
<input type="text"/>	<input type="text"/>	<input type="text"/>

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

2.

Feature condition:

Description:

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
<input type="text"/>	<input type="text"/>	<input type="text"/>

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

3.

Feature condition:

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

4.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

5.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

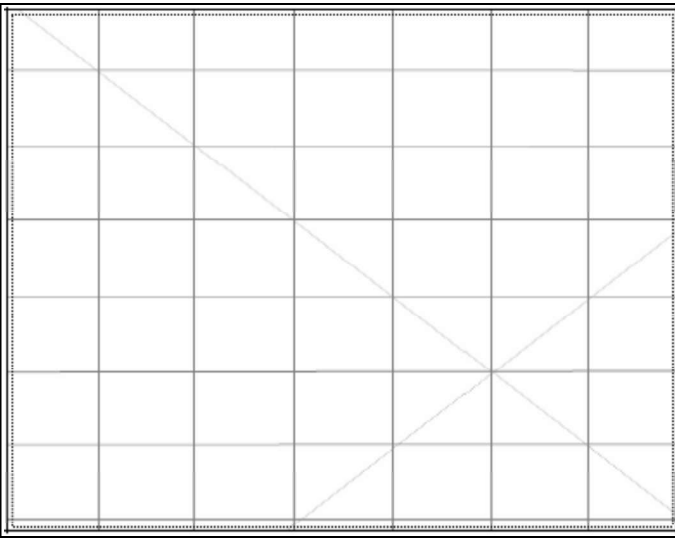
Site photographs



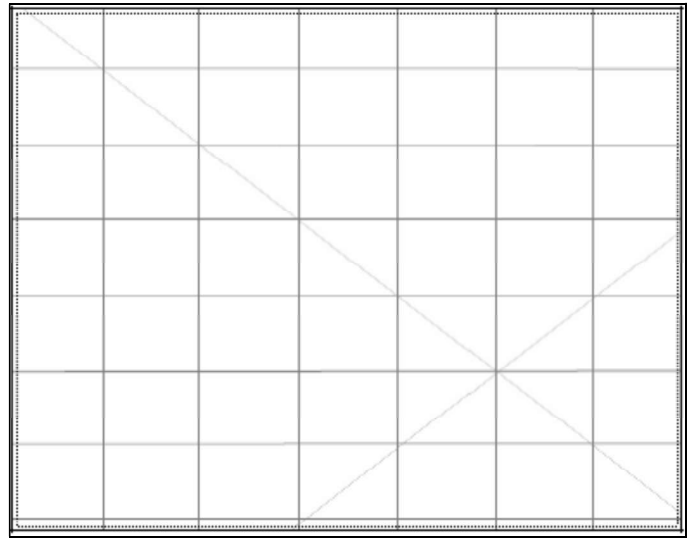
Description:



Description:



Description:



Description:

Site restrictions

Do you want to
Restrict this site?:

Restriction type: Gender N/A General Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="O'Brien-Poude"/>	<input type="text" value="Phillipa"/>
Organisation: <input type="text" value="EMM Consulting"/>		
Address: <input type="text" value="Ground floor, 20 Chandos Street, St Leonards NSW 2065"/>		
Phone: <input type="text" value="0249074881"/>	E-mail: <input type="text" value="pobrienpoude@emmconsulting.com.au"/>	

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: **Northing:** **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: **E-mail:**

Site Context Information

Land Form Pattern: **Land Use:**

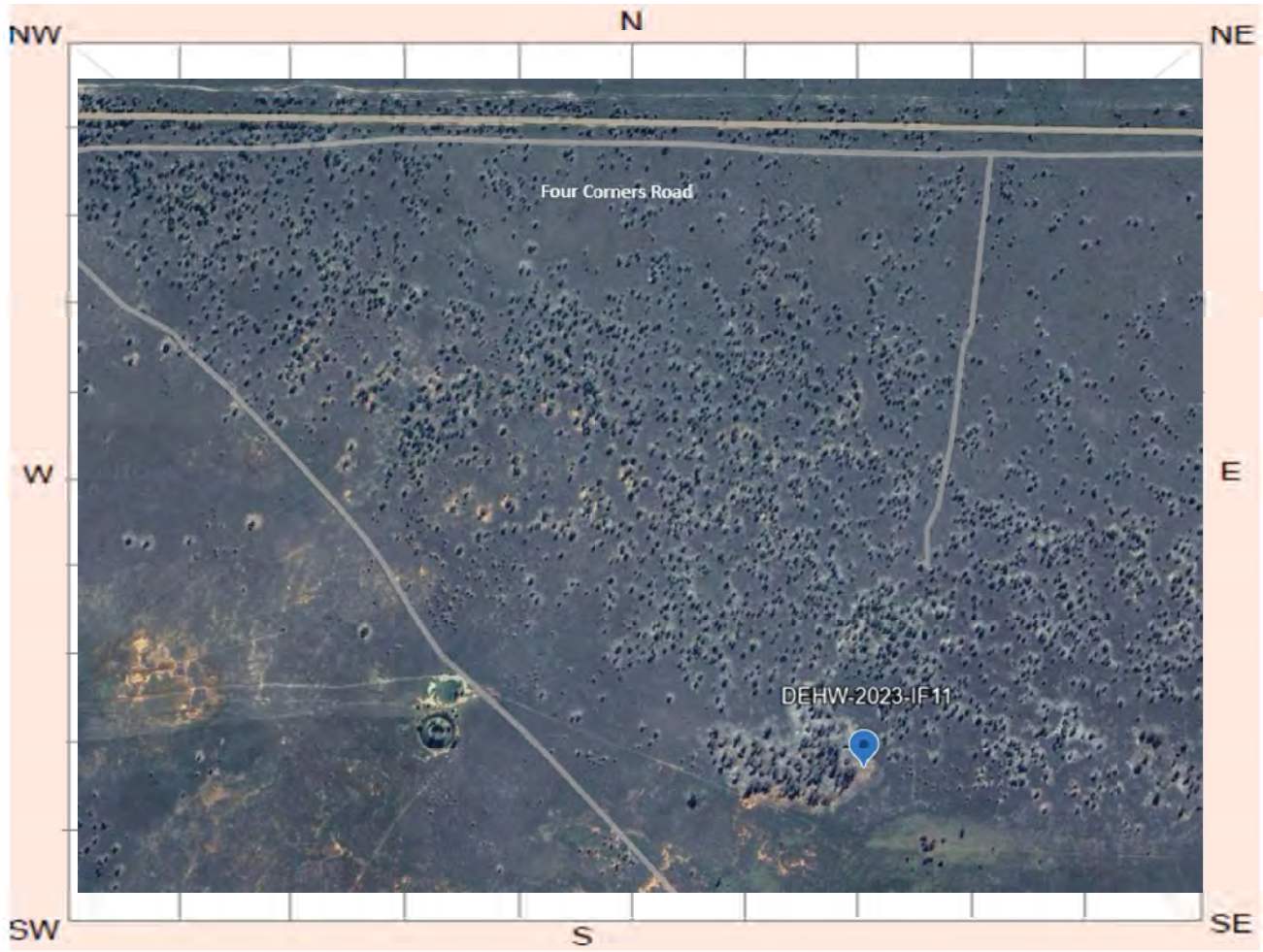
Land Form Unit: **Vegetation:**

Distance to Water (m): **Primary Report:**

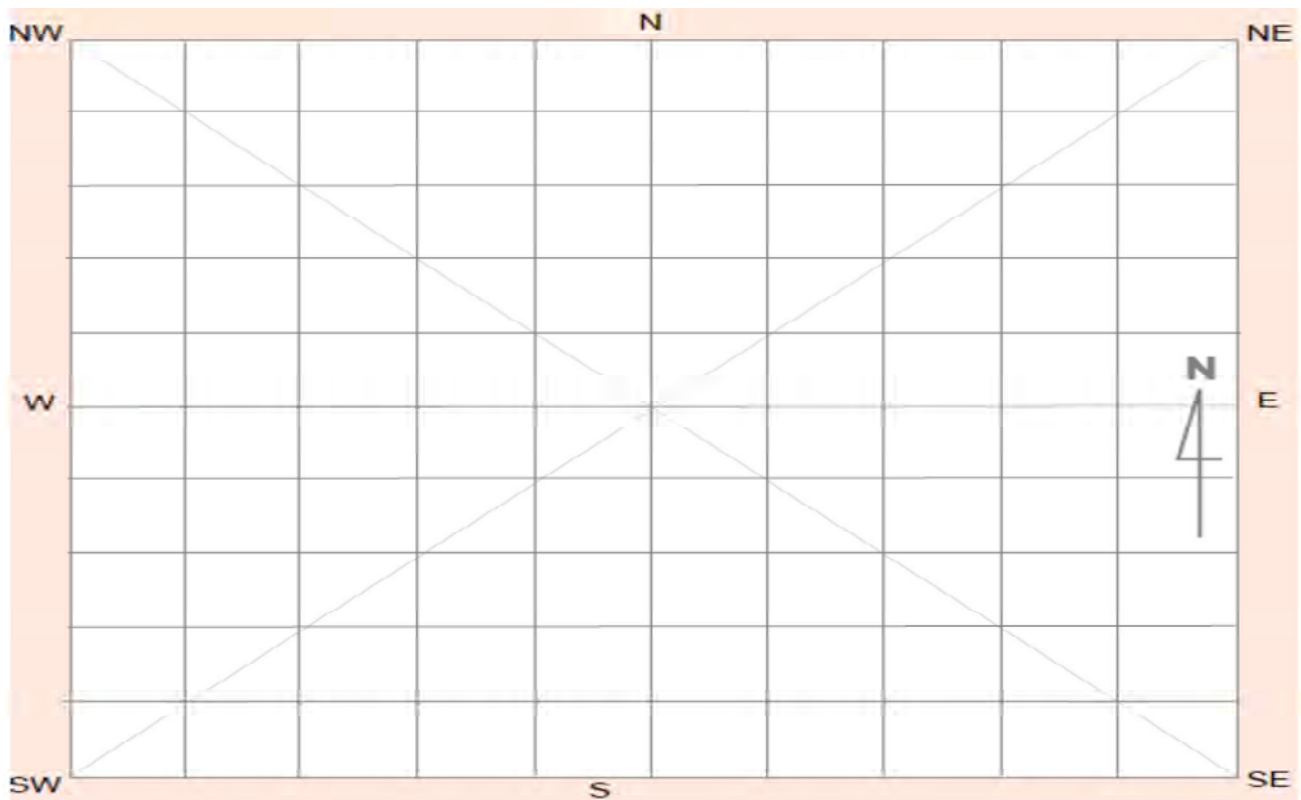
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Description:

One tentative quartz flake located on scald exposure.

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

4.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

5.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

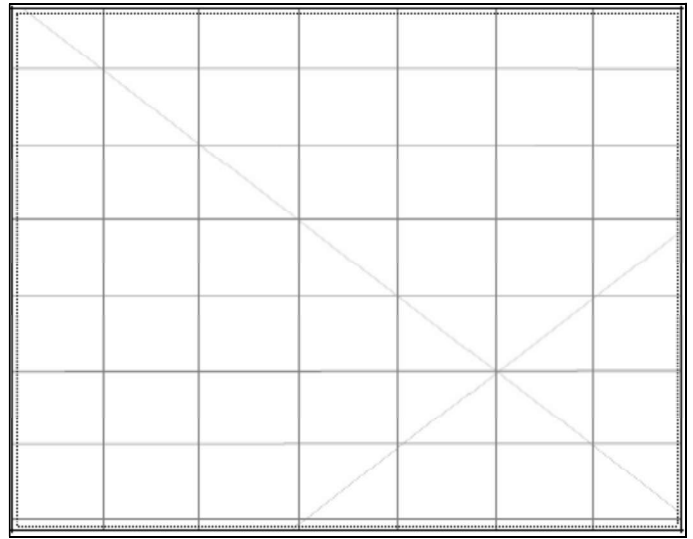
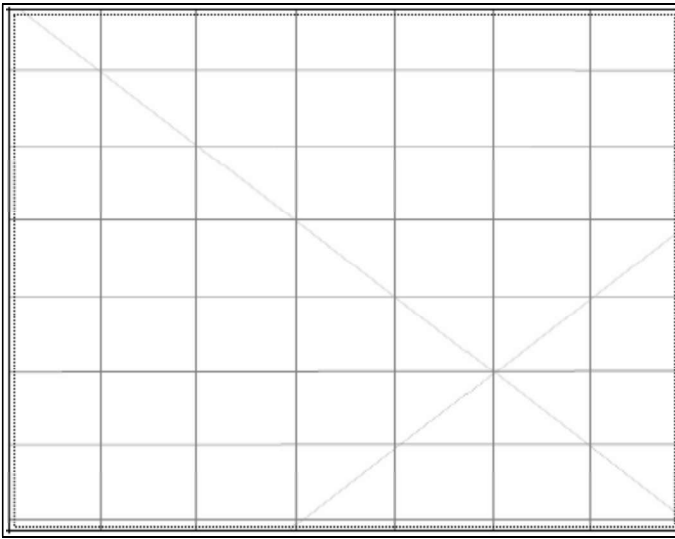
Site photographs



Description: Detailed close up of tentative quartz flake.



Description: Location of flake and condition of surrounding landscape. View west.



Description:

Description:

Site restrictions

Do you want to
Restrict this site?:

Restriction type: Gender General Location
N/A

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

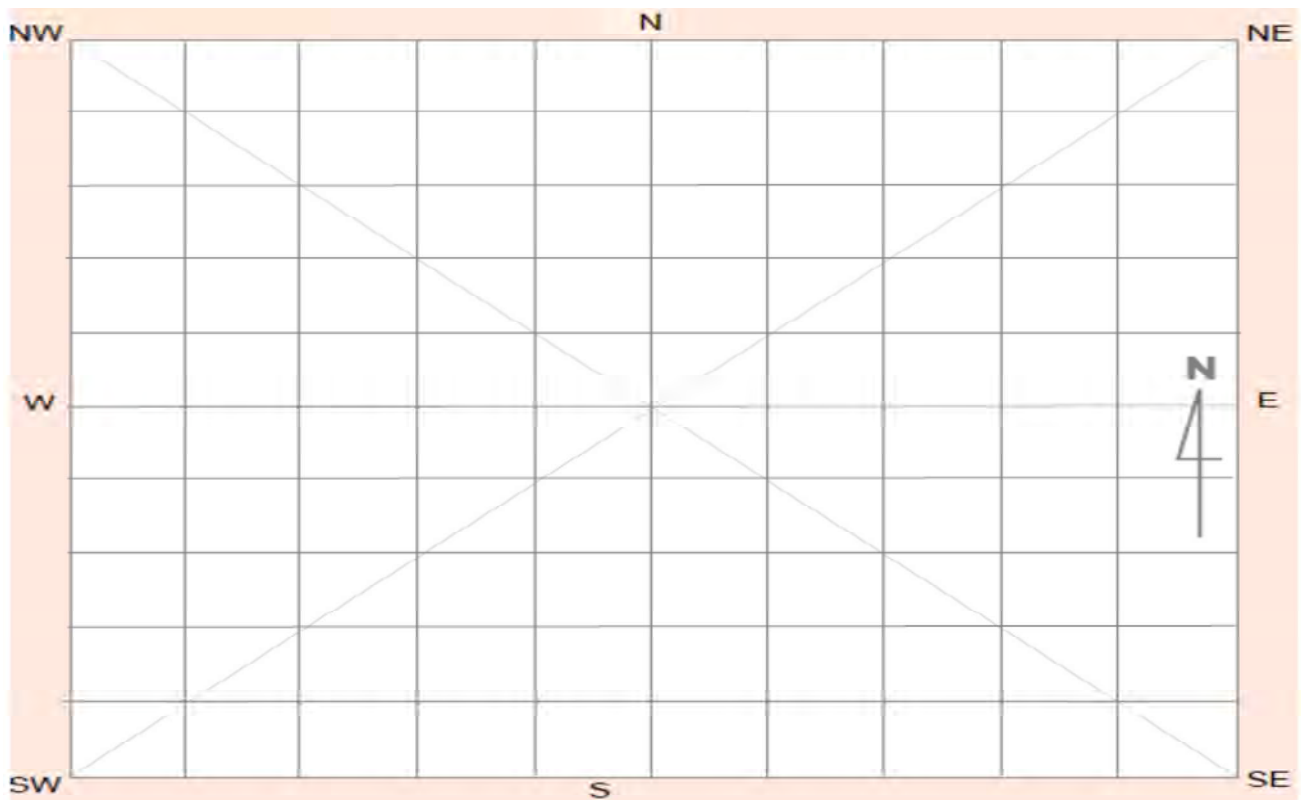
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

One silcrete flake, located on scald exposure parallel to fence line.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

4.

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

5.

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

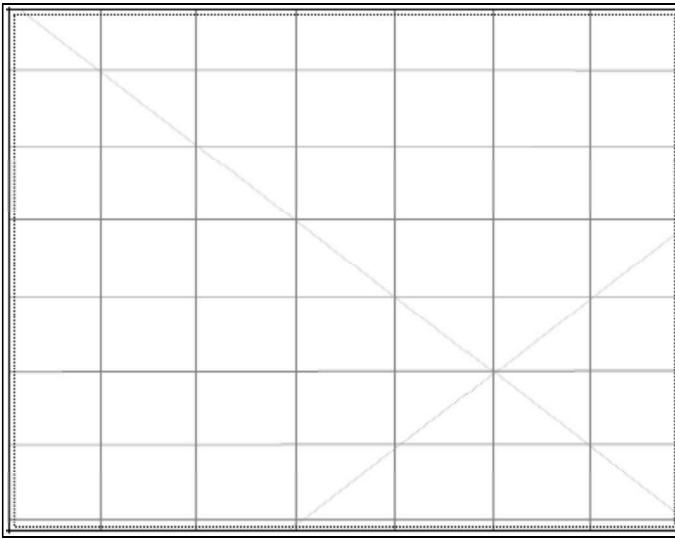
Site photographs



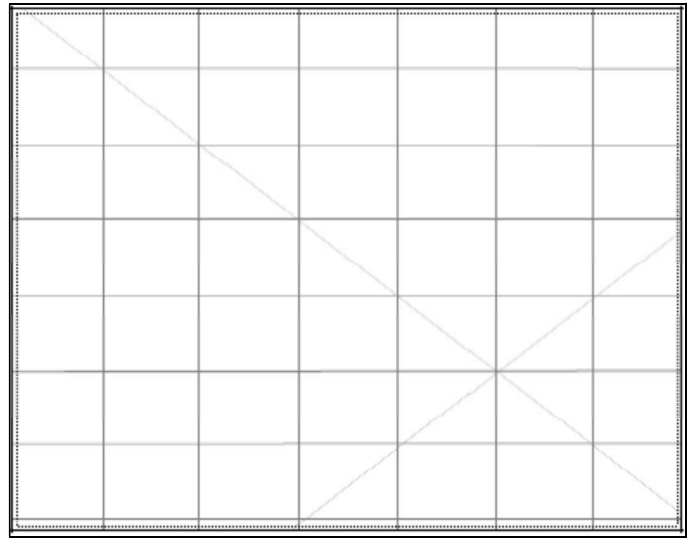
Description:



Description:



Description:



Description:

Site restrictions

Do you want to
Restrict this site?:

Restriction type: Gender General Location
N/A

Why is this site restricted?:

Further information contact

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="O'Brien-Poude"/>	<input type="text" value="Phillipa"/>
Organisation: <input type="text" value="EMM Consulting"/>		
Address: <input type="text" value="Ground floor, 20 Chandos Street, St Leonards NSW 2065"/>		
Phone: <input type="text" value="0249074881"/>	E-mail: <input type="text" value="pobrienpoude@emmconsulting.com.au"/>	

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

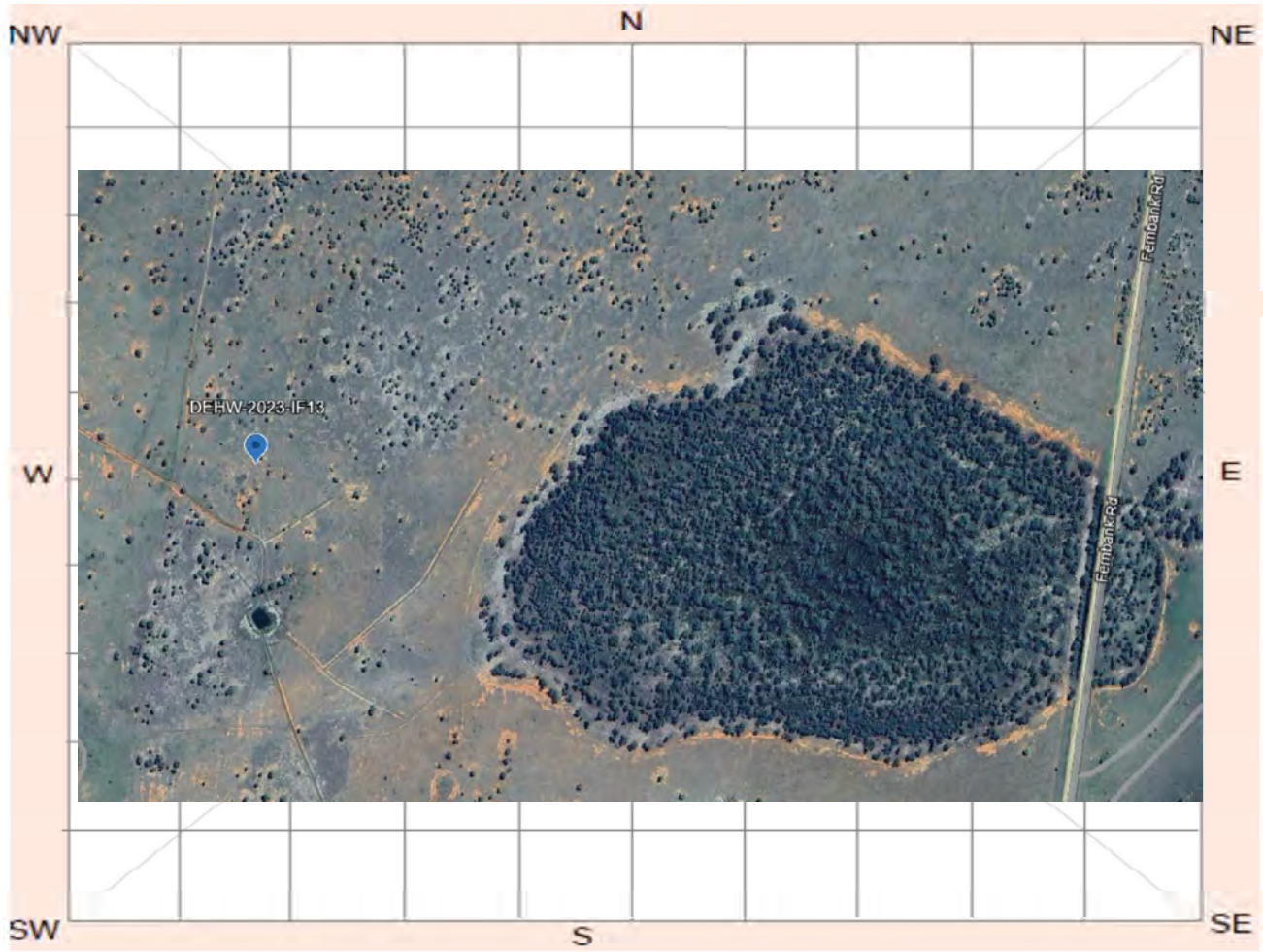
Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

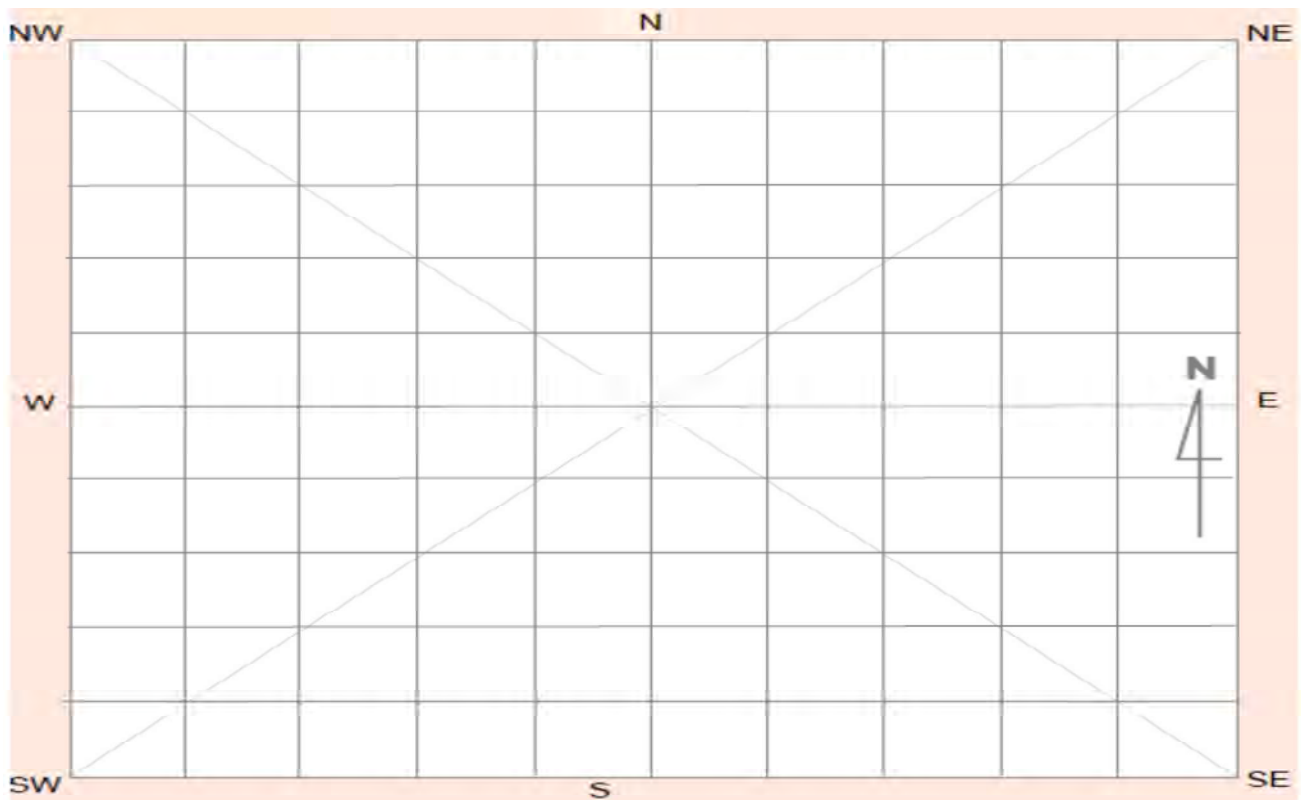
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Description:

Quartz core with evident bulb of percussion with three negative flake scars.

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

4.

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

5.

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

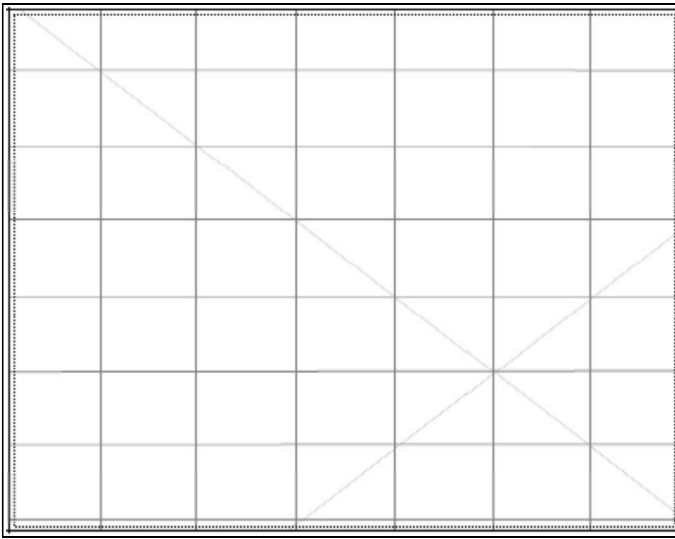
Site photographs



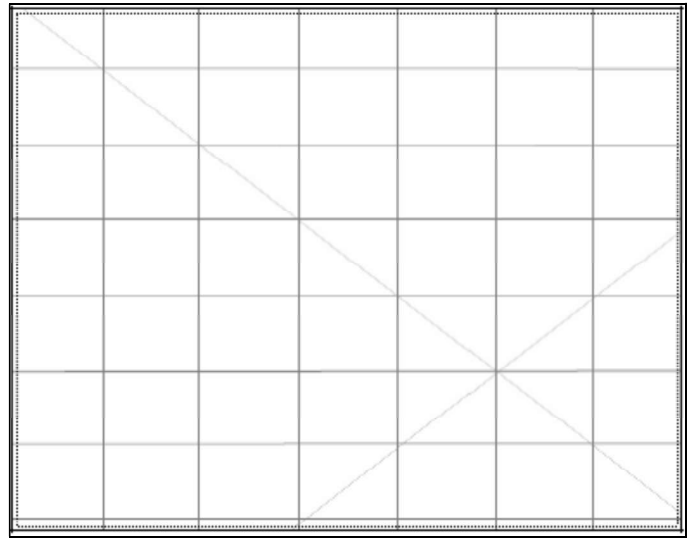
Description:



Description:



Description:



Description:

Site restrictions

Do you want to
Restrict this site?:

Restriction type: Gender N/A General Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="O'Brien-Poude"/>	<input type="text" value="Phillipa"/>
Organisation: <input type="text" value="EMM Consulting"/>		
Address: <input type="text" value="Ground floor, 20 Chandos Street, St Leonards NSW 2065"/>		
Phone: <input type="text" value="0249074881"/>	E-mail: <input type="text" value="pobrienpoude@emmconsulting.com.au"/>	

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

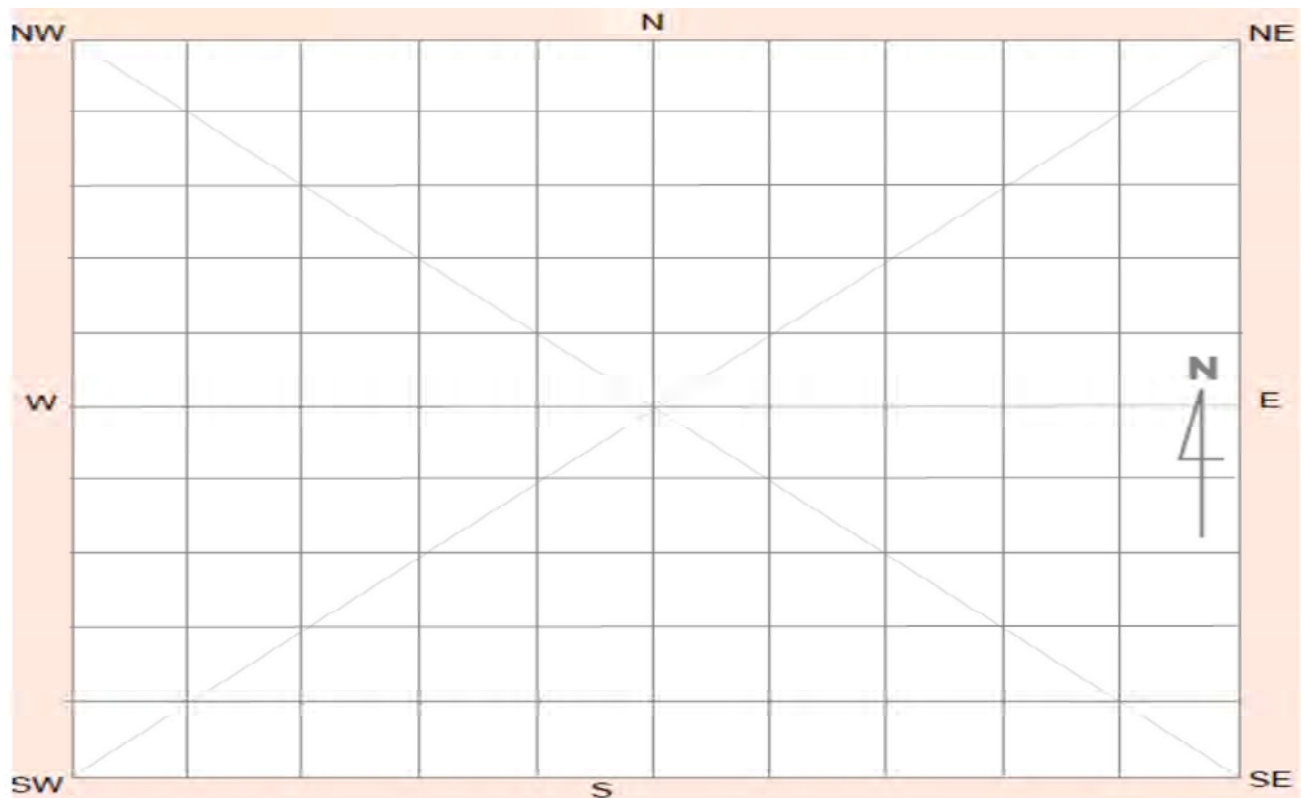
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Description:

Tentative quartzite core located on scald exposure in close proximity to dirt roadway.

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

4.

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

5.

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

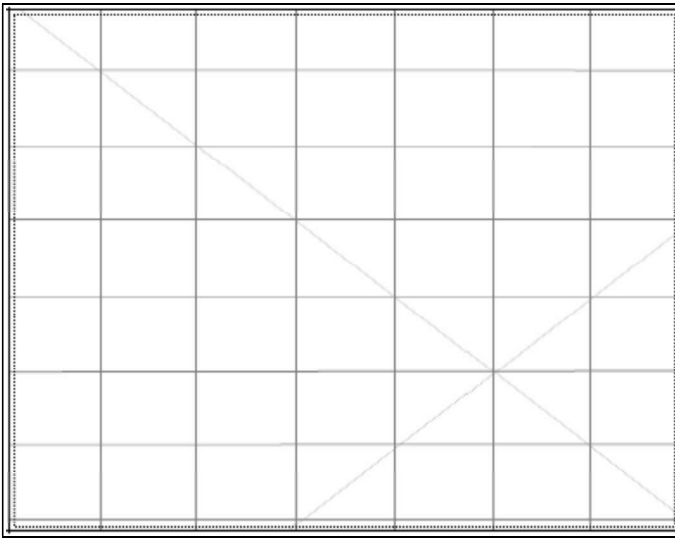
Site photographs



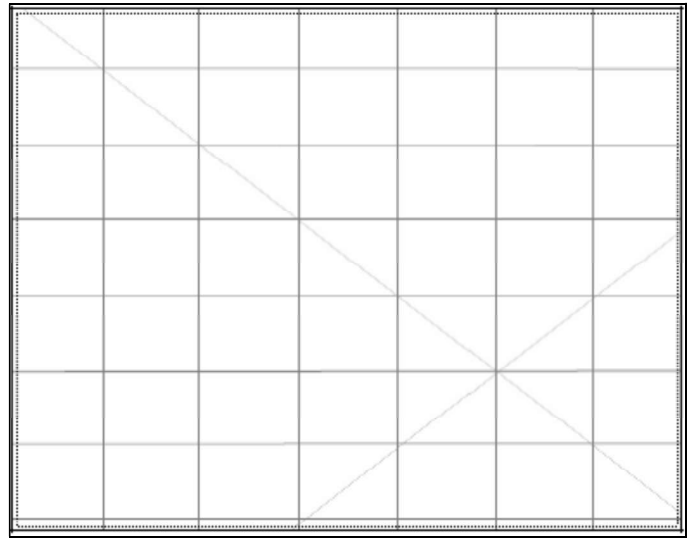
Description:



Description:



Description:



Description:

Site restrictions

Do you want to
Restrict this site?:

Restriction type: Gender General Location
N/A

Why is this site restricted?:

Further information contact

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="O'Brien-Poude"/>	<input type="text" value="Phillipa"/>
Organisation: <input type="text" value="EMM Consulting"/>		
Address: <input type="text" value="Ground floor, 20 Chandos Street, St Leonards NSW 2065"/>		
Phone: <input type="text" value="0249074881"/>	E-mail: <input type="text" value="pobrienpoude@emmconsulting.com.au"/>	

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: **Northing:** **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: **E-mail:**

Site Context Information

Land Form Pattern: **Land Use:**

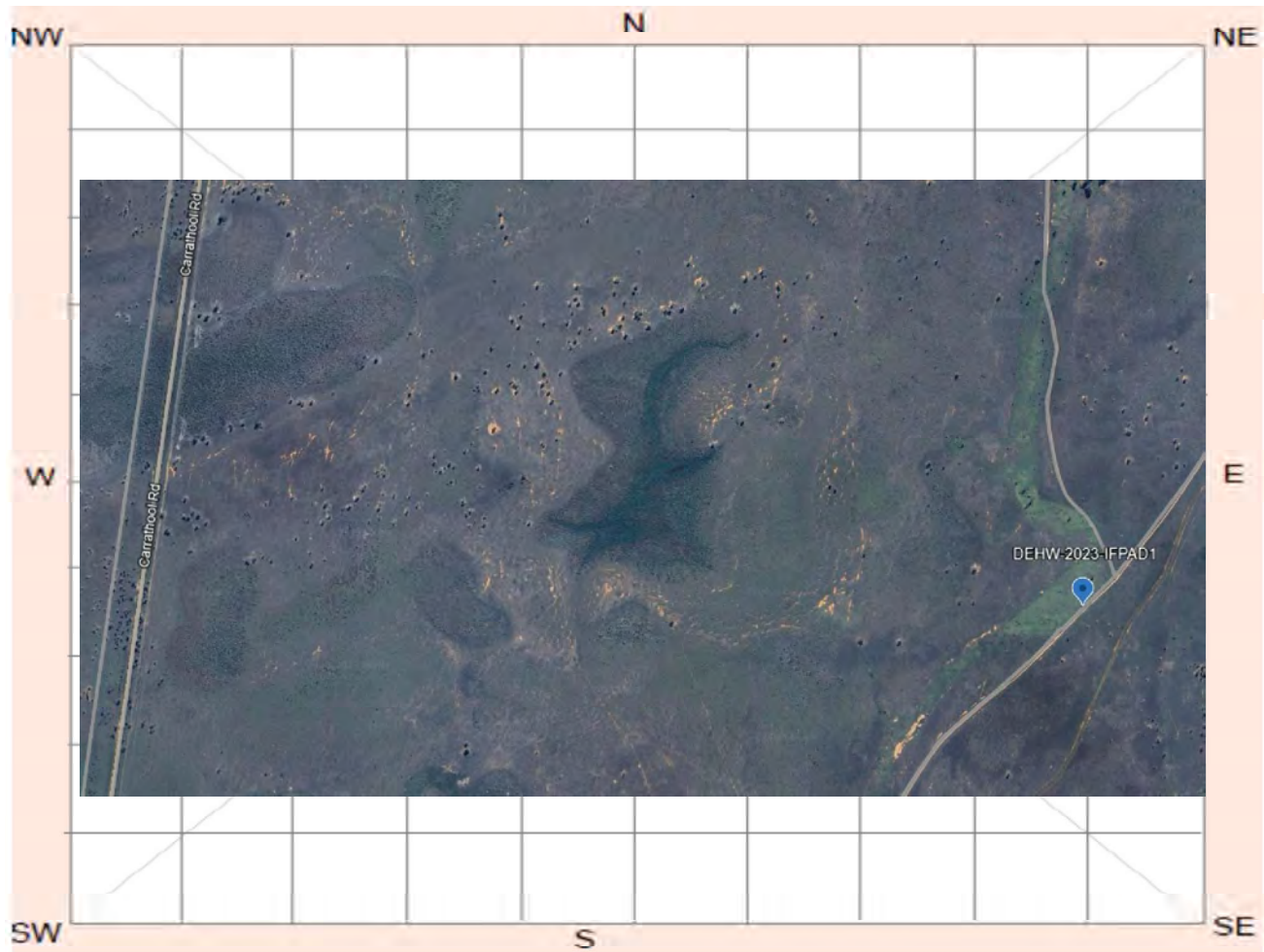
Land Form Unit: **Vegetation:**

Distance to Water (m): **Primary Report:**

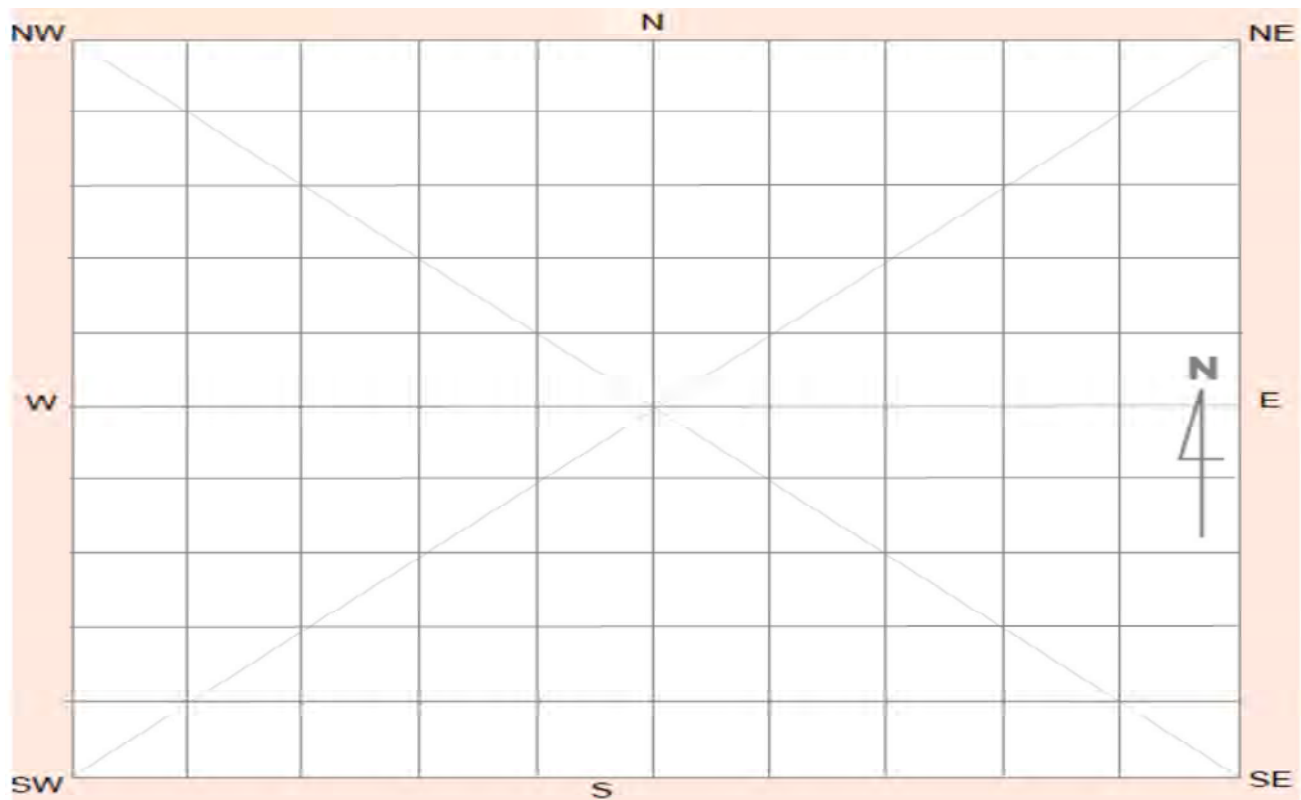
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

A singular silcrete flake identified, associated with PAD located at the top of a very gently inclined rise to the west, located in close proximity to a vehicle access track.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2. | |

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

PAD identified at the top of very a gently inclined rise to the west associated with a singular silcrete flake located in close proximity to a vehicle access track.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

4.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

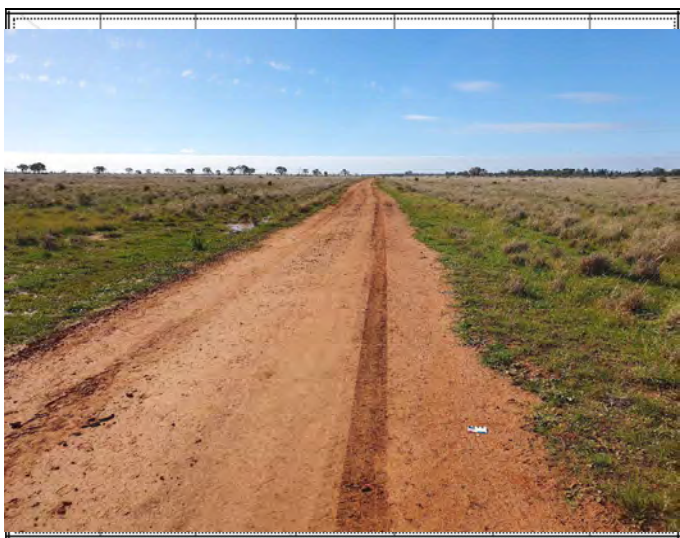
5.

