



The Planning Department
Murrindindi Shire Council
PO Box 138
Alexandra VIC 3714

27th October 2021

To the Planning Department,

Application for Planning Permit
Extend use of existing Campsite and maintain the existing facilities permanently on site
1059 Maroondah HWY, Narbethong

Further to our meeting with Councils Development Assessment Team (including Planner K Girvan) back in April 2018 we are finally able to submit our planning application to Extend use of existing Camp and maintain the existing facilities permanently on site.

We confirm that in preparing this application we have taken careful consideration of all details raised by Karen at that time and responded to all points raised.

We confirm the following documents as included in our application:

- Permit Application form
- Current copy of Title
- Planning Management Statement
- Architectural Application Drawings Site 1
- Architectural Applications Drawings Plans and Photos
- Bushfire Documents: BMS, BMP & Bushfire Emergency Management Plan
- Existing Septic – LCA report

We confirm in developing our planning permit application we have taken cognisance of the sites zoning requirements and the objectives of the local planning scheme.

We highlight that the Existing Campsite, as established by the previous property owners and the Cross-Country Jeep Club (CCJC), has been a tourist and recreational feature of the Murrindindi Shire and Acheron Valley for over 60 years. The Campsite has been a focal point for many community activities over that period.

After the 2009 bushfire the CCJC obtained funds from the State Governments Bushfire Recovery Fund to rebuild and, as you are aware, the Council has confirmed their ongoing use rights with the issue of a certificate to this effect.

We confirm that this application seeks, simply, to allow the property owners to utilize this existing space for groups outside the car-club and advertise for this purpose.

The proposal looks to utilize a long-established existing space and facilities for camping and tourism purposes. We believe that this will add to and enhance the important tourism sector of the Murrindindi Shire. The Owners will be looking to provide access for family and community groups to unique and private campsite. The Owners already have expressions of interest from several Melbourne Mountain biking associations, along with other outdoor education and sporting groups.

We thank you for your assistance to date and ask that you contact us should you require any further information or clarification.

Yours Sincerely,

Daniel Pardon Architects
cc. Client

PO Box 166 Main Street, Healesville
VICTORIA 3777



Date: 27th October 2021
Owners: Nicole & Daniel Pardon
Project: Use of Land as a campsite

Proposed extension of use for Campsite at 1059 Maroondah HWY, Narbethong
Property Outline and Management Statement

Introduction / Proposal

The Owners at 1059 Maroondah Hwy are seeking to extend the use of the existing campsite, on their property, for their own use and maintain the existing facilities permanently on site.

It is proposed the campsite would be advertised, to the public, for group camping activities. Group camping would be offered for up to 35 people at any one time for 25 weekends of the year. It is proposed that the campsite would be closed for all camping activities during the months of July and August.

It is highlighted that the proposed use, by the property Owners, would work alongside of the *existing use rights* as documented and approved, by the Council, for the Cross-Country Jeep Club (CCJC) (refer to the Council letter of use rights attached to this application and dated the 6th of May 2021).

The property Owners proposal, for 35 people camping at any one time for 25 weekends of the year, would look to place campers alongside CCJC campers where space is available and utilize weekends not booked by the CCJC.

Therefore, the proposed use of the campsite by the Owners doesn't seek increase the numbers of campers or duration of camping already considered and approved by the Council for the CCJC.

ZONING of land

FARMING ZONE (FZ)

OVERLAYS

BUSHFIRE MANAGEMENT OVERLAY (BMO OR WMO)

FLOODWAY OVERLAY (FO)

FLOODWAY OVERLAY SCHEDULE (FO)

LAND SUBJECT TO INUNDATION OVERLAY (LSIO)

LAND SUBJECT TO INUNDATION OVERLAY SCHEDULE (LSIO)

PROPERTY Details

- 17.3 hectares of land
- The property has approx. 1km of frontage to the Acheron River, with riparian rights to the river.
- The property is largely open grazing paddocks (fenced into 6 paddocks of various sizes)
- The property has an existing 3-bedroom house and associated outbuildings (carport, external office and farm sheds)
- Existing campsite and associated facilities – Approx. 1.46 hectares (or 3.6 acres)
 - Existing campsite facilities
 - Male & female toilet/shower blocks
 - Car club meeting room
 - Store & Mower shed
 - Covered cooking and eating space
 - Covered BBQ and fire pit



Existing Agricultural Activity

The Owners are utilizing the fenced pasture for livestock.

The Owners have established, over 4-year period, a small sheep herd of 15 -20 sheep with seasonal breeding of lambs for sale. It is proposed that the herd of Wiltipoll cross Dorper sheep be improved over time with selective breeding. With additional proposed fencing works the heard will grow to be between 20-30 sheep depending upon the time of season. The aim being to sell lambs years (or twice yearly) for meat and as livestock to other farms.

In addition to Owners agist cattle on the property. Number of cattle vary from season to season, but typically the land supports 8-10 cattle alongside the sheep heard. It is proposed to continue to agist cattle and numbers to be assessed against sheep numbers.

The owners have also begun planting tree corridors between the paddocks. It is proposed that this will be ongoing.

The owners have improved the existing fences where required to improve animal control and will look to add further fencing to allow for further paddock rotations combined with the development of revegetation corridors.

The Owners are utilizing traditional annual weed spraying in combination with a small herd of goats (5).

Agricultural Activity & Campsite

The campsite is located along the Acheron River and separated from the Agricultural activity the by the main access driveway and fencing. There is no impact from the current camping activities on the separated agricultural use of the land.

It proposed the extended campsite use by the Owners will not impact upon the ongoing Agricultural use of the adjoining paddocks.

Campsite

The proposal for the Owner to use / extend the use of the existing campsite to themselves involves the use of all existing facilities.

We highlight that no new works are required. This application proposes no new construction works, no new earth works, no excavations and no vegetation removal.

As noted earlier the campsite and established by the previous owners and CCJC has developed the campsite area over may years installing all current facilities and detailed on the application drawings and associated photos.

Campsite Location and Access

Existing Siting - The existing campsite has been well located between the Acheron River and farm driveway.

The campsite makes use of land sloping down to the river with the topography, river and existing vegetation creating a private campsite, with no visual impact from the highway or surrounding properties.

The campsite as noted is separated from adjoining properties by the river (lined on both sides with vegetation) and then the Maroondah Hwy. As the proposal is not seeking to increase the numbers of campers or time of use of the area, beyond that which is already approved in the existing rights use for the CCJC, then there will be no additional impact upon adjoining properties.



