

Bushfire Attack Level (BAL) Assessment Report for Stage 1-4 Beenyup Grove Estate, Byford

Site Details

Address: Beenyup Grove Estate (Lots 300, 356, 359, 370, 614, 619 and 713)

Suburb: Byford, 6122 **State:** Western Australia

Local Government Area: Shire of Serpentine Jarrahdale

Description of building works: Residential development, future buildings

Report details

Report/Job number:	21PER-19133	Report version:	v1
Assessment date:	9/06/2021	Report date:	27/07/2021
Author:	Stephen Moore	Review:	Daniel Panickar (BPAD Level 3-37802)



SITE ASSESSMENT AND SITE PLAN

The assessment of the seven subject lots was undertaken on 9 June 2021 for the purpose of determining the Bushfire Attack Level (BAL) in accordance with *Australian Standard AS 3959: 2018 Construction of Buildings in Bushfire Prone Areas (SA 2018) Simplified Procedure (Method 1)*. An overview of the site is presented in **Figure 1**.

VEGETATION CLASSIFICATION

All vegetation within 100 m of the seven subject lots was classified in accordance with Clause 2.2.3 of AS 3959: 2018. Each distinguishable vegetation class with the potential to determine the BAL is identified below and presented in **Figure 1**.

Plot 1 Classification or Exclusion Clause Excluded AS 3959: 2018 2.2.3.2 (e) & (f)

Photo Point 1

This plot has been excluded under Clause 2.2.3.2 (e) and (f) of AS 3959: 2018. This is an area that has been cleared for construction and will contain residential lots, roads, and low threat, maintained vegetation.



Plot 1 Classification or Exclusion Clause Excluded AS 3959: 2018 2.2.3.2 (e) & (f)

Photo Point 2

This plot has been excluded under Clause 2.2.3.2 (e) and (f) of AS 3959: 2018. This is an area of low threat, maintained vegetation and footpaths.



Plot 2 Classification or Exclusion Clause Excluded AS 3959: 2018 2.2.3.2 (f)

Photo Point 3

This plot has been excluded under Clause 2.2.3.2 (f) of AS 3959: 2018. This is an area of low threat, managed vegetation as windbreaks.



Plot 1 Classification or Exclusion Clause Excluded AS 3959: 2018 2.2.3.2 (e) & (f)

Photo Point 4

This plot has been excluded under Clause 2.2.3.2 (e) and (f) of AS 3959: 2018. This is an area of low threat, maintained grass, managed vegetation and non-vegetated areas (i.e. firebreaks and roads).



Plot 1 Classification or Exclusion Clause Excluded AS 3959: 2018 2.2.3.2 (f)

Photo Point 5

Offsite slashed open tussock grassland, paddocks with fully cured grass, sandy firebreak established on internal boundaries, lot is under a landowner agreement to be managed as low threat vegetation.



Plot 1 Classification or Exclusion Clause Excluded AS 3959: 2018 2.2.3.2 (f)

Photo Point 6

Offsite slashed open tussock grassland, paddocks with fully cured grass, sandy firebreak established on internal boundaries, lot is under a landowner agreement to be managed as low threat vegetation.



RELEVANT FIRE DANGER INDEX

The fire danger index for this site has been determined in accordance with Table 2.1 of AS 3959: 2018.

Relevant Fire Danger Index			
FDI 40 <input type="checkbox"/>	FDI 50 <input type="checkbox"/>	FDI 80 <input checked="" type="checkbox"/>	FDI 100 <input type="checkbox"/>
<i>Table 2.4.5</i>	<i>Table 2.4.4</i>	<i>Table 2.4.3</i>	<i>Table 2.4.2</i>

POTENTIAL BUSHFIRE IMPACTS

The potential bushfire impact to the site / proposed development from each of the identified vegetation plots are identified below, **Table 1** and Figure 1.