Feature condition:

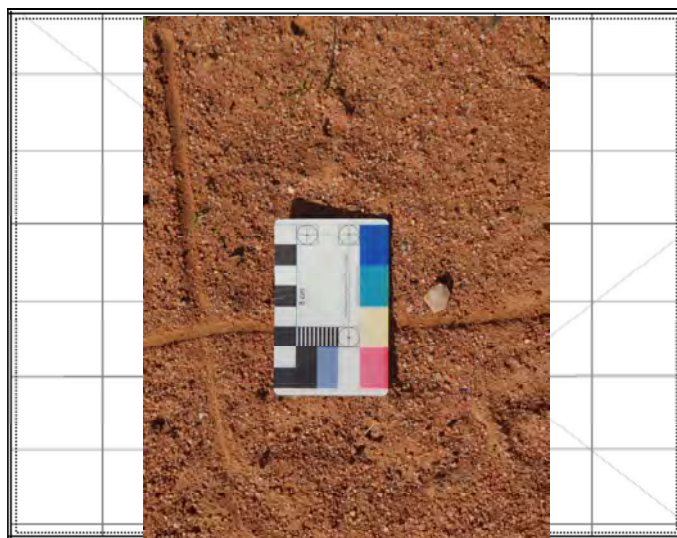
Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

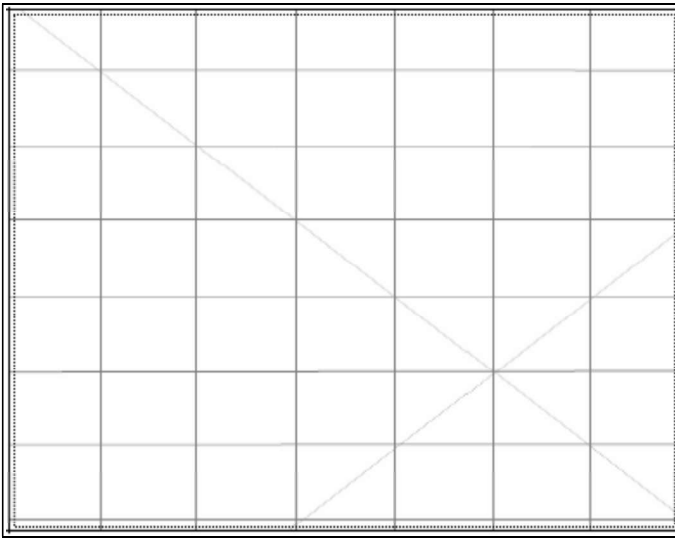
Site photographs



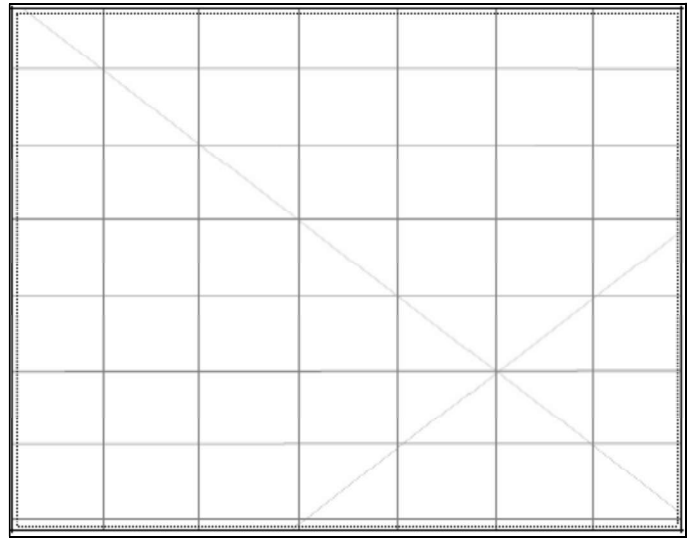
Description:



Description:



Description:



Description:

Site restrictions

Do you want to
Restrict this site?:

Restriction type: Gender N/A General Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="O'Brien-Pounde"/>	<input type="text" value="Phillipa"/>
Organisation: <input type="text" value="EMM Consulting"/>		
Address: <input type="text" value="Ground floor, 20 Chandos Street, St Leonards NSW 2065"/>		
Phone: <input type="text" value="0249074881"/>	E-mail: <input type="text" value="pobrienpounde@emmconsulting.com.au"/>	

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

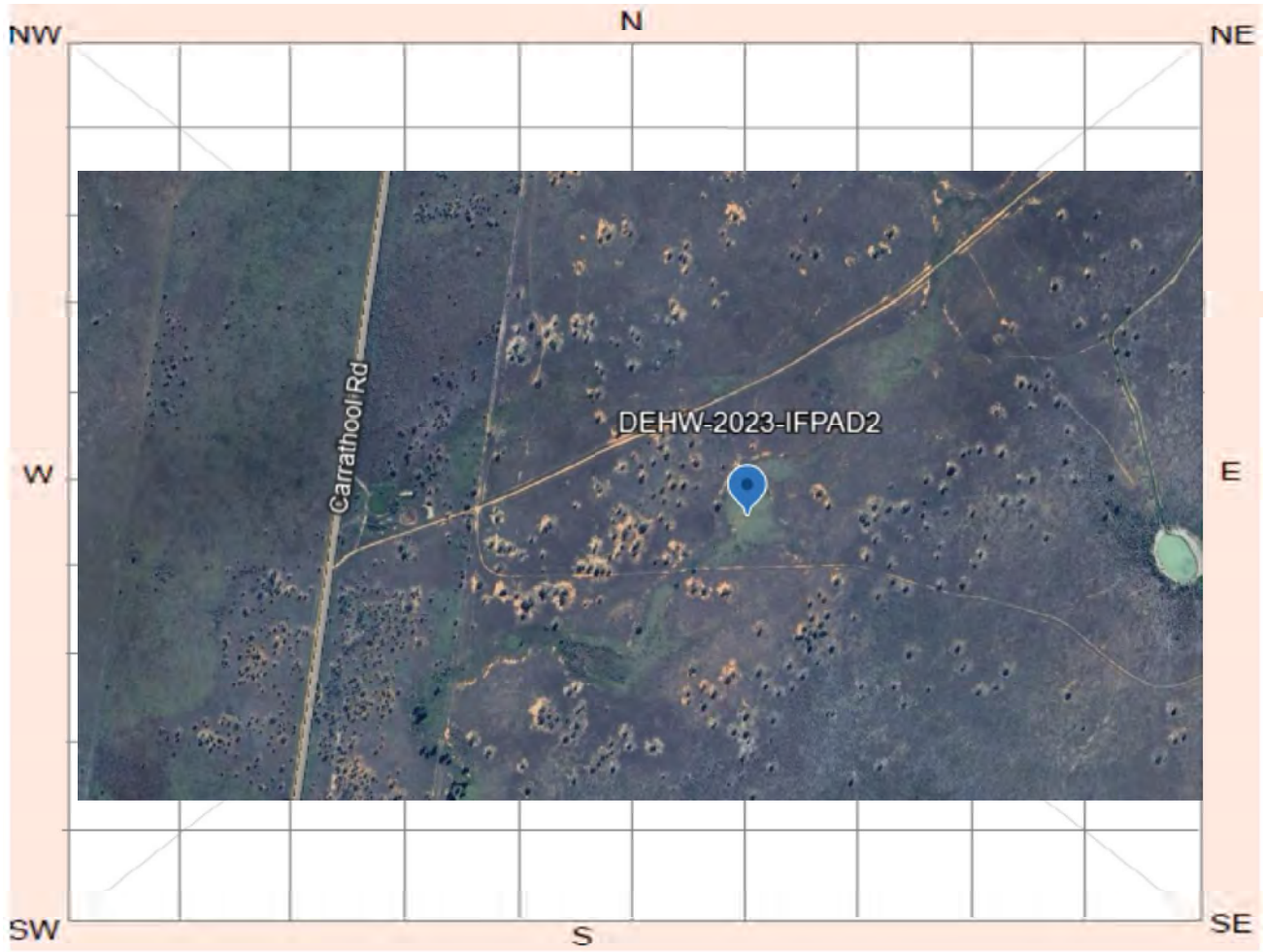
Distance to Water (m): Primary Report:

How to get to the site:

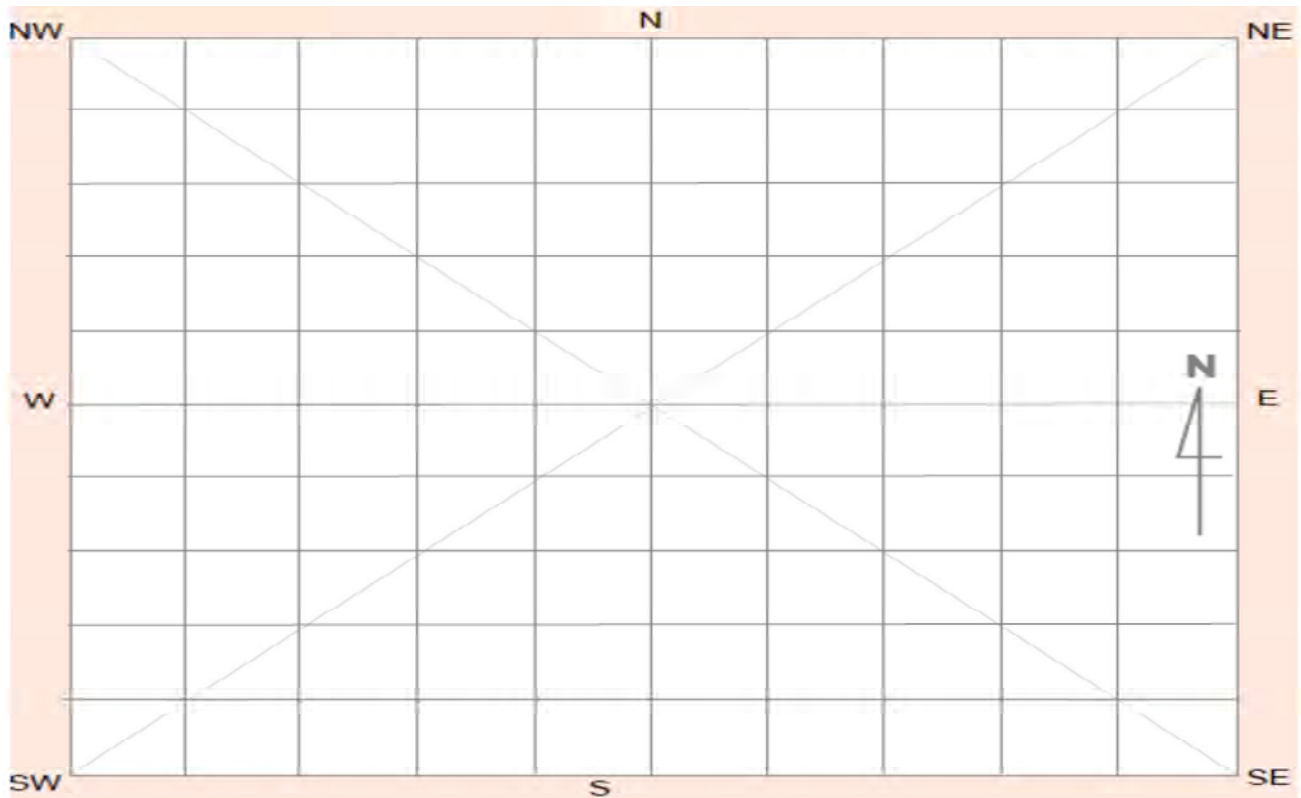
Other site information:

-

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

A singular tentative quartz flake identified associated with the rabbit burrows and native pine evident in proximity.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2. | |

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Scald exposures with 10% visibility and 50% exposure, comprising brown silty-sand. Rabbit burrows and native pine evident in the landscape with a singular tentative quartz flake identified and is associated with the site.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

4.

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

5.

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Feature condition:

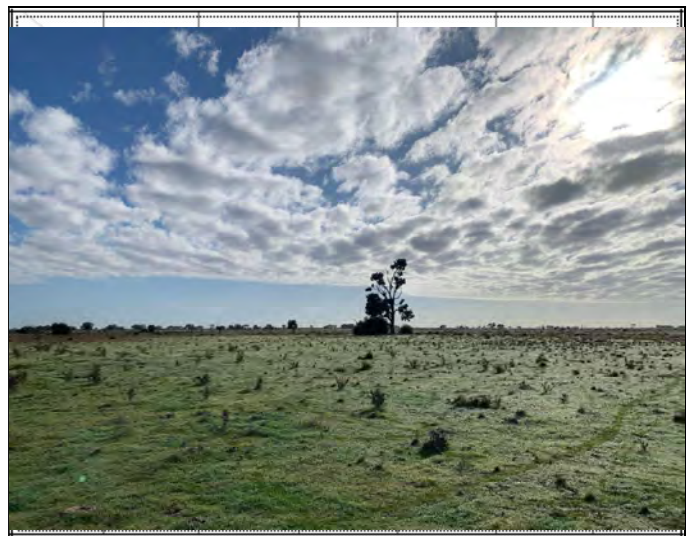
Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

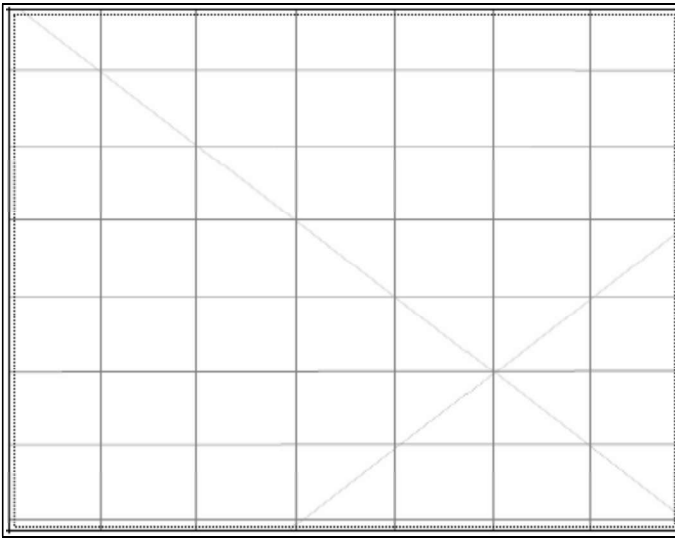
Site photographs



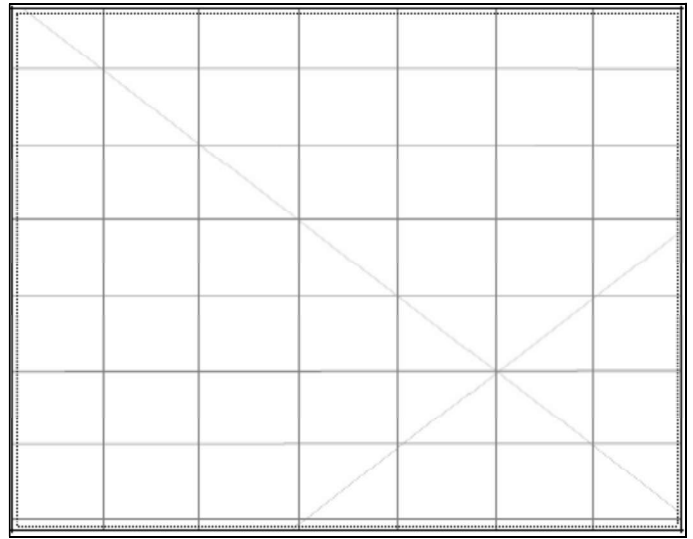
Description:



Description:



Description:



Description:

Site restrictions

Do you want to
Restrict this site?:

Restriction type: Gender General Location
N/A

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Poude	Phillipa
Organisation:	EMM Consulting	
Address:	Ground floor, 20 Chandos Street, St Leonards NSW 2065	
Phone:	0249074881	E-mail: pobrienpoude@emmconsulting.com.au

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

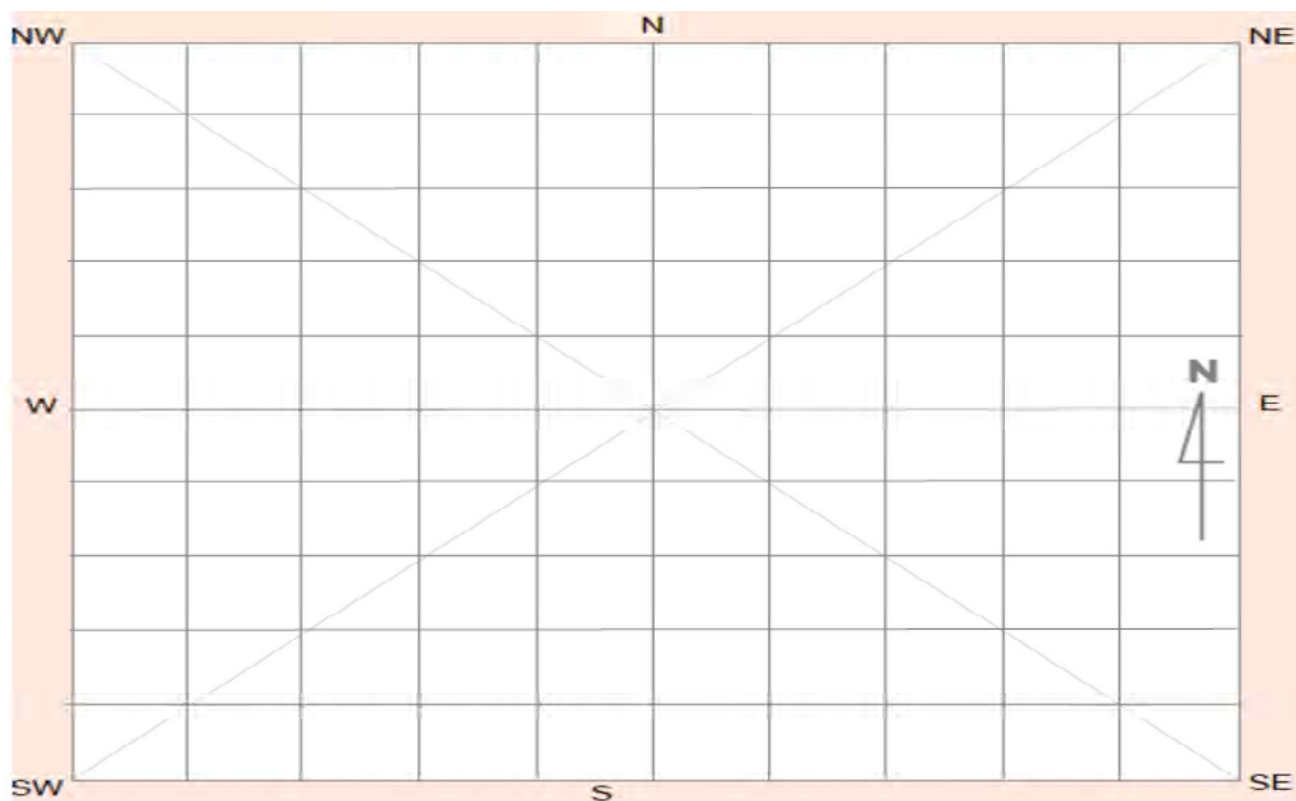
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
--------------------	---------------------------------	---------------------------------

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text" value="8"/>	<input type="text" value="10"/>	<input type="text" value="Oval"/>	<input type="text"/>

1.

Feature condition:

Description:

Tentative eucalypt culturally modified tree in poor condition and/or dead tree with the scar on situated on the south-eastern face of the tree.

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
--------------------	---------------------------------	---------------------------------

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

2.

Feature condition:

Description:

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
--------------------	---------------------------------	---------------------------------

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

3.

Feature condition:

Description:

Features:

4.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other
Eucalypt

Features:

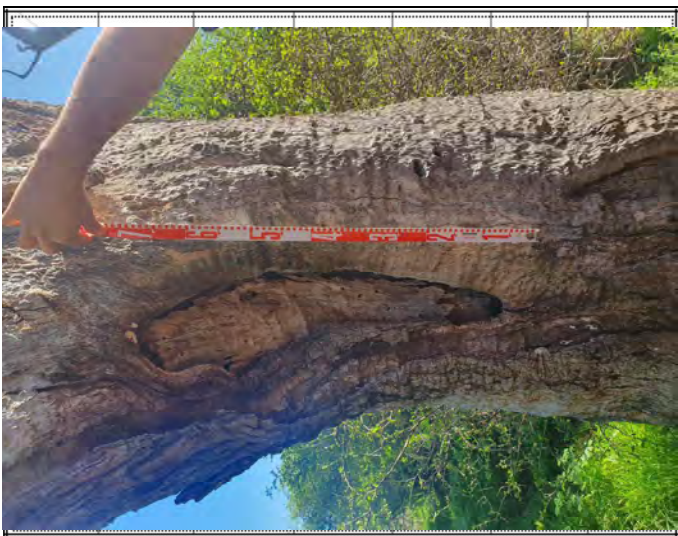
5.

Feature condition:

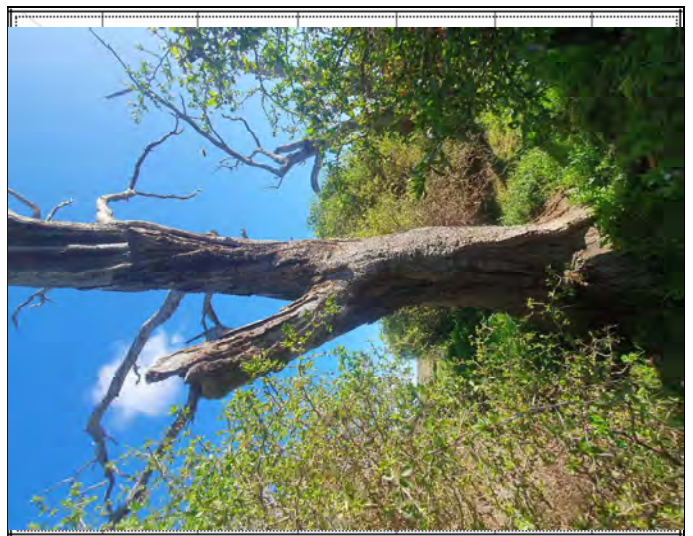
Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

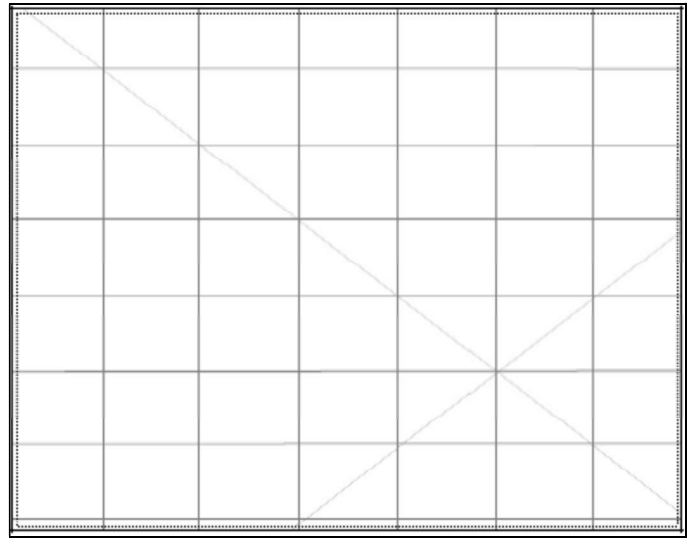
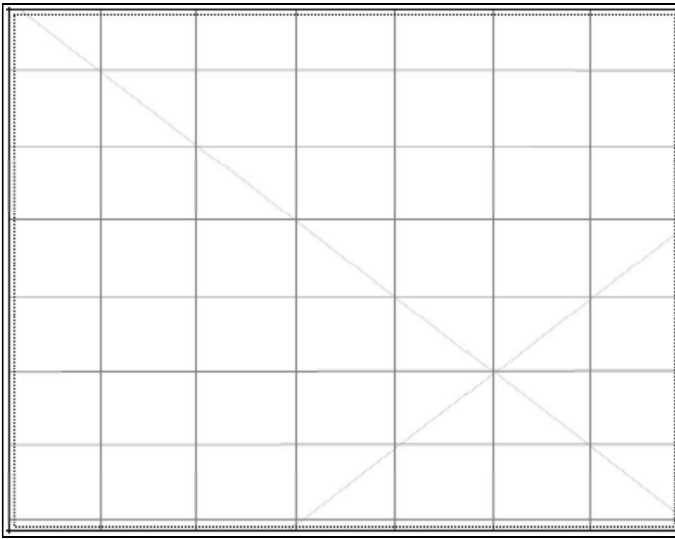
Site photographs



Description: Detailed close up of culturally modified tree.



Description: Location of culturally modified tree and condition of surrounding landscape.



Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender N/A General Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Poude	Phillipa
Organisation:	EMM Consulting	
Address:	Ground floor, 20 Chandos Street, St Leonards NSW 2065	
Phone:	0249074881	E-mail: pobrienpoude@emmconsulting.com.au

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

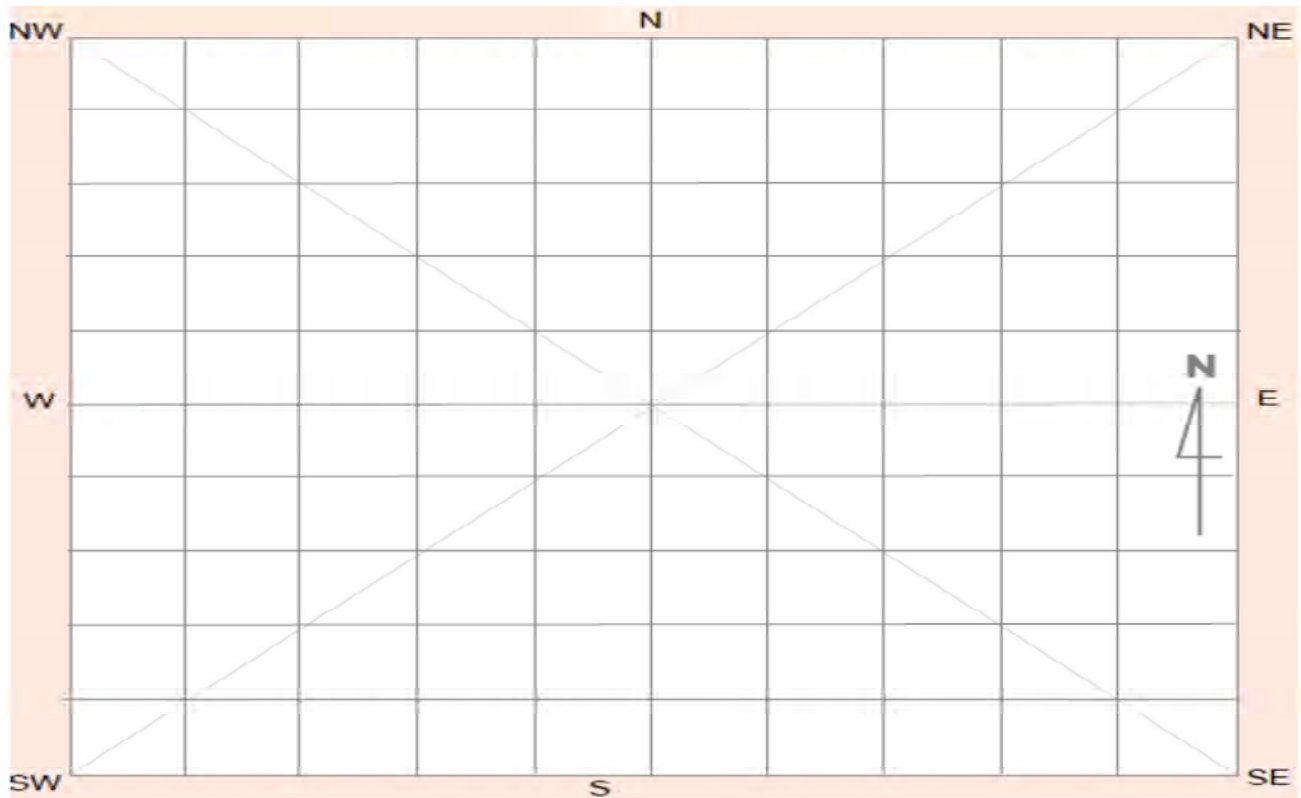
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text" value="21"/>	<input type="text" value="15"/>	<input type="text" value="Oval"/>	<input type="text"/>

Description:

Tentative Grey box eucalypt culturally modified tree in moderate condition with evidence of termite damage. Scar is situated on the south face side of the tree measuring 170cm x 20cm x 21cm. 65cm off ground.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

4.

Number of features
Length of feature(s) extent (m)
Width of feature (s) extent (m)

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Box

Feature condition:

Description:

Features:

5.

Number of features
Length of feature(s) extent (m)
Width of feature (s) extent (m)

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Feature condition:

Description:

Site photographs



Description:

Length of cultural scar.

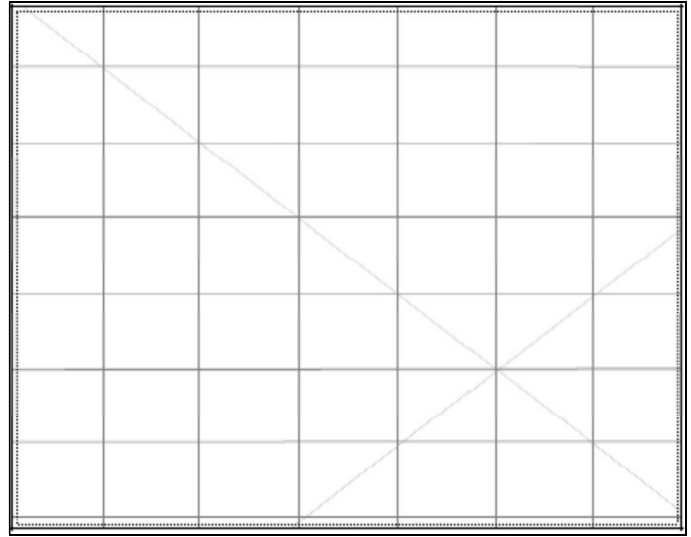


Description:

Detailed close up of culturally modified tree.



Description:



Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender N/A General Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Poude	Phillipa
Organisation:	EMM Consulting	
Address:	Ground floor, 20 Chandos Street, St Leonards NSW 2065	
Phone:	0249074881	E-mail: pobrienpoude@emmconsulting.com.au

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: **Northing:** **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: **E-mail:**

Site Context Information

Land Form Pattern: **Land Use:**

Land Form Unit: **Vegetation:**

Distance to Water (m): **Primary Report:**

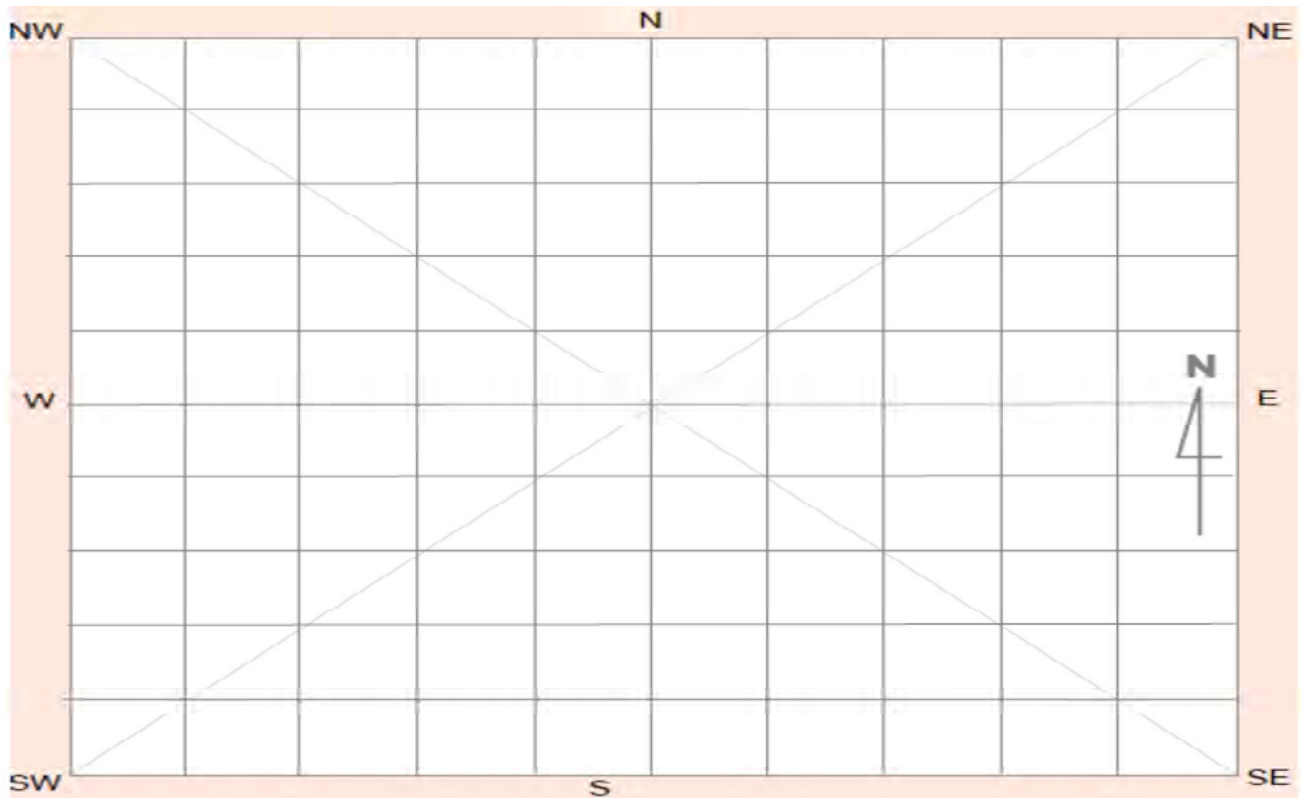
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text" value="12"/>	<input type="text" value="10"/>	<input type="text" value="Elongated"/>	<input type="text"/>

Description:

Grey box eucalypt with potential canoe scar tree on south side and 53cm off the ground. The tree shows evidence of termite damage and scarring on opposite side, otherwise the tree is alive and standing. Potential cut mark on bottom of scar with limb fall on branch above. Metal observed at base of tree as well, possible collar cut.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

4.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Box

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

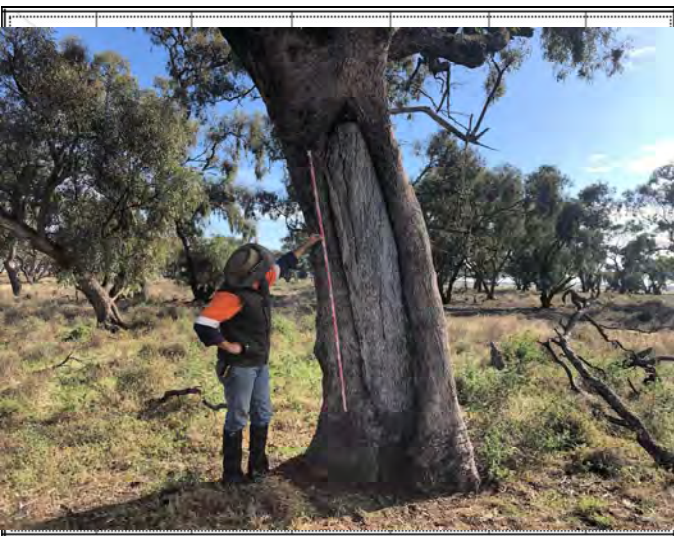
5.