Vegetation – Since the 2009 bushfires the previous owners and CCJC have embarked on a replanting program along the river and areas adjoining the campsite.

Over the years the previous Owners, along with earlier car club members conducted a number of 4WD activities in the campsite area and adjacent crown and council land. These activities included 4WD training, mud run challenges etc.

These activities ceased in the years prior to the current Owner's taking up residence and no longer continue. The current Owners are committed to maintaining and protecting the bush along the river and adjacent Crown and Council land as wildlife habitat (currently habitat for wallabies, wombats, echidnas, bird life and reptiles). This land also contributes as a riparian buffer to the river, which is also rich in native wildlife (platypus, river rats, freshwater crayfish, fish and bird life).

Campsite Services

The campsite has access to power (underground from house), water from existing rainwater tanks and the existing toilet and shower facilities are connected to an existing septic system. There is no requirement for the upgrade of any of the services as part of this application.

The existing septic system has been reviewed and an LCA report accompanies this application. We highlight the existing CCJC use and proposed camping number, as sort by the Owners, are in line with those as assessed to be acceptable in the LCA.

Campsite Access

The existing campsite and proposed use by the Owners will make use of the existing driveway access off Maroondah HWY adjacent to the bridge over the Acheron River.

This driveway has serviced the property (farm and campsite) for over 60 years.

This access continues to service the CCJC in their approved existing use. As this application does not seek any additional number of campers, we believe the access will continue to work effectively.

The campsite has an established separate entrance along side the driveway in the existing farmhouse. Past the gate there is a maintained all weather driveway down to the campsite.

Campsite Services and facilities

As noted above no new building works and services are proposed.

We highlight that following the 2009 bushfires the CCJC sort and received funding from the State Government Bushfire Recovery fund to re-establish the facilities on the campsite. These included the male and female toilet blocks, Club meeting room, storeroom, mower shed and septic system.

The Government finding paid for these facilities and this application seeks to have them permitted as permanent structures.

Siting, floorplans, and photos of the current facilities are provided with this application.

Bushfire Requirements

This application is supported by the following:

- BMS
- BMP
- Bushfire Emergency Management Plan

We refer you to those documents and confirm that these will be implemented to improve bushfire safety for the Owner patrons and CCJC members.

Note: this document to be read in conjunction with Planning Application Drawings.

BUSHFIRE MITIGATION MEASURES

DEFENDABLE SPACE (Table 6 Vegetation management requirements)
Defendable space is provided around the proposed Emergency Assembly Area for a distance of 60m in all directions where vegetation (and other flammable materials) will be maintained in accordance with the following requirements:

- Grass must be short cropped and maintained during the declared Fire Danger Period
- All leaves and vegetation debris must be removed at regular intervals during the declared Fire Danger Period
- Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building
- Plants greater than 10 centimetres in height must not be placed within 3 metres of a window or glass feature of the building.
- Shrubs must not be located under canopy trees.
- Individual and clumps of shrubs must not exceed 5 square metres in area and must be separated by at least 5 metres.
- Trees must not overhang or touch any elements of the building.
- The canopy of trees must be separated by at least 5m.
- There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

CONSTRUCTION STANDARD
Not applicable. No buildings are being proposed as part of the application.

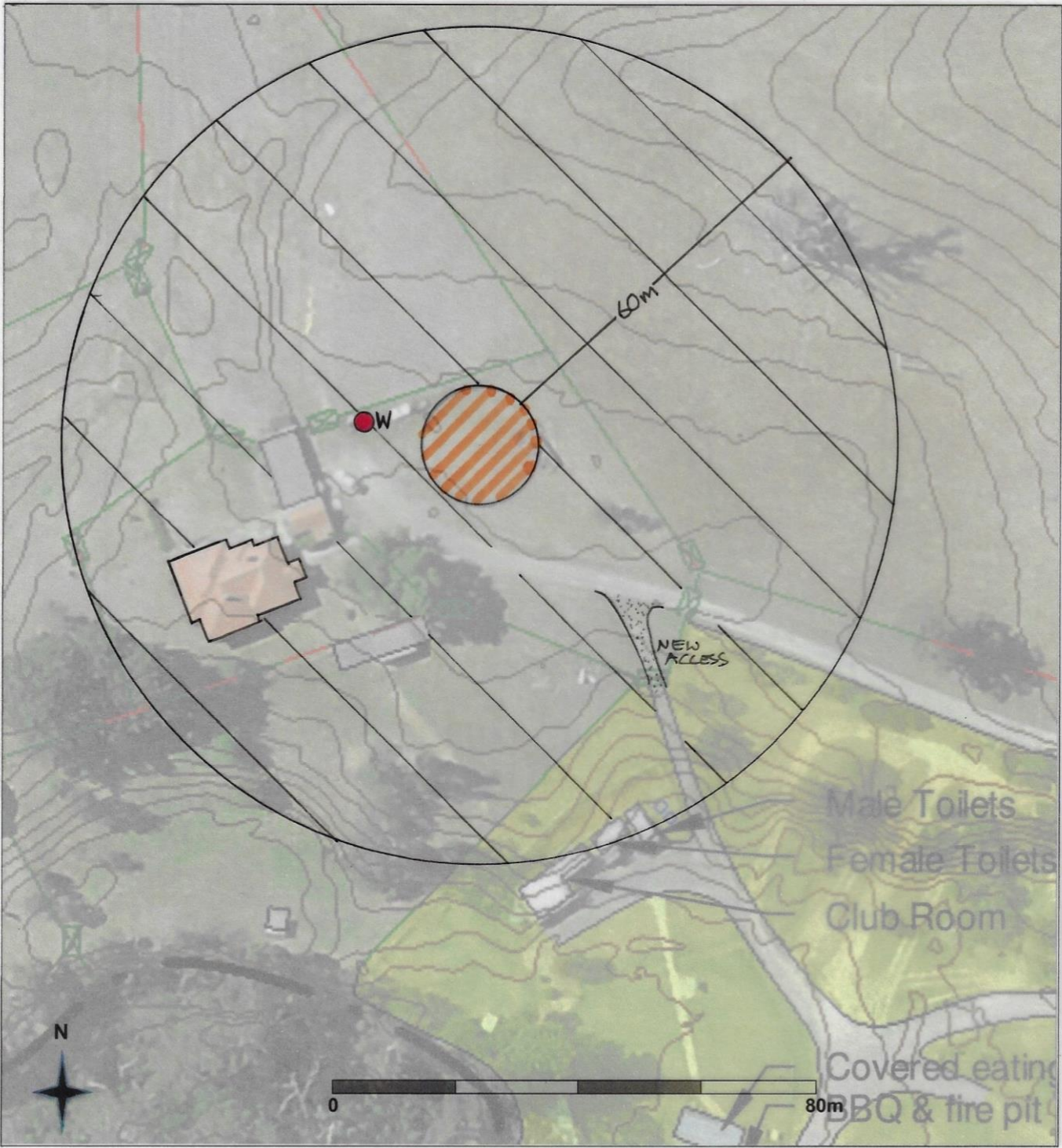
WATER SUPPLY (Table 4 Water supply requirements)
A water supply with an effective capacity of **10,000 litres** must be established on the site for firefighting purposes which meets the following requirements:

- Be stored in an above ground tank constructed of concrete or metal
- Have all fixed above ground water pipes and fittings required for firefighting purposes made of corrosive resistant metal.
- Include a separate outlet for occupant use
- Be readily identifiable from the building or appropriate identification signage to the satisfaction of the relevant fire authority.
- Be located within 60 metres of the outer edge of the approved building
- The outlet/s of the water tank must be within 4m of the accessway and unobstructed.
- Incorporate a separate ball or gate valve (65 millimetre BSP) and coupling (64mm CFA 3 threads per inch male fitting)
- Any pipework and fittings must be a minimum of 65 millimetres (excluding CFA coupling)

ACCESS (Table 5 Vehicle access design and construction)
Access to the Emergency assembly Area and CFA water supply outlet must meet the following requirements:

- All-weather construction
- A load limit of at least 15 tonnes
- Provide a minimum trafficable width of 3.5 metres
- Be clear of encroachments for at least 0.5 metres on each side and at least 4 metres vertically
- Curves must have a minimum inner radius of 10 metres.
- The average grade must be no more than 1 in 7 (14.4 percent) (8.1°) with a maximum of no more than 1 in 5 (20 percent) (11.3°) for no more than 50 metres
- Dips must have no more than a 1 in 8 (12.5 percent) (7.1°) entry and exit angle.
- A turning area for fire fighting vehicles must be provided close to the Emergency Assembly Area by one of the following:
 - A turning circle with a minimum radius of eight metres.
 - A driveway encircling the dwelling.
 - The provision of other vehicle turning heads – such as a T or Y head – which meets the specification of Austroad Design for an 8.8 metre Service Vehicle

Prepared by:	Dean Putting, Yarra Valley BAL Assessments PO Box 292, Yarra Glen, 3775 0409 330 458 dean@yval.com.au
--------------	--



LEGEND		CONSTRUCTION STANDARD: N/A	
VEGETATION CLASS: FOREST			
	CAMPSITE		DEFENDABLE SPACE
	PROPOSED EMERGENCY ASSEMBLY AREA		W WATER SUPPLY (nominated location)
	DWELLING		
	TITLE BOUNDARIES		

SCALE 1:1000

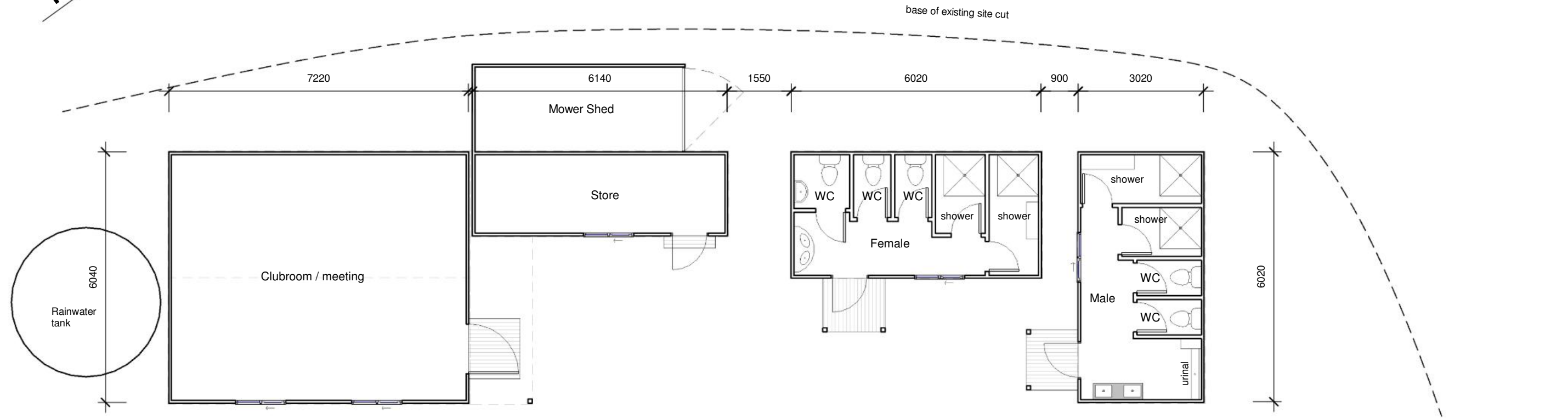
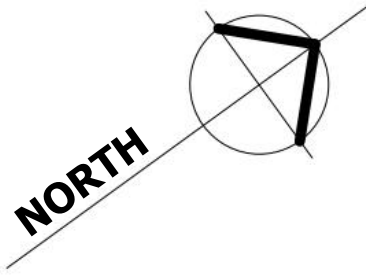


Photo 3 A04

All existing facilities are of sandwich constructed and painted the equivalent of 'Colorbond - Pale Eucalypt' (refer to photos)

Photo 2 A04

Photo 1 A04

1 Floor Level 01

1 : 100

No.	Description	Date

Builder/ Contractors shall verify all dimensions and levels on site before commencing all works. All works shall comply with the BCA and all current SAA codes. Figured dimensions shall take precedence over scaled works. Works shall also conform to the specifications, other drawings (Engineers, interiors etc). The locations of existing service points, trees, fixturers and building elements are indicative only - check on site before commencing.

Existing Facility Floor Plans
Existing Campsite
Nicole & Daniel Pardon
1059 Maroondah Highway, Narbethong

PO BOX 166
MAIN STREET
HEALESVILLE
VIC 3777
M.


