

Re: Bushfire Attack Level (BAL) Assessment Report for **Stages 1 and 2, Beenyup Grove Estate, Byford**

Site Details

Address: Beenyup Grove Estate, Stages 1 and 2 (Lots 370, 602, 603, 604, 609, 612, 614, 615, 617, 618, 619, 626, 629, 671, 685, 699, 704, 705, 713, 714, 718, 727 and 731)

Suburb: Byford, 6155 **State:** Western Australia

Local Government Area: Shire of Serpentine Jarrahdale

Description of building works: Residential development, future buildings

Report details

Report/Job number:	20PER-15870	Report version:	v1
Assessment date:	21/04/2020	Report date:	28/04/2020
Author:	James Leonard and Daniel Panickar	Review:	Daniel Panickar (BPAD Level 3 – 37802)



SITE ASSESSMENT AND SITE PLAN

The assessment of the 23 subject lots was undertaken on 21 April 2020 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 23 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 under clause 2.2.3.2 (e) and (f)

Photo Point 1

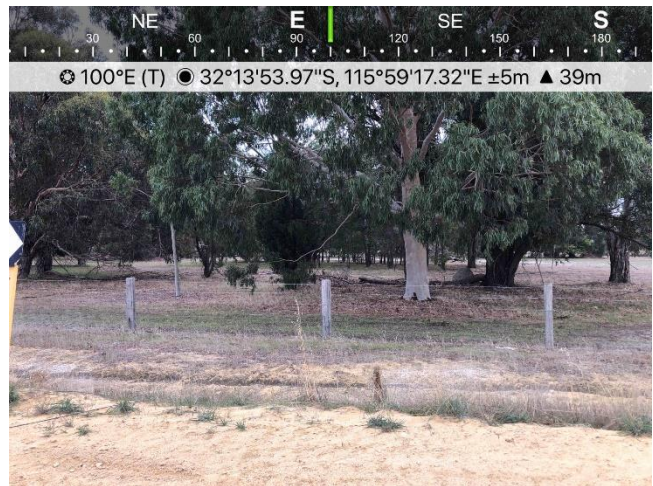
This plot has been excluded under Clause 2.2.3.2 (e) & (f) of AS 3959-2018. This area contains residential development. Land in the background is currently being cleared.



Plot 1 Classification or Exclusion Clause Excluded under clause 2.2.3.2 (e) and (f)

Photo Point 2

This plot has been excluded under Clause 2.2.3.2 (e) & (f) of AS 3959-2018. This photo depicts 119 Doley Road which is an area of low threat, maintained vegetation slashed on a regular basis as part of a landowner agreement between Parcel Property and the landholder.



Plot 1 Classification or Exclusion Clause Excluded under clause 2.2.3.2 (e) and (f)

Photo Point 3

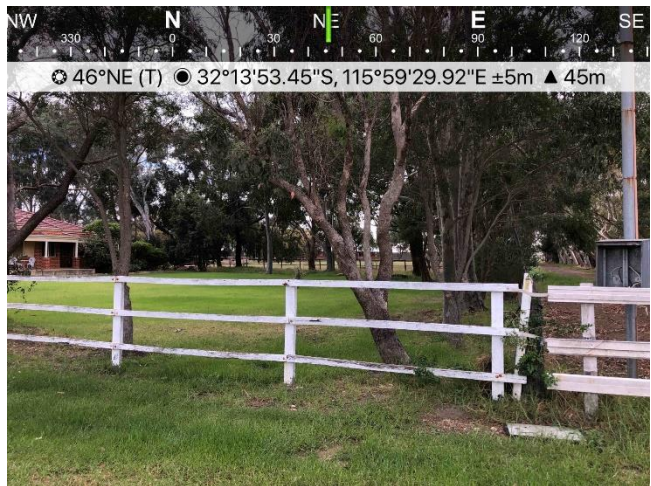
This plot has been excluded under Clause 2.2.3.2 (e) & (f) of AS 3959-2018. This photo depicts a neighbouring property which contains low threat, maintained vegetation.