Table 1: BAL Analysis AS 3959: 2018

Plot	Vegetation Classification	Effective Slope	Separation distances required				
			BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5
1	Excluded AS 3959: 2018 2.2.3.2 (e) & (f)	-	No separation distances required – BAL-LOW				

DETERMINED BUSHFIRE ATTACK LEVEL (BAL)

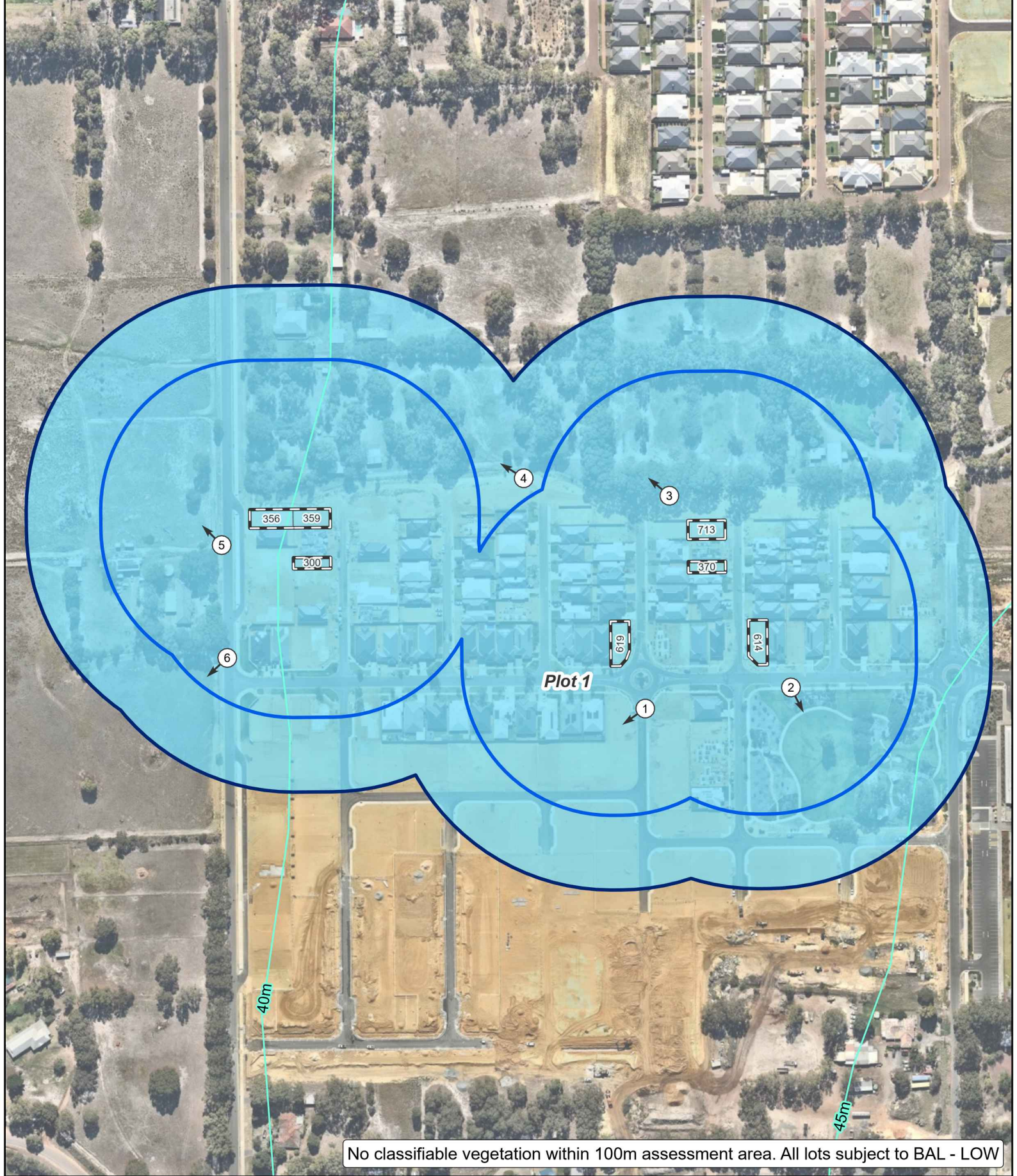
The determined Bushfire Attack Level (highest BAL) for the proposed works has been determined in accordance with Clause 2.2.6 of AS 3959: 2018 relevant data from the site assessment shown in Table 1 and Figure 1.

Table 2: BAL Assessment summary

BAL	Affected lots	Construction sections to be consulted in AS 3959: 2018
BAL-LOW	Determined Bushfire Attack Level for: Lots 300, 356, 359, 370, 614, 619 and 713	4

Note: This BAL rating is based on the information current at the date of this document and is valid for 12 months.