Feature condition:

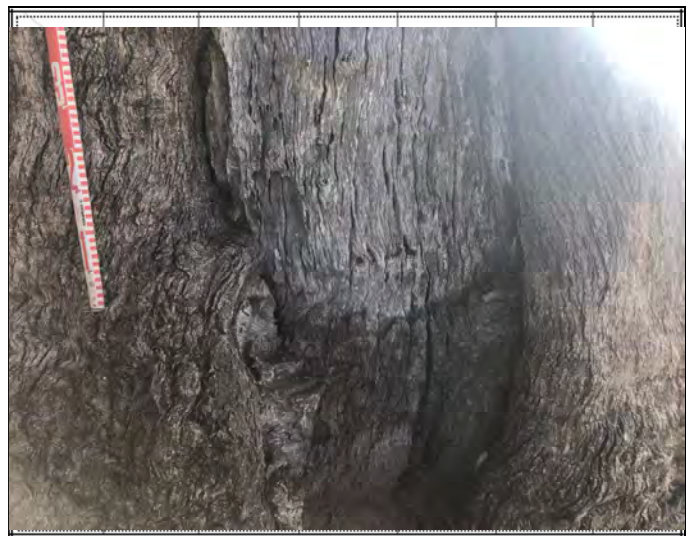
Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

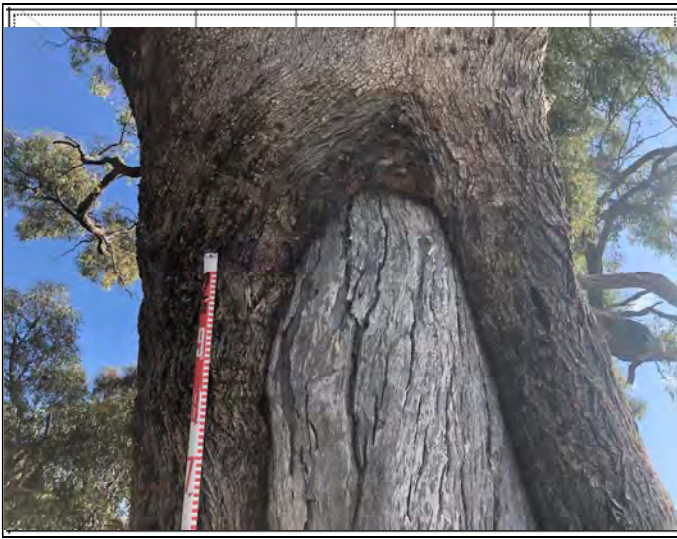
Site photographs



Description: Location of tree and condition of surrounding landscape. Measurement of scar length. View north.



Description: Detailed close up of the scar's bottom, indicating termite damage.



Description: Detailed close up of the scar's top, indicating termite damage.



Description: Location of tree and condition of surrounding landscape. Measurement of scar width. View north-west.

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender N/A General Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Poude	Phillipa
Organisation:	EMM Consulting	
Address:	Ground floor, 20 Chandos Street, St Leonards NSW 2065	
Phone:	0249074881	E-mail: pobrienpoude@emmconsulting.com.au

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

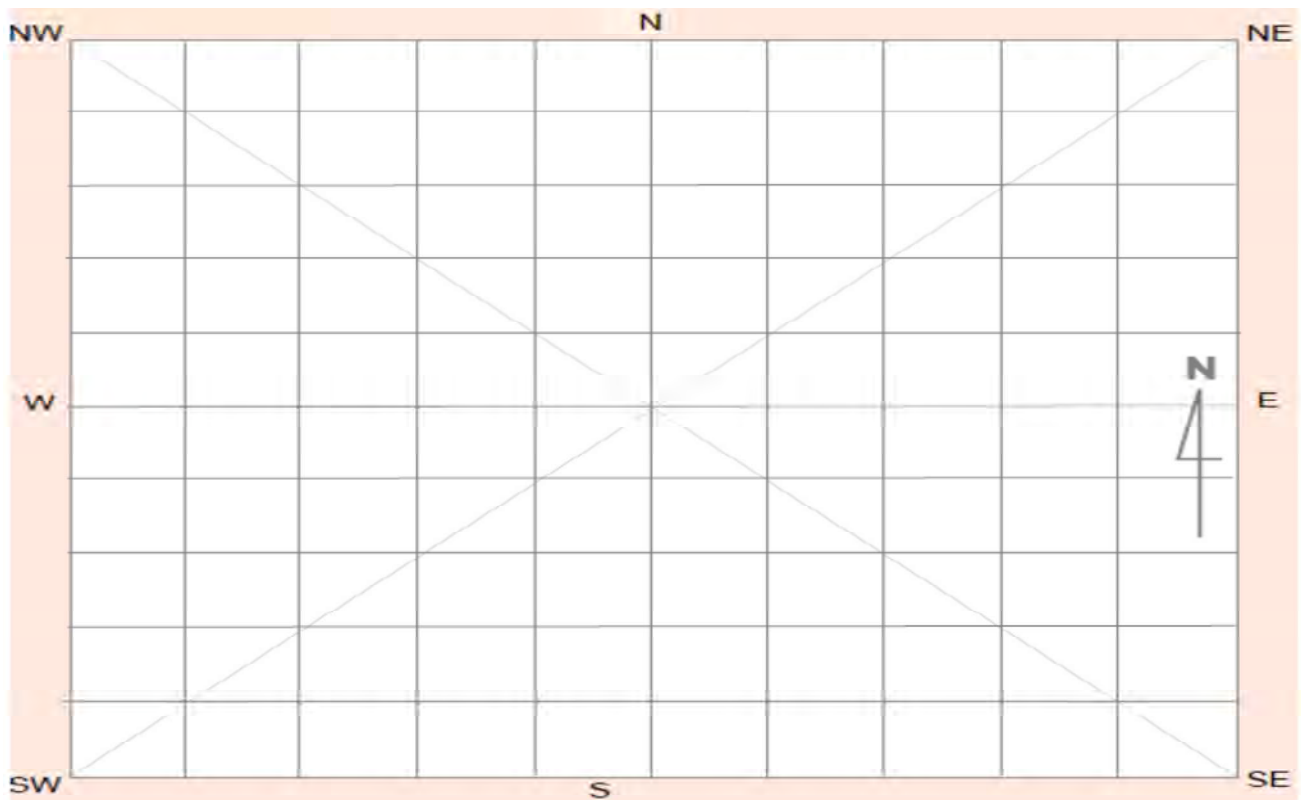
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
--------------------	---------------------------------	---------------------------------

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text" value="25"/>	<input type="text" value="10"/>	<input type="text" value="Elongated"/>	<input type="text"/>

1.

Feature condition:

Description:

Tentative grey box culturally modified tree with evident exit marks from termites, however it is undetermined if the termite damage occurred post scarring. The tree is in moderate condition with the scar approximately 20cm from the ground.

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
--------------------	---------------------------------	---------------------------------

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

2.

Feature condition:

Description:

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
--------------------	---------------------------------	---------------------------------

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

3.

Feature condition:

Description:

Features:

4.

Number of features
Length of feature(s) extent (m)
Width of feature (s) extent (m)

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Box

Feature condition:

Description:

Features:

5.

Number of features
Length of feature(s) extent (m)
Width of feature (s) extent (m)

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Feature condition:

Description:

Site photographs



Description: Overview of the culturally modified tree and measurement of scar length.



Description: Detailed close up of the top of the scar, revealing termite damage.



Description: Detailed close up of the bottom of the scar, revealing termite damage.



Description: Location of scared tree and condition of surrounding landscape.

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender N/A General Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Poude	Phillipa
Organisation: EMM Consulting		
Address: Ground floor, 20 Chandos Street, St Leonards NSW 2065		
Phone: 0249074881	E-mail: pobrienpoude@emmconsulting.com.au	

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

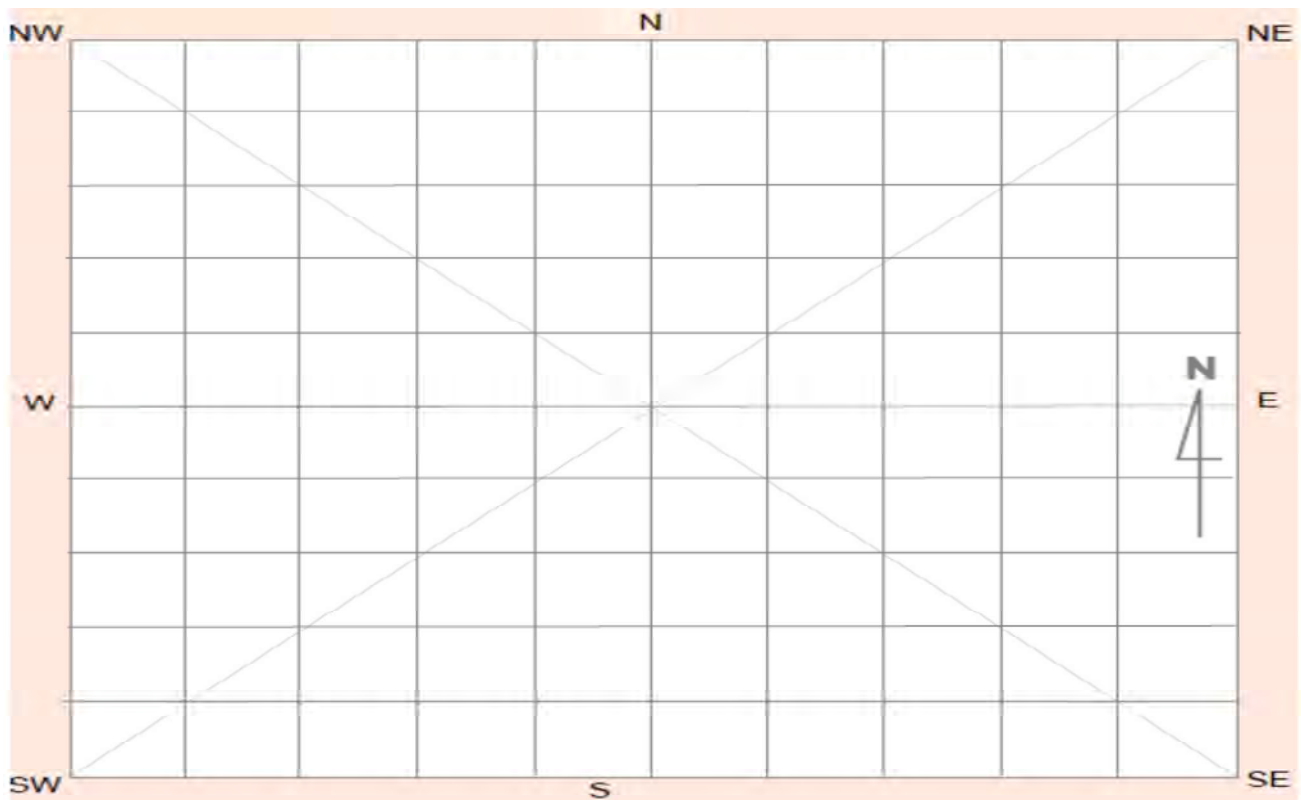
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text" value="25"/>	<input type="text" value="15"/>	<input type="text" value="Oval"/>	<input type="text"/>

1.

Feature condition:

Description:

Tentative Grey box culturally modified tree, with the scar west facing. Tree is in good condition however, shows signs of termite damage up branches and a contemporary cut mark inside.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

2.

Feature condition:

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

3.

Feature condition:

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

4.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Box

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

5.

Feature condition:

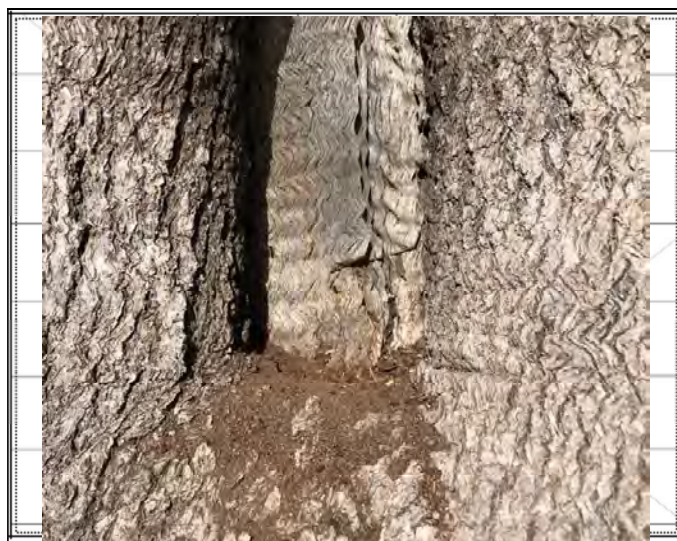
Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Site photographs



Description:



Description:



Description: Detailed close up of the top of the scar.



Description: Location of the scarred tree and condition of the surrounding landscape. View south-east.

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location
N/A

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Poude	Phillipa
Organisation:	EMM Consulting	
Address:	Ground floor, 20 Chandos Street, St Leonards NSW 2065	
Phone:	0249074881	E-mail: pobrienpoude@emmconsulting.com.au

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

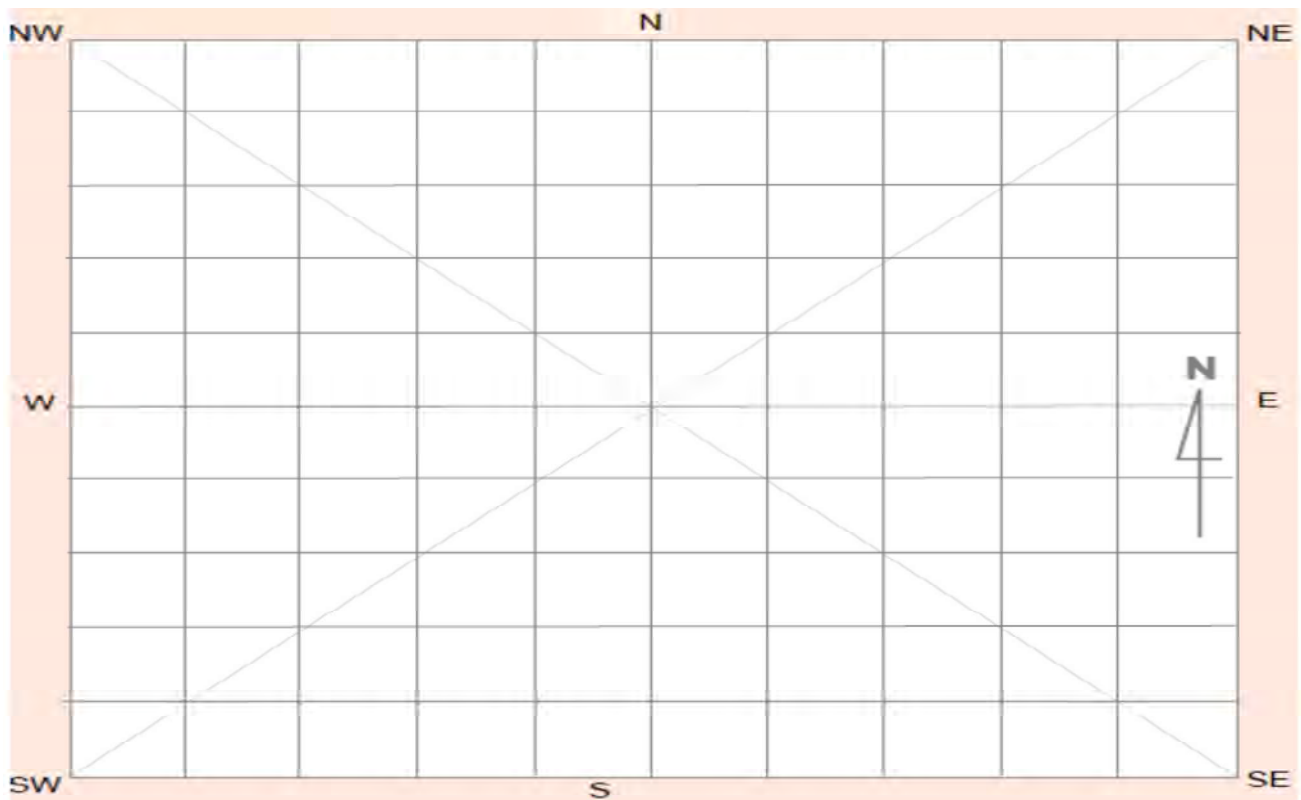
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text" value="6"/>	<input type="text" value="7"/>	<input type="text" value="Oval"/>	<input type="text"/>

Description:

Tentative culturally modified tree with the scar is south facing.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

4.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other			

Features:

5.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

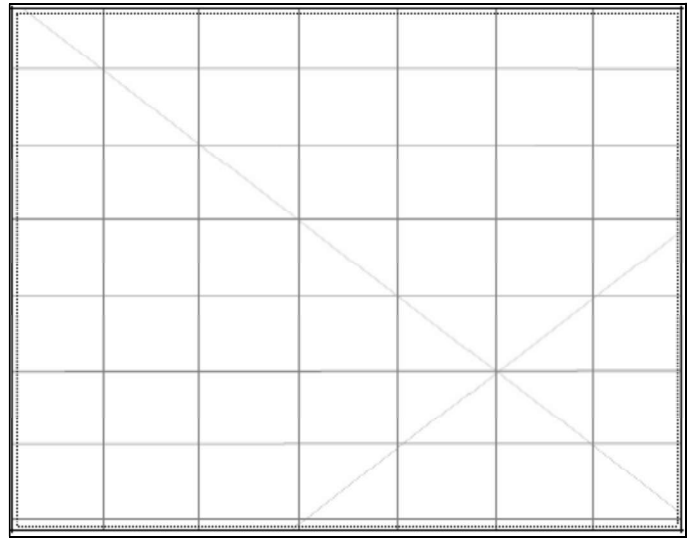
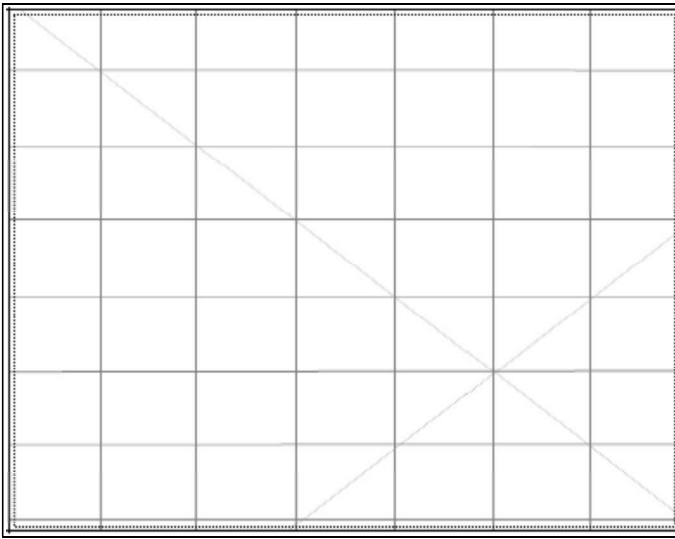
Site photographs



Description:



Description:



Description:

Description:

Site restrictions

Do you want to
Restrict this site?:

Restriction type: Gender General Location
N/A

Why is this site restricted?:

Further information contact

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="O'Brien-Poude"/>	<input type="text" value="Phillipa"/>
Organisation: <input type="text" value="EMM Consulting"/>		
Address: <input type="text" value="Ground floor, 20 Chandos Street, St Leonards NSW 2065"/>		
Phone: <input type="text" value="0249074881"/>	E-mail: <input type="text" value="pobrienpoude@emmconsulting.com.au"/>	

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

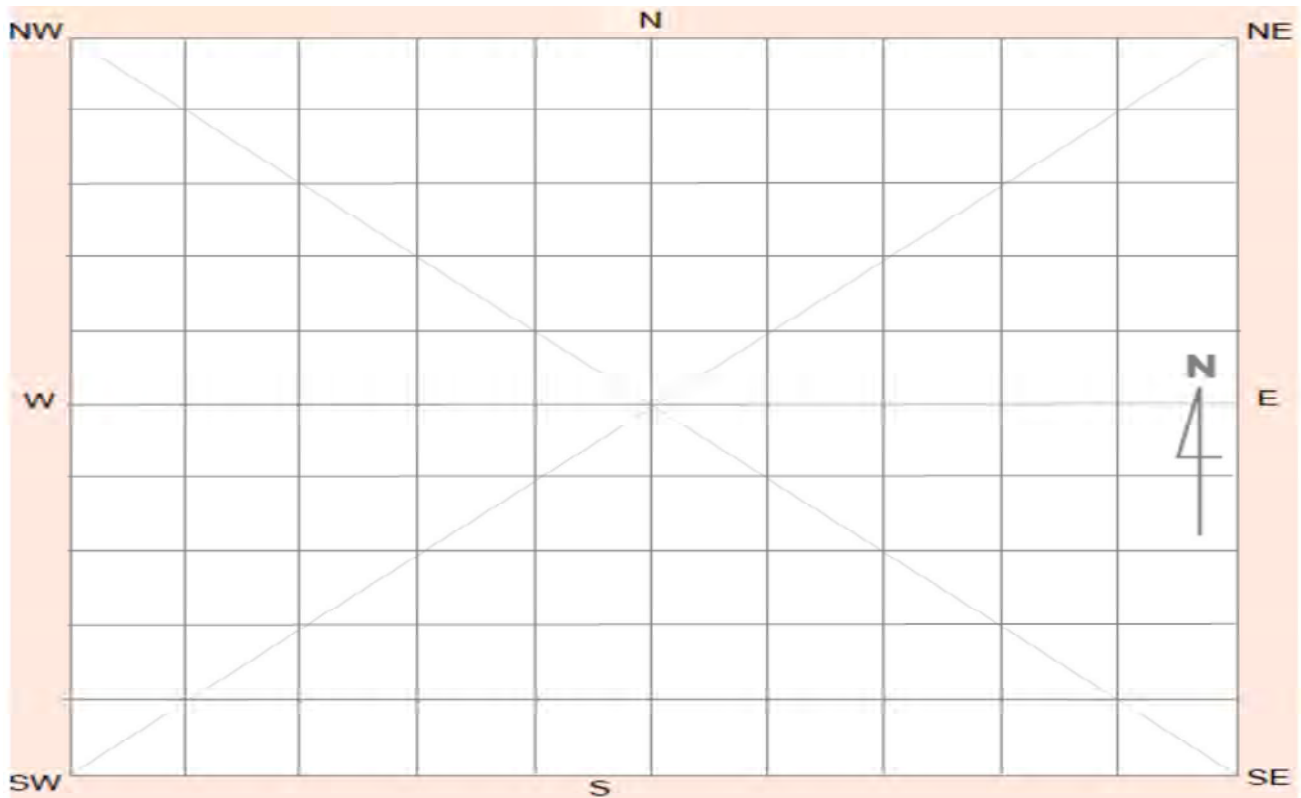
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
--------------------	---------------------------------	---------------------------------

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

1.	<input type="text" value="Modified Tree"/>	<input type="text" value="1"/>	<input type="text" value="250"/>	<input type="text" value="30"/>
----	--	--------------------------------	----------------------------------	---------------------------------

<input type="text" value="25"/>	<input type="text" value="20"/>	<input type="text" value="Elongated"/>	<input type="text"/>
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Feature condition:

Description:

Tentative Grey box culturally modified tree in moderate condition with the scar is west facing. The tree shows signs of termite damage on the east facing side, and the tree is hollow. It is undetermined whether termite damage happened post scarring or is the cause.

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
--------------------	---------------------------------	---------------------------------

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

2.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----	----------------------	----------------------	----------------------	----------------------

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------

Feature condition:

Description:

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
--------------------	---------------------------------	---------------------------------

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

3.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----	----------------------	----------------------	----------------------	----------------------

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------

Feature condition:

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

4.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Box

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

5.

Feature condition:

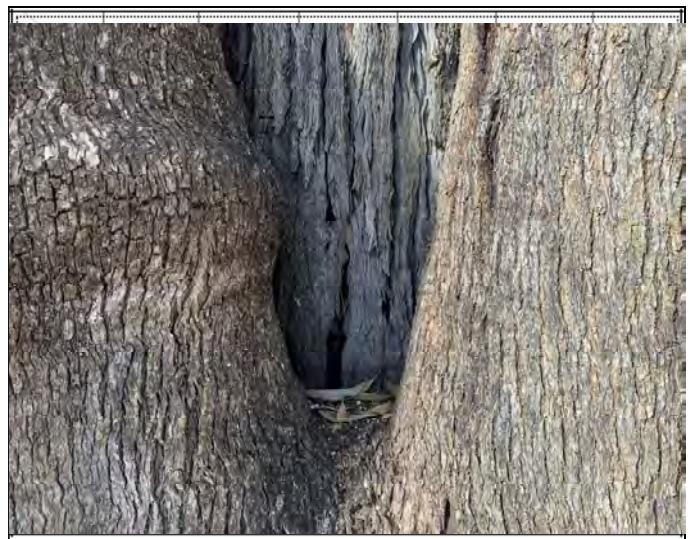
Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Site photographs



Description: Overview of scar with measurement of length.



Description: Detailed close up of bottom of scar.



Description: Detailed close up of top of scar.



Description: Location of scarred tree and condition of surrounding landscape. View east.

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location
N/A

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Poude	Phillipa
Organisation:	EMM Consulting	
Address:	Ground floor, 20 Chandos Street, St Leonards NSW 2065	
Phone:	0249074881	E-mail: pobrienpoude@emmconsulting.com.au

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

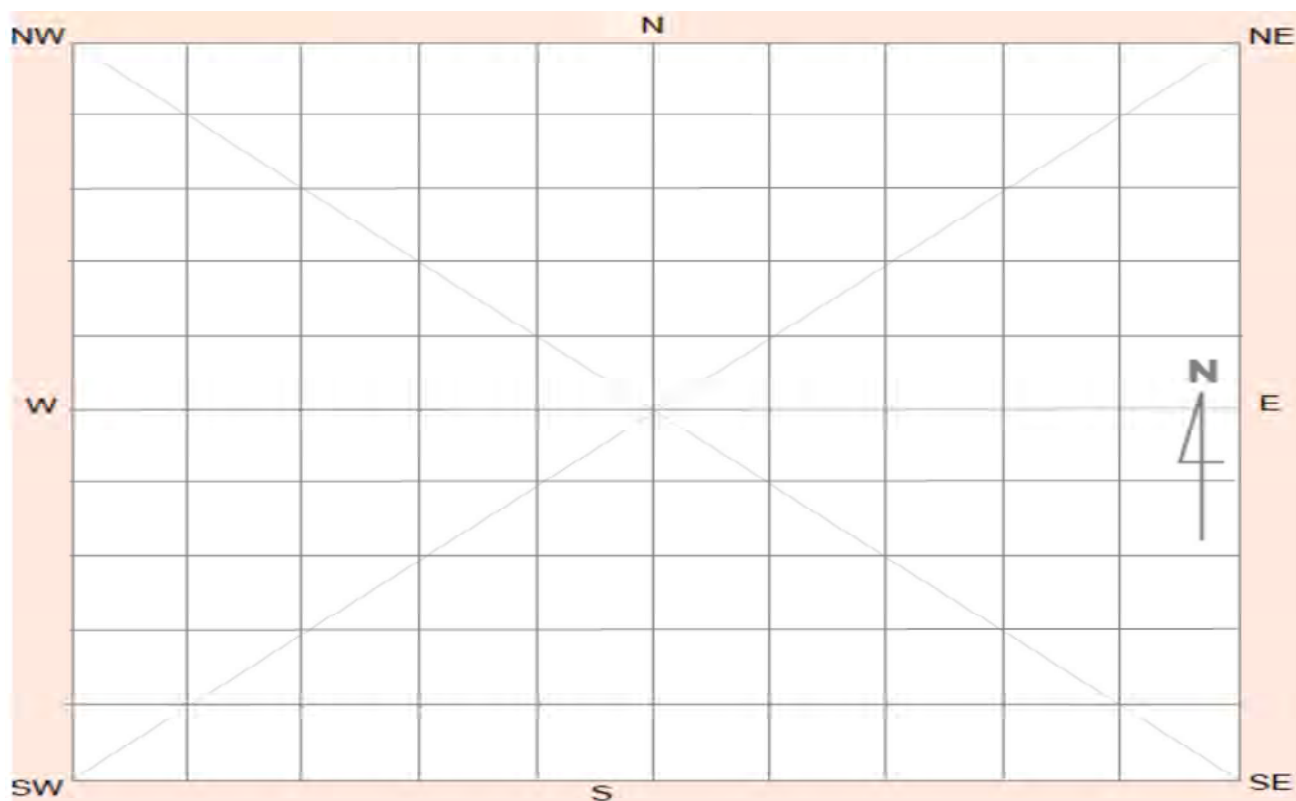
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text" value="70"/>	<input type="text" value="8"/>	<input type="text" value="Rectangular"/>	<input type="text"/>

1.

Feature condition:

Description:

Grey box culturally modified tree in moderate condition with three tentative stone axe marks located at the tree base. The epicormic stem may have prevented regrowth. Scar is north-west facing.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

2.

Feature condition:

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

3.

Feature condition:

Description:

Features:

4.

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Box

Features:

5.

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Site photographs



Description:



Description:



Description:

Detailed close up of bottom of scar.



Description:

Location of scarred tree and condition of surrounding landscape.

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location
N/A

Why is this site restricted?:

Further information contact

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="O'Brien-Poude"/>	<input type="text" value="Phillipa"/>
Organisation:	<input type="text" value="EMM Consulting"/>	
Address:	<input type="text" value="Ground floor, 20 Chandos Street, St Leonards NSW 2065"/>	
Phone:	<input type="text" value="0249074881"/>	E-mail: <input type="text" value="pobrienpoude@emmconsulting.com.au"/>

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

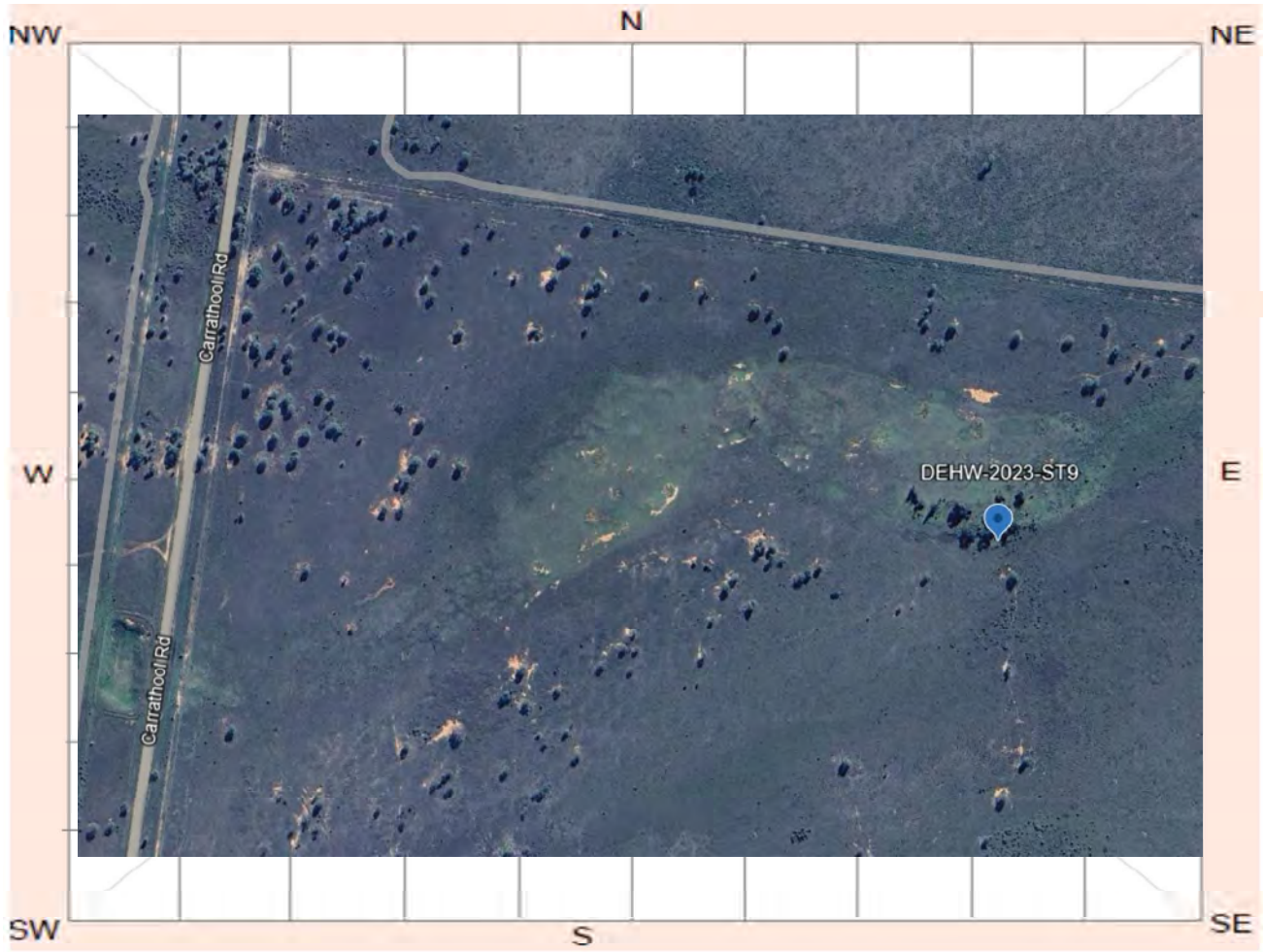
Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

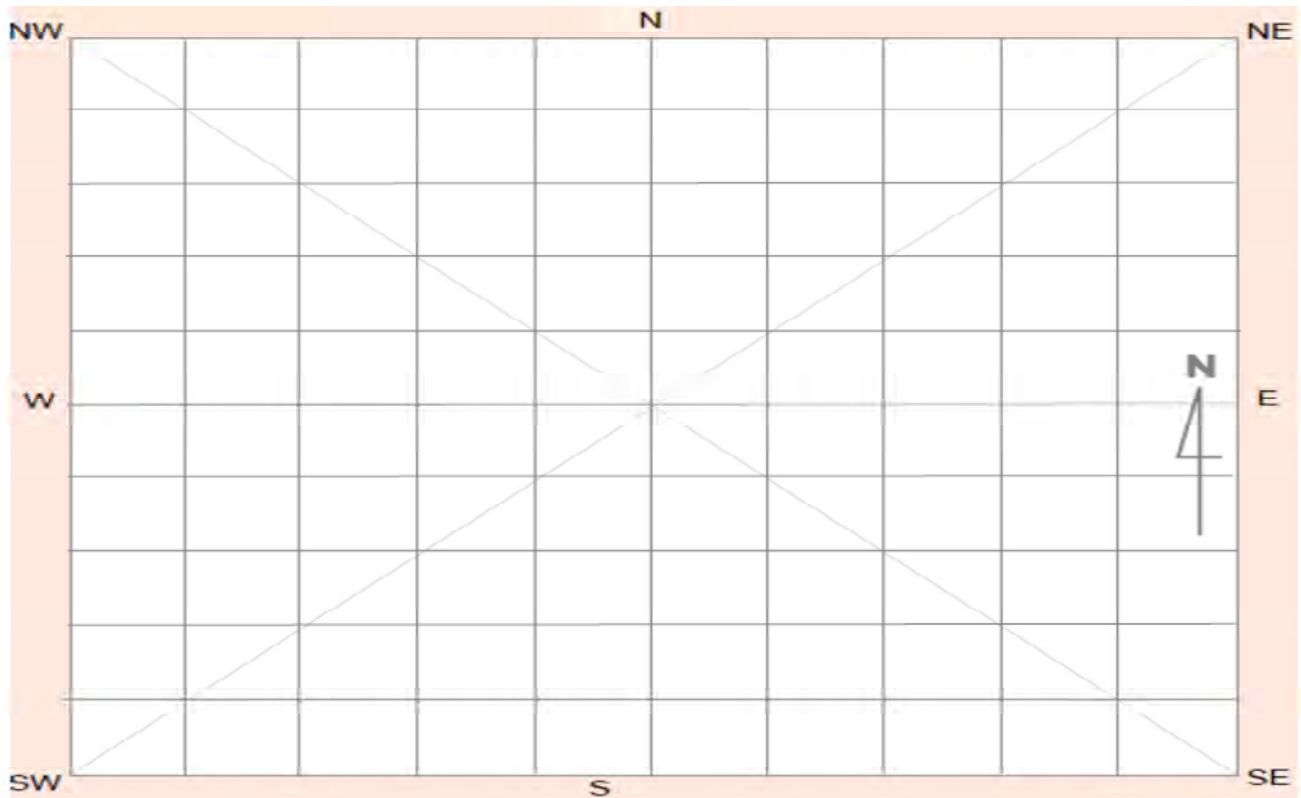
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text" value="7"/>	<input type="text" value="10"/>	<input type="text" value="Oval"/>	<input type="text"/>

Description:

Potential Grey box culturally modified tree with an oval shaped scar on the south facing side. The eucalypt is still alive with a branch tear evident on branch above with a potential secondary scar above, east facing.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features
Length of feature(s) extent (m)
Width of feature (s) extent (m)

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

4.

Feature condition:

Description:

Features:

Number of features
Length of feature(s) extent (m)
Width of feature (s) extent (m)

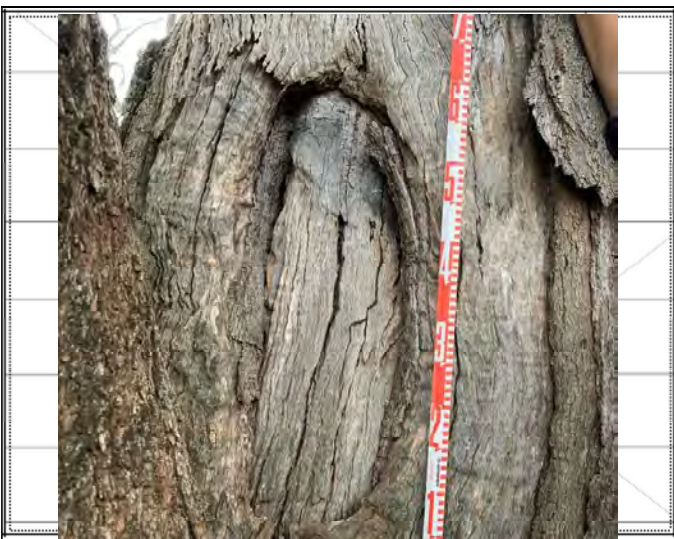
Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

5.