Date	October 2021
File name	EX plans
Project number	200000
P2 -	Daniel Pardon Arch. Reg 5923

A03

Scale 1 : 100



Photo 1 - Toilet/Shower Blocks and Club Meeting room



Photo 4 - Coverd eating, cooking fascilities, BBQ and Firepit



Photo 2 - Male and Female Toilet/Shower Blocks



Photo 3 - Club meeting room and Store

No.	Description	Date

Builder/ Contractors shall verify all dimensions and levels on site before comencing all works. All works shall comply with the BCA and all current SAA codes. Figured dimensions shall take precedence over scaled works. Works shall also conform to the specifications, other drawings (Engineers, interiors etc). The locations of existing service points, trees, fixturers and building elements are indicative only - check on site before comencing.

Existing Fascilities Photos
Existing Campsite
Nicole & Daniel Pardon
1059 Maroondah Highway, Narbethong

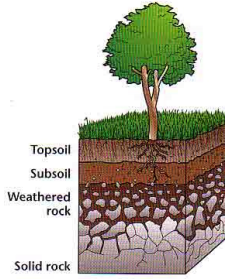
PO BOX 166
MAIN STREET
HEALESVILLE
VIC 3777



Date	October 2021
File name	Designer
Project number	200000
P2 -	Daniel Pardon Arch. Reg 5923

A04

Scale



Mansfield Land Capability & Soil Assessments

P.O. Box 623

Mansfield 3722

Phone: 0418 898 996

Email: adam@mansfieldlca.com.au

LAND CAPABILITY ASSESSMENT

Report No L140/2019

Client: Daniel Pardon

Site Address: 1059 Maroondah Hwy, Narbethong.



Figure 1: Existing Effluent Disposal Area (LAA) viewed from south east to north west as at 20th July 2019.

Table of Contents

Page

1.	Introduction.	3
2.	Description of Development.	3
3.	Investigation Method.	4
4.	Capability Assessment.	4-5
5.	Land Capability and Capability Assessment Table.	6
6.	Risk Assessment Matrix	7
7.	Sizing Calculations.	8
8.	Recommendations.	8-9
9.	Conclusion.	9-10
10.	Management Programme.	10
11.	References	11
12.	Appendix A - Site plan	12
13.	Appendix B - DEPI map	13
14.	Appendix C - Soil horizon profile	14
15.	Appendix D - Planning report and overlay.	15
16.	Appendix E - Bore hole testing location.	16

1. INTRODUCTION

Mansfield Land Capability & Soil Assessments has been engaged to undertake a Land Capability Assessment (LCA) by Daniel Pardon for a site at 1059 Maroondah Hwy, Narbethong, Vic.

My field visit and report have been undertaken and entirely carried out by myself and I have the required professional indemnity insurance. The field testing included soil profile logging and sampling, laboratory testing, water and nutrient balance modelling and risk assessment has revealed that on-site effluent disposal is appropriate and sustainable.

My submission will provide information about the site and soil conditions. It will also provide a detailed LCA and include a conceptual design for suitable onsite wastewater management, including recommendations for monitoring and management requirements.

There is an existing three-bedroom single storey dwelling on the property that has a septic and grey water disposal system. There is also a camp area that is currently used by 4WD car club and campers on long weekends and other weekends throughout the year. On average 18-25 weekends per year are used but not in the wetter months of the year (e.g. July and August). The camp ground has two ablution blocks, one has two showers and two toilets for females and the other has two showers, a urinal and two toilets for males but no onsite clothes washing is available. The campground has one camp kitchen with a sink and grease trap. Both ablution blocks and the dwelling are connected to 2 x 4500L septic tanks that pump up to the LAA via a pump well. The car club have been using this area for over 50 years and after the 2009 bush fires the septic system was installed with government funding. I have been asked to inspect the existing system and assess the ability of the system to service the above use.

2. DESCRIPTION OF DEVELOPMENT

Address Details:	1059 Maroondah Hwy, Narbethong, 3778.
Parcel Details:	Lot 2 TP233760 (Refer to Appendix B.)
Clients:	Daniel Pardon
Postal address:	daniel@p2design.com.au
Phone:	0408 339 938
Vic Roads directory reference:	80 C2
Local Government Authority:	Murrindindi
Council property number:	10685
Allotment area:	Approx. 16.9ha
Planning Zone:	Farming Zone (FZ) Schedule to the Farming Zone (Mansfield)
Planning Overlay:	Floodway Overlay (FO) Floodway Overlay Schedule (FO) Land Subject to Inundation Overlay (LSIO) Land Subject to Inundation Overlay Schedule (LSIO) Bushfire Management Overlay (BMO or WMO) Ref to Appendix D

3. INVESTIGATION METHOD

My report is in accordance with the current Code of Practice - *Onsite Wastewater Management*, E.P.A. Publication 891.4, *Land Capability Assessment for Onsite Domestic Wastewater Management*, E.P.A. Publication 746.1 and AS/NZS 1547:2012.

My capability assessment involved investigating and reporting on climate, slope, aspect, vegetation, soil profile characteristics, proximity to surface waters and escarpments, transient soil moisture characteristics and hydraulic conductivity.

Exploratory excavating was undertaken and a test pit excavated to a depth of 1.2m as shown in Appendix C.

Permeability tests within the proposed effluent disposal area could not be conducted due to recent prolonged periods of rain and the seasonally high moisture content in the topsoil and clay soils. A conservative estimate (indicative permeability Ksat) result was classified by soil laboratory results.

4. CAPABILITY ASSESSMENT

Slope and Aspect

The existing effluent disposal area (LAA) is located upslope of the dwelling and campground near the front entry of the property. The area slopes between 7 and 9% in a south east direction and is exposed to winds and sunshine throughout the year as seen in Figure1.

Slope Stability

The ground slopes stability within the proposed effluent disposal area is unlikely to be compromised by hydraulic loadings or slope degree due to the soil structure.

Climate

The general area receives a mean annual rainfall of 710.5mm and the redistribution of rainfall (9th Decile) of 945mm and a mean annual evaporation of 1156mm.

Vegetation

The existing effluent disposal area is vegetated with a mixture of dense pasture grasses including a dense cover of clover as the property is used for grazing livestock as shown in Figure 1 and Appendix C.

Subsurface Profile

The general subsurface profile consists of;

- A-horizon; layer of black, sandy silt (loam) with a soil reaction trend of 5.9 pH and electrical conductivity of 0.10 dS/m, to a depth of 140mm
- B₁-horizon; layer of brown, sandy silty clay (clay loam), moderately structured clay with a soil reaction trend of 6.1 pH and electrical conductivity of 0.08 dS/m, between the depths of 140-510mm
- B₂-horizon; layer of red-brown, silty clay, (light clay), with a soil reaction trend of 6.3 pH, electrical conductivity of 0.07 dS/m, between the depths of 510-1200mm.