Figure 1: Vegetation Classification



No classifiable vegetation within 100m assessment area. All lots subject to BAL - LOW

- Legend**
- Subject site
 - 100m site assessment
 - 150m site assessment
 - Contour (5m)

Photo location

Vegetation classification

- Excluded as per clause 2.2.3.2 (e) and (f)

0 25 50 100
Metres
Datum/Projection:
GDA 1994 MGA Zone 50

N
eco logical
AUSTRALIA
A TETRA TECH COMPANY
Project: 19133-SM Date: 26/07/2021

Appendix A – Additional Information / Advisory Notes

This assessment was undertaken as per AS 3959: 2018. It is important that the current version of AS 3959, is consulted for construction purposes.

This BAL rating is based on the information current at the date of this letter and is valid for 12 months from the date of this letter.

Bushfire Attack Level (BAL) as set out in the *Australian Standard 3959 Construction of Buildings in Bushfire-Prone Areas* (AS 3959), as referenced in the *Building Code of Australia*.

Bushfire Attack Level (BAL)	Classified vegetation within 100 m of the site and radiant heat flux exposure thresholds	Description of predicted bush fire attack and levels of exposure	Construction Section as per AS 3959
BAL-LOW		There is insufficient risk to warrant specific construction requirements.	4
BAL-12.5	$\leq 12.5 \text{ kW/m}^2$	Ember attack	3 and 5
BAL-19	$>12.5 \text{ kW/m}^2 \leq 19 \text{ kW/m}^2$	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux.	3 and 6
BAL-29	$>19 \text{ kW/m}^2 \leq 29 \text{ kW/m}^2$	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux	3 and 7
BAL-40	$>29 \text{ kW/m}^2 \leq 40 \text{ kW/m}^2$	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux with the increased likelihood of exposure to flames.	3 and 8
BAL-FZ	$>40 \text{ kW/m}^2$	Direct exposure to flames from fire front in addition to radiant heat flux and ember attack	3 and 9

Source: “AS 3959: 2018 Construction of buildings in bushfire-prone areas” published by Standards Australia, Sydney

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959: 2018

Site Details

Address:	Lot 300, Beenyup Grove Estate		
Suburb:	Byford, 6122	State:	WA
Local Government Area:	Shire of Serpentine Jarrahdale		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	21PER-19133	Report Date:	27/07/2021

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	N/A	N/A	N/A	BAL - LOW

Practitioner Details

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959: 2018.

Name Daniel Panickar
Eco Logical Australia

Signature: 

Certificate Date: 27/07/2021



Accreditation No: BPAD 37802
Accreditation Expiry: December 2021

Bushfire Attack Level (BAL) Certificate - Lot 300 (BAL - LOW)

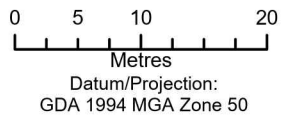
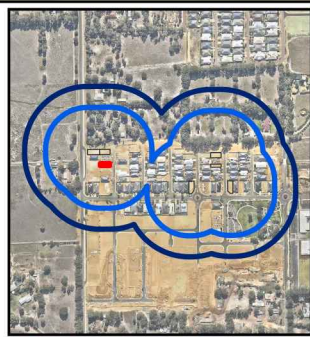


Legend

- Lot boundary
- 100m site assessment
- 150m site assessment

Bushfire Attack Level (BAL)

- BAL - FZ
- BAL - 40
- BAL - 29
- BAL - 19
- BAL - 12.5
- BAL - LOW



Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959: 2018

Site Details

Address:	Lot 356, Beenyup Grove Estate		
Suburb:	Byford, 6122	State:	WA
Local Government Area:	Shire of Serpentine Jarrahdale		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	21PER-19133	Report Date:	27/07/2021

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	N/A	N/A	N/A	BAL - LOW

Practitioner Details

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959: 2018.

Name Daniel Panickar
Eco Logical Australia

Signature: 

Certificate Date: 27/07/2021






Accreditation No: BPAD 37802
Accreditation Expiry: December 2021







Bushfire Attack Level (BAL) Certificate - Lot 356 (BAL - LOW)

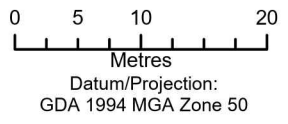


Legend

-  Lot boundary
-  100m site assessment
-  150m site assessment

Bushfire Attack Level (BAL)

-  BAL - FZ
-  BAL - 40
-  BAL - 29
-  BAL - 19
-  BAL - 12.5
-  BAL - LOW



Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959: 2018

Site Details

Address:	Lot 359, Beenyup Grove Estate		
Suburb:	Byford, 6122	State:	WA
Local Government Area:	Shire of Serpentine Jarrahdale		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	21PER-19133	Report Date:	27/07/2021

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	N/A	N/A	N/A	BAL - LOW

Practitioner Details

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959: 2018.