Feature condition:

Description:

Site photographs



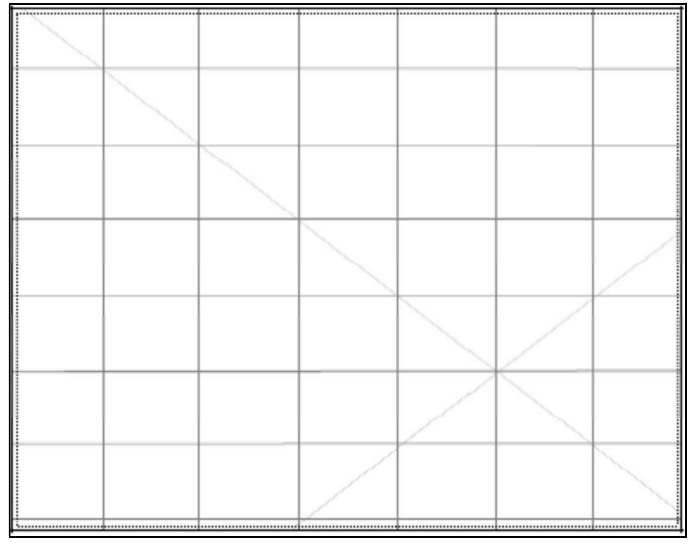
Description:



Description:



Description:



Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender N/A General Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Poude	Phillipa
Organisation:	EMM Consulting	
Address:	Ground floor, 20 Chandos Street, St Leonards NSW 2065	
Phone:	0249074881	E-mail: pobrienpoude@emmconsulting.com.au

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

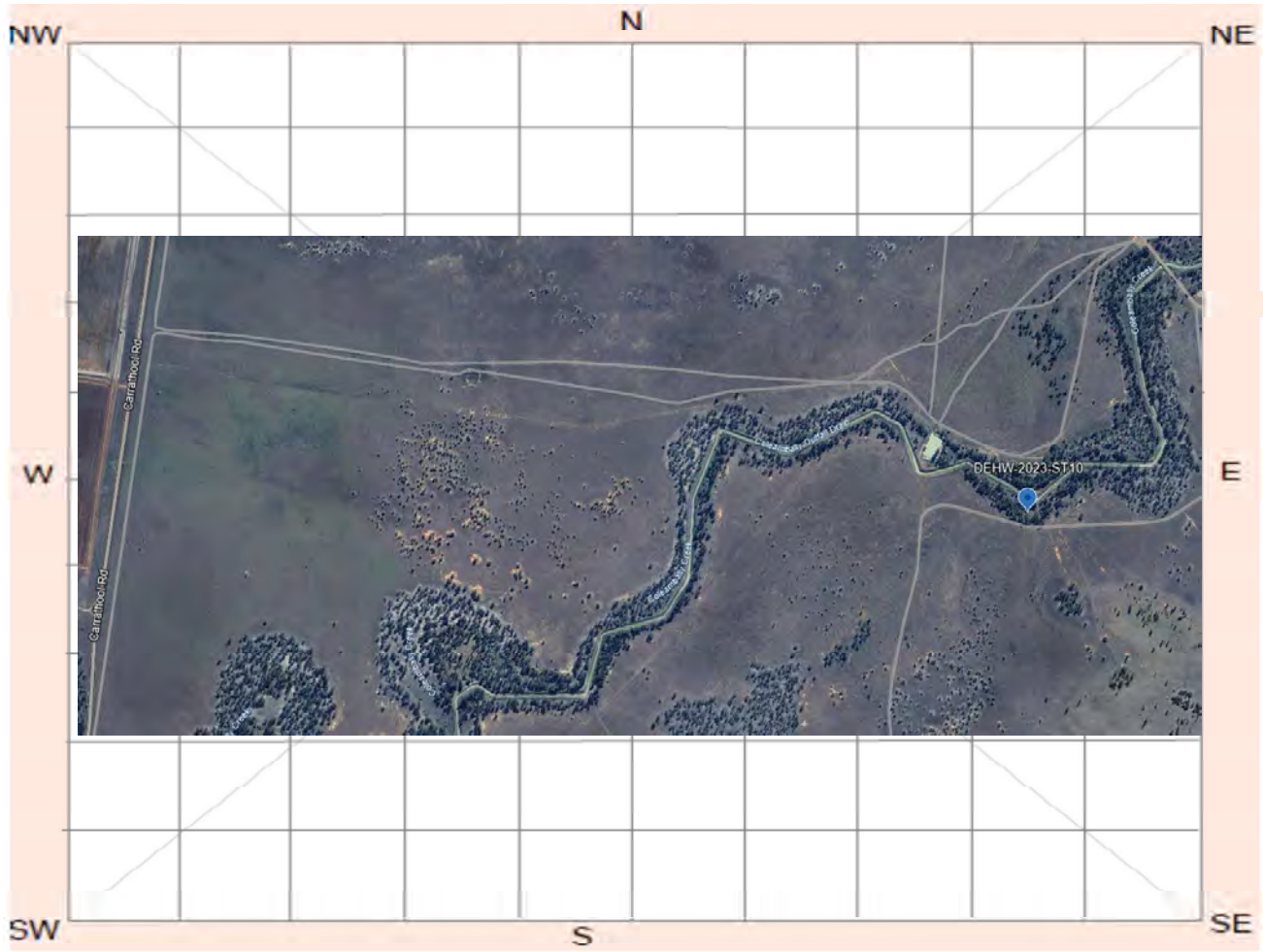
Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

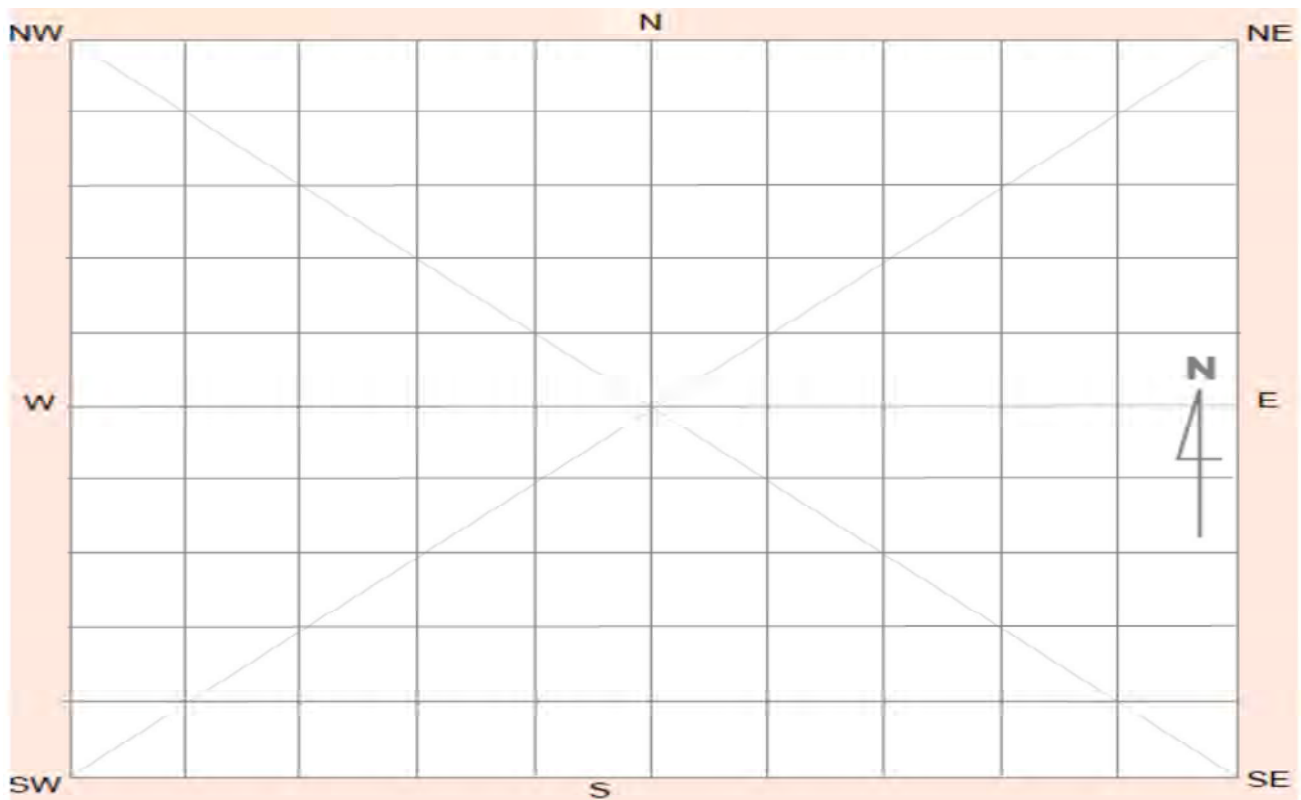
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text" value="7"/>	<input type="text" value="8"/>	<input type="text" value="Oval"/>	<input type="text"/>

Description:

Tentative eucalypt culturally modified tree in poor condition, with signs of potential lightning strike damage with a higher branch dead with signs of internal fire also evident. Scar is 2cm from ground level.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

4.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other			

Features:

5.

Feature condition:

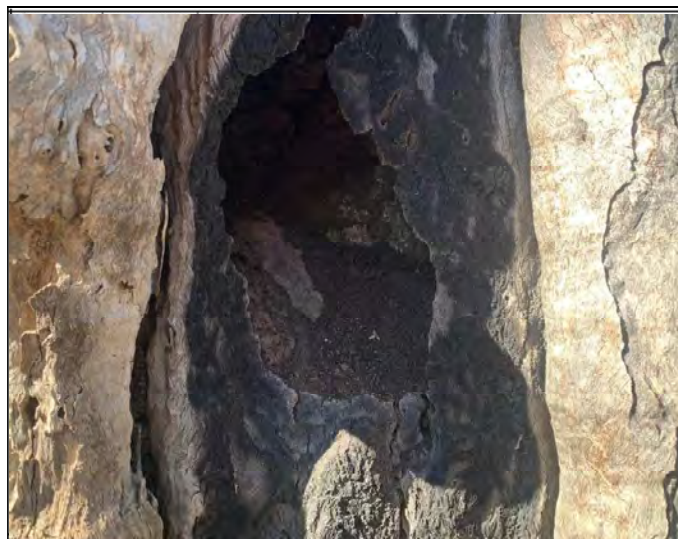
Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Site photographs



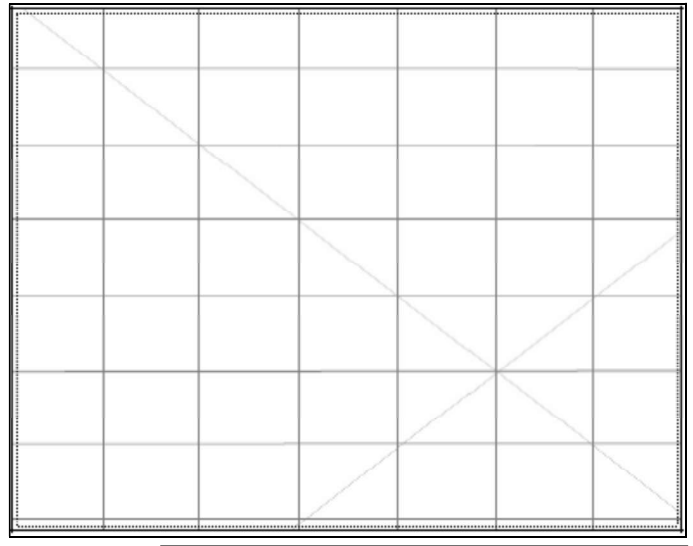
Description:



Description:



Description:



Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender N/A General Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Poude	Phillipa
Organisation: EMM Consulting		
Address: Ground floor, 20 Chandos Street, St Leonards NSW 2065		
Phone: 0249074881	E-mail: pobrienpoude@emmconsulting.com.au	

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: **Northing:** **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: **E-mail:**

Site Context Information

Land Form Pattern: **Land Use:**

Land Form Unit: **Vegetation:**

Distance to Water (m): **Primary Report:**

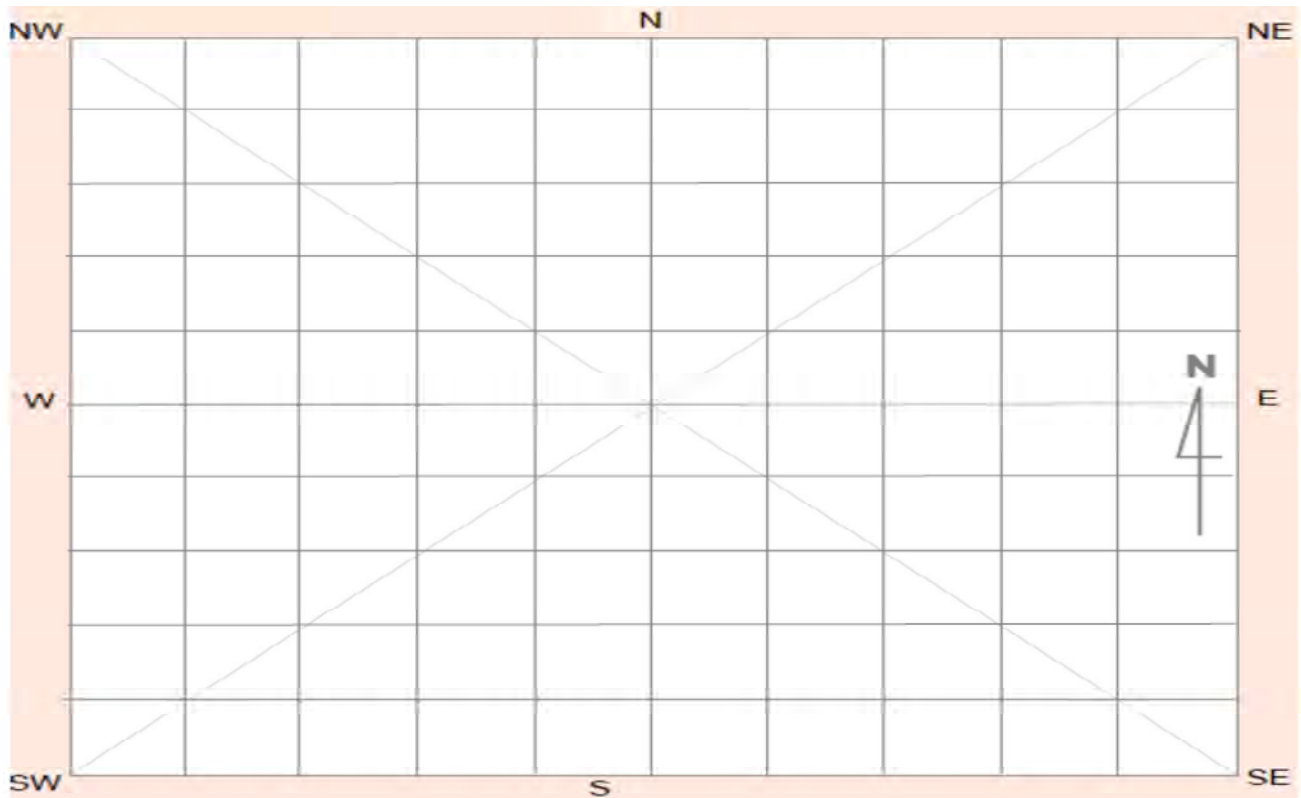
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text" value="5"/>	<input type="text" value="15"/>	<input type="text" value="Elongated"/>	<input type="text"/>

Description:

Site comprises three tentative culturally modified eucalyptus trees all in good condition. A: Scar on western side of tree measuring 70 x 60 x 5cm, approx. 60cm from base, and B: Scar on eastern side of tree measuring 120 x 40 x 5cm, approx. 40cm from base, and C: Cooloman scar on southern side of tree measuring 95 x 40cm wide, approx. 75cm from the ground.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

4.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other Eucalypt

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

5.

Feature condition:

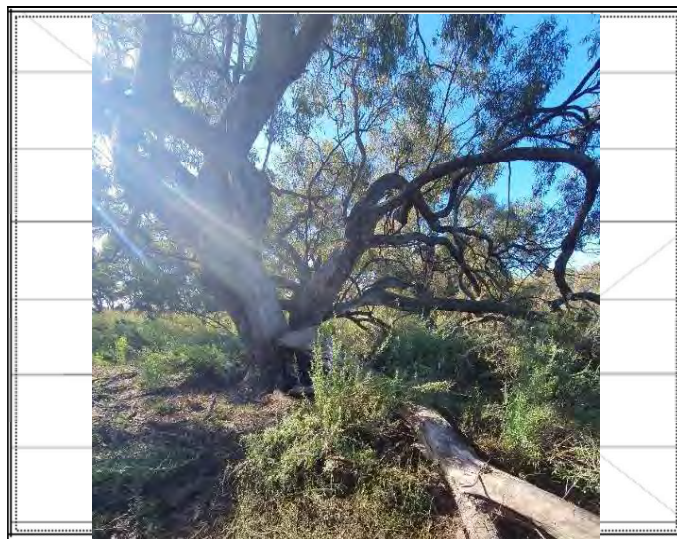
Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Site photographs



Description: Detailed close up of scar tree B, with measurement of length.



Description: Location of scarred tree B and condition of surrounding landscape. View north-east.



Description: Detailed close up of scar tree A, with measurement of length.



Description: Location of scarred tree A and condition of surrounding landscape. View north-east.

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender N/A General Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Poude	Phillipa
Organisation:	EMM Consulting	
Address:	Ground floor, 20 Chandos Street, St Leonards NSW 2065	
Phone:	0249074881	E-mail: pobrienpoude@emmconsulting.com.au

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

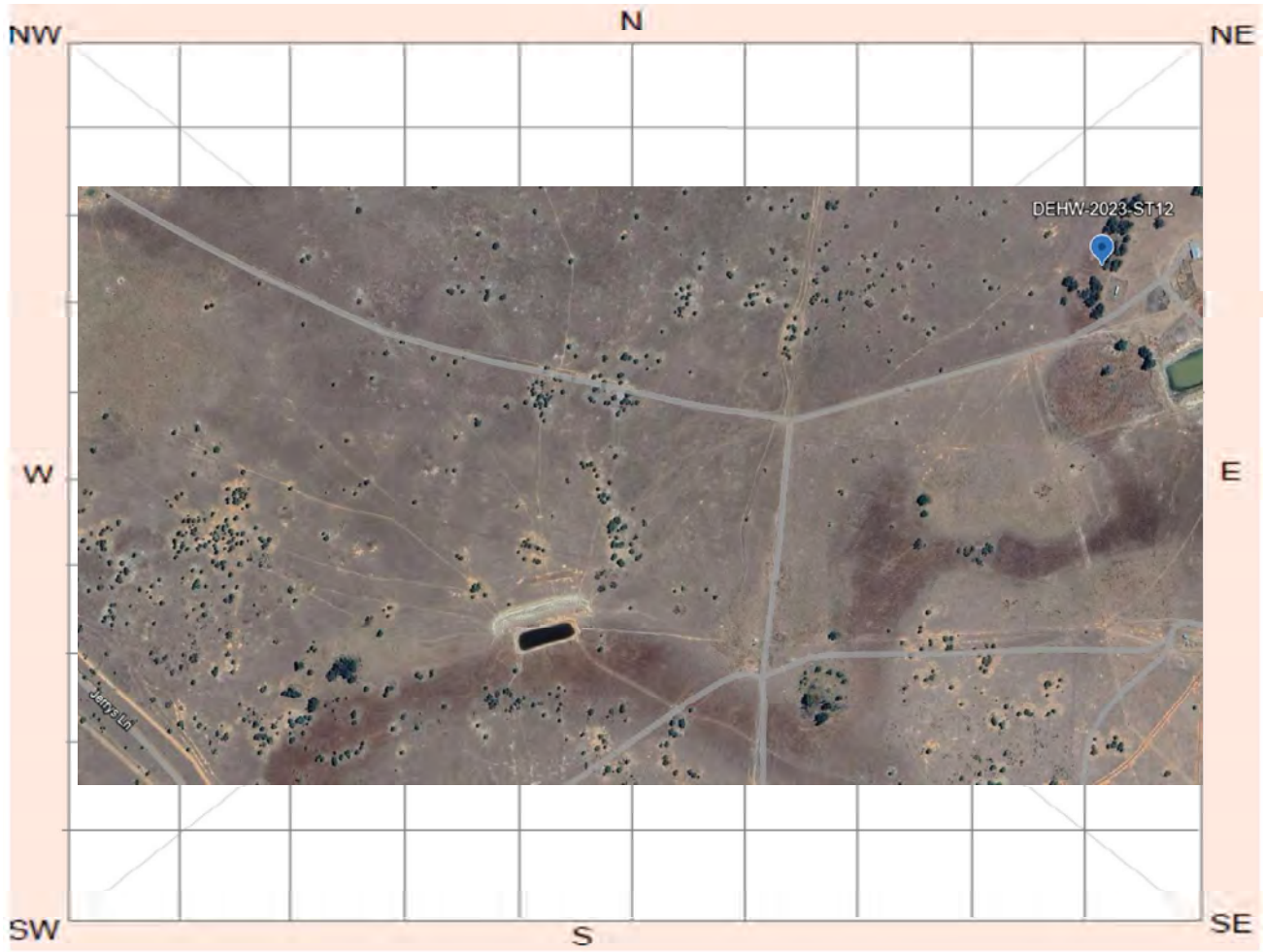
Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

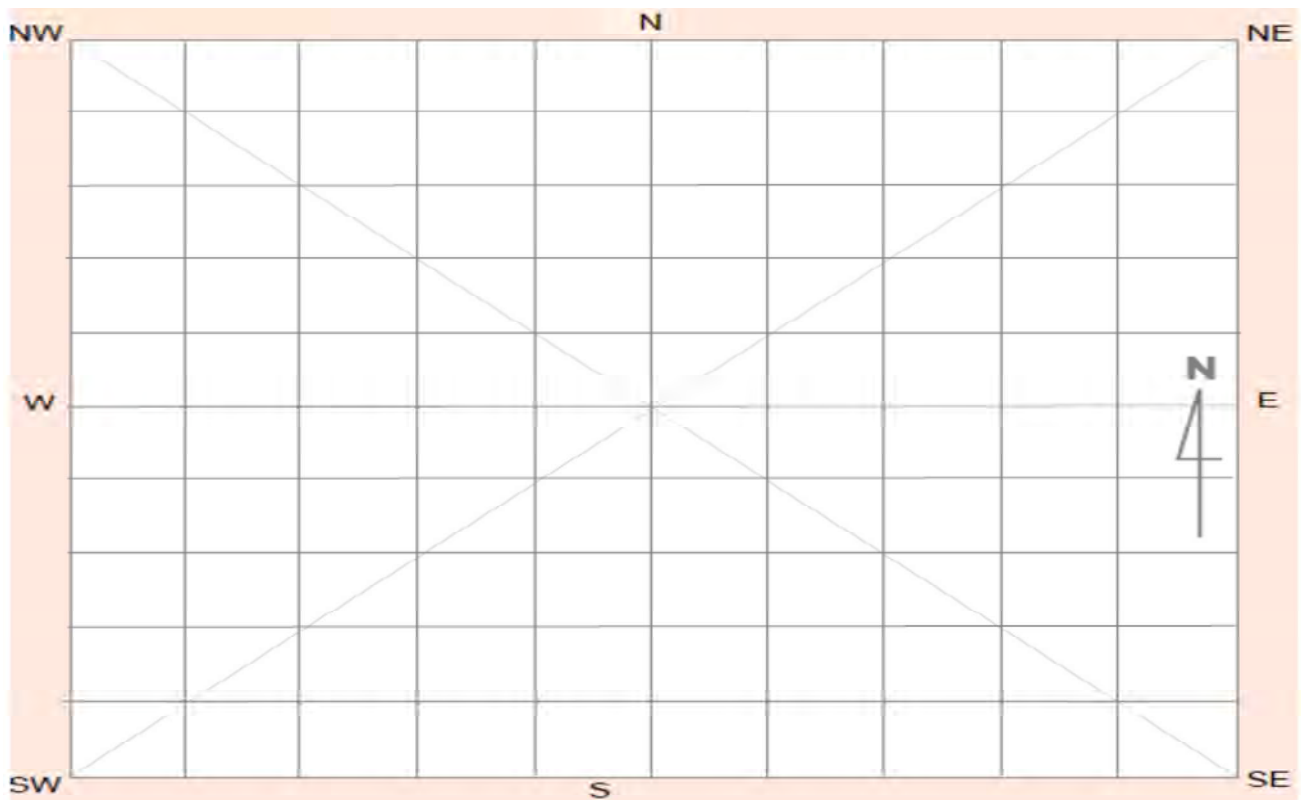
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="Elongated"/>	<input type="text"/>

Description:

Eucalypt ring tree in good condition located in proximity to cattle yards on grass plain with the scar measuring approx. 0.9m from ground level, with the ring measuring 0.8 x 0.35m.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

4.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Other
Eucalypt

Features:

5.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

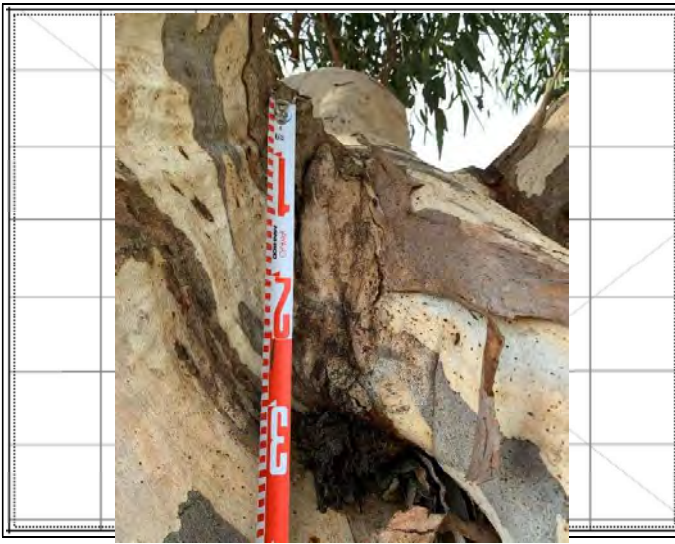
Site photographs



Description: Location of ring tree and condition of surrounding landscape.



Description: Alternative view of ring tree with 2m measuring tape.



Description: Detailed close up of the fused tree branches with measuring tape.



Description: Overview of the ring tree with 2m measuring tape.

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location
N/A

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Poude	Phillipa
Organisation:	EMM Consulting	
Address:	Ground floor, 20 Chandos Street, St Leonards NSW 2065	
Phone:	0249074881	E-mail: pobrienpoude@emmconsulting.com.au

Site interpretation and community statement

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

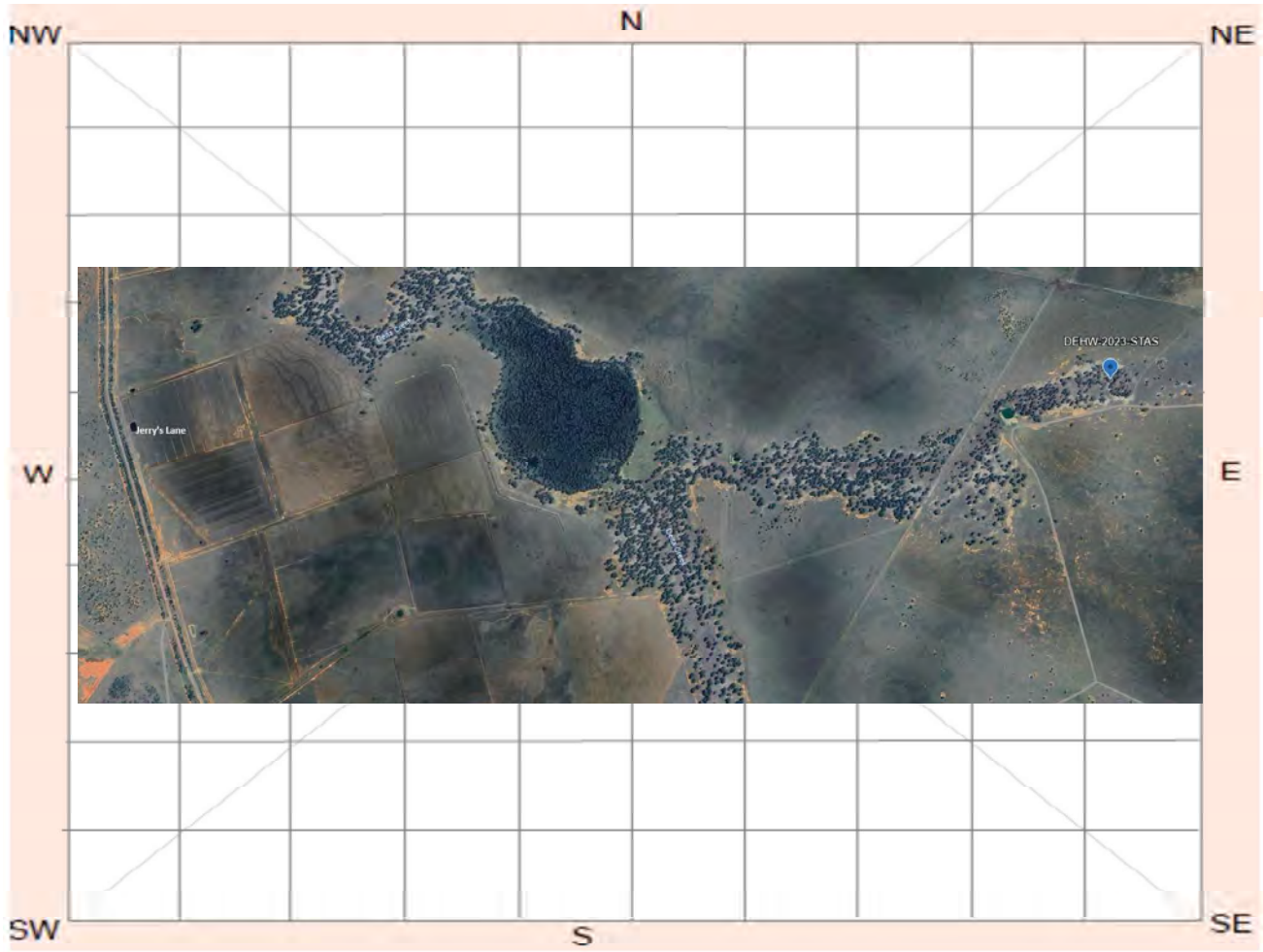
Distance to Water (m): Primary Report:

How to get to the site:

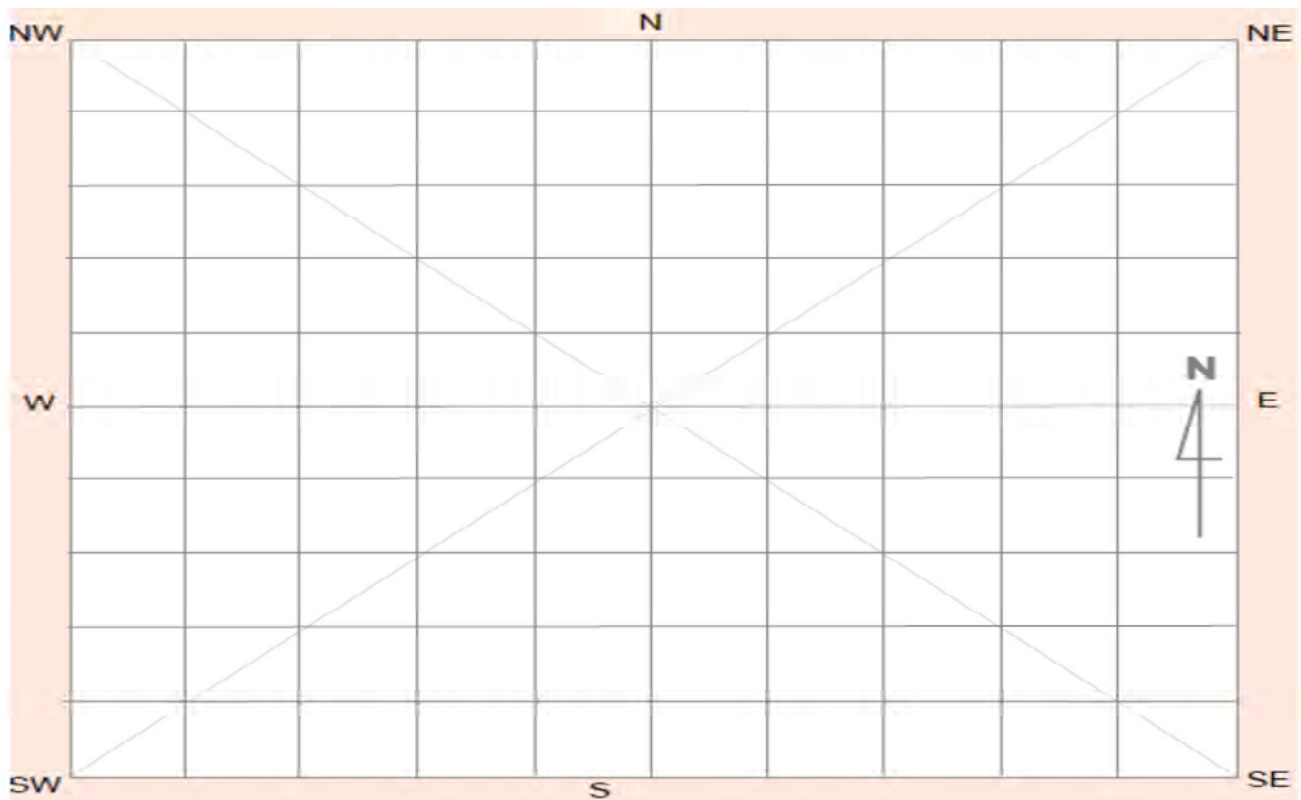
Other site information:

Area has been largely modified with grating scars identified in the vicinity of the area alongside vegetation dumps present. Culturally modified tree C is believed to be a Coolamon scar.

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
--------------------	---------------------------------	---------------------------------

1.	<input type="text" value="Artefact"/>	<input type="text" value="3"/>	<input type="text" value="400"/>	<input type="text" value="330"/>
----	---------------------------------------	--------------------------------	----------------------------------	----------------------------------

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Artefact scatter comprising a singular silcrete flake, a singular quartz flake and a tentative manuport associated with seven culturally modified trees in close proximity.

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
--------------------	---------------------------------	---------------------------------

2.	<input type="text" value="Modified Tree"/>	<input type="text" value="1"/>	<input type="text" value="100"/>	<input type="text" value="25"/>
----	--	--------------------------------	----------------------------------	---------------------------------

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text" value="15"/>	<input type="text" value="10"/>	<input type="text" value="Elongated"/>	<input type="text"/>

Description:

7 culturally modified grey/black box eucalypt trees with some showing axe marks. A: 90x30cm, 60cm high, B: 75x45x15cm, 150cm high and cir. 2.5m, C: 57x30x10cm, D: 80x25 cm, 40cm high with 10cm regrowth and cir. 2.7m, E: 60x20cm, 50cm high with 10cm regrowth and circ. 2.7m, F: measuring 90x40cm, 80cm high with 10cm regrowth, circ. 3.7m G: 100x25cm, 80cm high with 20cm regrowth and cir. 2.6m.

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
--------------------	---------------------------------	---------------------------------

3.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----	----------------------	----------------------	----------------------	----------------------

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

4.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

5.

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Box

Site photographs



Description: Location of scarred tree F and condition of surrounding landscape. View east.



Description: Overview of scarred tree D with measuring tape.



Description:

Overview of scarred tree E with measuring tape.



Description:

Overview of scarred tree C with measuring tape.

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender N/A General Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Poude	Phillipa
Organisation: EMM Consulting		
Address: Ground floor, 20 Chandos Street, St Leonards NSW 2065		
Phone: 0249074881	E-mail: pobrienpoude@emmconsulting.com.au	

Site interpretation and community statement

Discussion with Aboriginal stakeholders interpreted this site to be a potential women's site.

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

Zone:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="OBrienPounde"/>	<input type="text" value="Phillipa"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

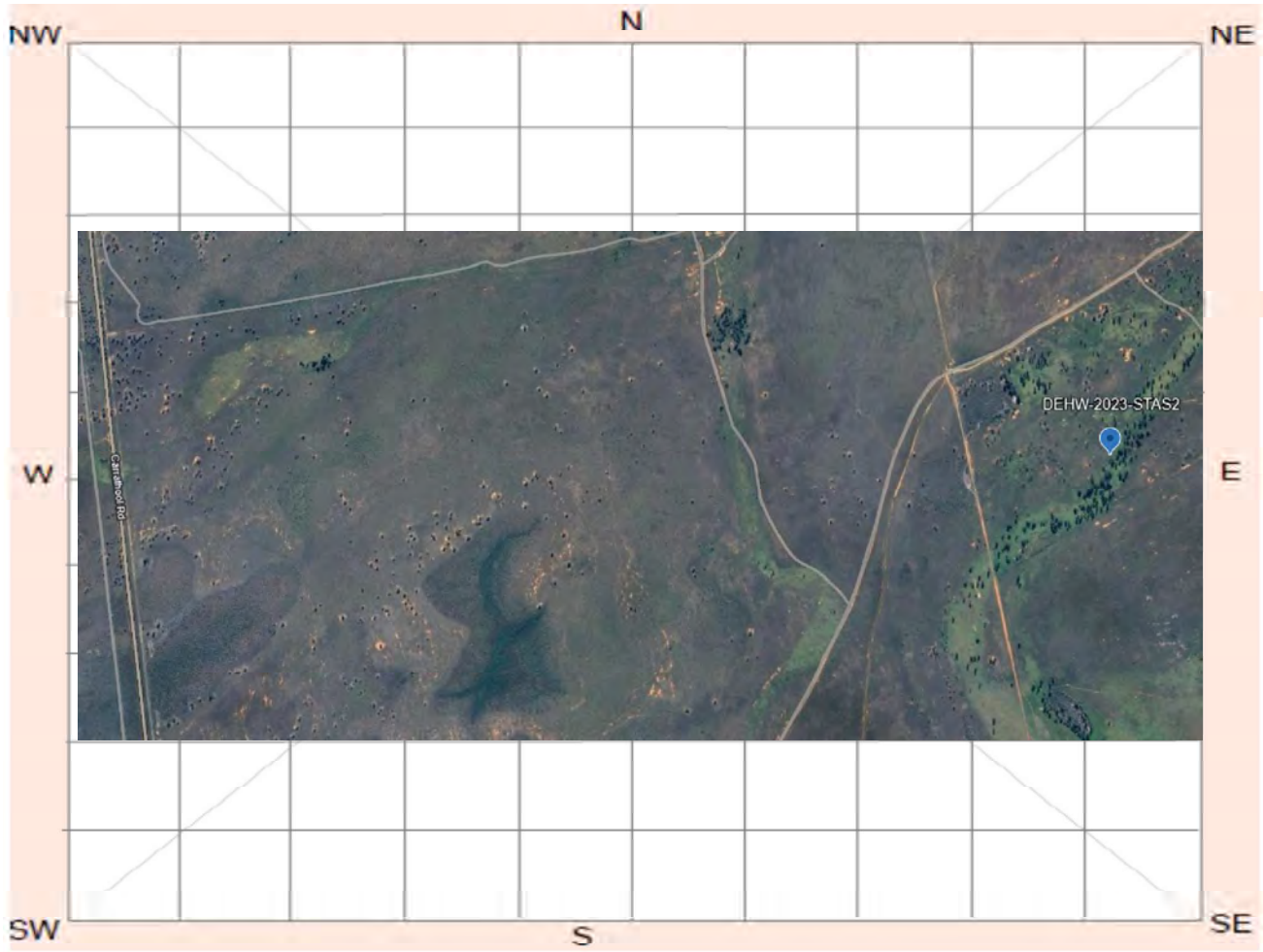
Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

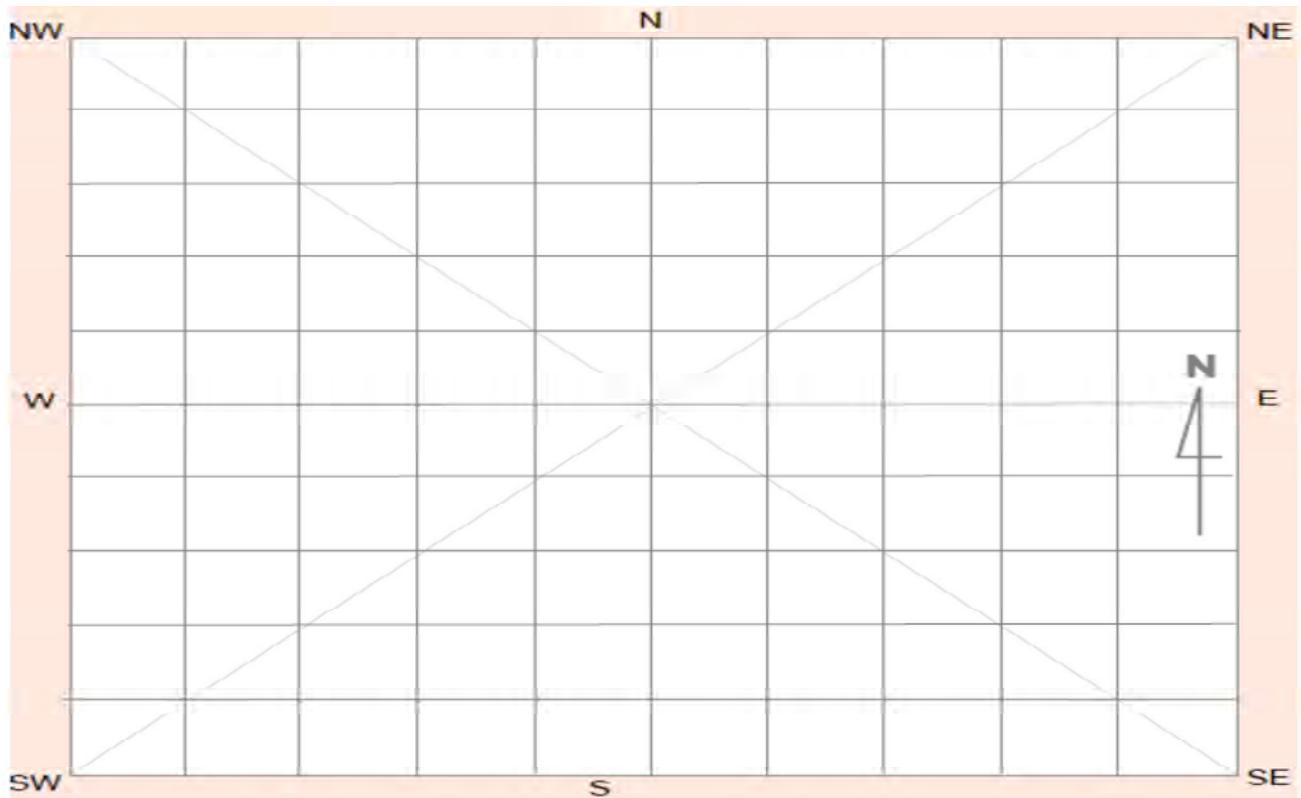
How to get to the site:

Other site information:

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

1.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Artefact scatter comprising a singular silcrete and quartz flakes associated with Ghost gum ring tree in close proximity.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

2.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="Other"/>	<input type="text"/>

Description:

Ghost gum ring tree identified on creek line. Through discussion with Aboriginal stakeholders, the tree was interpreted to be a 'Journey tree', murru (journey) line along a creek line. The ring is situated in the centre of the tree measuring 90 x 50cm, approx 1.7m from the ground with a 4-5m circumference for the tree. No scars present,. Found in proximity to silcrete flake.