The soil horizon profile can be seen in Appendix C.

Soil Permeability

Soil samples were taken from the excavation test pit on 20th July 2019 as seen in Appendix C.

Profile analysis in accordance with Table 5.1 in AS/NZS 1547:2012, EPA Code of Practice, Table 9- Appendix A and our laboratory determined swell potential shows the B-horizon clay soils to be moderately structured Clay Loam with an indicative permeability (Ksat) in the range of 0.5 to 1.5m/day.

For the moderately structured B-horizon clay loam soils, I have adopted the design loading rate of 15mm/day.

Soil Classification

In accordance with *AS/NZS1547:2012* the soil can be classified as Category 4 soil (clay loam).

Surface Waters

The existing effluent disposal area slopes to the south east and the nearest drainage line is located at least 60m away to the south (drive way), nearest watercourse is located at least 150m away to the south (Acheron River) and the nearest dam is located at least 100m away.

Groundwater Bores

There are no groundwater bores within 20m of the effluent disposal area and no visible evidence of groundwater use for domestic purposes within 100m of the effluent disposal area.

Watertable

There was no sign of shallow groundwater tables in the test pit to the depth of 1.2m.

5. LAND CAPABILITY AND CAPABILITY ASSESSMENT TABLE

Land features	Land Capability Risk Rating				Mitigation
	LOW	MEDIUM	HIGH	LIMITING	
Site Drainage: Run off/run on	No actual or potential	Low potential	High Potential	Cut-off drain not possible	Minor cut-off drain required upslope of LAA.
Flooding	Never	<1 in100	>1 in 100 and <1 in 20	<1 in 20	N/A
Proximity to waterway	>100m	70-100	40-70m	<40m	N/A
Proximity to drainage depression	>60m	40-60	<40		N/A
Slope % - Trenches & beds	<5%	5%-10%	10%-15%	>15%	Install trenches along contours.
Slope% - Subsurface Irrigation	<10%	10%-30%	30%-40%	>40%	Install irrigation system along contours.
Landslip	No actual or potential	Low potential	Potential	Present	N/A
Groundwater (m)	>2.0	2-1.5	<1.5	Surface	N/A
Compaction	No potential	Moderate	High	Severe potential	Livestock barriers required.
Exposure	High sun and wind	Moderate	Low sun and wind		N/A
Landform - AS1547:2000 figure 4.1b2	Convex side slope and plains	Straight sided slopes	Concave side slopes	Floodplains	Cut-off drain required upslope of LAA.
Vegetation	Pasture/turf		Dense forest		Mowing required
Rainfall (mm/yr) site 083020	<500	500-750	750-1000	>1000	Refer to water Balance table
Pan evaporation (mm/yr) BOM site 083023	>1250	1000-1250	750-1000	<750	Refer to water Balance table
Fill	No fill			Fill present	N/A
Permeability (m/day)	<0.3	0.3-3	3-5	>5.0	Gypsum required in excavated trenches
Presence of mottling	None	Slight		Extensive	N/A
Coarse fragments %	<10	10-20	>20		N/A
pH	6-8	4.5-6	<4.5, >8		N/A
Emerson aggregate class	4,5,6,8	7	2,3	1	N/A
Free Swell (%)	<30	30-80	80-120	>120	N/A

Note: Site assessments and soil test results are within the coloured range.

The compaction risk will be reduced to low with the installation of barriers and the total rainfall effect has been mitigated by the inclusion of a water balance table in this report which will also reduce the risk to low. The overall above assessment can be reduced to **medium** and the above results indicate disposal of effluent is achievable by primary treated effluent and on-site effluent disposal via absorption trench system.

6. RISK ASSESSMENT

Land Feature	Land Capability Risk Rating				Remarks
	LOW	MEDIUM	HIGH	RISK RATING	
Distance to reservoir (km)	>15	2-15	<2	1	>15 kilometers to reservoir.
Soil type rating (from LCA assessment table above)	1	2	3	2	Medium hydraulic conductivity of moderately structured soil.
Distance to river (m)	>80	40-80	<40	1	No river within 150m+
Distance to stream (m)	>80	40-80	<40	1	>100m to nearest watercourse.
Distance to drain (m)	>40	10-40	<10	1	>60m to nearest drain/drainage depression.
Lot size (ha)	>10	2-10	0.2-2	1	>16ha
Density (houses/km ²)	<20	20-40	>40	1	<20 dwellings in the km ² area.
LCA rating (from LCA assessment table above)	1 (LOW)	2 (MEDIUM)	3 (HIGH)	3	Refer to LCA table above.
System fail rate (%)	<5	5-10	>10	1	Assumed conservative rating for large size allotment.

I have assessed the exist development using the Edis Risk Assessment, Dr Robert Edis identified major factors which influence the level of risk posed by an on-site system. These factors have a differing level of importance, or weighting, when considered relative to other factors and that the interaction between factors must also be considered.

The individual factors can be rated as;

1. **Low risk** ($R_n < 2.5$) which reflects the range in which there is no expected consequential impact on water quality,
2. **Medium risk** ($R_n 2.5-5$) which reflects the range in which the factor may influence the risk to water quality, though as a minor component of the overall risk, and
3. **High risk** ($R_n > 5$) which represents a significant influence on the risk to water quality.

The Edis risk algorithm weights the major factors appropriately in the context of protecting the integrity of the potable water supply, as shown below:

Formula $R_n = ((R_{Res} + R_{Soil}) \times (R_{Riv} + R_{Str} + R_{Drain} + R_{Lot}) + (2 \times R_{LCA}) + (3 \times (R_{Fail} + R_{Den}))) / 10$