Name Daniel Panickar
Eco Logical Australia

Signature: 

Certificate Date: 27/07/2021



Accreditation No: BPAD 37802
Accreditation Expiry: December 2021

Bushfire Attack Level (BAL) Certificate - Lot 359 (BAL - LOW)

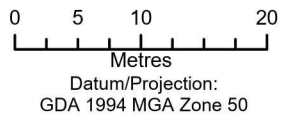


Legend

- Lot boundary
- 100m site assessment
- 150m site assessment

Bushfire Attack Level (BAL)

- BAL - FZ
- BAL - 40
- BAL - 29
- BAL - 19
- BAL - 12.5
- BAL - LOW



Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959: 2018

Site Details

Address:	Lot 370, Beenyup Grove Estate		
Suburb:	Byford, 6122	State:	WA
Local Government Area:	Shire of Serpentine Jarrahdale		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	21PER-19133	Report Date:	27/07/2021

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	N/A	N/A	N/A	BAL - LOW

Practitioner Details

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959: 2018.

Name Daniel Panickar
Eco Logical Australia

Signature: 

Certificate Date: 27/07/2021



Accreditation No: BPAD 37802
Accreditation Expiry: December 2021

Bushfire Attack Level (BAL) Certificate - Lot 370 (BAL - LOW)

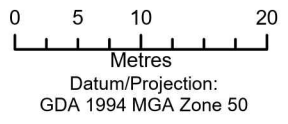
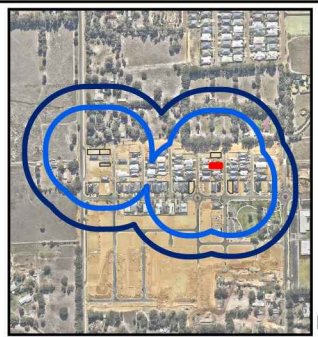


Legend

- Lot boundary
- 100m site assessment
- 150m site assessment

Bushfire Attack Level (BAL)

- BAL - FZ
- BAL - 40
- BAL - 29
- BAL - 19
- BAL - 12.5
- BAL - LOW



Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959: 2018

Site Details

Address:	Lot 614, Beenyup Grove Estate		
Suburb:	Byford, 6122	State:	WA
Local Government Area:	Shire of Serpentine Jarrahdale		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	21PER-19133	Report Date:	27/07/2021

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	N/A	N/A	N/A	BAL - LOW

Practitioner Details

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959: 2018.