Plot 1 Classification or Exclusion Clause Excluded under clause 2.2.3.2 (e) and (f)

Photo Point 4

This plot has been excluded under Clause 2.2.3.2 (e) & (f) of AS 3959-2018. This photo depicts a neighbouring property which contains low threat, maintained vegetation.



Plot 1 Classification or Exclusion Clause Excluded under clause 2.2.3.2 (e) and (f)

Photo Point 5

This plot has been excluded under Clause 2.2.3.2 (e) & (f) of AS 3959-2018. This photo depicts a neighbouring property which contains low threat, maintained vegetation.



Plot 1 Classification or Exclusion Clause Excluded under clause 2.2.3.2 (e) and (f)

Photo Point 6

This plot has been excluded under Clause 2.2.3.2 (e) & (f) of AS 3959-2018. This photo depicts an area of Public Open Space within Beenyup Grove Estate which contains low threat, maintained vegetation.



Plot 1 Classification or Exclusion Clause Excluded under clause 2.2.3.2 (e) and (f)

Photo Point 7

This plot has been excluded under Clause 2.2.3.2 (e) & (f) of AS 3959-2018. This photo depicts a land within Beenyup Grove Estate that has been recently cleared for development.



Plot 1 Classification or Exclusion Clause Excluded under clause 2.2.3.2 (e) and (f)

Photo Point 8

This plot has been excluded under Clause 2.2.3.2 (e) & (f) of AS 3959-2018. This photo depicts a land within Beenyup Grove Estate that has been recently cleared for development.



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 Figure 1 and Table 2.