Features:

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

3.

Feature condition:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

4.

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Feature condition:

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Features:

5.

Number of features Length of feature(s) extent (m) Width of feature (s) extent (m)

Feature condition:

Description:

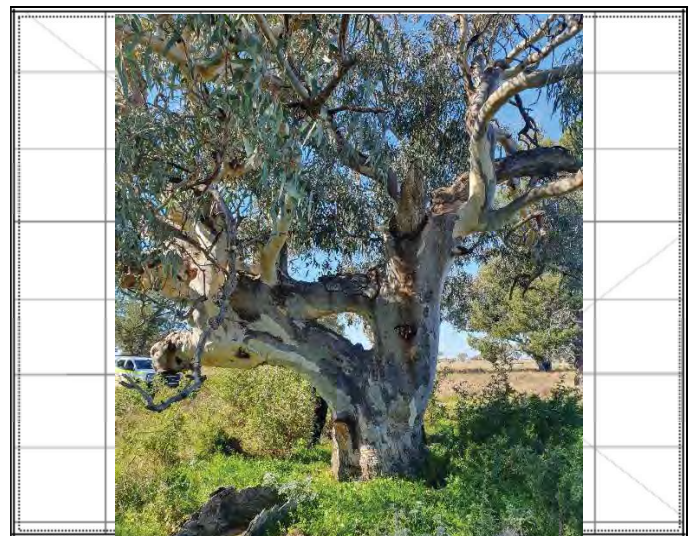
Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Other
Eucalypt

Site photographs



Description:



Description:



Description: Location of flake and condition of surrounding landscape.



Description: Overview of ring tree with measuring tape. View east.

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender N/A General Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Poude	Phillipa
Organisation:	EMM Consulting	
Address:	Ground floor, 20 Chandos Street, St Leonards NSW 2065	
Phone:	0249074881	E-mail: pobrienpoude@emmconsulting.com.au

Site interpretation and community statement

Attachment E

Field investigation

E.1 Photograph catalogue (field survey)



Dinawan Wind Survey (26)



Dinawan Wind Survey (27)



Dinawan Wind Survey (28)



Dinawan Wind Survey (29)



Dinawan Wind Survey (30)



Dinawan Wind Survey (31)



Dinawan Wind Survey (32)



Dinawan Wind Survey (33)



Dinawan Wind Survey (34)



Dinawan Wind Survey (35)



Dinawan Wind Survey (36)



Dinawan Wind Survey (37)



Dinawan Wind Survey (38)



Dinawan Wind Survey (39)



Dinawan Wind Survey (40)



Dinawan Wind Survey (41)



Dinawan Wind Survey (42)



Dinawan Wind Survey (43)



Dinawan Wind Survey (44)



Dinawan Wind Survey (45)



Dinawan Wind Survey (46)



Dinawan Wind Survey (47)



Dinawan Wind Survey (48)



Dinawan Wind Survey (49)



Dinawan Wind Survey (50)



Dinawan Wind Survey (51)



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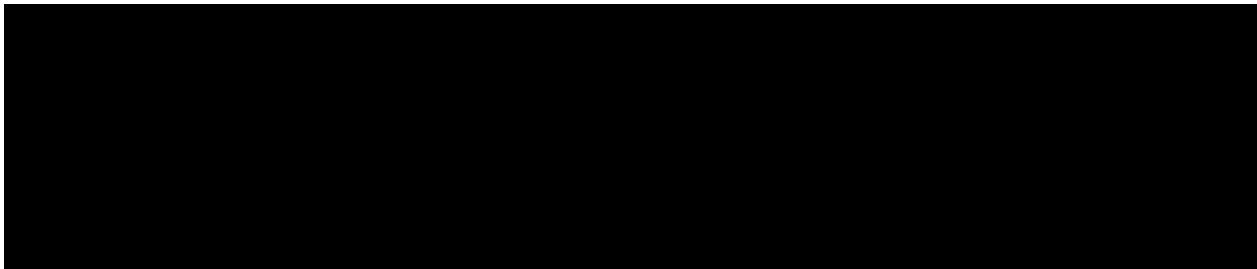
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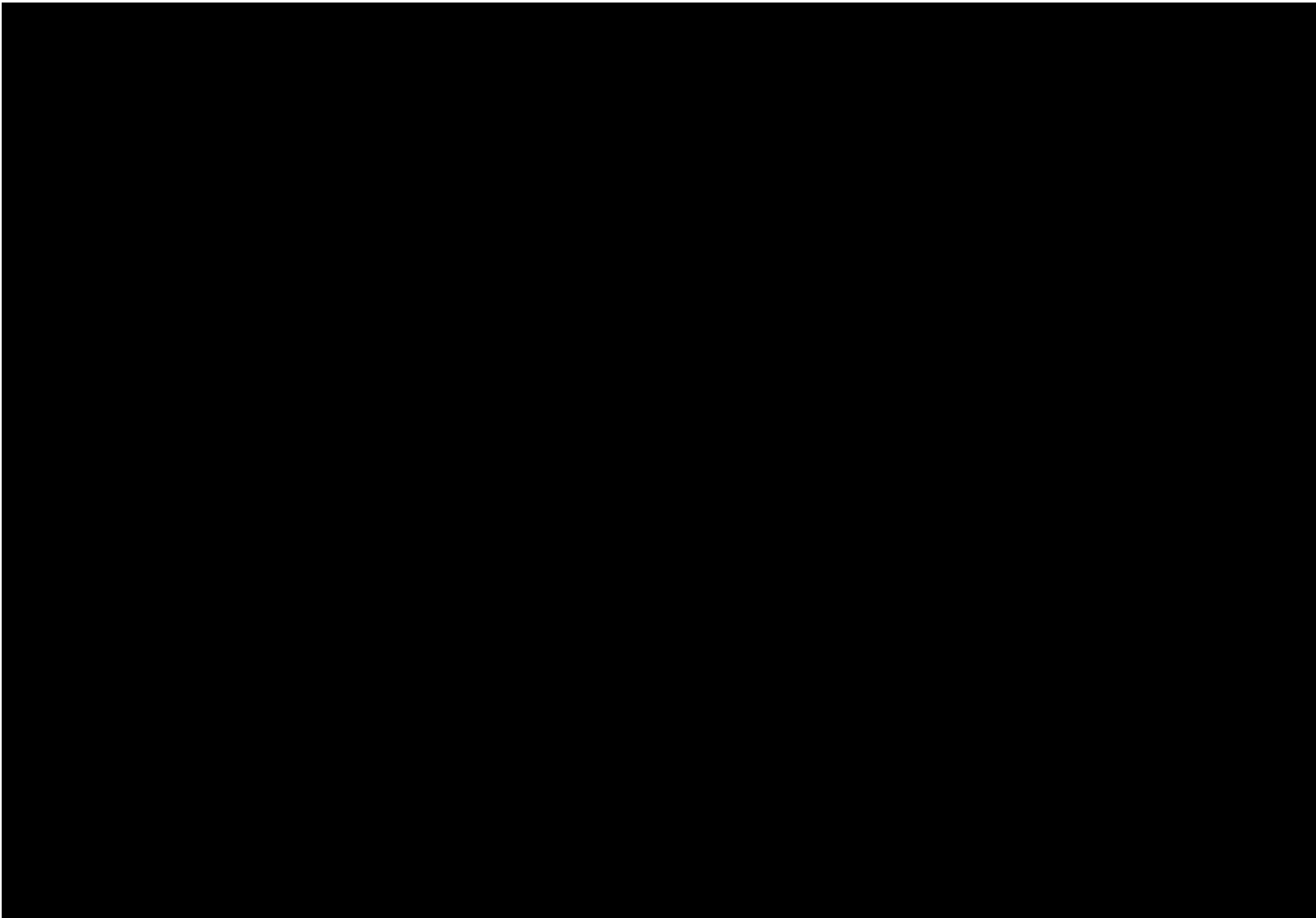


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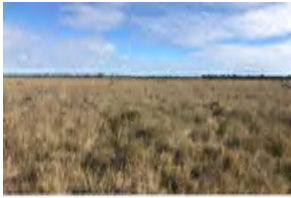
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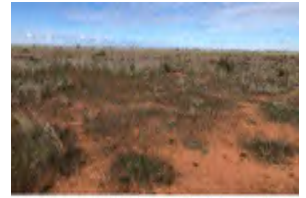
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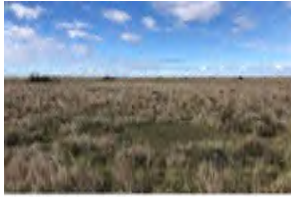
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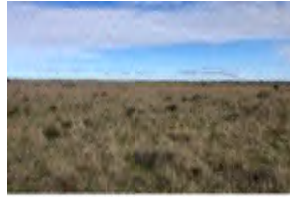
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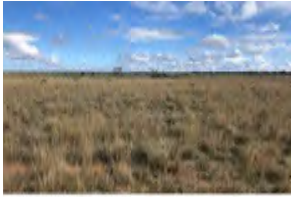
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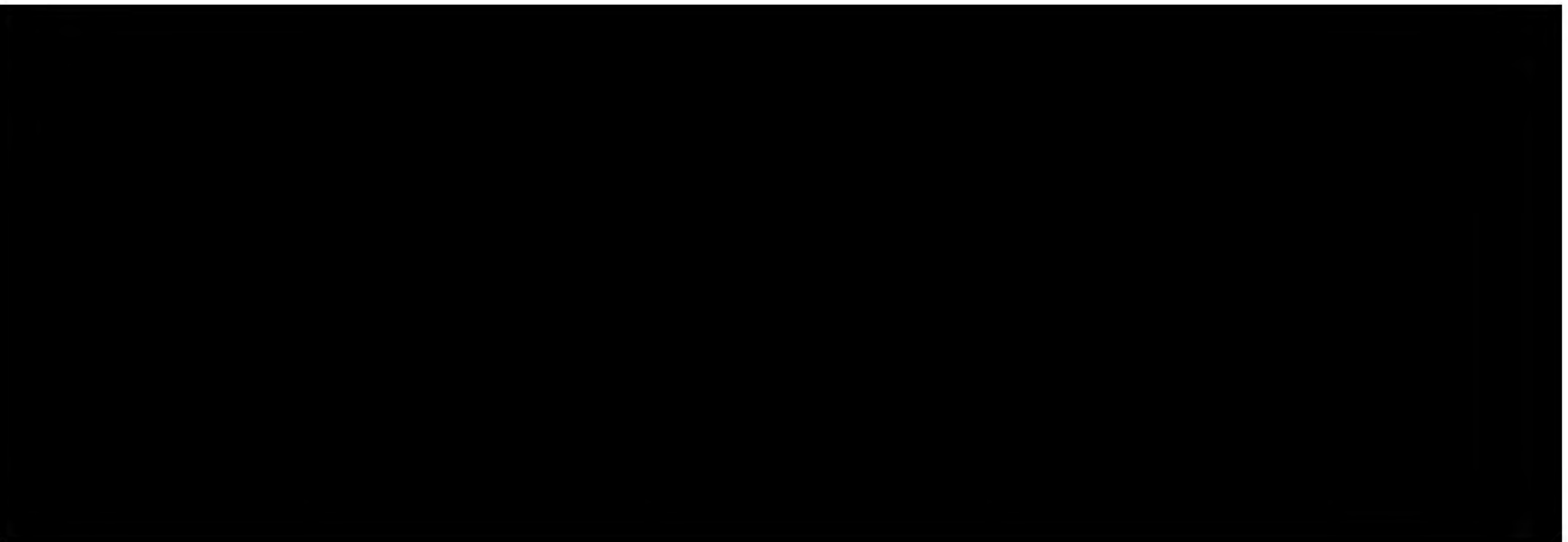
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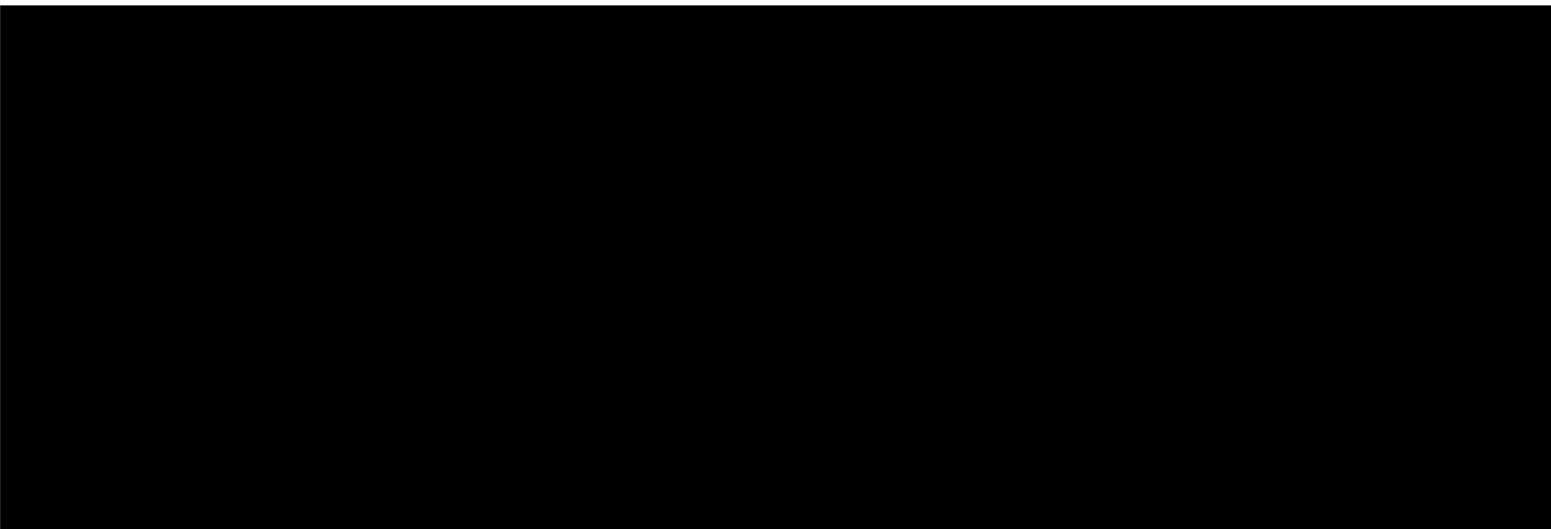


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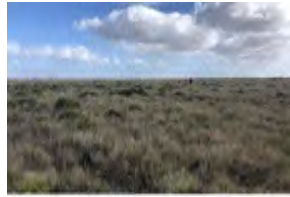
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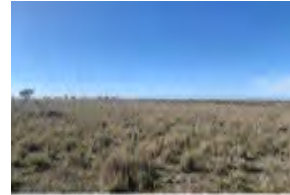
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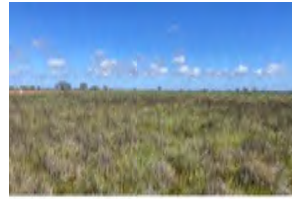
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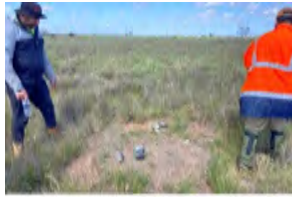
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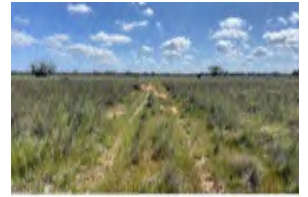
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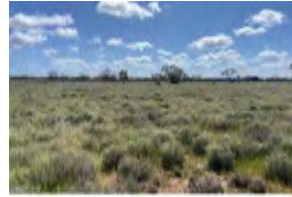
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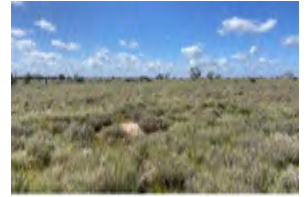
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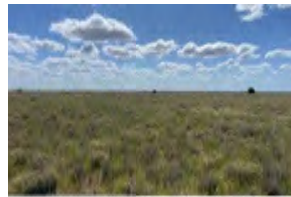
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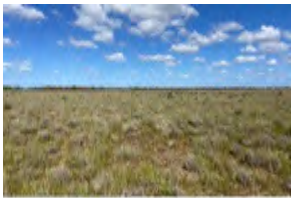
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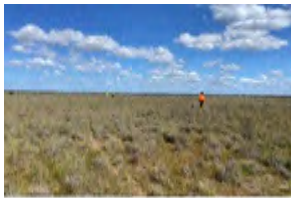
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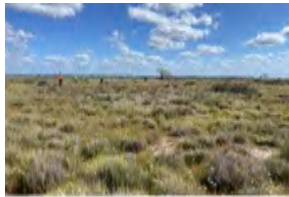
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IMG_2568

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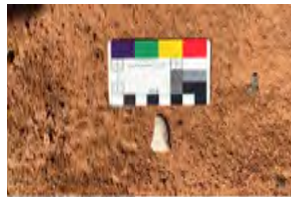
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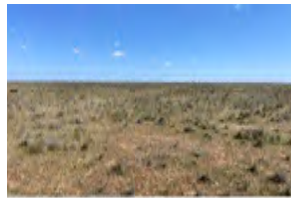
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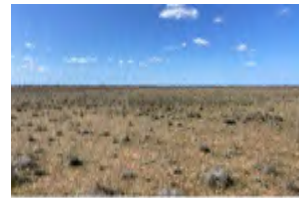
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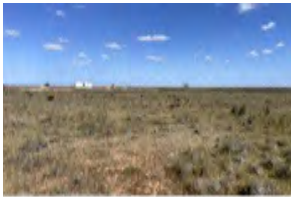
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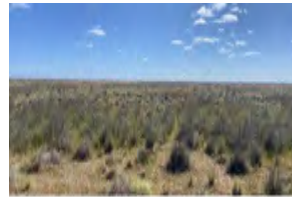
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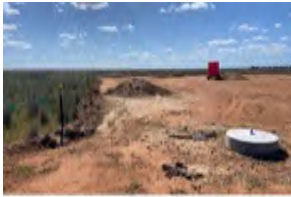
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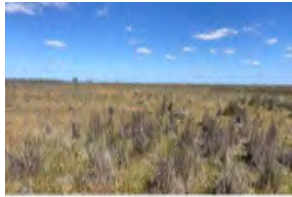
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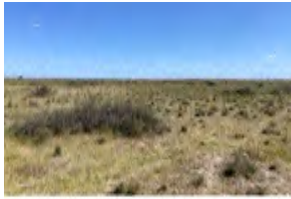
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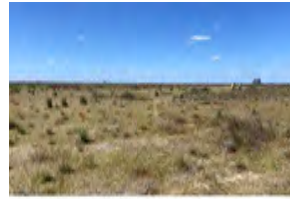
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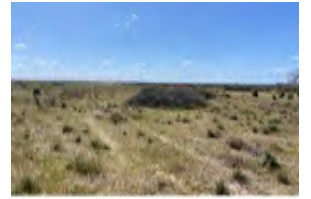
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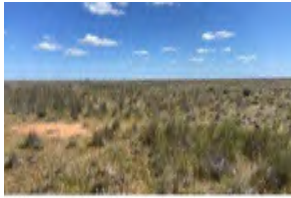
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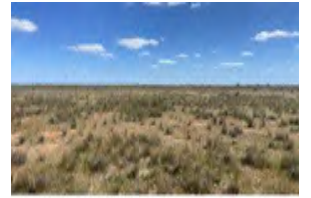
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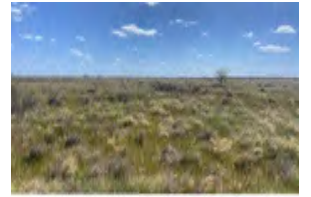
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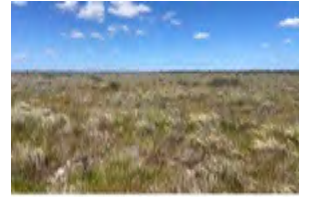
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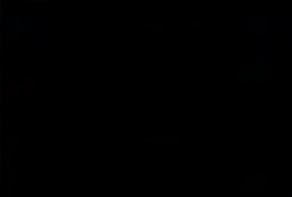
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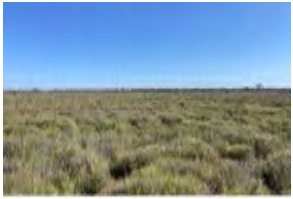
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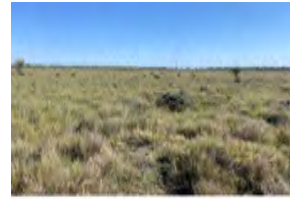
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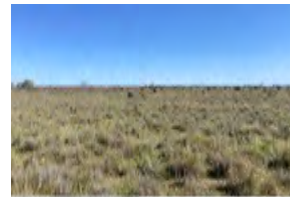
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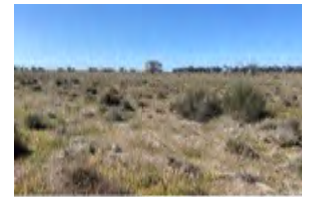
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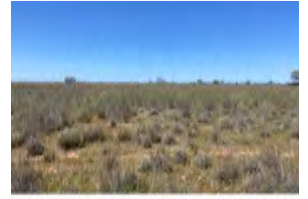
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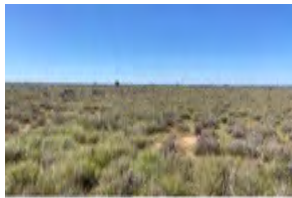
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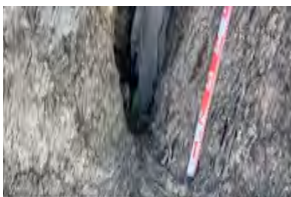
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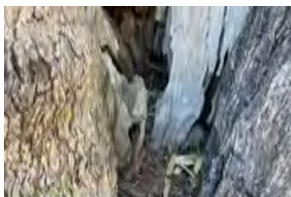
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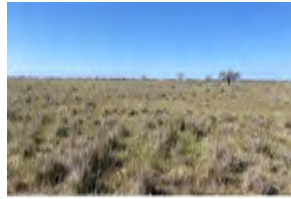
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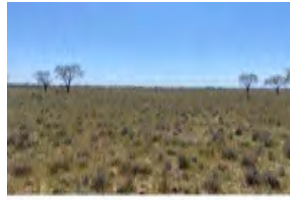
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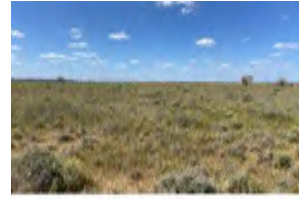
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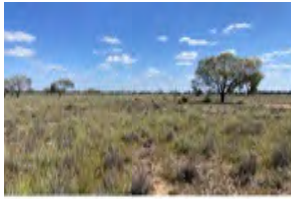
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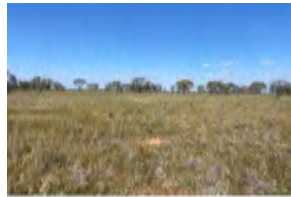
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E.2 Test pit information

Area	Test Pit	Spit 1 (0-10cm)	Spit 2 (10-20cm)	Spit 3 (20-30cm)	Spit 4 (30-40cm)	Spit 5 (40-50cm)	Spit 6 (50-60cm)	Spit 7 (60-70cm)	Spit 8 (70-80cm)	Total Count	Depth (m)	Total Spits	Notes	Length (m)	Width (m)	Volume (m³)
1.2	TP1	0	1	0						1	0.3	3		0.5	0.5	0.075
1.2	TP2 (exp)	0	0	2						2	0.3	3		0.5	0.5	0.075
1.2	TP15 (2)	0	0	0						0	0.3	3		0.5	0.5	0.075
1.2	TP16 (2)	1	0	0						1	0.3	3		0.5	0.5	0.075
1.2	TP3	0	0	0						0	0.3	3		0.5	0.5	0.075
1.2	TP4 (exp)	0	0	4	1	0				5	0.4	5		0.5	0.5	0.1
1.2	TP11 (4)	0	1	0	4	0				5	0.42	5		0.5	0.5	0.105
1.2	TP12 (4)	2	1	1	0	0				4	0.45	5		0.5	0.5	0.1125
1.2	TP13 (4)	0	0	0	0	1				1	0.45	5		0.5	0.5	0.1125
1.2	TP14 (4)	0	1	0	0					1	0.4	4		0.5	0.5	0.1
1.2	TP5	0	0	0						0	0.3	3		0.5	0.5	0.075
1.3	TP6	0	0	0						0	0.25	3		0.5	0.5	0.0625
1.3	TP7	1	0							1	0.2	2		0.5	0.5	0.05
1.3	TP8	0	0							0	0.2	2		0.5	0.5	0.05
1.1	TP9	0	0							0	0.2	2		0.5	0.5	0.05
1.1	TP10	0	1	0	0					1	0.4	4		0.5	0.5	0.1
2	TP17	0	0	0						0	0.25	3		0.5	0.5	0.0625
2	TP18	0	0	0	0					0	0.4	4		0.5	0.5	0.1
2	TP19	0	0	0						0	0.25	3		0.5	0.5	0.0625
2	TP20	0	0	0						0	0.25	3		0.5	0.5	0.0625
2	TP21	0	0	0						0	0.3	3		0.5	0.5	0.075
2	TP22	0	0	0						0	0.3	3		0.5	0.5	0.075
2	TP23	0	0	0						0	0.3	3		0.5	0.5	0.075
2	TP24	0	0	0	0	0	0			0	0.55	6		0.5	0.5	0.1375
2	TP25	0	0	0	0					0	0.35	4		0.5	0.5	0.0875
2	TP26	0	0	0						0	0.25	3		0.5	0.5	0.0625
2	TP27	0								0	0.1	1		0.5	0.5	0.025
2	TP28	0	0	0						0	0.25	3		0.5	0.5	0.0625
2	TP29	0	0							0	0.15	2		0.5	0.5	0.0375
2	TP30	0	0							0	0.2	2		0.5	0.5	0.05
2	TP31	0	0	0	0	0	0			0	0.54	6		0.5	0.5	0.135
2	TP32	0	0	0						0	0.3	3		0.5	0.5	0.075
2	TP33	0	0	0	0					0	0.35	4		0.5	0.5	0.0875
2	TP34	0	0	0	0					0	0.35	4		0.5	0.5	0.0875
4	TP35	0	1	0						1	0.3	3		0.5	0.5	0.075
4	TP36	0	1	0	0	0	0	0		1	0.65	7		0.5	0.5	0.1625
4	TP37	0	0	0	1	0	0	0		1	0.7	7		0.5	0.5	0.175
4	TP38	0	0	0	0	1	0			1	0.55	6		0.5	0.5	0.1375
4	TP39	0	0	0	0	0				0	0.45	5		0.5	0.5	0.1125
4	TP40	0	0	0	0	0	0	0		0	0.65	7		0.5	0.5	0.1625
4	TP41	0	0	3	0	0				3	0.45	5		0.5	0.5	0.1125
4	TP42	1	0	0	0	1	0			2	0.55	6		0.5	0.5	0.1375
4	TP43	0	0	0	0	1	0	0	0	1	0.8	8		0.5	0.5	0.2
4	TP44	0	0	0	0	0	0	0	0	0	0.7	7		0.5	0.5	0.175
4	TP45	0	0	0	0	0	0	0	0	0	0.8	8		0.5	0.5	0.2
4	TP46	0	0	0	0	1	0	0	0	1	0.8	8		0.5	0.5	0.2
4	TP47	0	0	0	0					0	0.4	4		0.5	0.5	0.1
4	TP48	0	0	0	0	0				0	0.5	5		0.5	0.5	0.125
4	TP49	0	0	0	0	0	1	0	0	1	0.8	8		0.5	0.5	0.2
4	DEHW-2023- HASPAD3	1								1	0.1	1		0.5	0.5	0.025
5	TP50	0	0	0	0	0	0	0	0	0	0.8	8		0.5	0.5	0.2
5	TP51	0	0	1	0	0				1	0.45	5		0.5	0.5	0.1125
5	TP52	0	0	0						0	0.3	3		0.5	0.5	0.075
5	TP53	0	0	0	0	0	0	0	0	0	0.8	8		0.5	0.5	0.2
5	TP54	0	0	0	0	0	0	0	0	0	0.8	8		0.5	0.5	0.2
5	TP55	0	0	0	0					0	0.4	4		0.5	0.5	0.1
5	TP56	0	0	0						0	0.25	3		0.5	0.5	0.0625
5	TP57	0	0	0	0	0	0	0		0	0.7	7		0.5	0.5	0.175
5	TP58	1	0							1	0.2	2		0.5	0.5	0.05
5	TP59	1	0							1	0.2	2		0.5	0.5	0.05
5	TP60	0	0							0	0.2	2		0.5	0.5	0.05
5	TP61	0								0	0.1	1		0.5	0.5	0.025
5	TP62	0	0							0	0.15	2		0.5	0.5	0.0375
5	TP63	0	0							0	0.2	2		0.5	0.5	0.05
5	TP64	0	0	0						0	0.3	3		0.5	0.5	0.075
5	TP65	0	1	0	0	0	0			1	0.6	6		0.5	0.5	0.15
5	TP66	0	0	0	0	0				0	0.5	5		0.5	0.5	0.125
6	TP67	0	0							0	0.2	2		0.5	0.5	0.05
6	TP68	0	0							0	0.15	2		0.5	0.5	0.0375
6	TP69	0	0							0	0.15	2		0.5	0.5	0.0375
6	TP70	0	0	0						0	0.25	3		0.5	0.5	0.0625

Area	Test Pit	Spit 1 (0-10cm)	Spit 2 (10-20cm)	Spit 3 (20-30cm)	Spit 4 (30-40cm)	Spit 5 (40-50cm)	Spit 6 (50-60cm)	Spit 7 (60-70cm)	Spit 8 (70-80cm)	Total Count	Depth (m)	Total Spits	Notes	Length (m)	Width (m)	Volume (m³)
6	TP71	0	0							0	0.15	2		0.5	0.5	0.0375
6	TP72	0	0							0	0.2	2		0.5	0.5	0.05
6	TP73	0								0	0.1	1		0.5	0.5	0.025
6	TP74	0	0							0	0.15	2		0.5	0.5	0.0375
6	TP75	0	0							0	0.2	2		0.5	0.5	0.05
6	TP76	0								0	0.1	1		0.5	0.5	0.025
6	TP77	1	0							1	0.15	2		0.5	0.5	0.0375
6	TP78	0								0	0.1	1		0.5	0.5	0.025
6	TP79	0								0	0.1	1		0.5	0.5	0.025
6	TP80	0								0	0.1	1		0.5	0.5	0.025
6	TP81	0	0							0	0.2	2		0.5	0.5	0.05
6	TP82	0								0	0.1	1		0.5	0.5	0.025
6	TP83	0	0							0	0.2	2		0.5	0.5	0.05
6	TP84	0	0							0	0.15	2		0.5	0.5	0.0375
6	TP85	0								0	0.1	1		0.5	0.5	0.025
3	TP86	0								0	0.1	1		0.5	0.5	0.025
3	TP87	0								0	0.1	1		0.5	0.5	0.025
3	TP88	0	0							0	0.15	2		0.5	0.5	0.0375
3	TP89	0	0							0	0.2	2		0.5	0.5	0.05
3	TP90	0	0							0	0.2	2		0.5	0.5	0.05
3	TP91	0	0							0	0.2	2		0.5	0.5	0.05
3	TP92	0								0	0.1	1		0.5	0.5	0.025
3	TP93	0	0							0	0.2	2		0.5	0.5	0.05
3	TP94	0	0	0						0	0.25	3		0.5	0.5	0.0625
3	TP95	1	0	0						1	0.25	3		0.5	0.5	0.0625
3	TP96	0	0	0						0	0.25	3		0.5	0.5	0.0625
3	TP97	0	0							0	0.2	2		0.5	0.5	0.05
Total		10	8	11	6	5	1	0	0	41	0.324591837	337	X not excavated			7.9525

E.3 Photograph catalogue (excavation)



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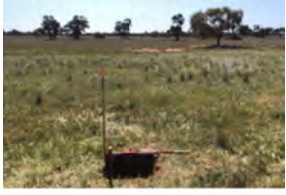
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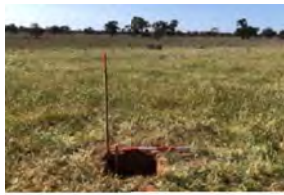
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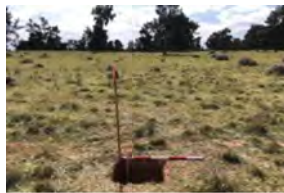
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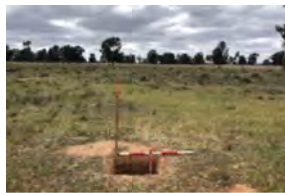
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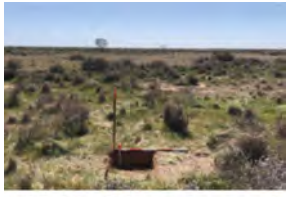
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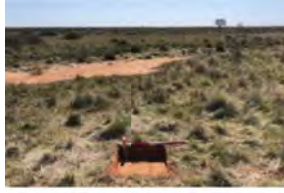
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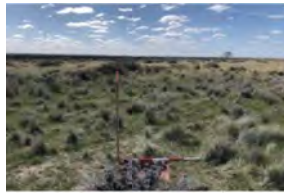
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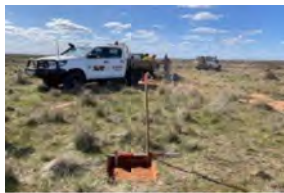
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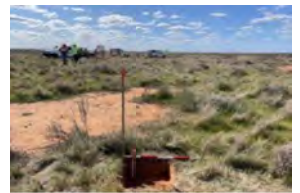
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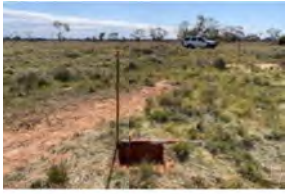
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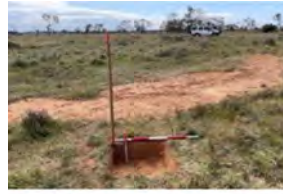
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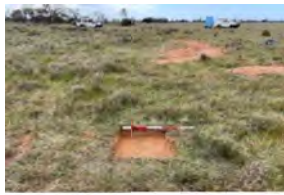
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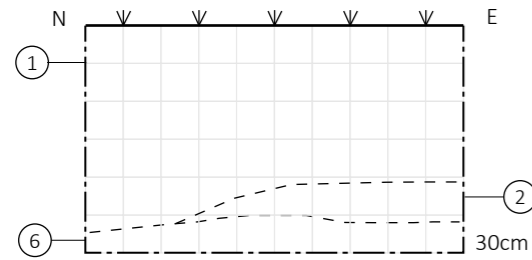
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nawan Wind Test Excavation |

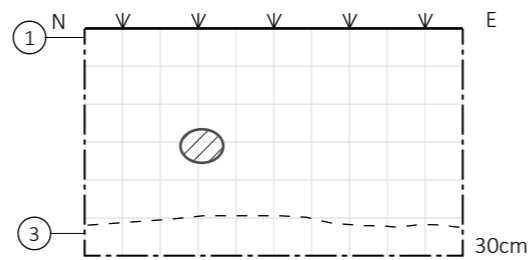
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E.4 Section drawings

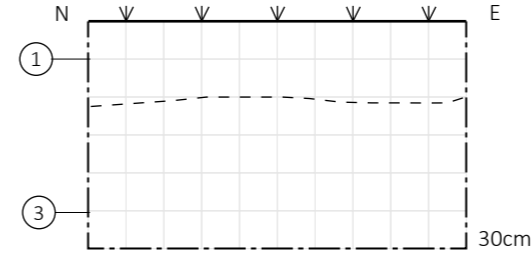
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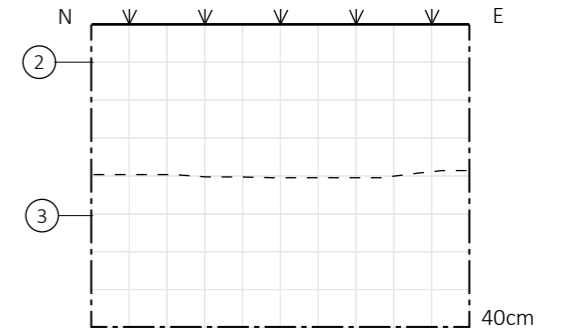
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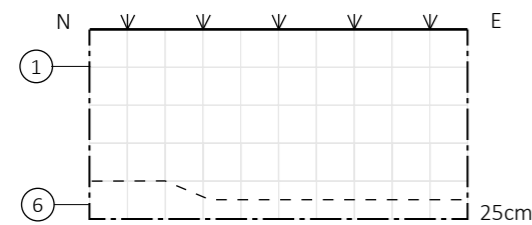
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NORTH SECTION



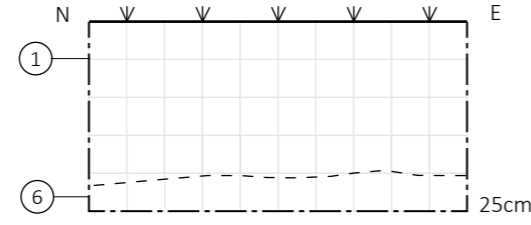
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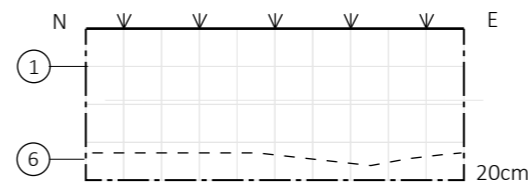
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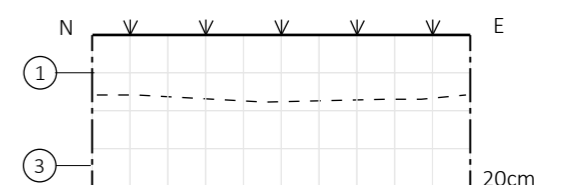
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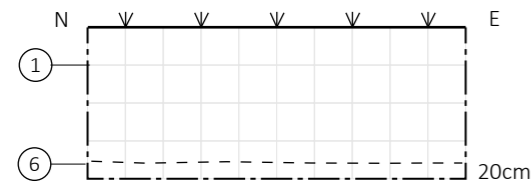
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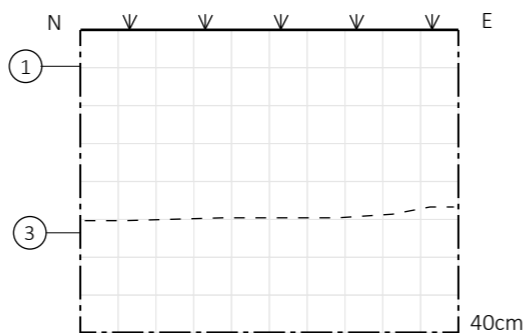
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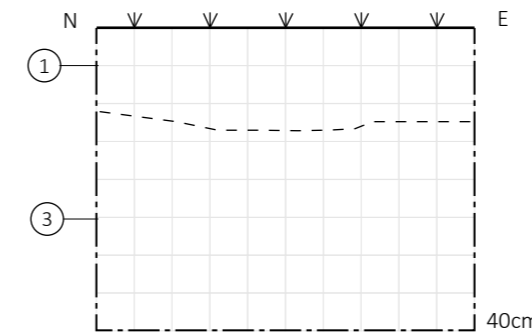
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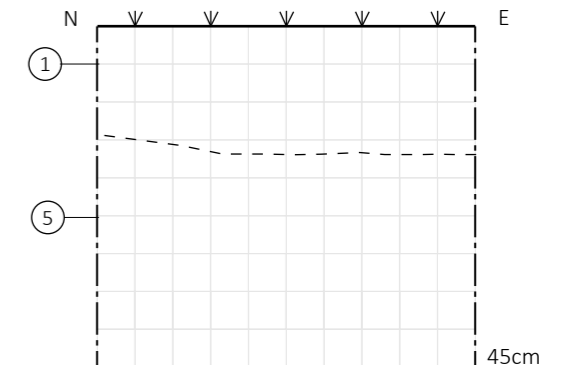
TP 10
NORTH SECTION