Name Daniel Panickar
Eco Logical Australia

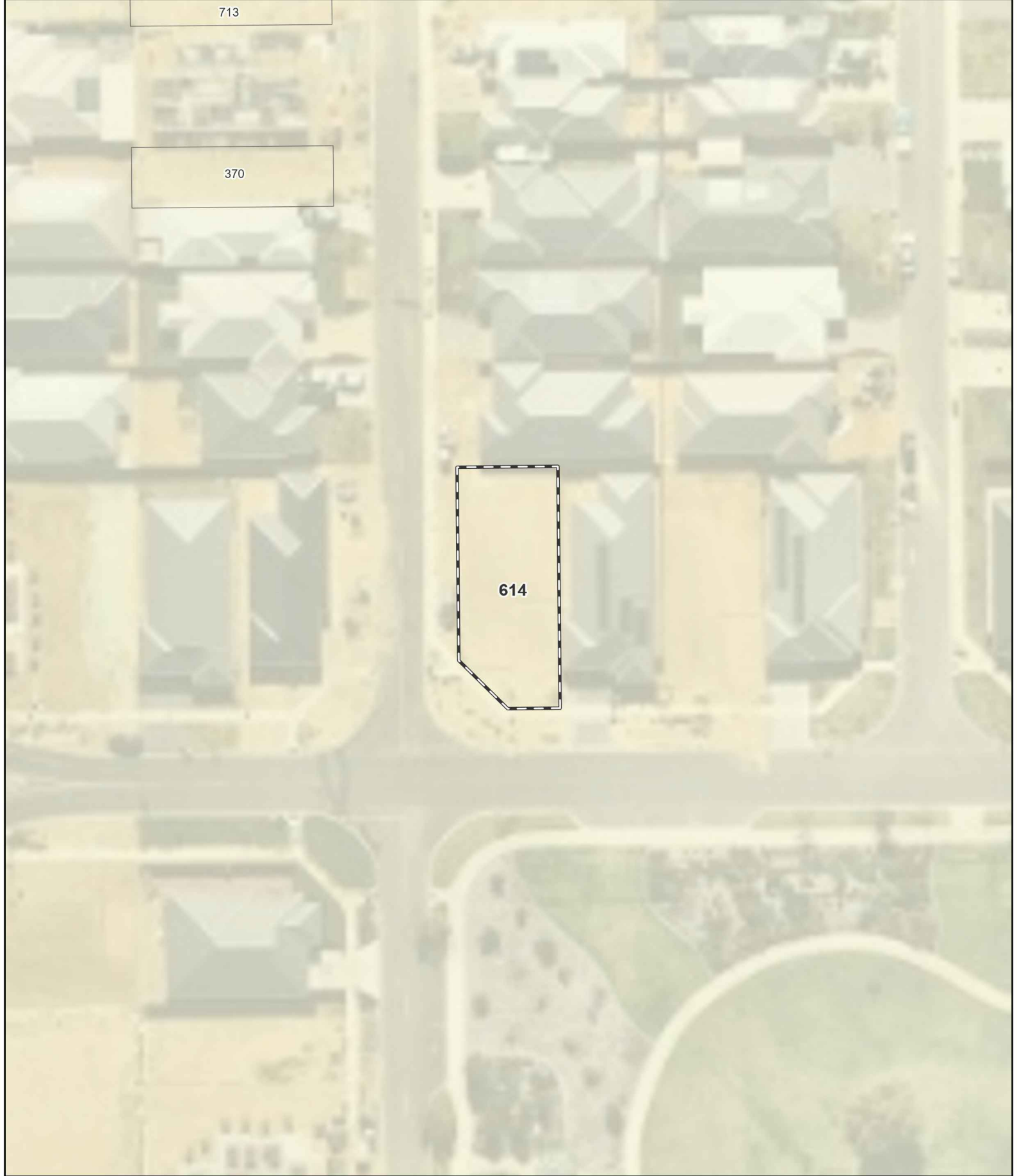
Signature: 

Certificate Date: 27/07/2021



Accreditation No: BPAD 37802
Accreditation Expiry: December 2021

Bushfire Attack Level (BAL) Certificate - Lot 614 (BAL - LOW)



- Legend**
- Lot boundary
 - 100m site assessment
 - 150m site assessment

- Bushfire Attack Level (BAL)**
- BAL - FZ
 - BAL - 40
 - BAL - 29
 - BAL - 19
 - BAL - 12.5
 - BAL - LOW



0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50

N
eco logical
AUSTRALIA
A TETRA TECH COMPANY
Project: 19133-SM Date: 27/07/2021

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959: 2018

Site Details

Address:	Lot 619, Beenyup Grove Estate		
Suburb:	Byford, 6122	State:	WA
Local Government Area:	Shire of Serpentine Jarrahdale		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	21PER-19133	Report Date:	27/07/2021

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	N/A	N/A	N/A	BAL - LOW

Practitioner Details

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959: 2018.

Name Daniel Panickar
Eco Logical Australia

Signature: 