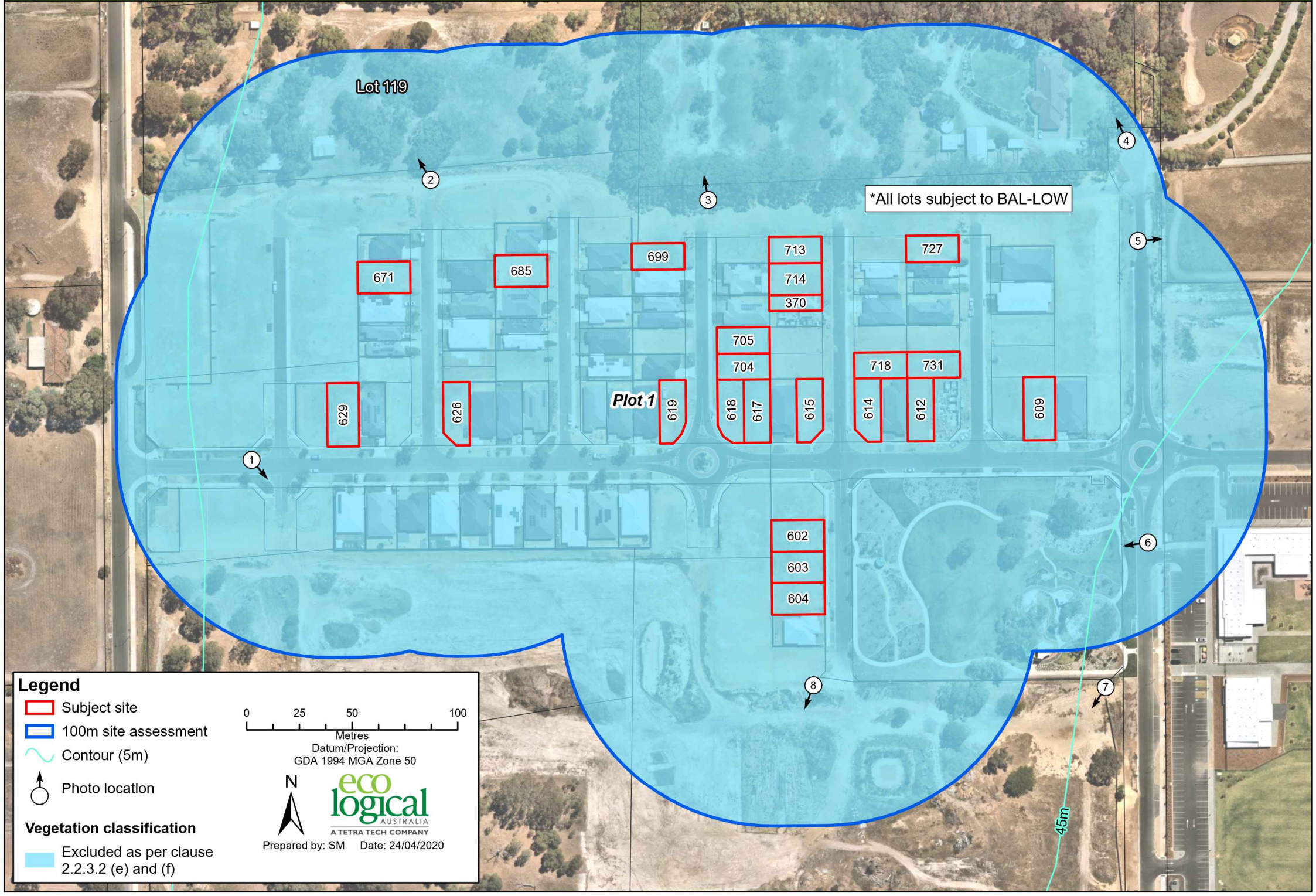
Table 2: BAL Assessment summary

BAL	Affected lots	Construction sections to be consulted in AS 3959-2018
BAL-LOW	Determined Bushfire Attack Level for: Lots 370, 602, 603, 604, 609, 612, 614, 615, 617, 618, 619, 626, 629, 671, 685, 699, 704, 705, 713, 714, 718, 727 and 731	4

Note: Parcel Property have a current landowner agreement on several properties adjacent to the Beenypup Stage 3 subdivision including 119 Doley Road, whereby the lot will be managed as low threat vegetation in perpetuity.

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



Appendix A – Additional Information / Advisory Notes

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 619, Beenyup Grove Estate Stages 1 and 2		
Suburb:	Byford, 6155	State:	WA
Local Government Area:	Shire of Serpentine Jarrahdale		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-15870	Report Date:	28/04/2020