TP 11
NORTH SECTION



TP 12
NORTH SECTION



- ① FINE GRAINED PALE BROWN SILT
- ② PALE BROWN SILT WITH QUARTZ SAND FACTION
- ③ DIFFUSED BROWN SILTY CLAY LOAM

- ④ COMPACTED AGGREGATED SILTY CLAY
- ⑤ GREY BROWN CLAY LOAM
- ⑥ COMPACT RED BROWN CLAY

EMM CONSULTANTS PTY LTD
Ground floor, 20 Chandos Street
St Leonards NSW 2065
St Leonards NSW 1590
T 02 9493 9500
E info@emmconsulting.com.au
www.emmconsulting.com.au

VERSION	DESCRIPTION	DATE
1.0	DRAFT	21/09/2023

LEGEND

	PIT BOUNDARY
	SOIL PROFILE BOUNDARY
	DIFFUSE SOIL PROFILE BOUNDARY
	MED/LARGE ROOTS
	STONE INCLUSIONS

	INFUSED CHARCOAL
	CLAY BALLS
	BURROW
	CALCIUM CARBONATE NODULE
	OSL SAMPLE

CLIENT
SPARKES RENEWABLES

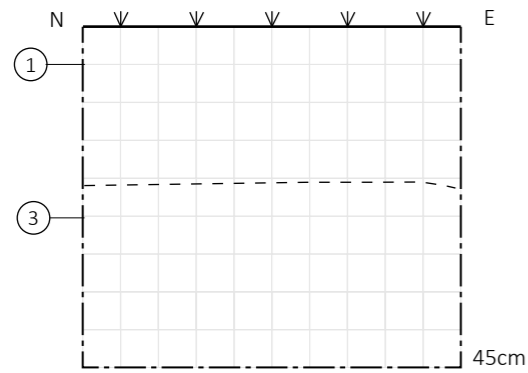
PROJECT
DINAWAN SOLAR FARM

TITLE
TEST PIT SECTION DRAWINGS

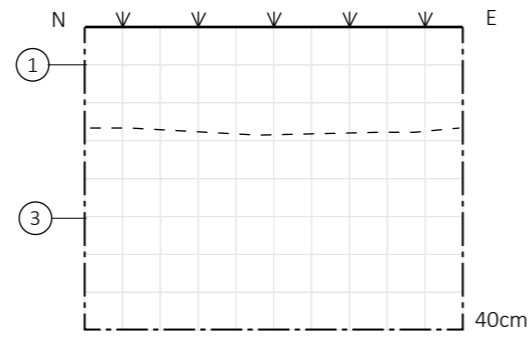
TP SECTION DRAWINGS

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1:10	SE/	001
PROJECT NO. E220305	VERSION 1.0	

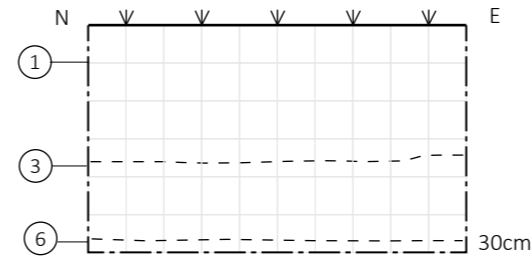
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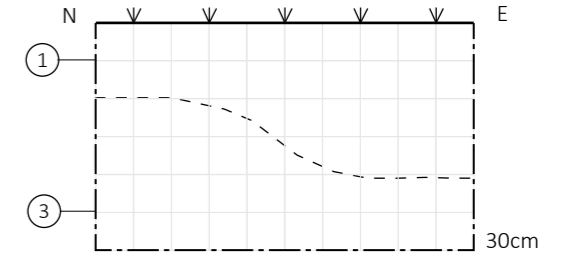
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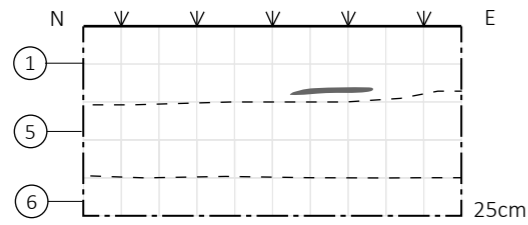
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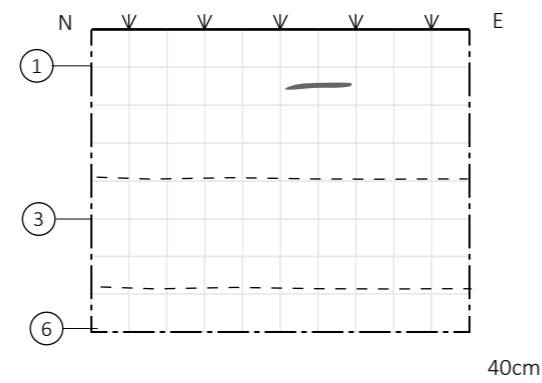
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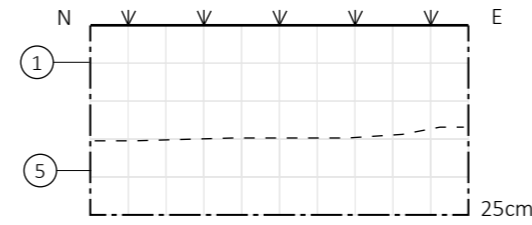
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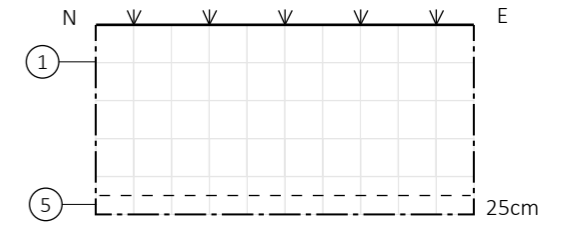
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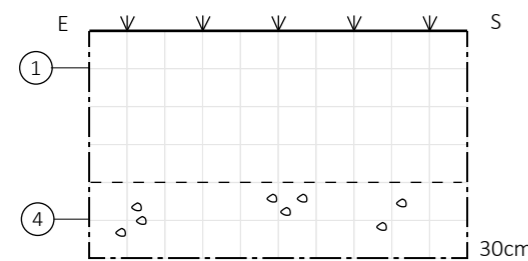
TP 19
NORTH SECTION



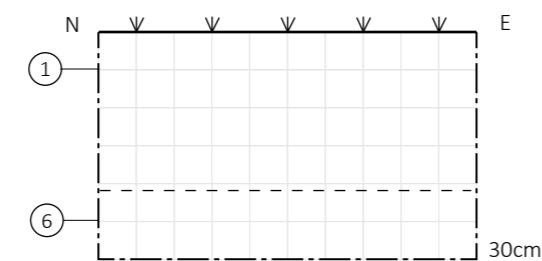
TP 20
NORTH SECTION



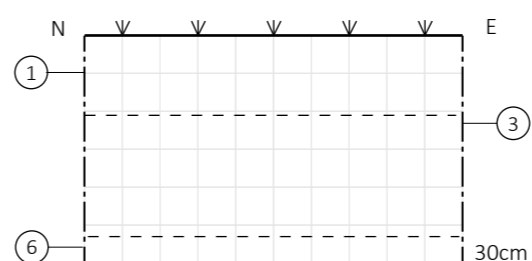
TP 21
EAST SECTION



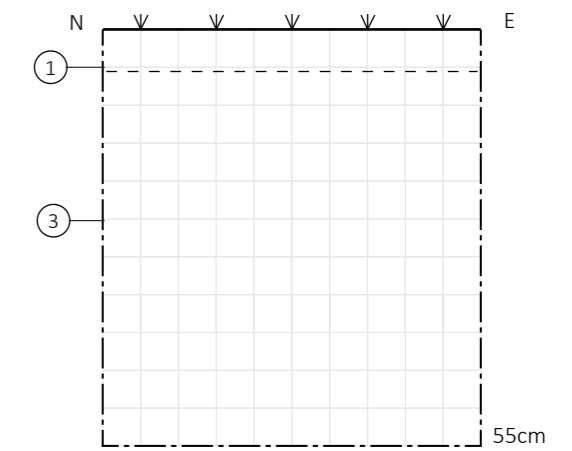
TP 22
NORTH SECTION



TP 23
NORTH SECTION



TP 24
NORTH SECTION



- ① FINE GRAINED PALE BROWN SILT
- ② PALE BROWN SILT WITH QUARTZ SAND FACTION
- ③ DIFFUSED BROWN SILTY CLAY LOAM

- ④ COMPACTED AGGREGATED SILTY CLAY
- ⑤ GREY BROWN CLAY LOAM
- ⑥ COMPACT RED BROWN CLAY

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VERSION	DESCRIPTION	DATE
1.0	DRAFT	21/09/2023

LEGEND

	PIT BOUNDARY
	SOIL PROFILE BOUNDARY
	DIFFUSE SOIL PROFILE BOUNDARY
	MED/LARGE ROOTS
	STONE INCLUSIONS

	INFUSED CHARCOAL
	CLAY BALLS
	BURROW
	CALCIUM CARBONATE NODULE
	OSL SAMPLE

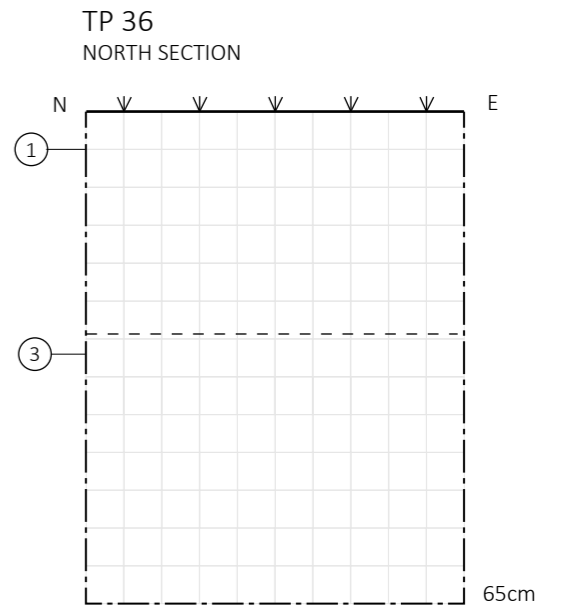
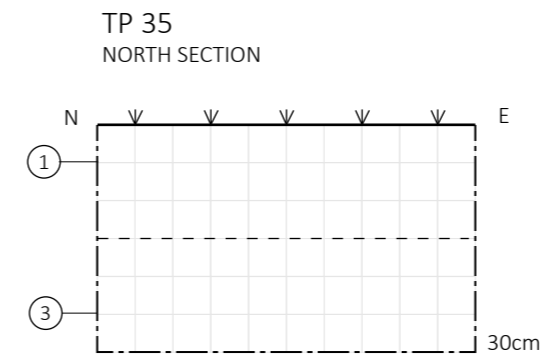
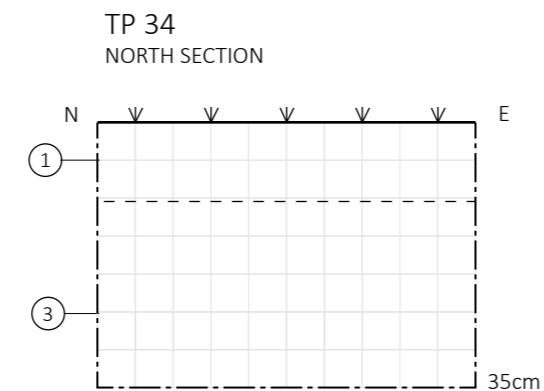
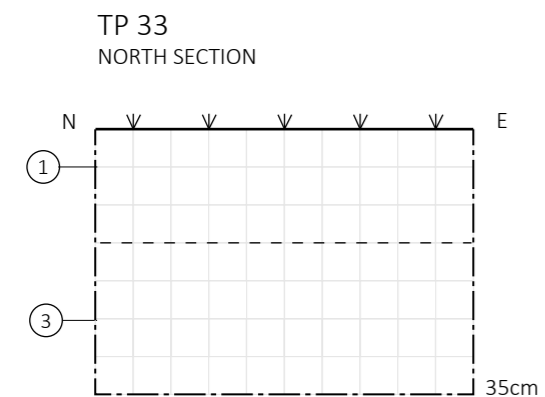
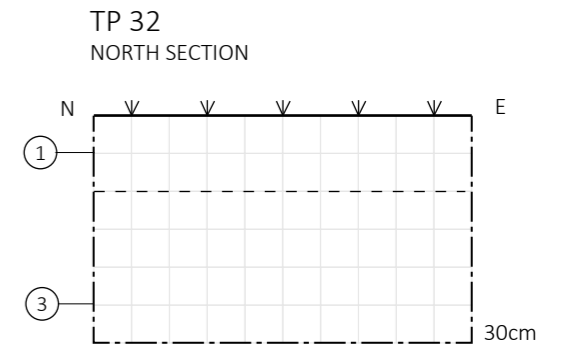
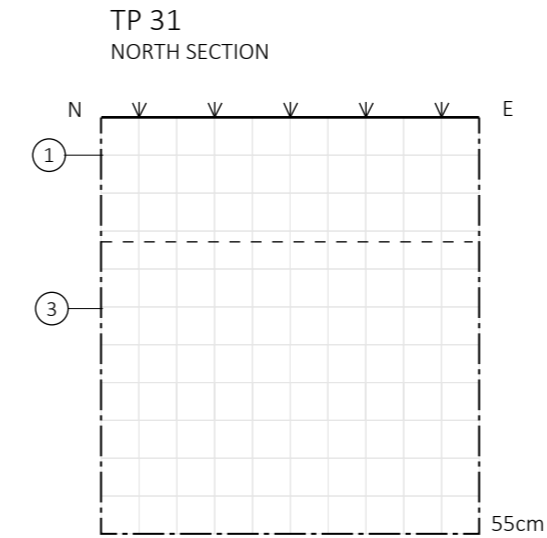
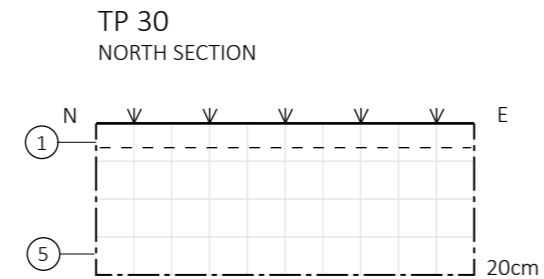
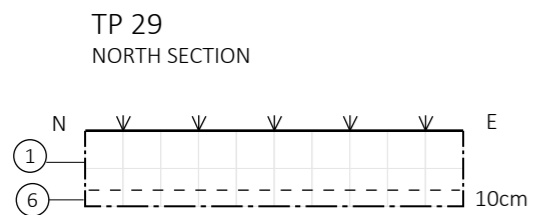
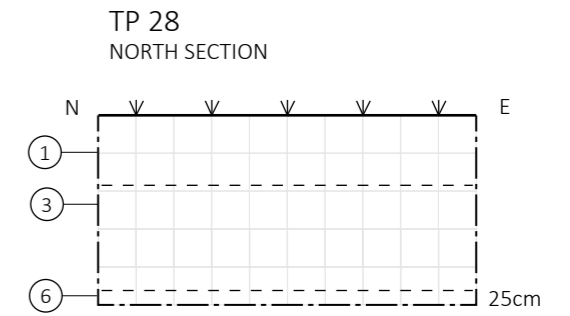
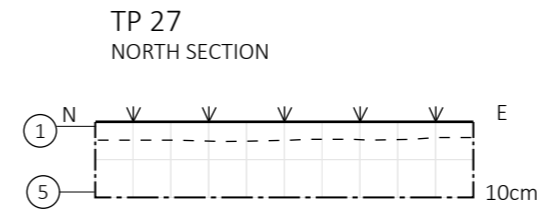
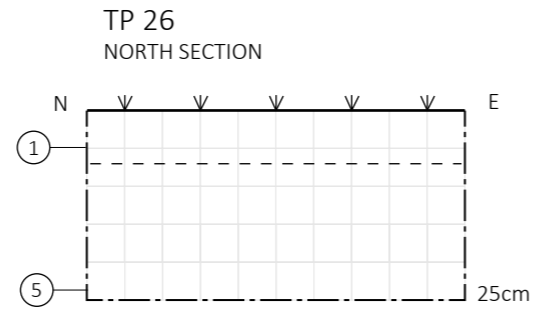
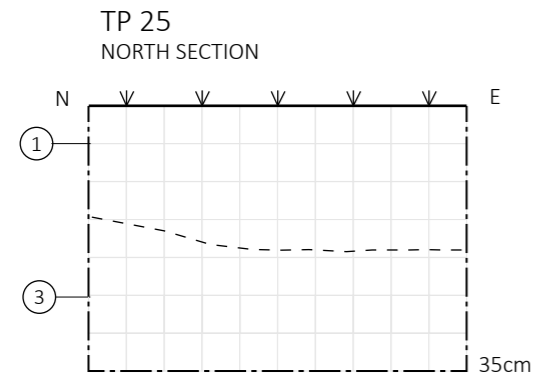
CLIENT
SPARKES RENEWABLES

PROJECT
DINAWAN SOLAR FARM

TITLE
TEST PIT SECTION DRAWINGS

TP SECTION DRAWINGS

SCALE	DRAWN/CHECK	DRAWING NO.
1:10	SE/	002
PROJECT NO. E220305	VERSION 1.0	



- ① FINE GRAINED PALE BROWN SILT
- ② PALE BROWN SILT WITH QUARTZ SAND FACTION
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LEGEND

	PIT BOUNDARY
	SOIL PROFILE BOUNDARY
	DIFFUSE SOIL PROFILE BOUNDARY
	MED/LARGE ROOTS
	STONE INCLUSIONS

	INFUSED CHARCOAL
	CLAY BALLS
	BURROW
	CALCIUM CARBONATE NODULE
	OSL SAMPLE

CLIENT
SPARKES RENEWABLES

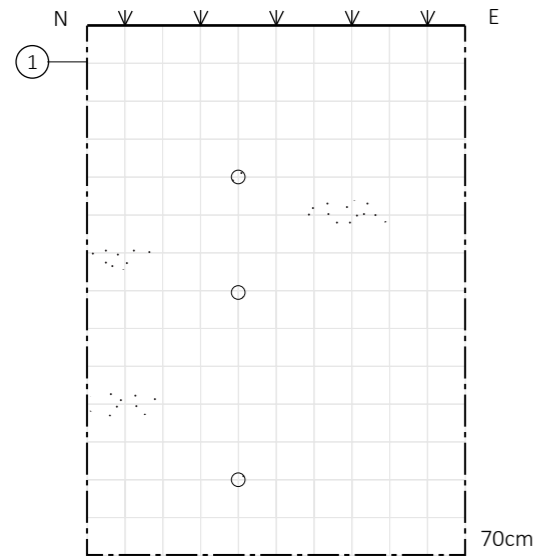
PROJECT
DINAWAN SOLAR FARM

TITLE
TEST PIT SECTION DRAWINGS

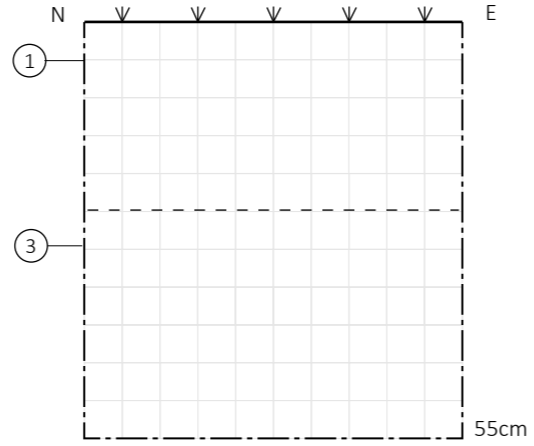
TP SECTION DRAWINGS

SCALE	DRAWN/CHECK	DRAWING NO.
1:10	SE/	003
PROJECT NO. E220305	VERSION 1.0	

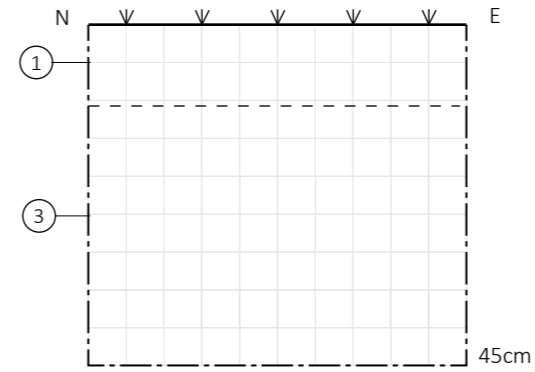
TP 37
NORTH SECTION



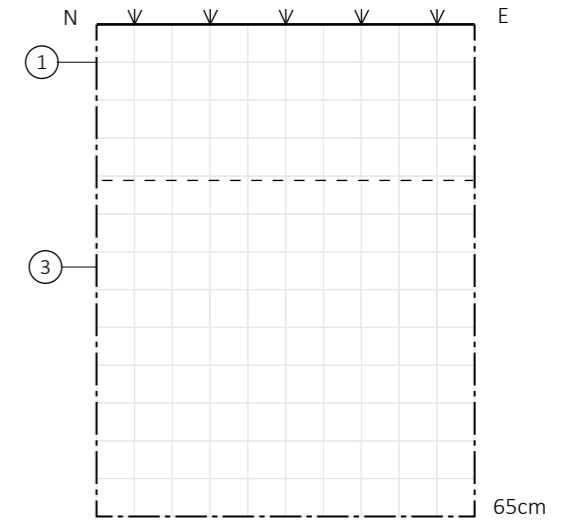
TP 38
NORTH SECTION



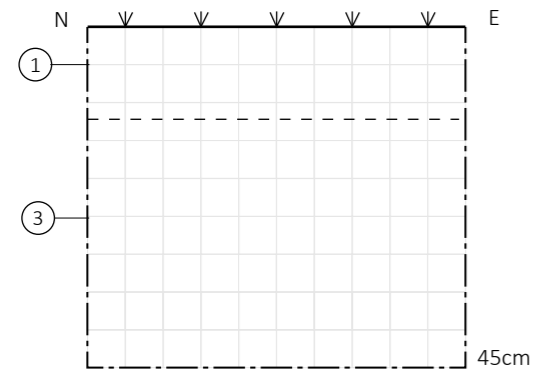
TP 39
NORTH SECTION



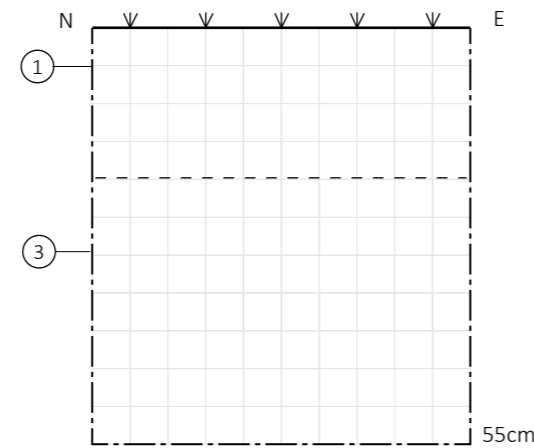
TP 40
NORTH SECTION



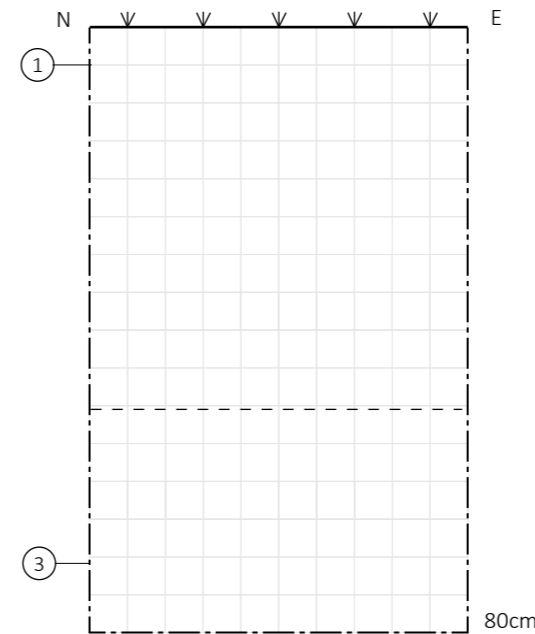
TP 41
NORTH SECTION



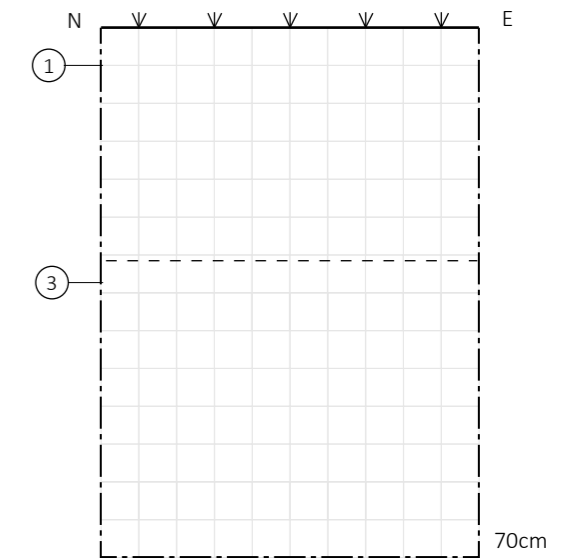
TP 42
NORTH SECTION



TP 43
NORTH SECTION



TP 44
NORTH SECTION



- ① FINE GRAINED PALE BROWN SILT
- ② PALE BROWN SILT WITH QUARTZ SAND FACTION
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	INFUSED CHARCOAL
	CLAY BALLS
	BURROW
	CALCIUM CARBONATE NODULE
	OSL SAMPLE

CLIENT
SPARKES RENEWABLES

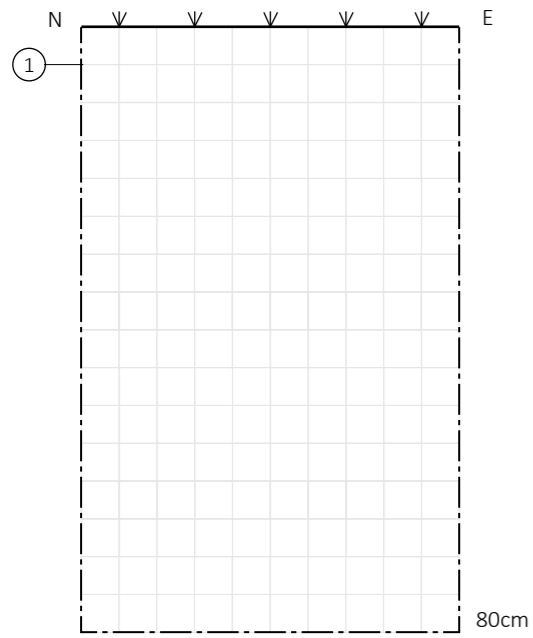
PROJECT
DINAWAN SOLAR FARM

TITLE
TEST PIT SECTION DRAWINGS

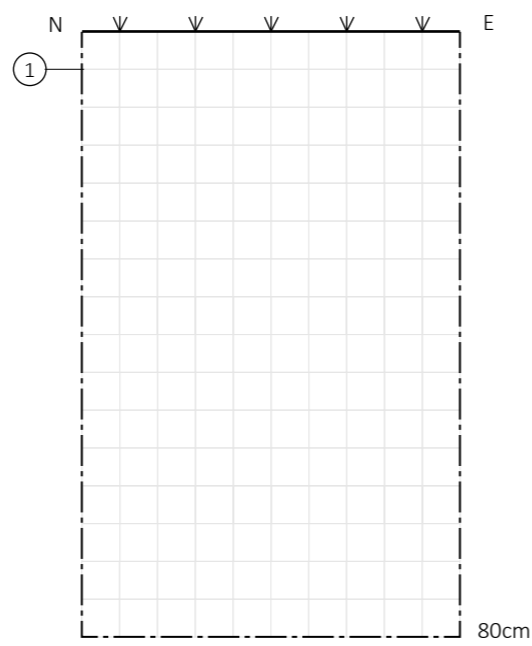
TP SECTION DRAWINGS

SCALE	DRAWN/CHECK	DRAWING NO.
1:10	SE/	004
PROJECT NO. E220305	VERSION 1.0	

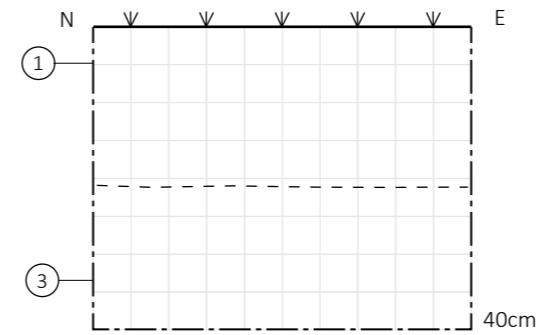
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NORTH SECTION



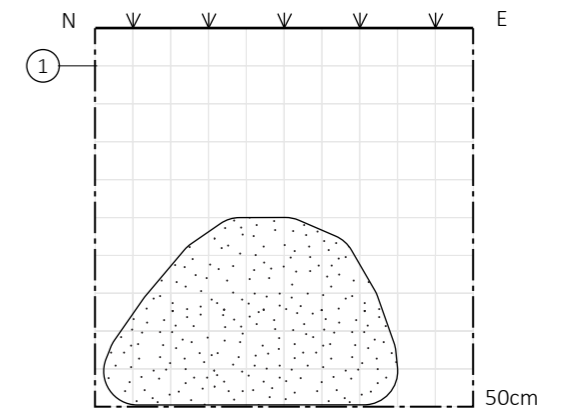
TP 46
NORTH SECTION



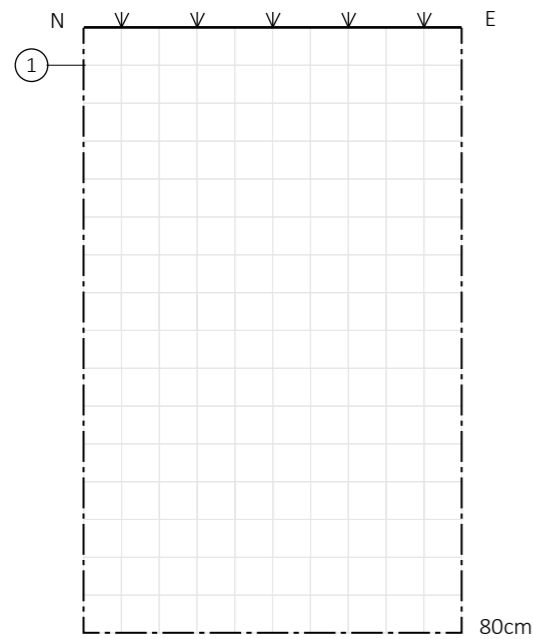
TP 47
NORTH SECTION



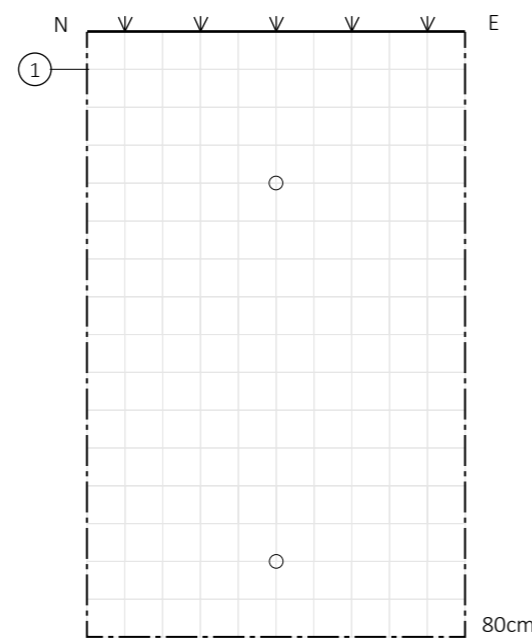
TP 48
NORTH SECTION



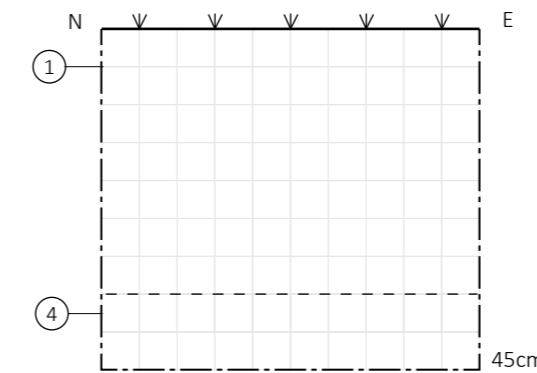
TP 49
NORTH SECTION



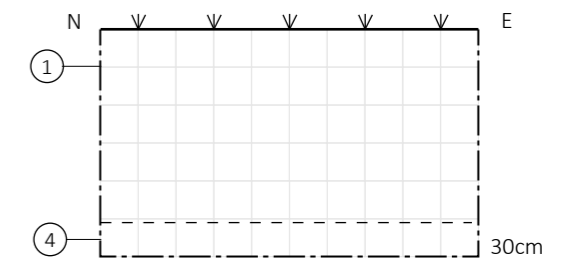
TP 50
NORTH SECTION



TP 51
NORTH SECTION



TP 52
NORTH SECTION



- ① FINE GRAINED PALE BROWN SILT
- ② PALE BROWN SILT WITH QUARTZ SAND FACTION
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	CLAY BALLS
	BURROW
	CALCIUM CARBONATE NODULE
	OSL SAMPLE

CLIENT
SPARKES RENEWABLES

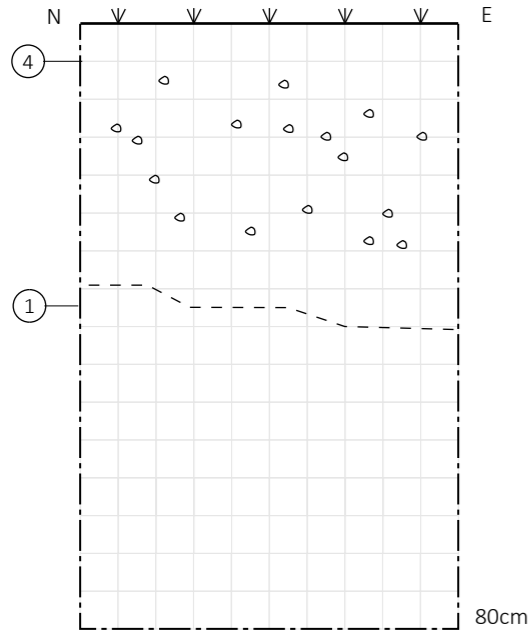
PROJECT
DINAWAN SOLAR FARM

TITLE
TEST PIT SECTION DRAWINGS

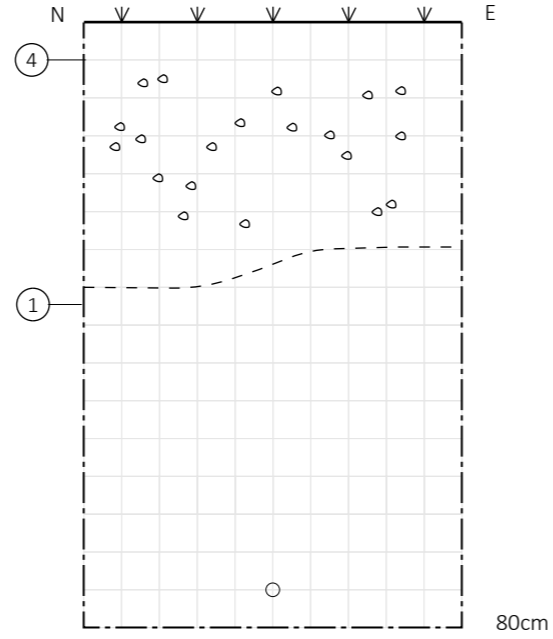
TP SECTION DRAWINGS

SCALE	DRAWN/CHECK	DRAWING NO.
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PROJECT NO. E220305	VERSION 1.0	

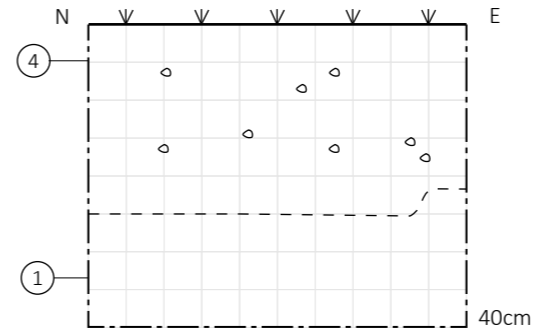
TP 53
NORTH SECTION



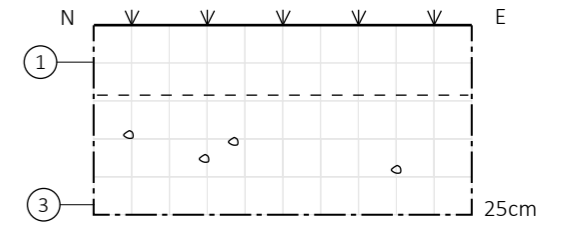
TP 54
NORTH SECTION



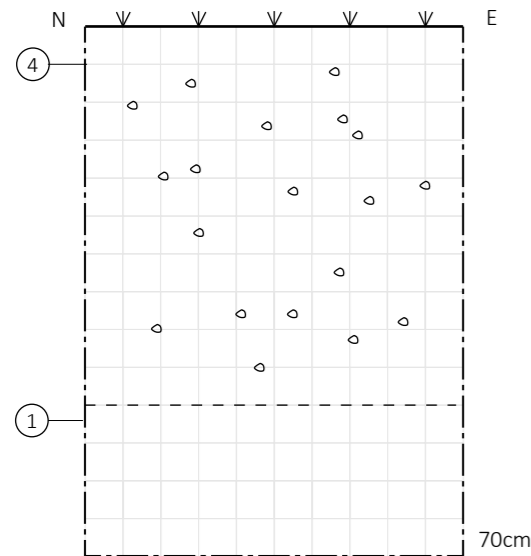
TP 55
NORTH SECTION



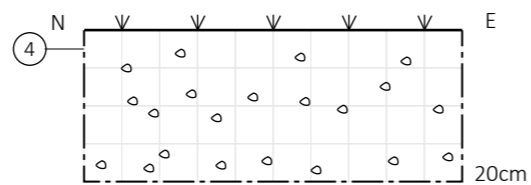
TP 56
NORTH SECTION



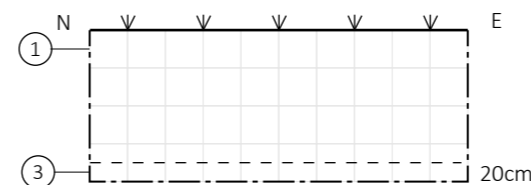
TP 57
NORTH SECTION



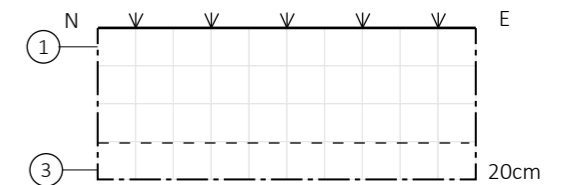
TP 58
NORTH SECTION



TP 59
NORTH SECTION



TP 60
NORTH SECTION



- ① FINE GRAINED PALE BROWN SILT
- ② PALE BROWN SILT WITH QUARTZ SAND FACTION
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	INFUSED CHARCOAL
	CLAY BALLS
	BURROW
	CALCIUM CARBONATE NODULE
	OSL SAMPLE