Where

R_n = Combined Risk Number,

R_{Res} = Distance to reservoir risk rating

R_{Soil} = Soil risk rating

R_{Riv} = Distance to river risk rating

R_{Str} = Distance to stream risk rating

R_{Drain} = Distance to drain risk rating

R_{Lot} = Lot size risk rating

R_{LCA} = Land capability assessment risk rating

R_{Fail} = System fail rate risk rating

R_{Dens} = Density of development risk rating

The combined risk number for this site is **2.4 (Low Risk)**

7. SIZING CALCULATIONS

Victorian Land Capability Assessment Framework January 2014

Victorian Land Capability Assessment Framework				
Trench & Bed Sizing				
FORMULA FOR TRENCH AND BED SIZING				
$L = Q/DLR \times W$				From AS/NZS 1547:2012
Where:	Units			
L = Trench or bed length	m			Total trench or bed length required
Q = Design Wastewater Flow	L/day			Based on maximum potential occupancy and derived from Table 4 in the EPA Code of Practice (2016)
DLR = Design Loading Rate	mm/day			Based on soil texture class/permeability and derived from Table 9 in the EPA Code of Practice (2016)
W = Trench or bed width	m			As selected by designer/installer
INPUT DATA				
Design Wastewater Flow	Q	2200	L/day	Based on maximum potential occupancy and derived from Table 4 in the EPA Code of Practice (2016)
Design Loading Rate	DLR	15.0	mm/day	Based on soil texture class/permeability and derived from Table 9 in the EPA Code of Practice (2016)
Trench basal area required	B	146.7	m ²	
Selected trench or bed width	W	0.7	m	As selected by designer/installer
OUTPUT				
Required trench or bed length	L	209.5	m	
CELLS				
				Please enter data in blue cells
	XX			Red cells are automatically populated by the spreadsheet
	XX			Data in yellow cells is calculated by the spreadsheet, DO NOT ALTER THESE CELLS

The above table shows the existing trench length will accommodate 2200L/day using the 'MAV Model Land Capability Assessment'.

8. RECOMMENDATIONS

The following recommendations are based on the results of our assessment, and are made in accordance with the *Code of Practice - Onsite Wastewater Management*, E.P.A. Publication 891.4, M.A.V. Model Land Capability Assessment Report and AS/NZS 1547:2012.

EFFLUENT DISPOSAL

General

Based on the results of our laboratory determined swell potential, sub-soil conditions including soil profile, slope and adequate site drainage, on-site sub-soil absorption trenches are appropriate for effluent disposal.

Effluent

The effluent generated from the dwelling and campground is black and grey water classed as 'all waste' and is treated using two 4500 litre dual chamber septic tanks that flow to a pump well. The pump well has a submersible pump that pumps the effluent to sub-soil absorption trenches (7 x 30m).

Wastewater Load

Wastewater load is calculated on a 3-bedroom dwelling and therefore $(3 + 1) \times 150\text{L/person/day} = 600\text{L/day}$. Extra wastewater load has been calculated for the intermittent use of the campground and the total trench system will accommodate 2200L/per/day.

Sub-soil Absorption Trenches

The effluent disposal area has been determined from the results of the laboratory determined swell potential, EPA code of practise, AS/NZS 1547:2012 and the past evidence of use of the existing dwelling and campground.

Effluent Absorption Trenches

It is recommended that gypsum be broadcasted over the effluent absorption trenches at the rate of 1kg/m². The effluent absorption trenches have been installed along the contours and do not exceed the recommended design of 400mm in depth or 30m in length with a minimum of 2m separation between trenches.

Septic Tank

The septic tanks have been installed near the ablution blocks and inspection openings have been brought to ground-surface level with saddle risers and inspection covers fitted.

Pump Well

The pump well has been installed in line with the septic tanks and brought up to ground-surface level with a child proof steel gatic lid. It has a high-water level alarm that is mounted to the outside of the ablution block next to the pump well.

Inspections and Monitoring

The 'permit to use' issued by the local council should state the required inspection periods. I recommend that the septic tank is inspected every 3 years and a septic report be issued to the local council to ensure the ongoing effectiveness of the system.

Site Drainage

A swale drain shall be placed upslope of the effluent disposal area so all potential stormwater runoff be discharged down slope well away of the area.

Site Compaction

As the effluent disposal area is in a paddock that is been grazed by livestock, it must be fenced to prevent all vehicles and livestock from causing compaction or damage to the area.

Setback Distances

All setbacks referred to in Table 5- Code of Practice – Onsite Wastewater Management, E.P.A. Publication 891.4 have been achieved.

SUMMARY OF RECOMMENDATIONS

My capability and risk assessment indicate that primary effluent and trench systems are appropriate for this development and sufficient space exists for retention of all wastewater on the allotment and is achievable by using the principle of absorption trenches after primary treatment. The precautionary principle requires water conservation, treatment and dispersal at a rate where the impact from nutrient will not adversely affect vegetation.

This assessment concludes the existing on-site wastewater management system is sustainable, with minimal risk to human health as required by state environment protection policies.

9. CONCLUSION

I have assessed the site and effluent disposal area (LAA) for existing and potential risks and the Edis risk algorithm has a combined risk assessment rating of 2.4 (Low Risk). The land is subject to both an inundation and flood overlay but the LAA is outside of both overlays and complies with current EPA regulations.

There is no evidence of the existing septic system failing due to use of the dwelling and campground. The campground is not used in the wet times of the year as the owners are mindful of the impact this can have to land (Closed over winter period except for Queens Birthday weekend). Prior to investigations it had been raining off and on for a few days and only the first effluent absorption trench was in use (Approx. 5-10%) and there are seven trenches at 30m with a total of 210m.

The septic tanks had less than 10% sludge in each and both comply with current EPA code of practice. The effluent absorption trenches have been installed correctly as they comply with the

current EPA code of practice and are in excellent condition. The area does need fencing to prevent any large animals from compacting the area (e.g. cattle) and a swale drain needs to be installed above the trenches to act as a cut off drain.

There is a kitchen sink located at the camping ground that is connected to a grease trap and then disperses to an unknown location. This sink and grease trap needs to be removed, relocated at the ablution block and be connected to the existing septic system.

The existing 3 bed-room dwelling is occupied by 4 persons and the current use of the campground is 30-35 people 18-25 weekends per year depending on weather conditions. The existing LAA will accommodate 2200L/day and although this will be exceeded on the weekends the campground is used it has all week to recover and on average the daily wastewater load would be approx. 1400-1600 when the development is in full use.

The existing septic system is working satisfactory for the current use of the property and only a couple of minor improvements are required as stated in this conclusion.

10. MANAGEMENT PROGRAMME

Wastewater treatment systems serving the exist dwelling and campground must comply with the EPA conditions indicated in approval conditions or equivalent.

To ensure for the most effective use of any effluent system the following measures are recommended:

For best practice:

1. all trenches to be monitored for signs of any surcharge or seepage;
2. a sink strainer to be used to catch food particles;
3. a front-loading washing machine be used when possible;
4. surge loads be avoided (letting out large volumes of water at the same time);
5. use biodegradable soaps;
6. environmentally-friendly, low-phosphate laundry products to be used;
7. scrape all dishes to remove grease and fats before washing;
8. do not install a garbage grinder waste disposal system;
9. do not allow sanitary napkins or hygiene products to enter the system;
10. do not dispose of aggressive toxic cleaning agents in the system;
11. do not dispose of any solvents or paints in the system;
12. do not allow bleach, whiteners, nappy soakers, spot removers or disinfectants to enter the system;
13. water saving devices should be used where practicable, eg: shower head, aerator on sink outlet, pressure regulating valve;
14. if a spa or insinkerator is to be installed, additional trench length(s) shall be added to the system;
15. the plumber installing the system shall lodge a Plumbing Industry compliance certificate and as-laid drainage plan to the local Council on completion of the works.