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

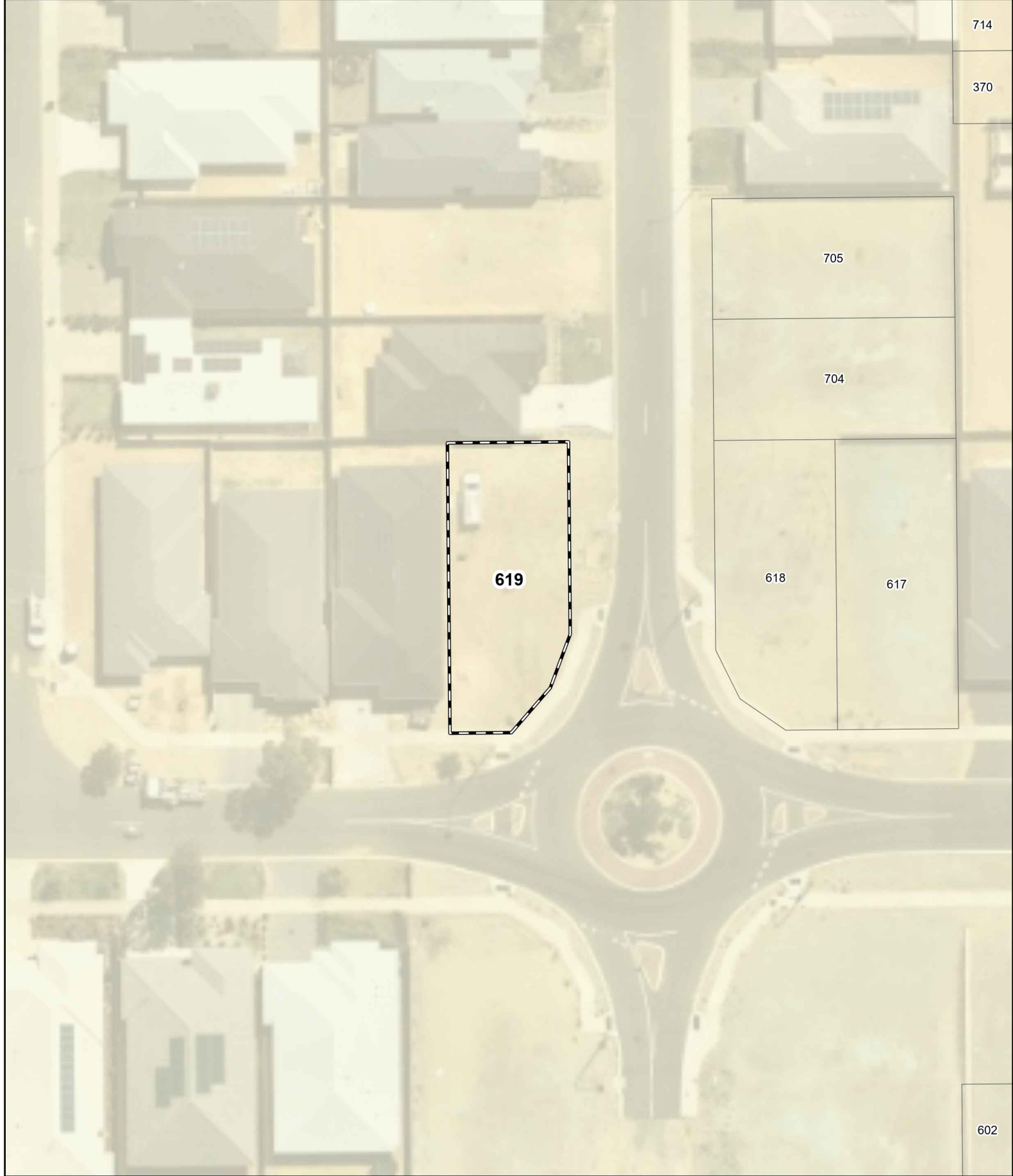
Signature: 

Certificate Date: 28/04/2020



Accreditation No: BPAD 37802
Expiry: December 2020

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



Legend
 Lot location
 100m site assessment

Bushfire attack level (BAL)

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



0 4.25 8.5 17
 Metres
 Datum/Projection:
 GDA 1994 MGA Zone 50

eco logical AUSTRALIA
 A TETRA TECH COMPANY
 Prepared by: SM Date: 24/04/2020

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

Site Details

Address:	Lot 626, Beenyup Grove Estate Stages 1 and 2		
Suburb:	Byford, 6155	State:	WA
Local Government Area:	Shire of Serpentine Jarrahdale		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-15870	Report Date:	28/04/2020

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

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Name Daniel Panickar
Eco Logical Australia