CLIENT
SPARKES RENEWABLES

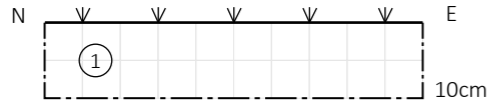
PROJECT
DINAWAN SOLAR FARM

TITLE
TEST PIT SECTION DRAWINGS

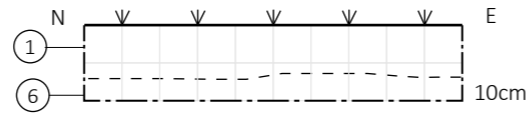
TP SECTION DRAWINGS

SCALE	DRAWN/CHECK	DRAWING NO.
1:10	SE/	006
PROJECT NO. E220305	VERSION 1.0	

TP 61
NORTH SECTION



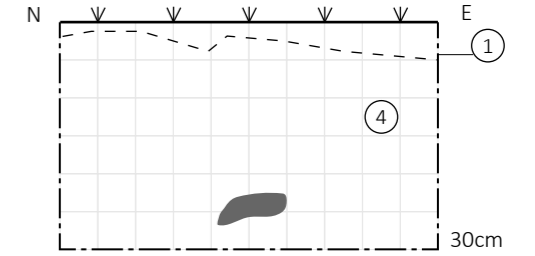
TP 62
NORTH SECTION



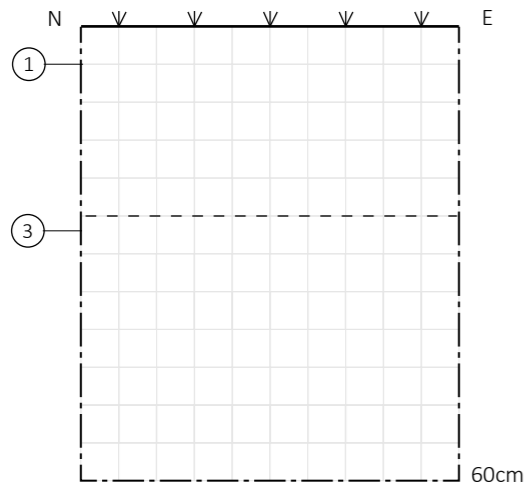
TP 63
NORTH SECTION



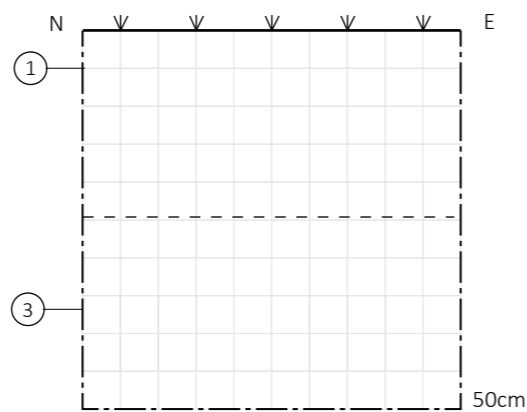
TP 64
NORTH SECTION



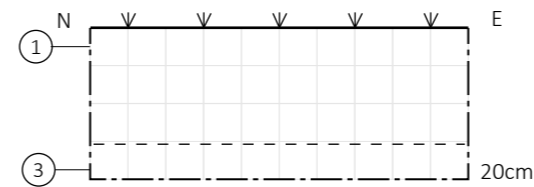
TP 65
NORTH SECTION



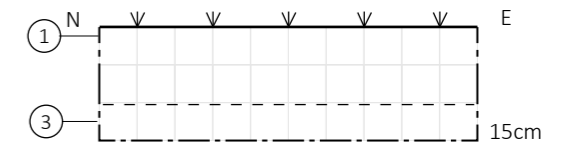
TP 66
NORTH SECTION



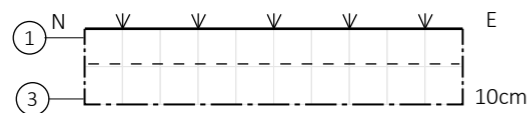
TP 67
NORTH SECTION



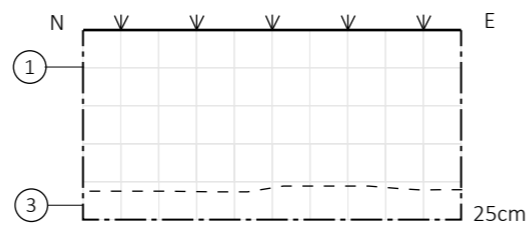
TP 68
NORTH SECTION



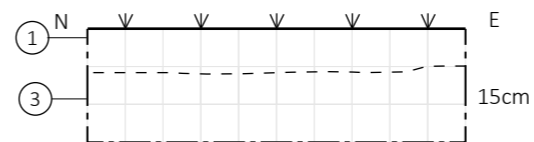
TP 69
NORTH SECTION



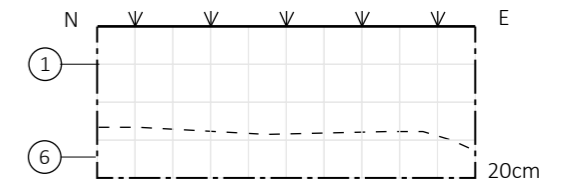
TP 70
NORTH SECTION



TP 71
NORTH SECTION



TP 72
NORTH SECTION



- ① FINE GRAINED PALE BROWN SILT
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	STONE INCLUSIONS

	INFUSED CHARCOAL
	CLAY BALLS
	BURROW
	CALCIUM CARBONATE NODULE
	OSL SAMPLE

CLIENT
SPARKES RENEWABLES

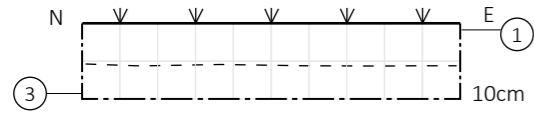
PROJECT
DINAWAN SOLAR FARM

TITLE
TEST PIT SECTION DRAWINGS

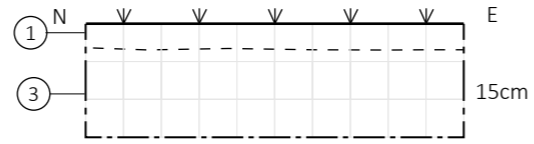
TP SECTION DRAWINGS

SCALE	DRAWN/CHECK	DRAWING NO.
1:10	SE/	007
PROJECT NO. E220305	VERSION 1.0	

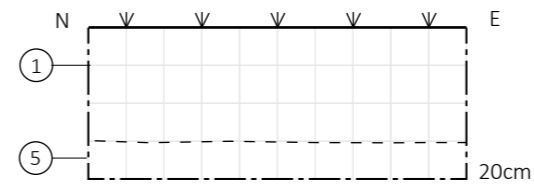
TP 73
NORTH SECTION



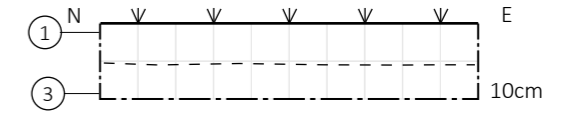
TP 74
NORTH SECTION



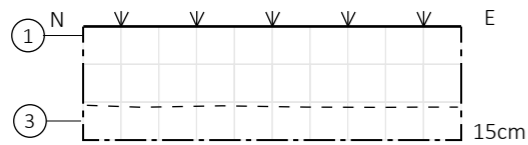
TP 75
NORTH SECTION



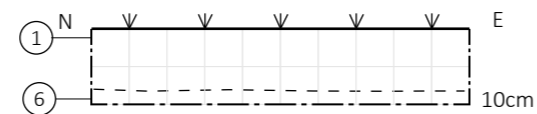
TP 76
NORTH SECTION



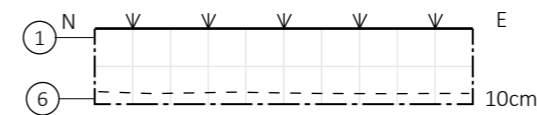
TP 77
NORTH SECTION



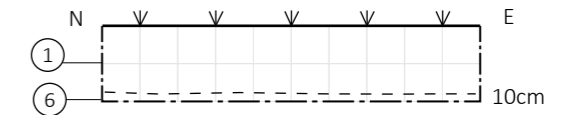
TP 78
NORTH SECTION



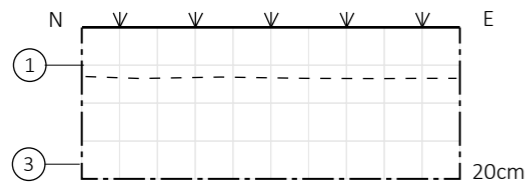
TP 79
NORTH SECTION



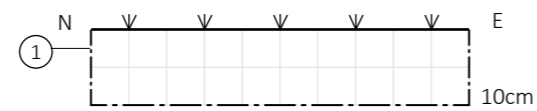
TP 80
NORTH SECTION



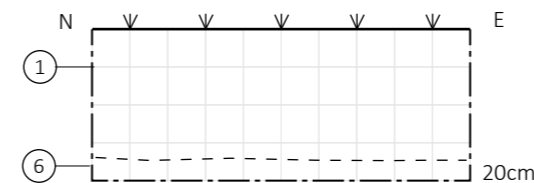
TP 81
NORTH SECTION



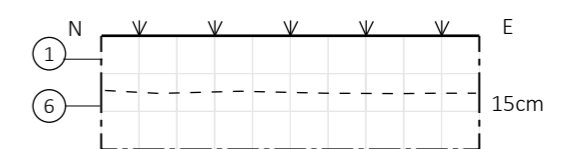
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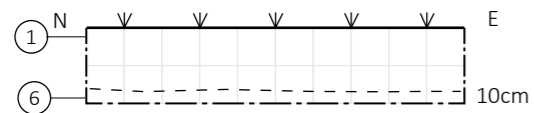
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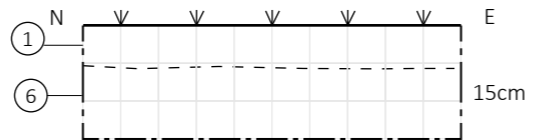
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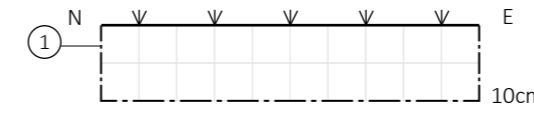
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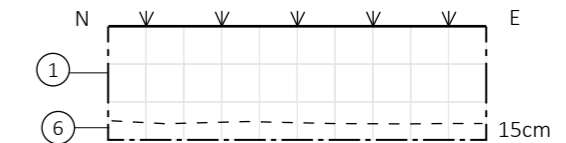
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TP 87
NORTH SECTION



TP 88
NORTH SECTION



- ① FINE GRAINED PALE BROWN SILT
- ② PALE BROWN SILT WITH QUARTZ SAND FACTION
- ③ DIFFUSED BROWN SILTY CLAY LOAM

- ④ COMPACTED AGGREGATED SILTY CLAY
- ⑤ GREY BROWN CLAY LOAM
- ⑥ COMPACT RED BROWN CLAY

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VERSION	DESCRIPTION	DATE
1.0	DRAFT	21/09/2023

LEGEND

	PIT BOUNDARY
	SOIL PROFILE BOUNDARY
	DIFFUSE SOIL PROFILE BOUNDARY
	MED/LARGE ROOTS
	STONE INCLUSIONS

	INFUSED CHARCOAL
	CLAY BALLS
	BURROW
	CALCIUM CARBONATE NODULE
	OSL SAMPLE

CLIENT
SPARKES RENEWABLES

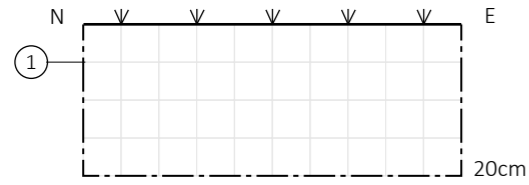
PROJECT
DINAWAN SOLAR FARM

TITLE
TEST PIT SECTION DRAWINGS

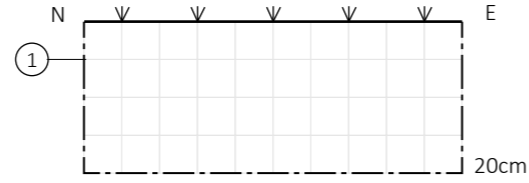
TP SECTION DRAWINGS

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PROJECT NO. E220305	VERSION 1.0	

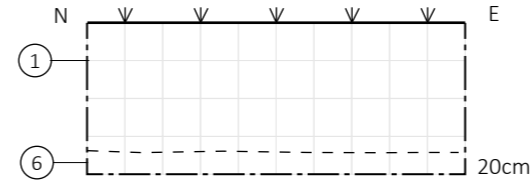
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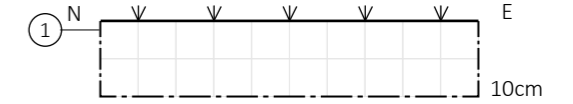
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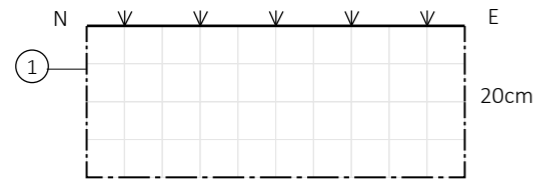
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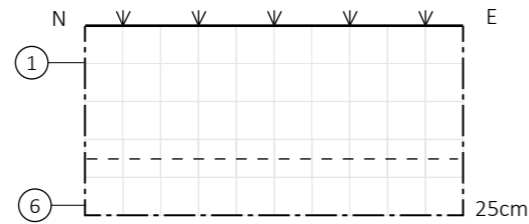
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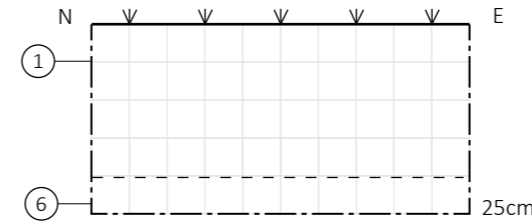
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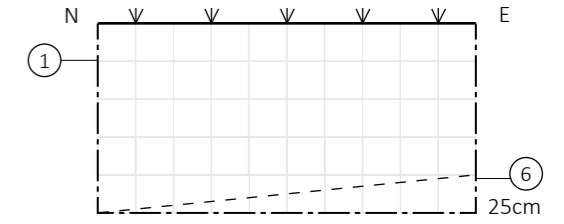
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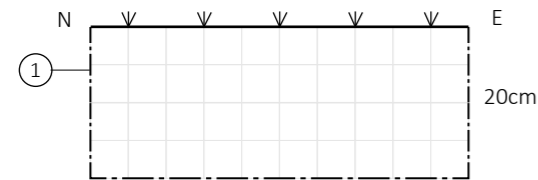
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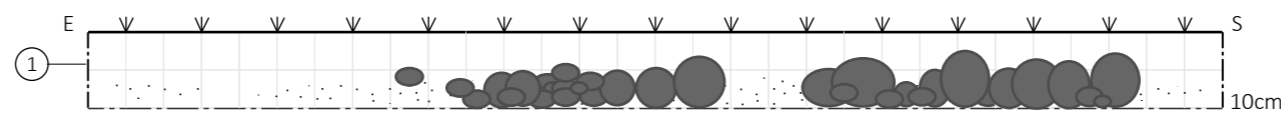
TP 96
NORTH SECTION



TP 97
NORTH SECTION



DEHW-2023-HASPAD3
NORTH SOUTH SECTION



- ① FINE GRAINED PALE BROWN SILT
- ② PALE BROWN SILT WITH QUARTZ SAND FACTION
- ③ DIFFUSED BROWN SILTY CLAY LOAM

- ④ COMPACTED AGGREGATED SILTY CLAY
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CLIENT
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DINAWAN SOLAR FARM

TITLE
TEST PIT SECTION DRAWINGS

TP SECTION DRAWINGS

SCALE	DRAWN/CHECK	DRAWING NO.
1:10	SE/	09
PROJECT NO. E220305	VERSION 1.0	

E.5 OSL report



AUSTRALIAN RESEARCH COUNCIL

**Centre of Excellence for
Australian Biodiversity
and Heritage**

**OSL dating of three sediment samples collected
from the Dinawan Energy Hub, NSW on behalf
of EMM**

27 November 2023

Zenobia Jacobs
University of Wollongong

Abstract

Optically stimulated luminescence (OSL) dating was applied to individual quartz grains extracted from three sediment samples collected from two different test pits excavated into a deflated dune sand at the Dinawan Energy Hub, Murray Basin, NSW. Samples were collected from depths of 20, 70 and 75 cm below surface. All samples responded well to OSL measurements (i.e., they have moderately bright OSL signals and decay curves and dose-response curves typical of quartz grains).

The equivalent dose (D_e) distributions of both samples are consistent with sediment that were mixed post-depositionally. We used the normalised absolute deviation (nMAD) method to identify statistical outliers (intrusive grains) and rejected these before combining the remaining D_e values from using the central age model (CAM). We also calculated the minimum D_e value for TP50_20, using the minimum age model (MAM).

The beta and gamma dose rates were calculated from estimates of U, Th and K measured using inductively coupled plasma mass spectrometry and optical emission spectroscopy. The cosmic-ray dose rates were calculated from the geomagnetic latitude, altitude and depth of sediment overburden at each sample location and all types of dose rate were corrected for soil moisture content measured in the field today.

The two samples at 75 and 70 cm depth in two different test pits (TP54 and TP50) gave ages of $10,440 \pm 625$ and $8,800 \pm 715$ years, respective. These two ages are consistent at 1σ . Their broad D_e distributions need to be kept in mind and these ages should be considered broad average ages for deposition of sediment. Both ages are consistent with deposition during the early Holocene. The uppermost sample collected from a depth of 20 cm in TP50 gave a much younger average age of 760 ± 60 years. If this sample is interpreted as partially bleached, then the minimum age of 280 ± 45 year will be more appropriate.

Introduction

Three sediment samples were collected from two test pits (TP50 and TP54) as part of an excavation at the Dinawan Energy Hub, Murray Basin, NSW by EMM for single grain optically stimulated luminescence (OSL) dating. All OSL dating procedures were carried out in the Optical Dating Facility at the University of Wollongong (UOW), which is part of the Australian Research Council Centre of Excellence for Australian Biodiversity and Heritage (CABAH). Samples were prepared, measured and analysed using conventional standards and approaches adopted in the Optical Dating Facility. This report documents the specific procedures and results and provide the final age estimates for the samples.

Sample locations

Three sediment samples were collected from a deflated dune, located on the plains of the Murray Basin in NSW. This area has been allocated for a wind farm as part of the Dinawan Energy Hub and an artifact scatter was located in its vicinity. Two samples were collected from Test Pit 50 (TP50), the highest point of the dune. The third sample was collected from TP54 from the deflated zone of the dune, which may reside atop a palaeochannel. While the dune may be quite ancient, it has been theorized that despite its size, its positioning within the landscape may be quite recent (perhaps under 200 years old). TP50 consists of a moderately compacted reddish-brown silt with diffuse layers and no inclusions. Roots were constrained to the top 5 cm of the profile with large roots from nearby trees cut out of the north and south sections. TP54 consists of a light brown silt with an abundance of gravel inclusions atop a reddish silty sand (30 cm below the surface) with less inclusions atop a clay base of the same colour. Thin roots cease at ~30 cm below surface.

Samples were collected with PVC pipe that was pushed horizontally into the profile wall of the test pits. Figure 1 shows the location of each sample and Table 1 lists the field and laboratory codes, and the sample depths below surface.

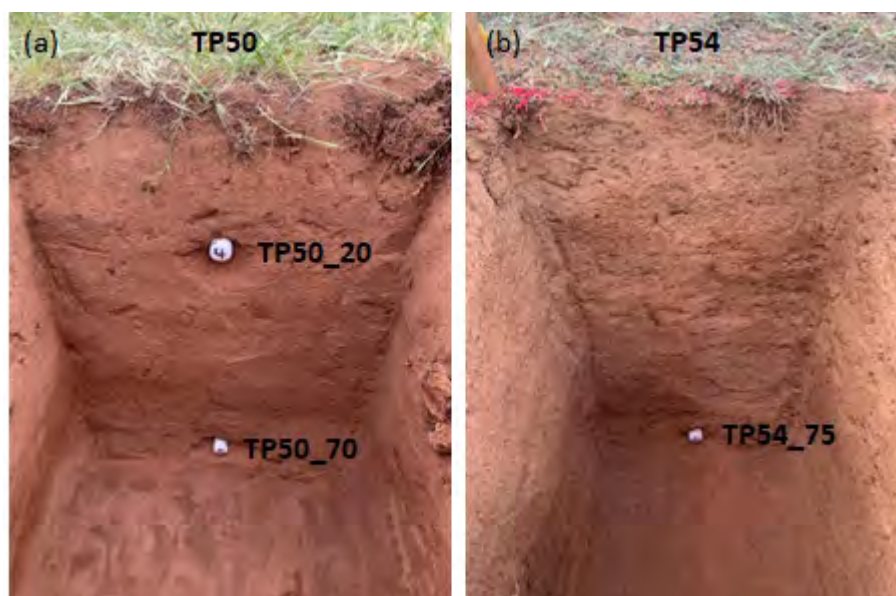


Figure 1: (a) TP50 and (b) TP54) at the Dinawan Energy Hub from which samples were collected for OSL dating.

Table 1: Field and laboratory codes and present-day average depths below surface for all samples.

Field code	Test Pit	Laboratory code	Depth (cm)
TP50_20	50	CABAH-1638	20
TP50_70	50	CABAH-1639	70
TP54_75	54	CABAH-1640	75

OSL dating

OSL dating provides a means of determining burial ages for sediments and associated artefacts and fossils (Huntley et al., 1985; Aitken, 1998; Duller, 2004; Jacobs and Roberts, 2007; Wintle, 2014; Roberts et al., 2015; Athanassas and Wagner, 2016). The method is based on the time-dependent increase in the number of trapped electrons induced in mineral grains—such as quartz—by low levels of ionising radiation from the decay of naturally occurring uranium, thorium and potassium in the surrounding deposits, and from cosmic rays. The time elapsed since the light-sensitive electron traps were emptied can be determined from measurements of the luminescence signals from quartz (OSL) from which the equivalent dose (D_e) is estimated, together with determinations of the radioactivity of the sample and the material surrounding it to a distance of ~30 cm (the environmental dose rate). The luminescence ‘clock’ is reset by just a few seconds (quartz) of exposure to sunlight. The D_e divided by the environmental dose rate gives the burial time of the grains in calendar years ago. Here, we exploited the inherent benefits of single-grain dating, which include the identification and elimination of individual grains that exhibit aberrant luminescence characteristics (Jacobs et al., 2006; Jacobs and Roberts, 2007; Duller, 2008) and the use of D_e distributions to investigate the potential impact that depositional and post-depositional processes, such as sediment mixing or insufficient exposure to sunlight (partial bleaching), may have on age determination.

Sample preparation and analytical facilities

All samples were prepared using routine optical dating procedures (Aitken, 1998). Samples were first treated with HCl acid and H_2O_2 solution to remove carbonates and organic matter, respectively. The remaining sediment was then dried and sieved to obtain a range of sand-sized grain fractions. Grains of 180–212 μm in diameter were used for dating. The grains were etched using 40% HF acid for 45 min to dissolve any feldspar grains that may be present, and to remove the alpha-irradiated layer around the surface of each grain. The HF-etched grains were then rinsed in HCl acid to remove any precipitated fluorides and sieved again.

Single-grain OSL measurements of D_e were made for all quartz samples. OSL measurements were made on an automated Risø TL-DA-20 luminescence reader equipped with a focused green (532 nm) laser for single-grain stimulation (Bøtter-Jensen et al., 2003). Luminescence emissions were detected using an Electron Tubes Ltd 9235QA photomultiplier tube. The OSL signals were detected through Hoya U-340 filters. Single-grain measurements were made using aluminium discs drilled with 100 holes, each 300 μm in diameter and 300 μm deep (Bøtter-Jensen et al., 2003). Irradiations were carried

out inside the luminescence reader using a $^{90}\text{Sr}/^{90}\text{Y}$ beta source that has been calibrated using a range of known gamma-irradiated quartz. Spatial variations in beta dose rate to individual grain positions were taken into account for D_e determination (Ballarini et al., 2006).

D_e determination and results

All single-grain quartz measurements were made using the single-aliquot regenerative-dose (SAR) procedure (Galbraith et al., 1999; Murray and Wintle, 2000). The SAR procedure involves measuring the OSL signals from the natural (burial) dose (L_n) and from a series of regenerative doses (L_x) that adequately bracket the D_e value (given in the laboratory by means of the calibrated $^{90}\text{Sr}/^{90}\text{Y}$ beta source). Grains were preheated at 260°C for 10 s prior to optical stimulation by an intense, green (532 nm) laser beam for 2 s at 125°C. A fixed test dose (~10 Gy, preheated at 160°C for 5 s) was given after each natural and regenerative dose, and the induced OSL signals (T_n and T_x) were used to correct for any sensitivity changes during the SAR sequence. A duplicate regenerative dose was included in the sequence to check the adequacy of this sensitivity correction, and a 'zero regenerative dose' (0 Gy) measurement cycle was included to monitor the extent of any 'recuperation' induced by the preheat treatment. As a check for possible contamination of the acid-etched quartz grains by other mineral inclusions, we also applied the OSL IR depletion ratio test (Duller, 2003) to each grain at the end of the SAR sequence, using an infrared exposure of 40 s at 50°C.

A total of 1,500 individual quartz grains were measured; 500 grains for each sample. Not every quartz grain that is measured is useful as a chronometer. Most grains are unsuitable because they have inherent luminescence properties that may give rise to inaccurate estimates of D_e . These unsuitable grains are identified based on known characteristics and the outcomes of tests built into the measurement sequences (e.g., the recycling ratio test, OSL IR depletion ratio test and recuperation ratio test). A series of quality-assurance criteria (Jacobs et al., 2006; Li et al., 2017) have been developed to objectively identify and reject such grains. Grains were rejected for the following reasons:

1. Initial T_n signal is less than 3σ above the corresponding background count, or the relative error on T_n is $>25\%$.
2. Recycling ratio (i.e., the ratio of L_x/T_x values for the duplicate regenerative doses) is not consistent with unity at 2σ .
3. Recuperation ratio (i.e., the ratio of the L_x/T_x values for the 0 Gy and maximum regenerative doses) is $>5\%$.
4. OSL IR depletion ratio is greater than 2σ less than unity (Duller, 2003).
5. L_x/T_x ratios are too scattered to be reliably fitted with a curve, have a large figure-of-merit (FOM) value with an upper limit of 10% or have a reduced chi-squared value of >5 .
6. L_n/T_n ratio is statistically consistent with, or higher than, the saturation level of the corresponding dose-response curve (DRC), so that a finite D_e value and error estimate could not be obtained, or D_e value is obtained by extrapolation of the fitted DRC, rather than interpolation among the regenerative-dose signals.

Table 2: Number of individual quartz grains measured, rejected and accepted for each sample, together with the reasons for their rejection (see text for reference to numbers).

Sample	No. of measured grains	Rejection criteria (see text)						Sum of rejected grains	No. of accepted grains	Negative D_e
		1	2	3	4	5	6			
TP50_20	500	265	29	10	53	39	1	397	103	5
TP50_70	500	291	31	1	48	41	6	418	82	0
TP54_75	500	244	24	2	56	63	8	397	103	0

Table 2 lists the numbers of individual grains measured, rejected and accepted for D_e determination for each of the samples, and the reasons for their rejection. Between 16% and 21% of grains were accepted for each sample; all accepted grains provide reliable estimates of D_e .

L_n , L_x , T_n and T_x values were estimated from the first 0.22 s of OSL decay, with the mean count recorded over the last 0.3 s subtracted as background. Sensitivity-corrected (L_x/T_x) dose response curves were then constructed from the L_x and T_x OSL signals, using a general-order kinetic (GOK) function (Guralnik et al., 2015), and the sensitivity-corrected natural OSL signal (L_n/T_n) was projected onto the fitted DRC to estimate the D_e value by interpolation (Fig. 2). All data analyses, including curve fitting, D_e determination and error estimations, were achieved using the functions implemented in the R-package ‘numOSL’ (Peng et al., 2013).

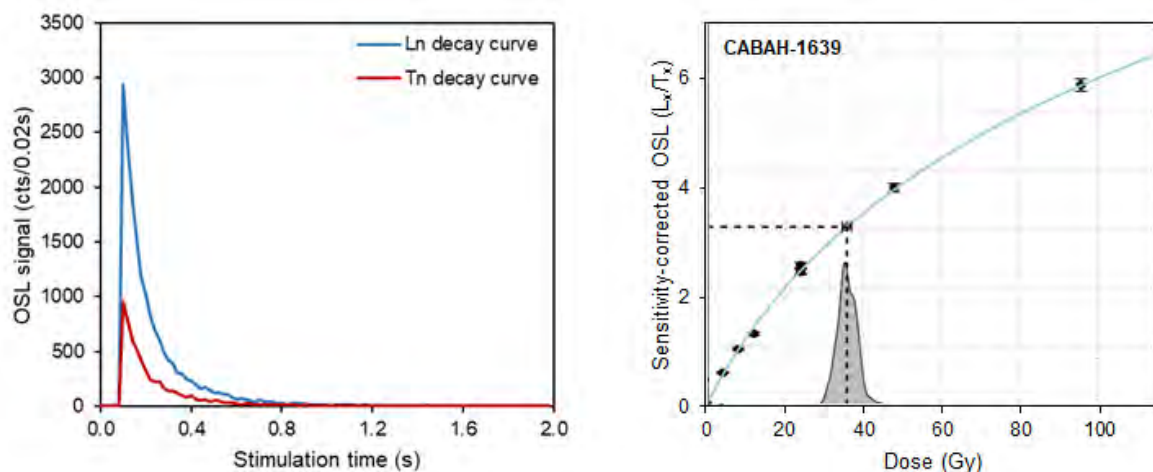


Figure 2: Representative OSL decay curves (left-hand column) for the natural dose (blue) and test dose (~10 Gy; red) OSL signals and corresponding full DRC (right-hand column) for one representative grain from sample C-1639 (TP50_70).

Fig. 2 (left) shows the natural and regenerative dose OSL decay curves for a representative quartz grain from each of the samples, following a preheat of 260°C for 10 s. The OSL decay curves exhibit a range of shapes but are generally quite reproducible and decay rapidly to instrumental background, with less than ~5% of the initial signal remaining after 0.3 s of optical stimulation. Fig. 2

(right) shows the corresponding DRC for the same representative grains. Most DRCs have very similar shapes up to ~ 30 Gy and continue to grow far beyond the range of D_e values for samples in this study.

The performance of the single-grain OSL procedure was tested using a dose recovery test (Galbraith et al., 1999) on sample TP50_70. The OSL signals for grains from this sample were first bleached and then given a known dose of ~ 25 Gy to act as a surrogate ‘natural’ dose. Five-hundred grains were measured using the procedure outlined above. The dose recovery ratio (i.e., the ratio of measured dose to given dose) of 0.98 ± 0.02 is consistent with unity at 2σ , demonstrating that the single-grain OSL procedure can produce reliable estimates of measured dose for the samples in this study. The dose recovery results for 83 accepted grains are shown in Fig. 3, where the measured/given dose ratios are presented as a radial plot. The overdispersion (OD) value is $10 \pm 2\%$.

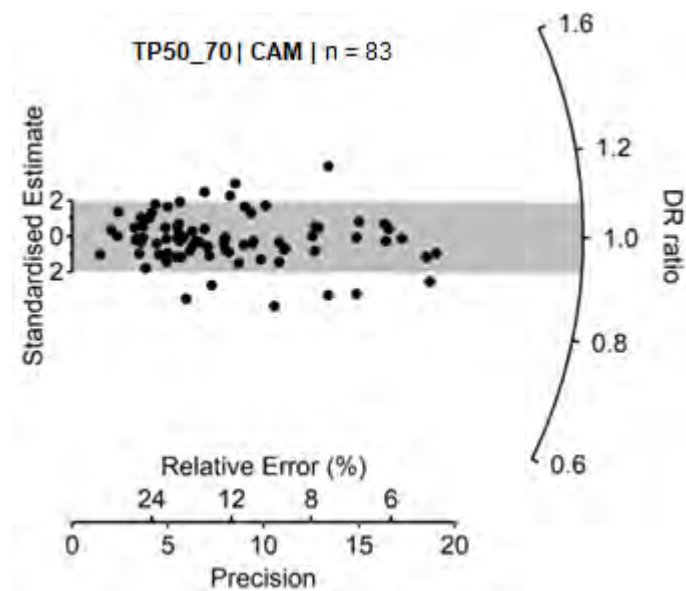


Figure 3: Measured/given dose ratios for 83 individual grains from sample TP50_70 that were first bleached and then given a known beta dose of ~ 25 Gy. Grains were measured in the same manner as for the natural samples in this study. All grains consistent with the given dose fall within the grey band that is centred on a value of unity.

Information about the numbers of grains measured and used for D_e determination are provided in Table 2.

It is commonplace in single-grain OSL dating for there to be some spread in the data due to natural variability and other complicating factors. To quantify the degree of spread, we routinely calculate OD values for the D_e distributions of each sample. OD represents the relative standard deviation (i.e., the coefficient of variation) of the D_e distribution after accounting for the various measurement uncertainties (Galbraith et al., 2005; Galbraith and Roberts, 2012). Even for samples that have been well-bleached (zeroed by sunlight) prior to deposition and that remained undisturbed since burial, some degree of OD is present; typical values for such samples range between about 10 and 30%. The OD values calculated for the D_e distributions, and the D_e values $\pm 1\sigma$ uncertainties, using statistical

models are presented in Table 3 for each sample. The OD values for both samples are much greater than what would be expected of samples that were well-bleached and undisturbed.

Information about potential reasons for OD are usually obtained by looking at the shape and patterns of the D_e distributions for each sample when plotted as radial plots, such as those shown in Fig. 3. In such plots, each point represents a single grain, for which the D_e can be read by extending a line from the 'standardised estimate' axis on the left-hand side to intersect the radial axis on the right; the point of intersection is the D_e . The uncertainty on this estimate can be read by extending a line vertically from the data point to intersect the horizontal axis running along the bottom of the plot. This axis shows the relative standard error in % (i.e., the standard error, in Gy, divided by the D_e estimate, in Gy, multiplied by 100) and its reciprocal (the 'precision'). In such plots, the most precise estimates fall to the right and the least precise to the left. If the D_e values are consistent with statistical expectation, then 95% of the points will scatter within any chosen band of width ± 2 units projecting from the left-hand axis (see grey bands in Fig. 4), and 0% overdispersion will be obtained. The radial plots for all samples are shown in Fig. 4.

The D_e distributions for all three samples are consistent with sediment that have been disturbed post-depositionally. The D_e distributions are much broader than what would be expected of a sample that was well-bleached prior to deposition and that remained undisturbed since burial. There is no simple way to obtain a reliable and accurate estimate of D_e for the depositional event. To obtain some estimate of D_e , we determined which of the D_e values were statistical outliers using the normalised median absolute deviation (nMAD) method (Rousseeuw and Croux, 1993; Rousseeuw et al., 2006). We used 1.4826 as the appropriate correction factor for a normal distribution and outliers were identified as those with log D_e values with nMADs of greater than 2.0 (Powell et al., 2002; Storey et al., 2012; Wood et al., 2016). In all three samples, we identified as outliers a small number of grains with both smaller and larger D_e values, shown as open triangles in Fig. 4. After rejection of the outliers, we then used the central age model (CAM) to obtain the final D_e value (Table 3). This model (Galbraith et al., 1999; Galbraith and Roberts, 2012) assumes that the D_e values for all grains are centred on some average value of D_e (similar to the median) and the estimated standard error takes account of any D_e overdispersion; hence, the greater the OD, the larger the error. We also estimated the minimum D_e value for the uppermost sample (TP50_20), using the minimum age model (MAM) of Galbraith et al. (1999).

The D_e estimates for all three samples using the statistical approaches outlined above are provided in Table 3.

Environmental dose rate determination and results

The total environmental dose rate consists of contributions from beta, gamma and cosmic radiation external to the sand-sized quartz grains used for optical dating, as well as a small alpha dose rate due to the radioactive decay of uranium and thorium inclusions inside the grains. To calculate the OSL ages, we have assumed that the present-day radionuclide activities and dose rates have prevailed throughout the period of sample burial.

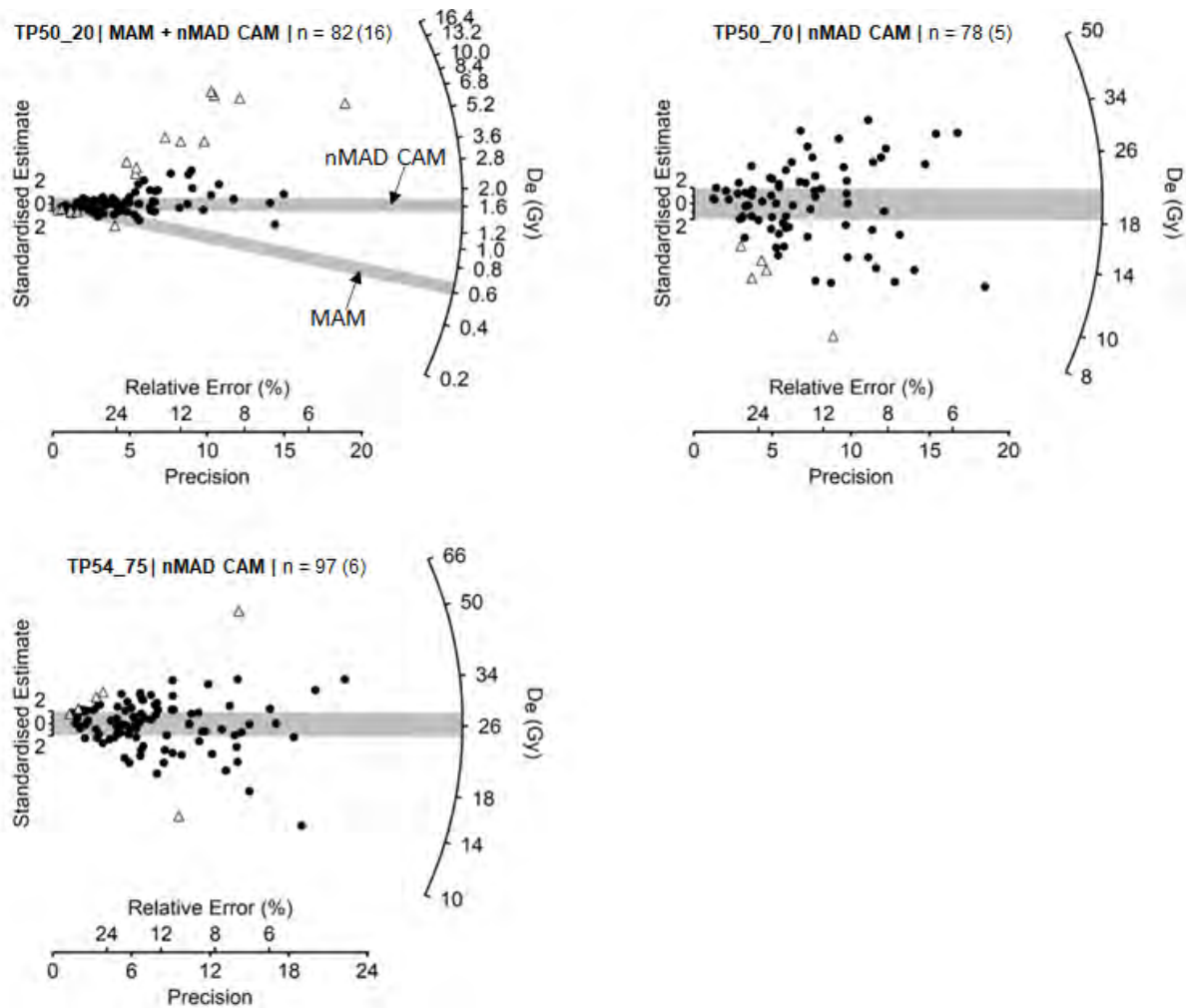


Figure 4: Radial plots of samples collected from Dinawan Energy Hub. The grey bands in all plots are centred on the weighted mean D_e value calculated using the central age model after statistical outliers (open triangles) were identified and rejected. For TP50_20 the lower grain band is centred on the minimum D_e value.

We estimated the beta and gamma dose rates by measuring the K, Th and U concentrations of dried, homogenised and powdered sediment samples using inductively coupled plasma optical emission spectrometry (ICP-OES; for K) and inductively coupled plasma mass spectrometry (ICP-MS; for Th and U). These analyses were performed externally at a commercial laboratory (Intertek Genalysis) in Perth, Western Australia. The K, Th and U concentrations were converted into beta and gamma dose rates using the dose rate conversion factors of Guèrin et al. (2011). For beta dose rates, allowance was made for the impact of sample water content (Nathan and Mauz, 2008), grain size (Brennan, 2003) and HF acid etching (Bell and Zimmerman, 1978) on beta-dose attenuation. Gamma dose rates were also corrected for water content. The cosmic dose rates were calculated following Prescott and Hutton (1994) and corrected for water content. In addition, we assumed an effective internal alpha dose rate of 0.031 ± 0.011 Gy/ka.