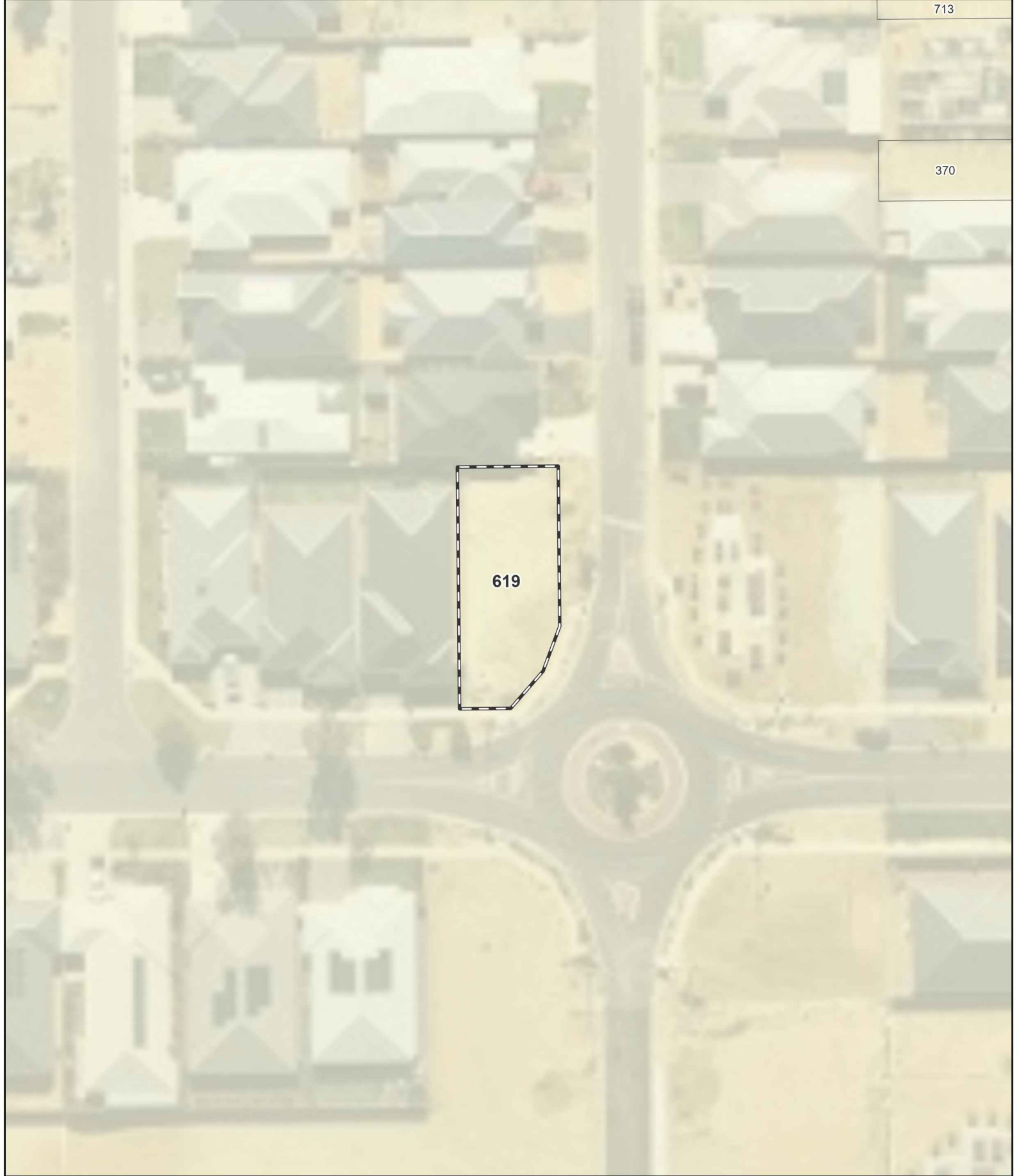
Certificate Date: 27/07/2021



Accreditation No: BPAD 37802
Accreditation Expiry: December 2021

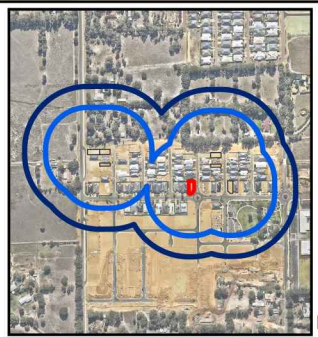
Bushfire Attack Level (BAL) Certificate - Lot 619 (BAL - LOW)

713
370



- Legend**
- Lot boundary
 - 100m site assessment
 - 150m site assessment

- Bushfire Attack Level (BAL)**
- BAL - FZ
 - BAL - 40
 - BAL - 29
 - BAL - 19
 - BAL - 12.5
 - BAL - LOW



0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50



eco logical
AUSTRALIA
A TETRA TECH COMPANY

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959: 2018

Site Details

Address:	Lot 713, Beenyup Grove Estate		
Suburb:	Byford, 6122	State:	WA
Local Government Area:	Shire of Serpentine Jarrahdale		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	21PER-19133	Report Date:	27/07/2021

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	N/A	N/A	N/A	BAL - LOW

Practitioner Details

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959: 2018.