11. REFERENCES

AS/NZS 1547:2012 On-site domestic wastewater management
Environment Protection Act 1970 (Victoria)
EPA Victoria (1996), *Code of Practice – Septic Tanks (Publication 451)*
EPA Victoria (2003), *Septic Tanks Code of Practice (Publication 891)*
EPA Victoria (2003), *Land Capability Assessment for Onsite Domestic Wastewater Management (Publication 746.1)*
EPA Victoria (2013), *Code of Practice – Onsite Wastewater Management (Publication 891.4)*
Municipal Association of Victoria (2006), *Model Land Capability Assessment Report*, MAV & DSE
Land Capability Assessment for On-site Wastewater Management 2010- Joe Whitehead
Mansfield Shire Domestic Wastewater Management Plan Pilot Project 2014



Adam Layfield
Mansfield Land Capability Assessments
29th July 2019.

Member of Victorian Construction Materials Laboratories Association (VCMLA)
Member of Australian Water Association (AWA)
Member of the Foundation and Footings Society (Vic) Inc. (FFSV)
Victorian Building Authority Licence No 32561

Appendix A

Site Plan
Not to Scale



Farm house and Campsite plan - scale 1:1000



Valley Farm / Black Rabbit Run : project
Nicole and Daniel Pardon : client
1059 Maroonah Hwy, Narbethong : location
Daniel Pardon, Architect Reg.No:15923 Tias P2 design

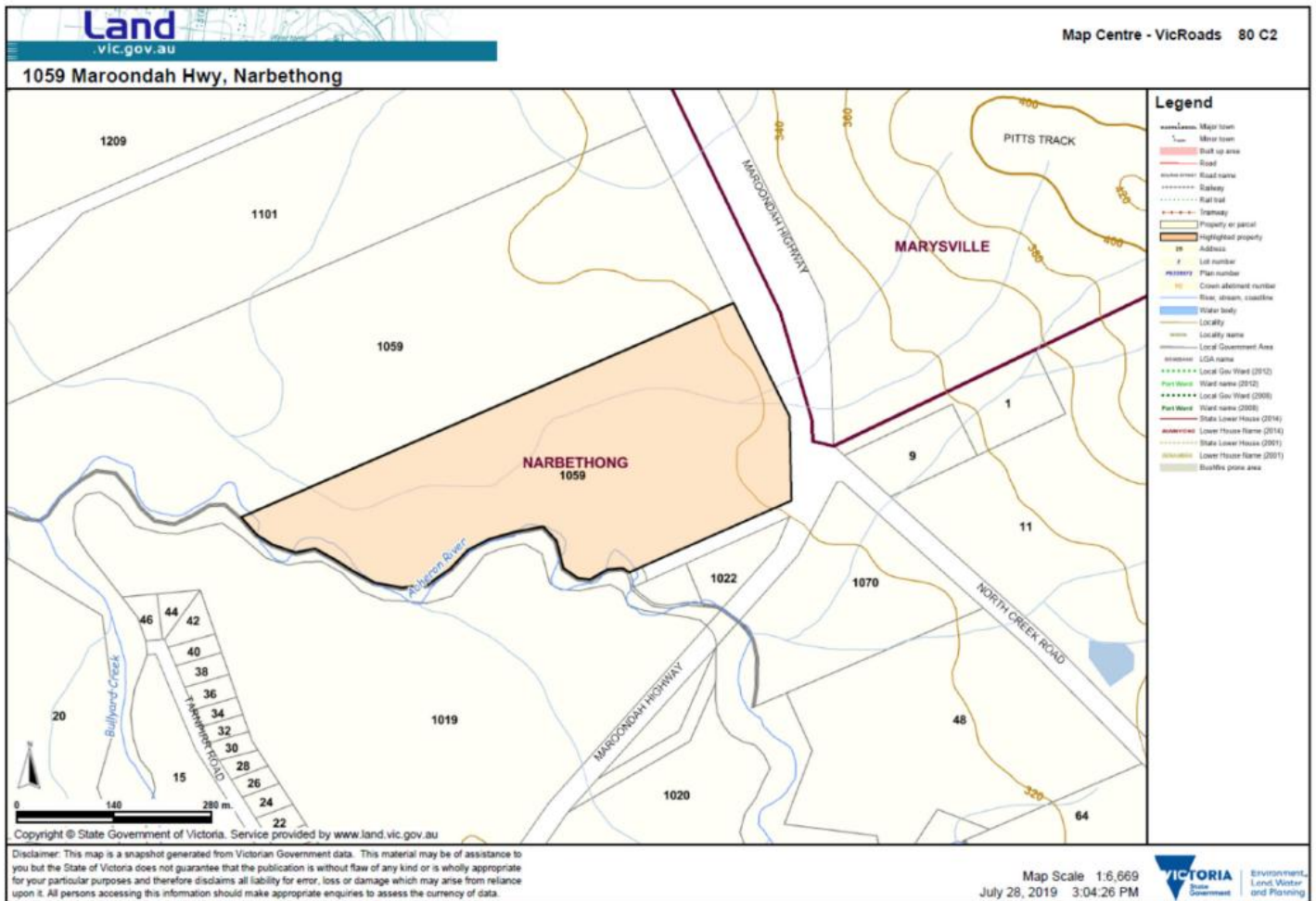
P2 design	date: 15/04/2018
P2/001 100, Warraboon HEALESVILLE VIC 3777 P. 0436 330 005	drawing: S01

2 x 4500L septic tank & pump well

7 x 30m effluent absorption trenches

Appendix B

Map from DEPI of 1059 Maroondah Hwy, Narbethong.