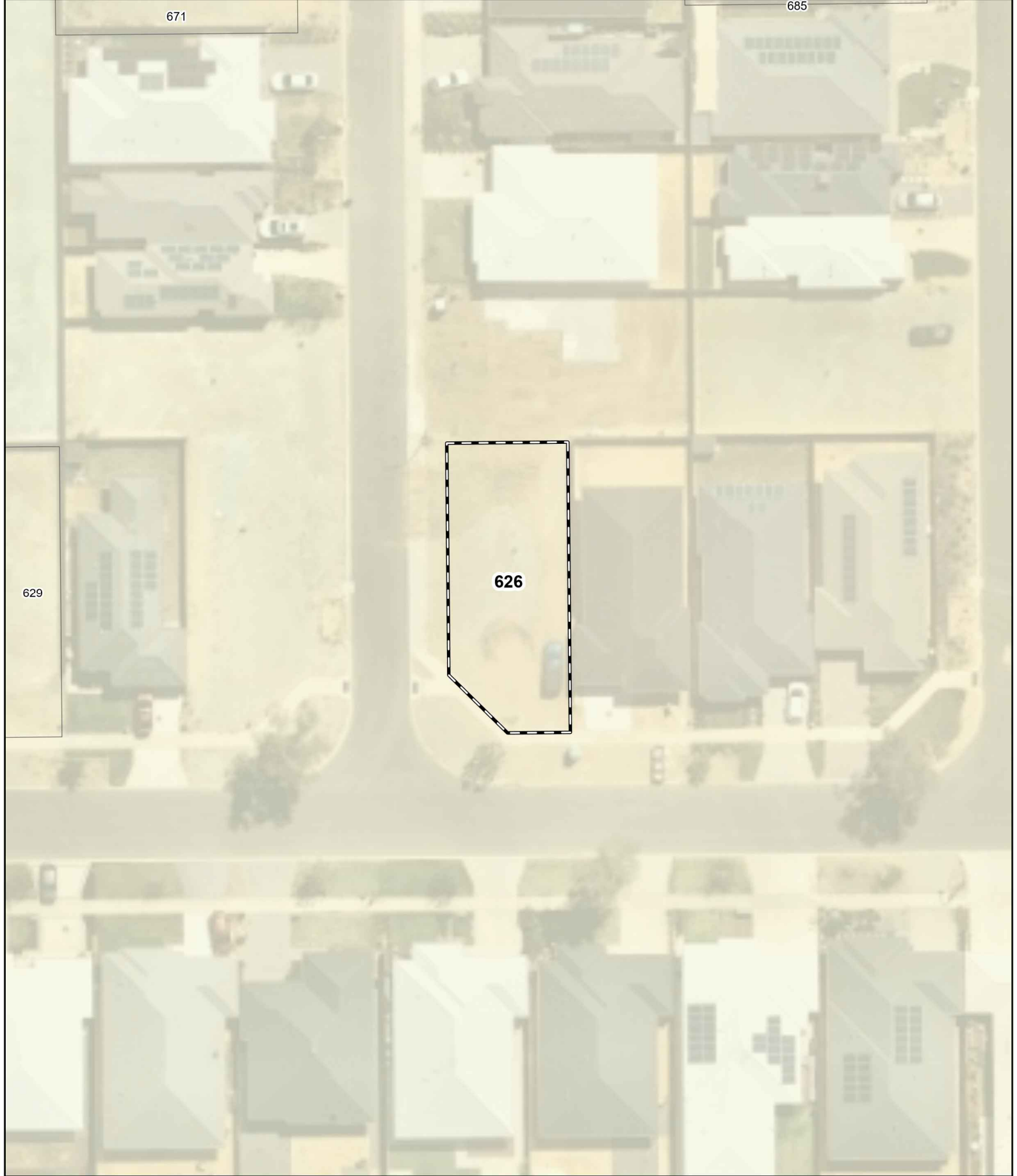
Signature: 

Certificate Date: 28/04/2020



Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 626 (BAL - LOW)



Legend
[Dashed black outline] Lot location
[Blue outline] 100m site assessment

Bushfire attack level (BAL)	
[Red square]	BAL - FZ
[Orange square]	BAL - 40
[Yellow square]	BAL - 29
[Light blue square]	BAL - 19
[Medium blue square]	BAL - 12.5
[Light green square]	BAL - LOW



0 4.25 8.5 17
Metres
Datum/Projection:
GDA 1994 MGA Zone 50

N
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Prepared by: SM Date: 24/04/2020