Name Daniel Panickar
Eco Logical Australia

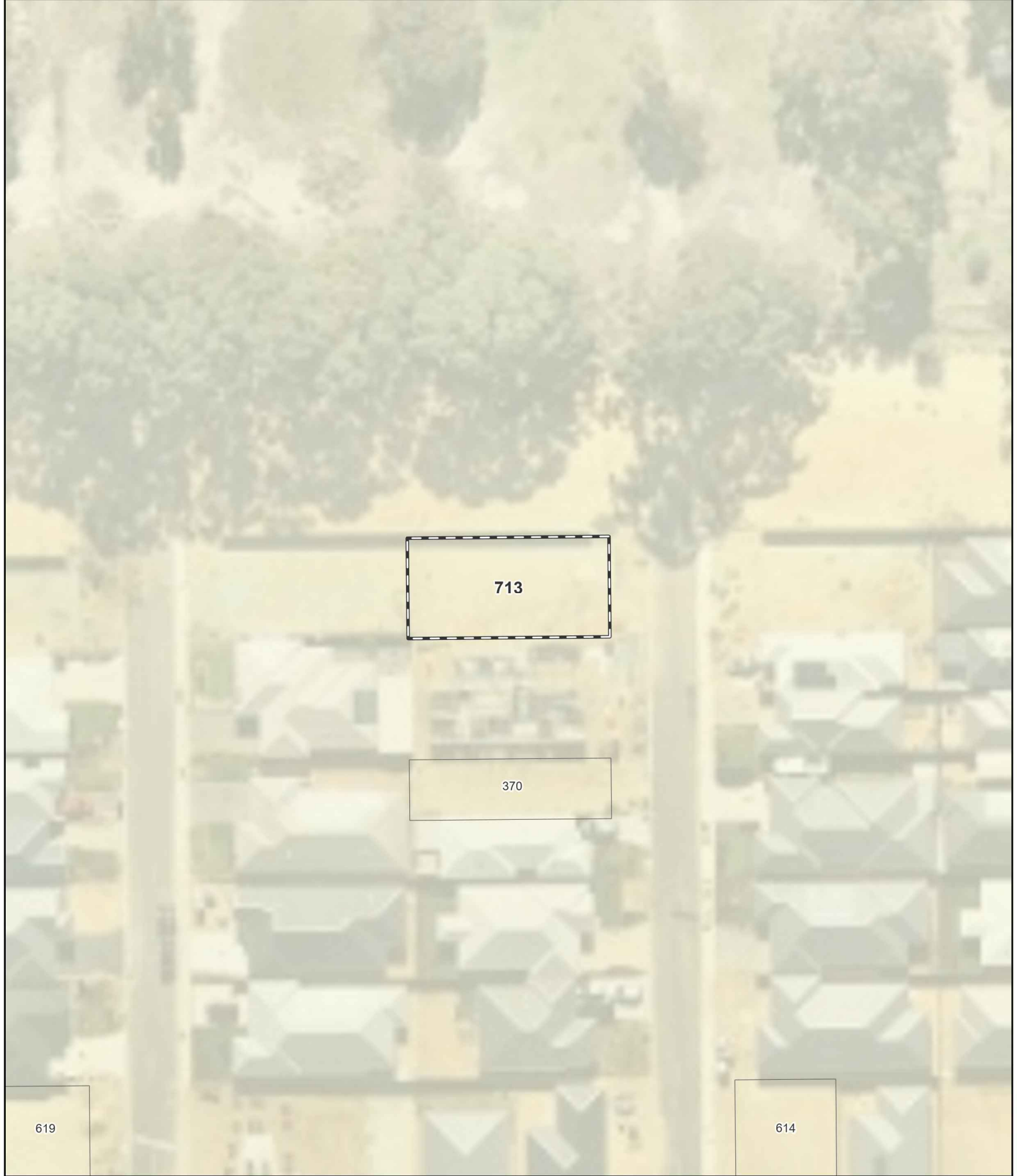
Signature: 

Certificate Date: 27/07/2021






Accreditation No: BPAD 37802
Accreditation Expiry: December 2021







Bushfire Attack Level (BAL) Certificate - Lot 713 (BAL - LOW)



Legend

-  Lot boundary
-  100m site assessment
-  150m site assessment

Bushfire Attack Level (BAL)

-  BAL - FZ
-  BAL - 40
-  BAL - 29
-  BAL - 19
-  BAL - 12.5
-  BAL - LOW