Appendix C

Soil Horizon



Appendix D

PLANNING PROPERTY REPORT



From: www.planning.vic.gov.au, on 28 July 2019 09:05 PM

PROPERTY DETAILS

Address: 1059 MAROONDAH HIGHWAY NARBETHONG 3778
Lot and Plan Number: Lot 2 TP233760
Standard Parcel Identifier (SPI): Z/TP233760
Local Government Area (Council): MURRINDINDI
Council Property Number: 10685
Planning Scheme: Murrindindi
Directory Reference: VicRoads 80 C2

www.murrindindi.vic.gov.au

planning-schemes.delwp.vic.gov.au/schemes/murrindindi

UTILITIES

Rural Water Corporation: Goulburn-Murray Water
Urban Water Corporation: Goulburn Valley Water
Melbourne Water: outside drainage boundary
Power Distributor: AUSNET

STATE ELECTORATES

Legislative Council: NORTHERN VICTORIA
Legislative Assembly: EILDON

Planning Zones

FARMING ZONE (FZ)

SCHEDULE TO THE FARMING ZONE (FZ)



Copyright © State Government of Victoria

FZ - Farming

PCRZ - Public Conservation & Resource

RDZ1 - Road - Category 1

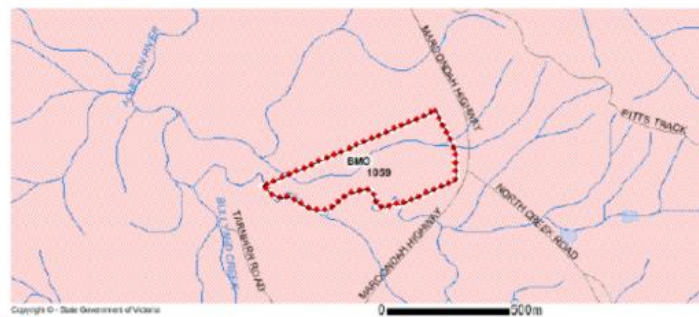
Note: Labels for zones may appear outside the actual zone - please compare the labels with the legend.

PLANNING PROPERTY REPORT



Planning Overlays

BUSHFIRE MANAGEMENT OVERLAY (BMO)



Copyright © State Government of Victoria

BMO - Bushfire Management

Note: Due to overlaps, some overlays may not be visible, and some colours may not match those in the legend.

FLOODWAY OVERLAY (FO)

FLOODWAY OVERLAY SCHEDULE (FOS)



Copyright © State Government of Victoria

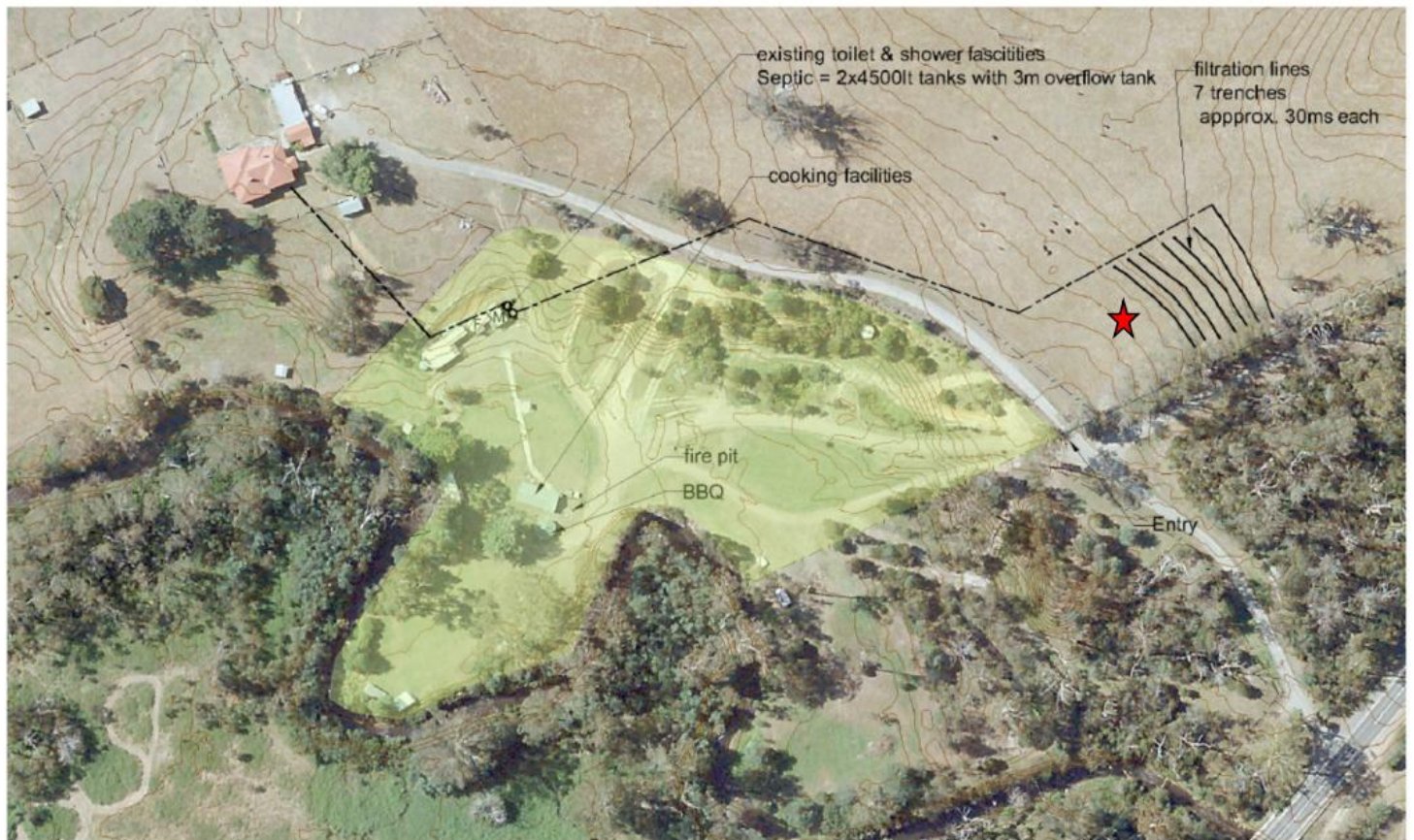
FO - Floodway

Note: Due to overlaps, some overlays may not be visible, and some colours may not match those in the legend.

Appendix E

Bore hole testing location

GPS Location 37° 30.895' S
145° 40.692' E



Farm house and Campsite plan - scale 1:1000



Valley Farm / Black Rabbit Run : project
Nicole and Daniel Pardon : client
1059 Maroondah Hwy, Narbethong : location
Daniel Pardon, Architect Reg.No:15923 Tias P2 design

P2 design	date: 15/04/2018
PO Box 185, Warburton HEALESVILLE VIC 3777 P: 0438 232 086	drawing: S01

★ Test pit