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

Site Details

Address:	Lot 629, Beenyup Grove Estate Stages 1 and 2		
Suburb:	Byford, 6155	State:	WA
Local Government Area:	Shire of Serpentine Jarrahdale		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-15870	Report Date:	28/04/2020

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: 28/04/2020









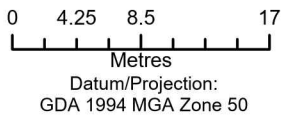
Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 629 (BAL - LOW)



- Legend**
-  Lot location
 -  100m 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 671, Beenyup Grove Estate Stages 1 and 2		
Suburb:	Byford, 6155	State:	WA
Local Government Area:	Shire of Serpentine Jarrahdale		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-15870	Report Date:	28/04/2020

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: 28/04/2020









Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 671 (BAL - LOW)



Legend
 Lot location
 100m site assessment

Bushfire attack level (BAL)	
	BAL - FZ
	BAL - 40
	BAL - 29
	BAL - 19
	BAL - 12.5
	BAL - LOW



0 4.25 8.5 17
Metres
Datum/Projection:
GDA 1994 MGA Zone 50



Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

Site Details

Address:	Lot 685, Beenyup Grove Estate Stages 1 and 2		
Suburb:	Byford, 6155	State:	WA
Local Government Area:	Shire of Serpentine Jarrahdale		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-15870	Report Date:	28/04/2020

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

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Name Daniel Panickar
Eco Logical Australia

Signature: 

Certificate Date: 28/04/2020



Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 685 (BAL - LOW)



Legend
[Dashed box] Lot location
[Blue outline] 100m site assessment

Bushfire attack level (BAL)	
[Red]	BAL - FZ
[Orange]	BAL - 40
[Yellow]	BAL - 29
[Blue]	BAL - 19
[Light Blue]	BAL - 12.5
[Light Green]	BAL - LOW



0 4.25 8.5 17
Metres
Datum/Projection:
GDA 1994 MGA Zone 50

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A TETRA TECH COMPANY
Prepared by: SM Date: 24/04/2020

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

Site Details

Address:	Lot 699, Beenyup Grove Estate Stages 1 and 2		
Suburb:	Byford, 6155	State:	WA
Local Government Area:	Shire of Serpentine Jarrahdale		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-15870	Report Date:	28/04/2020

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: 28/04/2020



Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 699 (BAL - LOW)



Legend
[Dashed box] Lot location
[Blue outline] 100m site assessment

- Bushfire attack level (BAL)**
- [Red] BAL - FZ
 - [Orange] BAL - 40
 - [Yellow] BAL - 29
 - [Light Blue] BAL - 19
 - [Lighter Blue] BAL - 12.5
 - [Lightest Blue] BAL - LOW



0 4.25 8.5 17
Metres
Datum/Projection:
GDA 1994 MGA Zone 50

N
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A TETRA TECH COMPANY
Prepared by: SM Date: 24/04/2020

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

Site Details

Address:	Lot 705, Beenyup Grove Estate Stages 1 and 2		
Suburb:	Byford, 6155	State:	WA
Local Government Area:	Shire of Serpentine Jarrahdale		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-15870	Report Date:	28/04/2020

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: 28/04/2020



Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 705 (BAL - LOW)



Legend
[Dashed box] Lot location
[Blue outline] 100m site assessment

Bushfire attack level (BAL)	
[Red]	BAL - FZ
[Orange]	BAL - 40
[Yellow]	BAL - 29
[Light Blue]	BAL - 19
[Lighter Blue]	BAL - 12.5
[Lightest Blue]	BAL - LOW



0 4.25 8.5 17
Metres
Datum/Projection:
GDA 1994 MGA Zone 50

N
eco logical
AUSTRALIA
A TETRA TECH COMPANY
Prepared by: SM Date: 24/04/2020