Present-day water contents of ~ 1 -3% were measured for the three samples. It is expected that the measured water contents are indicative of the long-term average water contents of these samples. The relative uncertainty of 25% is sufficient to accommodate the likely range of water contents

experienced by these deposits; the OSL age estimates increase by about 1% for each 1% increase in water content. The dose rates for each of the samples are provided in Table 3.

OSL age estimates

The OSL age estimates are presented for all samples in Table 3. Uncertainties on the estimates are given at 1σ (the standard error on the mean) and were estimated by combining, in quadrature, all known and estimated sources of random and systematic error.

The two samples at 75 and 70 cm depth in two different test pits (TP54 and TP50) gave ages of $10,440 \pm 625$ and $8,800 \pm 715$ years, respective. These two ages are consistent at 1σ . Their broad De distributions need to be kept in mind and these ages should be considered broad average ages for deposition of sediment. Both ages are consistent with deposition during the early Holocene. The uppermost sample collected from a depth of 20 cm in TP50 gave a much younger average age of 760 ± 60 years. If this sample is interpreted as partially bleached, then the minimum age of 280 ± 45 year will be more appropriate.

Table 3: Dose rate data, equivalent dose (D_e) and overdispersion (OD) values, and ages.

Sample	Water (%)	External dose rate (Gy/ka)			Total	D_e (Gy)	Model	OD (%)	Age (years)
		Beta	Gamma	Cosmic					
TP50_20	3 ± 1 (2)	1.19 ± 0.04	0.72 ± 0.03	0.26	2.20 ± 0.06	0.61 ± 0.10	MAM	100 ± 8 (20)	280 ± 45
						1.67 ± 0.11	nMAD CAM	100 ± 8 (53)	760 ± 60
TP50_70	3 ± 1 (1)	1.24 ± 0.04	0.79 ± 0.03	0.22	2.28 ± 0.06	20.0 ± 1.5	nMAD CAM	75 ± 6 (61)	8,800 ± 715
TP54_75	3 ± 1 (3)	1.38 ± 0.05	0.91 ± 0.03	0.22	2.53 ± 0.07	26.4 ± 1.3	nMAD CAM	52 ± 4 (45)	10,440 ± 625

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E.6 Radiocarbon dating



Radiocarbon Dating Laboratory

Report on Radiocarbon Age Determination for Wk- 57295

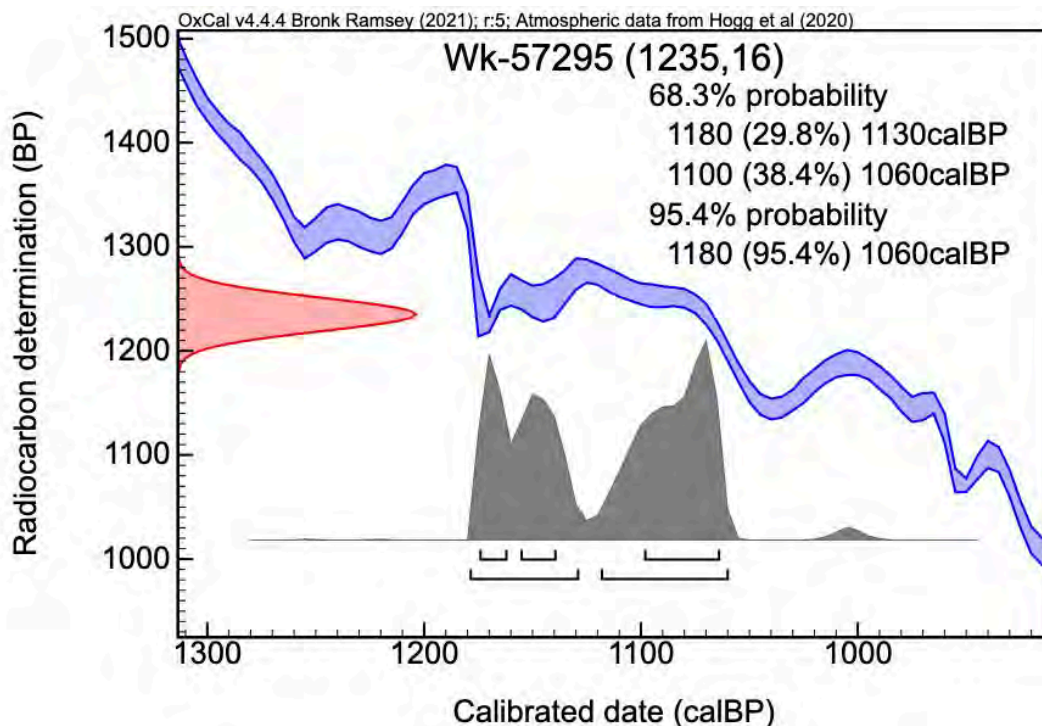
Submitter	S Elias
Submitter's Code	DEH-23-HASPAD3. Sample 7
Site & Location	Dinawan Energy Hub Solar, Murray Basin., Australia
Sample Material	Charcoal
Physical Pretreatment	Sample cleaned.
Chemical Pretreatment	Sample washed in hot HCl, rinsed and treated with multiple hot NaOH washes. The NaOH insoluble fraction was treated with hot HCl, filtered, rinsed and dried.

D¹⁴C -142.5 ± 1.7 ‰
F¹⁴C% 85.7 ± 0.2 %
Result **1235 ± 16 BP**

(AMS measurement)

Comments


Please note: The Carbon-13 stable isotope value ($\delta^{13}\text{C}$) was measured on prepared graphite using the AMS spectrometer. The radiocarbon date has therefore been corrected for isotopic fractionation. However the AMS-measured $\delta^{13}\text{C}$ value can differ from the $\delta^{13}\text{C}$ of the original material and it is therefore not shown.



- Explanation of the calibrated Oxcal plots can be found at the Oxford Radiocarbon Accelerator Unit's calibration web pages (<http://c14.arch.ox.ac.uk/embed.php?File=explanation.php>)
- Result is *Conventional Age or Percent Modern Carbon (pMC)* following Stuiver and Polach, 1977, Radiocarbon 19, 355-363. This is based on the Libby half-life of 5568 yr with correction for isotopic fractionation applied. This age is normally quoted in publications and must include the appropriate error term and Wk number.
- Quoted errors are 1 standard deviation due to counting statistics multiplied by an experimentally determined Laboratory Error Multiplier.
- The isotopic fractionation, $\delta^{13}\text{C}$, is expressed as ‰ wrt PDB and is measured on sample CO_2 .
- F¹⁴C% is also known as *Percent Modern Carbon (pMC)*.

M. Hogg

E.7 Lithic analysis report



ARTEFACT
ANALYSIS FROM
DINAWAN WIND
FARM

October 2023

Dr Trudy Doelman



Overview of Assemblage Characteristics

A total of 39 flaked artefacts and an axe/chisel were excavated from 77 test pits (n=39) and collected from a hearth in PAD-3 (n=1). Most artefacts were found in TP11 (n=4, 12.5%) and TP4 (n=4, 12.5%) with an artefact density of <1.9 per 1m² test pit. TP11 also had the highest weight of artefacts (9.5 g, 22.0%). The low artefact density is shown by the number of test pits (n=16) with only one artefact while nearly a third of all test pits had no artefacts.

Test Pit	Count	%	Total Weight (g)	%	Test Pit	Count	%	Total Weight (g)	%
1	1	2.5	0.73	1.7	33	1	2.5	3.03	7.0
2	2	5	2.14	4.9	35	1	2.5	2.09	4.8
4	5	12.5	4.35	10.1	41	2	5	1.16	2.7
7	1	2.5	0.92	2.1	42	1	2.5	0.43	1.0
10	1	2.5	3.33	7.7	43	1	2.5	0.16	0.4
11	5	12.5	9.5	22.0	46	1	2.5	0.11	0.3
12	4	10	8.71	20.1	49	1	2.5	0.3	0.7
13	1	2.5	0.19	0.4	51	1	2.5	0.21	0.5
14	1	2.5	0.19	0.4	53	1	2.5	0.43	1.0
15	1	2.5	0.46	1.1	65	1	2.5	0.66	1.5
16	3	7.5	2.94	6.8	77	1	2.5	0.36	0.8
31	2	5	0.73	1.7	HASPAD-3	1	2.5	0.12	0.3
					Total	40		43.25	

Table 1. Distribution of artefacts in the assemblage

Most of the artefacts were found in spit 2 (n=11, 27.5%) and spit 3 (n=25, 15.0%). Only 13 artefacts were in spits 4-6 (Table 2). The number, weight and size of these artefacts indicates a downwards movement (up to 30 cm). As already noted, one artefact was found in a hearth feature.

Spit	Count	%	Total Weight (g)	%	Maximum Length (mm)	Std Dev.
1	5	12.5	4.06	9.4	17.0	5.1
2	11	27.5	22.66	52.4	19.8	6.0
3	10	25	6.24	14.4	14.7	2.9
4	5	12.5	7.82	18.1	18.4	8.7
5	6	15	1.94	4.5	13.1	2.6
6	2	5	0.41	0.9	11.6	2.3
Hearth	1	2.5	0.12	0.3	9.1	

Table 2. Distribution of artefacts in the assemblage by spit

Five raw material types were used in the Dinawan assemblage (Table 4). Most of the artefacts were made from silcrete (n=18) and milky quartz (n=18). The silcrete artefacts were typically light grey (n=8) but varied in colour to include red (n=2), pink (n=2), white (n=1), and red/grey (n=1). Most of the silcrete artefacts were fine-grained (n=14). Two artefacts were made from high quality, matrix-dominated silcrete and two flakes from medium, grain-dominated silcrete. Silcrete is associated with

basalts in eastern Australia (Webb et al. 2003) Relatively large numbers of milky quartz (n=18) suggest the use of local sources. Other material types used include chalcedony, a cryptocrystalline quartz, quartzite and volcanics.

The cortex (or weathered exterior of the parent rock) provides information about the type of stone sources used (i.e., a primary or secondary source). Artefacts with a rough cortex were acquired from a primary source (or an *in-situ* outcrop). Artefacts with a smooth or water-rolled cortex originate from a secondary source (e.g., a cobble from a waterway) (c.f. Doelman 2008). A crazed cortex is associated with heat treatment prior to flaking but can be attributed to natural burning of outcrops (bush fires). Lastly, a polished cortex can be a gibber corte or from an exposed gravel source (e.g., a paleochannel).

Milky quartz (n=1) and volcanics (n=1) have a water-rolled cortex while five artefacts of silcrete have a rough or weathered cortex from a primary outcrop, a crazed/burnt surface (n=1) or a polished cortex (n=1). The fine-grained silcrete artefacts are small by maximum length in comparison to the other silcrete types indicating the on-site reduction of this material type. Quartzite and volcanic artefacts are also large compared to the milky quartz and chalcedony artefacts.

<i>Material</i>	<i>Count</i>	<i>%</i>	<i>Mean Maximum Length (mm)</i>	<i>Std Dev.</i>	<i>Total Weight (g)</i>	<i>%</i>
Fine-Grained Silcrete	14	35	14.8	5.7	6.1	14.2
Matrix-Dominated Silcrete	2	5	21.9	6.1	4.5	10.3
Medium-Grained Silcrete	2	5	18.6	0.6	2.2	5.0
Sub-Total	18	45			12.8	29.5
Milky Quartz	18	45	15.3	4.5	23.3	54.0
Chalcedony	1	2.5	11.1		0.2	0.4
Quartzite	1	2.5	25.1		0.9	2.1
Volcanic	2	5	26.1	1.6	6.0	13.9

Table 4. Material types by length and total weight in the assemblage

<i>Material</i>	<i>Primary Outcrop</i>	<i>Secondary/water-rolled</i>	<i>Crazed/burnt</i>	<i>Polished</i>
Matrix-dominated silcrete	1			
Medium-grained silcrete				1
Fine-grained silcrete	4		1	
Milky Quartz		4		
Volcanic		1		

Table 5. Types of cortex on the artefacts in the assemblage

Complete flakes dominate the assemblage (n=13, 32.5%). Broken flakes, including distal, medial and proximal flakes, account for 37.5% (n=15) of the assemblage (Table 5). There is a high frequency of cores in the assemblage (n=5, 12.5%). Only one flaked tool on a complete flake was found. Surprisingly a small axe/chisel was found in TP11. Two of the cores were also found in this test pit. In addition, two heat shattered fragments (HSA) and three angular fragments were also found. Both HSAs were found in TP4.

<i>Class</i>	<i>Count</i>	<i>%</i>	<i>Maximum Length (mm)</i>	<i>Std Dev.</i>	<i>Total Weight (g)</i>	<i>%</i>
Core	5	12.5	16.7	4.4	10.4	24.0
Complete Flake	13	32.5	16.0	4.7	7.0	16.3
Distal Flake	6	15	15.1	7.6	4.6	10.6
Medial Flake	6	15	14.6	5.6	2.6	6.0
Proximal Flake	3	7.5	17.5	9.4	6.6	15.4
	15	37.5			13.8	32.0
Complete Tool	1	2.5	14.9		1.0	2.3
Axe	1	2.5	27.3		3.8	8.9
	2	5			4.8	11.2
Angular Fragment	3	7.5	17.2	2.4	4.6	10.6
HSA	2	5	18.4	9.3	2.6	5.9

Table 6. Composition of the artefacts in the assemblage

The cores were found TPs 11, 2, 16 and 33 (Figure 3). Three of the cores were made from milky quartz while two were made from high quality, light grey silcrete. One silcrete core was obtained from a primary outcrop while the milky quartz cores were made from small, water-rolled pebbles. Four of the cores have elongated flake scars, while one (id=12) silcrete core has expanding flake scars. Two of the cores were made on flakes which might indicate the recycling of artefacts to extend use. All the cores are highly reduced, flaked using a bipolar technique and have evidence of anvil resting i.e., crushing. This technique is used to extend the use of a core or is commonly used on small milky quartz pebbles to remove flakes (Holdaway and Stern:2004: 194). One core (id=12) was bifacially flaked in multiple directions, has numerous step terminations and expanding flake scars. All cores were 20 mm or below. The small size of the cores coupled with the anvil resting and bipolar flaking indicates a need to conserve and maximise the flakes manufactured from each core. This scenario suggests extreme raw material stress equating to an increased distance from silcrete sources and only the local availability of small milky quartz pebbles.

<i>Id</i>	<i>Test Pit</i>	<i>Material</i>	<i>Core Type</i>	<i>Core Body</i>	<i>Scar Form</i>	<i>Maximum Length (mm)</i>	<i>Weight</i>
6	11	Fine-Grained Silcrete	Bipolar	Flake	Elongated	9.2	0.33
12	2	Matrix-Dominated silcrete	Bipolar	Nondiagnostic	Expanding	17.6	1.14
5	11	Milky Quartz	Bipolar	Flake	Elongated	19.6	4.06
20	16	Milky Quartz	Bipolar	Nodule	Elongated	16.9	1.8
18	33	Milky Quartz	Bipolar	Nondiagnostic	Elongated	20	3.03

Table 7. Cores in the assemblage



Figure 1. Cores in the assemblage, left to right ids=20, 18, 11, 5, 12 and 6. Scale=1cm

Indeterminate flakes dominant the assemblage (n=14). A further seven bipolar flakes and six elongated flakes were also found (Table 6). The largest flake, a proximal flake, was a split pebble of milky quartz. A proximal flake with a blade form was also found in the test pits. A single large fine-grained silcrete flake was also found (Table 8). In contrast, the largest complete flake of milky quartz (17.2 mm) was considerably smaller.

<i>Form</i>	<i>Count</i>	<i>Mean Maximum Length (mm)</i>	<i>Std Dev.</i>	<i>Total Weight (g)</i>
Bipolar	7	12.8	2.2	3.21
Blade	1	13.2		0.3
Block	1	26.2		3.33
Elongated	6	18.7	6.6	3.35
Indeterminate	14	15.1	5.5	9.38
Split pebble	1	28.3		6.16

Table 8. Form of all flakes by material type in the assemblage.

<i>Material</i>	<i>Count</i>	<i>Mean Axial Length (mm)</i>	<i>Std Dev.</i>	<i>Maximum Axial Length (mm)</i>
Fine-Grained Silcrete	5	17.2	6.4	27.9
Milky Quartz	7	12.9	2.7	17.2
Medium-Grained Silcrete	1	16.8		16.8

Table 9. Size of complete flakes by material type in the assemblage.

Two tools were found during in the assemblage. The tools include a complete tool of milky quartz made on a bipolar flake in TP2. This tool had scraper retouch in one quadrant. Of note was a small axe or chisel of a light grey volcanic material in TP11 (Figure 2). This axe (id=7) or chisel (c.f. McCarthy 1976) has two polished edges indicating evidence of rotation and recycling. The axe was 27.3 mm in maximum dimension. While one face was polished the back appears to be a broken fragment possibly from a larger axe. This tool again shows recycling and raw material pressures.

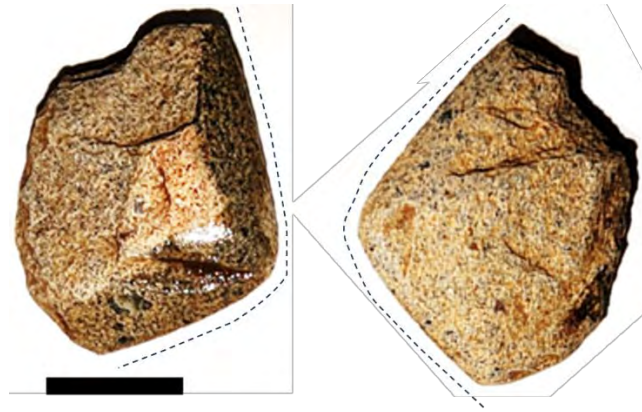


Figure 2. Axe/chisel found in the assemblage, Left shows double polished bevels (dashed lines), right shows previous fracture id=7. Scale=1cm

Summary

Only two test pits have five artefacts (TP4 and TP11). The overall artefact density is low. TP4 has the highest density of cores and the axe/chisel. Only one blade, indicative of a mid-late Holocene occupation (c.f. Holdaway and Stern 2004) was found in TP49. Small, presumably local, pebbles of milky quartz were flaked using a bipolar technique. Silcrete cores were also found in the assemblage. Silcrete was obtained from non-local primary outcropping source. Evidence for raw material conservation and intensive use was seen in the assemblage indicating the lack of available stone resources and the distance from silcrete sources. In particular, cores were small, sometimes rotated or bifacially flaked using an anvil. These factors have contributed to a low artefact density.

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E.8 Lithic catalogue

3D	Test Pt	SPH	Depth	CLASS	MATERIAL	COLOUR	HEAT DAMAGE	DIGITAL END	CORTEX %	CORTEX TYPE	FORM	EXT. PLATFORM	PLATFORM TYPE	DORSAL SCARS	TOOL TYPE	RETOUCHED EDGES	EDGE 1	EDGE 2	EDGE 3	EDGE 4	CORE TYPE	CORE BODY	SCAR FORM	CORE PLATFORM NO.	CORE PLATFORM NO.	STEP TERMINATIONS	HINGE TERMINATIONS	MAX. LENGTH	AXIAL LENGTH	MAX. WIDTH	MAX. THICK	PLATFORM WIDTH	PLATFORM THICKNESS	CORE SCAR LENGTH	CORE SCAR WIDTH	CORE SCAR NO.	WEIGHT	MODIFIED	COMMENTS
1	A1-TP1	2	10-20	DISTFLAKE	FSILCRETE	White	N	FEATHER	0%		Elongated					0											23.1	0	0	0	0	0	0	0	0	0.73	N/A	PEDO	
2	12	2	10-20	PROXFLAKE	MilkyQuartz	Brown	N		100%	WRSsmooth	SPEBBLE	NA	Cortical			0											28.3	0	0	0	15.1	9.5	0	0	0	6.16	N/A		
3	11	4	30-40	CompFlake	FSILCRETE	Igrey	N	FEATHER	51-99%	Weather	Elongated	NA	Uni	0		0											28.5	27.9	9.2	5.2	3.9	3.6	0	0	0	1.11	N/A		
4	11	4	30-40	DISTFLAKE	FSILCRETE	Red	Y	FEATHER	0%		Indeterminate					0											9.8	0	0	0	0	0	0	0	0	0.15	N/A		
5	11	4	30-40	CORE	MilkyQuartz	White	N		26-50%	WRSsmooth						0					Bipolar	Flake	Elongated	na	10	0	19.6	0	17.1	7.5	0	0	18.4	5.9	1-2	4.06	N/A	FAB/BIPOLAR	
6	11	4	30-40	CORE	FSILCRETE	Igrey	N		0%							0					Bipolar	Flake	Elongated	na	10	0	9.2	0	8.2	3.1	0	0	7.9	4.2	1-2	0.33	N/A	FAB/CRUSHED	
7	11	2	10-20	AXE	Volcanic	Igrey	N			Weather	Indeterminate					0											27.3	0	0	0	0	0	0	0	0	3.85	N/A	ROTATED	
8	12	1	0-10	CompFlake	FSILCRETE	Igrey	N	FEATHER	0%		Indeterminate	NA	Crush	0		0											12.7	10.6	9.6	1.9	0	0	0	0	0	0.28	N/A		
9	12	1	0-10	ANGULARFRAG	MSILCRETE	Brown	N		1-25%	Rough						0											19	0	0	0	0	0	0	0	0	1.72	N/A		
10	53	5	40-50	MEDFLAKE	MilkyQuartz	White	N		0%		Indeterminate					0											15.5	0	0	0	0	0	0	0	0	0.43	N/A		
11	2	3	20-30	COMPFOOL	MilkyQuartz	White	N	CRUSH	0%		Bipolar	NA	Uni	0	R	1	N/A	N/A	N/A	SCRAPER							14.9	13.2	10.2	4.5	9.4	4.7	0	0	0	1	N/A		
12	2	3	20-30	CORE	MDSILCRETE	Igrey	N		1-25%	Weather						0					Bipolar	Nondiagnostic	Expanding	na	4 <5	0	17.6	0	12.6	5.2	0	0	9.9	10.3	3-5	1.14	N/A	FAB/BFACIAL	
13	HASPAD-3	HEARTH	0-10	DISTFLAKE	FSILCRETE	Red	N	FEATHER	1-25%	Weather	Elongated					0											9.1	0	0	0	0	0	0	0	0	0.12	N/A		
14	15	2	10-20	CompFlake	MSILCRETE	R/G	Y	FEATHER	1-25%	POLISH	Elongated	NA	Uni	0		0											18.2	16.8	9.4	2.1	5.8	1.5	0	0	0	0.46	N/A		
15	65	2	10-20	CompFlake	MilkyQuartz	White	N	FEATHER	0%		Elongated	NA	Crush	180		0											17.5	17.2	10.7	2.9	0	0	0	0	0	0.66	N/A	SEMITRANS	
17	14	2	10-20	PROXFLAKE	Chalcedony	Brown	N		0%		Bipolar	NA	Crush			0											11.1	0	0	0	0	0	0	0	0	0.19	N/A		
16	4	4	30-40	HSA	Volcanic	dry	Y		1-25%	WRSsmooth	N/A					0											25	0	0	0	0	0	0	0	0	2.17	N/A	NA?	
18	33	2	10-20	CORE	MilkyQuartz	White	N		0%							0					Bipolar	Nondiagnostic	Elongated	na	10	0	20	0	16.1	8.2	0	0	19.4	7.7	1-2	3.03	N/A	CRUSHED/FAB	
19	10	2	10-20	DISTFLAKE	MDSILCRETE	Igrey	N		26-50%	Weather	Block					0											26.2	0	0	0	0	0	0	0	0	3.33	N/A		
20	16	2	10-20	CORE	MilkyQuartz	White	N		26-50%	WRSsmooth						0					Bipolar	Nodule	Elongated	na	10	0	16.9	0	13	6.6	0	0	15.9	8.9	1-2	1.8	N/A	Y/W	
21	16	2	10-20	CompFlake	MilkyQuartz	White	N	CRUSH	0%		Bipolar	NA	Crush	0		0											10.6	9.6	8.3	2.5	0	0	0	0	0	0.36	N/A		
22	35	2	10-20	ANGULARFRAG	MilkyQuartz	White	N		0%							0											18.1	0	0	0	0	0	0	0	0	2.09	N/A	OPAQUE	
23	4	3	20-30	CompFlake	FSILCRETE	Igrey	N	FEATHER	100%	Rough	Indeterminate	NA	Uni	N/a		0											19.5	14.4	14.3	4	5.2	2.9	0	0	0	0.83	N/A		
24	4	3	20-30	DISTFLAKE	FSILCRETE	Igrey	N	FEATHER	1-25%	Rough	Indeterminate					0											12.2	0	0	0	0	0	0	0	0	0.16	N/A		
25	4	3	20-30	CompFlake	FSILCRETE	Pink	N	FEATHER	0%		Indeterminate	NA	Crush	0		0											17.1	17.1	8.9	4.1	0	0	0	0	0	0.79	N/A		
26	4	3	20-30	HSA	FSILCRETE	R/G	Y		1-25%	craze	N/A					0											11.8	0	0	0	0	0	0	0	0	0.4	N/A	SPALL	
31	31	5	40-50	MEDFLAKE	FSILCRETE	Igrey	N		0%		Indeterminate					0											14.8	0	0	0	0	0	0	0	0	0.46	N/A		
32	31	5	40-50	CompFlake	FSILCRETE	Pink	N	FEATHER	0%		Elongated	NA	Uni	0		0											15.8	15.8	6.8	1.5	3.1	0.9	0	0	0	0.27	N/A		
27	41	3	20-30	CompFlake	MilkyQuartz	White	N	FEATHER	0%		Indeterminate	NA	Uni	0		0											14.4	13	9.4	4.1	7.7	5.6	0	0	0	0.62	N/A		
28	41	3	20-30	CompFlake	MilkyQuartz	White	N	CRUSH	1-25%	WRSsmooth	Bipolar	NA	Crush	0		0											12.9	11.3	9.7	3.6	0	0	0	0	0	0.54	N/A	OPAQUE	
29	49	6	50-60	PROXFLAKE	FSILCRETE	Igrey	N		0%		Blade	NA	Uni			0											13.2	0	0	0	4.6	2.2	0	0	0	0.3	N/A		
30	16	1	0-10	ANGULARFRAG	MilkyQuartz	White	N		0%							0											14.4	0	0	0	0	0	0	0	0	0.78	N/A		
33	43	5	40-50	MEDFLAKE	MilkyQuartz	White	N		0%		Indeterminate					0											11.3	0	0	0	0	0	0	0	0	0.16	N/A		
34	7	1	0-10	MEDFLAKE	Quartzite	Pink	N		0%		Indeterminate					0											25.1	0	0	0	0	0	0	0	0	0.92	N/A		
35	12	3	20-30	CompFlake	MilkyQuartz	White	N	FEATHER	0%		Bipolar	NA	Crush	0		0											16	15.1	11.5	2.8	0	0	0	0	0	0.55	N/A		
36	46	6	50-60	DISTFLAKE	MilkyQuartz	White	N	FEATHER	0%		Indeterminate					0											10	0	0	0	0	0	0	0	0	0.11	N/A		
37	77	1	0-10	CompFlake	MilkyQuartz	White	N	CRUSH	0%		Bipolar	NA	Crush	0		0											13.7	13.2	5.4	4.1	0	0	0	0	0	0.36	N/A		
38	51	3	20-30	CompFlake	MilkyQuartz	White	N	FEATHER	0%		Bipolar	NA	Crush	180		0											10.6	10.6	7.7	2.5	0	0	0	0	0	0.21	N/A		
39	13	5	40-50	MEDFLAKE	FSILCRETE	Igrey	N		0%		Indeterminate					0											9.7	0	0	0	0	0	0	0	0	0.19	N/A		
40	42	5	40-50	MEDFLAKE	MilkyQuartz	White	N		0%		Indeterminate					0												11.3	0	0	0	0	0	0	0	0	0.43	N/A	

Attachment F

Aboriginal cultural heritage management plan guiding principles

F.1 Guiding principles

The key recommendation of Section 11 of this report is the development of an Aboriginal cultural heritage management plan (ACHMP) to guide the management and mitigation of cultural materials within the project. While specific approaches and methodology would be developed as part of the ACHMP, the below section provides over-arching guiding principles for the management of key content requirements and each site type that may be adversely affected by the project.

F.1.1 Contents of the ACHMP

The ACHMP should include, but not be limited to the following:

- Where the project may interact with other approved projects, the document would consider and comply with other ACHMPs and cultural management measures.
- Processes, timing, communication methods and project involvement (e.g. on-site activities) for maintaining Aboriginal community consultation and participation through the remainder of the project. This should include a grievance mechanism that is readily available and designed for use by the local Aboriginal community.
- If not previously completed and where necessary, provide descriptions and methods for undertaking further investigation and assessment of the sites and cultural deposits currently assigned a tentative classification.
- If not previously completed, discuss and identify any areas of design optimisation with the RAPs to avoid or further minimise harm to identified Aboriginal sites, objects and places.
- Detail descriptions and methods of any additional investigative and/or mitigative archaeological actions that may be required prior to construction works commencing or during the project. These should include, but not be limited to, archival recording of all identified Aboriginal objects, sites and places that may be adversely affected; suitable recovery or relocation, documentation and analysis of any archaeological sites proposed for direct impacts; management of any archaeological excavation of areas of significant buried cultural material and where direct impacts are proposed; and/or cultural monitoring for any areas identified by the Aboriginal community as having significant cultural value. For these activities, details of location/s, methods, personnel, and timing should be included.
- Description and methods of actions to minimise any inadvertent impacts to identified Aboriginal objects and/or sites and areas of archaeological sensitivity outside, but in proximity, of the development corridor. This should include, but not be limited to, cultural inductions for all personnel and subcontractors outlining their location and significance, fencing and clear marking of heritage sites and zones of interest in proximity to proposed works, appropriate screening for sensitive and gender-specific areas, and any additional requirements identified by the Aboriginal community. A suitable regime of monitoring these activities should also be outlined, including locations, methods, personnel and timing.
- Description and methods for undertaking further Aboriginal heritage assessment, investigation and mitigation of any areas of the development corridor that have changed following completion of the ACHA, and/or during the final design and construction phases of the project.
- Description and methods of post-excavation analysis and reporting of the archaeological investigations and activities implemented as part of the ACHMP. For excavations, these should include suitable collection and processing of stone artefacts, and chronological, soil and environmental samples.

- Procedures for managing the unexpected discovery of Aboriginal objects, sites and/or human remains during the project.
- Procedures for the curation and long-term management of cultural materials recovered or relocated as part of the works outlined in the ACHMP and any preceding stages associated with the project. This should include any ongoing monitoring requirements to ensure the preservation of recovered cultural materials, such as culturally modified trees.
- Processes for reviewing, monitoring, and updating the ACHMP as the project progresses.

F.1.2 Avoidance and/or impact minimisation approaches

The specific methods for avoiding or minimising impacts to identified Aboriginal sites and places would typically be highly specific to the cultural materials in question and the development activities occurring nearby.

Currently, the following sites are proposed for avoidance: DEHW-2023-HAS13 (#55-1-0162), DEHW-2023-HIF5 (#48-6-0283), PEC-E-47 (#55-1-0057), PEC-E-50 (#55-1-0060), DEHW-2023-HAS1 (#54-3-0071), DEHW-2023-ST1 (#48-6-0273), DEHW-2023-ST8 (#48-6-0253), PEC-E-48 (#55-1-0058), PEC-E-49 (#55-1-0059), DEHW-2024A-ST5, DEHW-2024A-ST6, DEHW-2024A-ST7, DEHW-2024A-ST8, DEHW-2024A-ST10, DEHW-2024A-ST11, DEHW-2024A-ST12, DEHW-2024A-ST13, DEHW-OA3 (#48-6-0308), DEHW-OA6 (#54-3-0076), DEHW-2023-HAS4 (#54-3-0070), DEHW-CS1 (#48-6-0310), DEHW-2023-STAS2 (#48-6-0250), DEHW-2023-ST12 (#55-1-0144), DEHW-2024A-RT1, DEHW-2023-HH2 (#55-1-0196), and DEHW-2023-STAS1 (#55-1-0143) (part).

Some general approaches that can be applied with site specific options developed and applied as part of the ACHMP include:

- incorporation of the sites, cultural deposits, curtilages, and obligations for their protection into cultural inductions for site personnel
- where available, incorporation of the sites and curtilage into ‘no-go’ and/or constraint layers within the development document packages and their inclusion into ground disturbance permit/approval requirements for the project
- establishment of fencing and/or signage during works in and around identified sites and cultural deposits. These should be developed in conjunction with an Aboriginal heritage specialist and/or RAPs
- where necessary, establishment of surface protection such as heavy-duty ground protection mats, or equivalent. These should be developed in conjunction with an Aboriginal heritage specialist and/or RAPs
- establishment of permanent (non-intrusive) signage to indicate cultural deposits and to contact an Aboriginal heritage specialist prior to development activity.

F.1.3 Methods for identified site types

In terms of each site type, the following provides several guiding principles that should be adopted in the ACHMP and other relevant documents where sites and/or cultural deposits would be adversely affected (direct and indirect), including the following:

- Management of hearths and associated cultural materials (DEHW-2023-HAS13 (#55-1-0162), DEHW-2023-HIF5 (#48-6-0283), PEC-E-47 (#55-1-0057), PEC-E-50 (#55-1-0060), DEHW-2023-HAS1 (#54-3-0071), DEHW-2023-H3 (#48-6-0257), DEHW-2023-HAS8 (#48-6-0267), DEHW-2023-HAS7 (#55-1-0165), DEHW-2024-HAS1 (#48-6-0291), DEHW-2024-HAS2 (#48-6-0292), DEHW-2024-H1 (#48-6-0289), DEHW-2023-HAS12 (#55-1-0163), DEHW-2023-HASST1 (#48-6-0264), DEHW-2023-HAS4 (#54-3-0070), DEHW-OA1 (#55-1-0172), DEHW-OA2 (#49-4-0243), DEHW-OA3 (#48-6-0308), DEHW-OA4 (#49-4-0244), DEHW-OA5 (#48-6-0309), DEHW-OA8 (#55-1-0169), DEHW-OA9 (#55-1-0170)):
 - Archival recording of the site both in its landscape context and the specific features of the modifications prior to disturbance, including a focus on any rock art that may be present.
 - Detailed field survey should be undertaken to identify the curtilage of the site and all observable surface cultural materials. Once identified, cultural materials should be spatially documented, collected and subject to detailed lithic analysis.
 - archaeological excavation of the hearth feature where any cultural deposits are observed to inform the significance of the site and provide information on the past use by Aboriginal people. Excavations should initially include half of the hearth feature. Excavations should be undertaken manually in discrete test pits (1 m²), use 5 cm spits for recovery, soil samples of 200–300 g should be recovered at each spit, all remaining sediment should be sieved through a 3 mm mesh, recover suitable paleo environmental and chronological sampling, and undertake appropriate recording. Once recorded and determined to be cultural, the remaining half of the hearth should be subject to excavation and recovery. This may adopt the same methods or deviate to maximise information that could be obtained from the cultural deposit.
- Management of culturally modified trees (DEHW-2023-ST1 (#48-6-0273), DEHW-2023-ST8 (#48-6-0253), PEC-E-48 (#55-1-0058), PEC-E-49 (#55-1-0059), DEHW-2024A-ST5, DEHW-2024A-ST6, DEHW-2024A-ST7, DEHW-2024A-ST8, DEHW-2024A-ST10, DEHW-2024A-ST11, DEHW-2024A-ST12, DEHW-2024A-ST13, DEHW-2023-ST10 (#48-6-0251), DEHW-2024A-ST9, DEHW-2023-STAS2 (#48-6-0250), DEHW-2023-ST12 (#55-1-0144), DEHW-2024A-RT1, DEHW-2023-HH2 (#55-1-0196), DEHW-2023-STAS1 (#55-1-0143), DEHW-2023-HASST1 (#48-6-0264), DEHW-OA1 (#55-1-0172), DEHW-OA3 (#48-6-0308), DEHW-OA4 (#49-4-0244), and DEHW-OA9 (#55-1-0170)):
 - Archival recording of the tree both in its landscape context and the specific features of the modifications prior to disturbance.
 - Methods for protection in situ and/or suitable relocation of the tree, either in its entirety and/or via the removal of the ‘scar’ portion of the tree. It should be dictated that these approaches should be overseen by a qualified arboriculturist.
 - Where left in situ, the processes and methods for long term monitoring of the culturally modified tree to ensure its ongoing preservation.
 - Where relocated, methods for the long-term curation and conservation of the removed tree or tree fragment, including suitable conditions and preservation agents as required.

- Management of occupation areas or site complexes of a range of stone artefactual and hearth cultural materials (DEHW-2023-HASST1 [#48-6-264], DEHW-2023-STAS1 [#55-1-0143], DEHW-2023-HAS12 [#55-1-0163], DEHW-OA1 [#55-1-0172], DEHW-OA2 [#49-4-0243], DEHW-OA4 [#49-4-0244], DEHW-OA5 [#48-6-0309], DEHW-OA7 [#55-1-0171], DEHW-OA8 [#55-1-0169] and DEHW-OA9 [#55-1-0170]):
 - Detailed field survey should be undertaken to identify the curtilage of the site and all observable surface cultural materials. Once identified, cultural materials should be spatially documented, collected and subject to detailed lithic analysis.
 - Where subsurface potential is identified, it should be subjected to archaeological excavations. Archaeological excavations that include both an investigative phase and a salvage phase:
 - Investigative phase – the excavations undertaken as part of the ACHA were disparate and widely spaced to maximise investigation of the development corridor. Where cultural deposits are to be adversely affected, additional investigation in the form of high-resolution systematic grids of test pits spaced 10–20 m across targeted areas should be implemented. Excavations should be undertaken manually in discrete test pits (1 m²), use 10 cm spits for recovery, sieve all sediment through a 5 mm mesh, recover suitable paleo-environmental and chronological sampling, and undertake appropriate recording.
 - Salvage phase – once the test pits containing the highest significance are identified, archaeological salvage excavation (conservation *ex situ*) of the area/s should be undertaken. Depending on the number of high value locales and the nature of the impacts, salvage excavation may focus on some or all of these test pits. In accordance with current best practice, all salvage works should consist of initially 25 m² of contiguous open area excavation centred on the test pit/s of interest and expanding up to 100 m² where suitable thresholds are met (e.g. continuing high density of artefact numbers, unique characteristics, etc). Excavations should be undertaken manually in discrete test pits (0.25–1 m²), use 5 cm spits for recovery, sieve all sediment through a 3 mm mesh, recover suitable paleo environmental and chronological sampling, and undertake appropriate recording.

It is noted that some of the occupation areas are substantial and a representative approach of recovering only the most significant portions of these cultural deposits identified through field survey and/or other mechanism should be applied.

- Management of low-density background artefact scatter cultural materials (DEHW-BS1):
 - No further mitigation measures are recommended. It has been demonstrated that ~1–15 artefacts/m² would be expected disparately and intermittently across the amended project area, which reflects the ephemeral use of the region by Aboriginal people for several millennia. It is considered that further investigation of these areas would not alter the significance or understanding of these cultural deposits.
 - Targeted surface collection may be considered for cultural materials where requested by the RAPs.
- Analysis and reporting:
 - All additional investigation, mitigation and monitoring activities should ensure suitable reporting and lodgement with relevant repositories, such as the Heritage NSW AHIMS database.

- In the case of excavations, post- excavation analysis should be undertaken for all recovered sedimentological and cultural materials. Analysis should include processing of chronological samples (e.g. optically stimulated luminescence, radiocarbon), paleo environmental samples (e.g. particle size, geochemistry, pollen analysis, etc), lipid analysis, and stone tool analysis.
- Identification of short- and long-term repositories for recovered cultural materials and other collected samples.

F.1.4 Contents and methods for interpretation strategy, plan and implementation

The following points provide some guiding principles for consideration in the development of heritage interpretation of the project:

- Initially an interpretation strategy should be developed to identify key and over-arching themes. Subsequently, a plan would refine the strategy with content (visual and textual) and design details in order to allow the implementation stage.
- The documents should be co-designed and closely developed with local Wiradjuri traditional owners. This includes identification of initial aims and ideas, content and structure.
- Given the nature of the project, these documents may consider off-site public outreach opportunities at nearby townships such as Narrandera, Griffith, etc.
- The content should include, but not be limited to:
 - the ethnographic and historical record, which includes post-Contact and contemporary associations with the site and immediate environs
 - consultation and input from the Wiradjuri traditional owners
 - information obtained from the archaeological excavations and findings undertaken for the project on the cultural and environmental landscape within which past Aboriginal people interacted with in the past.

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